

**U.S. 61**  
**FROM MEMORIAL PARK ROAD IN BURLINGTON NORTH TO 1**  
**MILE NORTH OF IA 78 IN LOUISA COUNTY.**  
**DES MOINES & LOUISA COUNTY, IOWA**  
**NHS-061-2(50) - 19-58**


**ENVIRONMENTAL ASSESSMENT**


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

By The

U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
And  
IOWA DEPARTMENT OF TRANSPORTATION  
OFFICE OF LOCATION AND ENVIRONMENT

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

  
\_\_\_\_\_  
For the Iowa Division Administrator  
Federal Highway Administration

  
\_\_\_\_\_  
For the Office of Location and  
Environment  
Iowa Department of Transportation

11/24/2015  
\_\_\_\_\_  
Date of Approval for Public Availability

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## PREFACE

The Transportation Equity Act of the 21<sup>st</sup> Century (TEA-21) (23 CFR) mandated environmental streamlining in order to improve transportation project delivery without compromising environmental protection. In accordance with TEA-21, the environmental review process for this project has been documented as a Streamlined Environmental Assessment (EA). This document addresses only those resources or features that apply to the project. This allowed study and discussion of resources present in the study area, rather than expend effort on resources that were either not present or not impacted. Although not all resources are discussed in the EA, they were considered during the planning process and are documented in the Streamlined Resource Summary, shown in Appendix A.

The following table shows the resources considered during the environmental review for this project. The first column with a check means the resource is present in the project area. The second column with a check means the impact to the resource warrants more discussion in this document. The other listed resources have been reviewed and are included in the Streamlined Resource Summary.

**Table P-1: Resources Considered**

SOCIOECONOMIC		NATURAL ENVIRONMENT	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Land Use	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Wetlands
<input type="checkbox"/>	<input type="checkbox"/> Community Cohesion	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Surface Waters and Water Quality
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Churches and Schools	<input type="checkbox"/>	<input type="checkbox"/> Wild and Scenic Rivers
<input type="checkbox"/>	<input type="checkbox"/> Environmental Justice	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Floodplains
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Economic	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Wildlife and Habitat
<input type="checkbox"/>	<input type="checkbox"/> Joint Development	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Threatened and Endangered Species
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Parklands and Recreational Areas	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Woodlands
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Bicycle and Pedestrian Facilities	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Farmlands
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Right-of-Way		
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Relocation Potential		
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Construction and Emergency Routes		
<input checked="" type="checkbox"/>	<input type="checkbox"/> Transportation		
CULTURAL		PHYSICAL	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Historical Sites or Districts	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Noise
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Archaeological Sites	<input checked="" type="checkbox"/>	<input type="checkbox"/> Air Quality
<input checked="" type="checkbox"/>	<input type="checkbox"/> Cemeteries	<input checked="" type="checkbox"/>	<input type="checkbox"/> Mobile Source Air Toxics (MSATs)
		<input checked="" type="checkbox"/>	<input type="checkbox"/> Energy
		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Contaminated and Regulated Materials Sites
		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Visual
		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Utilities
<input type="checkbox"/>	<b>CONTROVERSY POTENTIAL: Low</b>		
<input checked="" type="checkbox"/>	<b>Section 4(f):</b> Historic Sites – FHWA had determined the impacts meet the <i>de minimis</i> finding criteria		

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- B. Agency and Tribal Coordination
- C. Farmland Protection Form
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# **SECTION 1**

## **DESCRIPTION OF PROPOSED ACTION**

This Environmental Assessment (EA) has been 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.

### **Proposed Action**

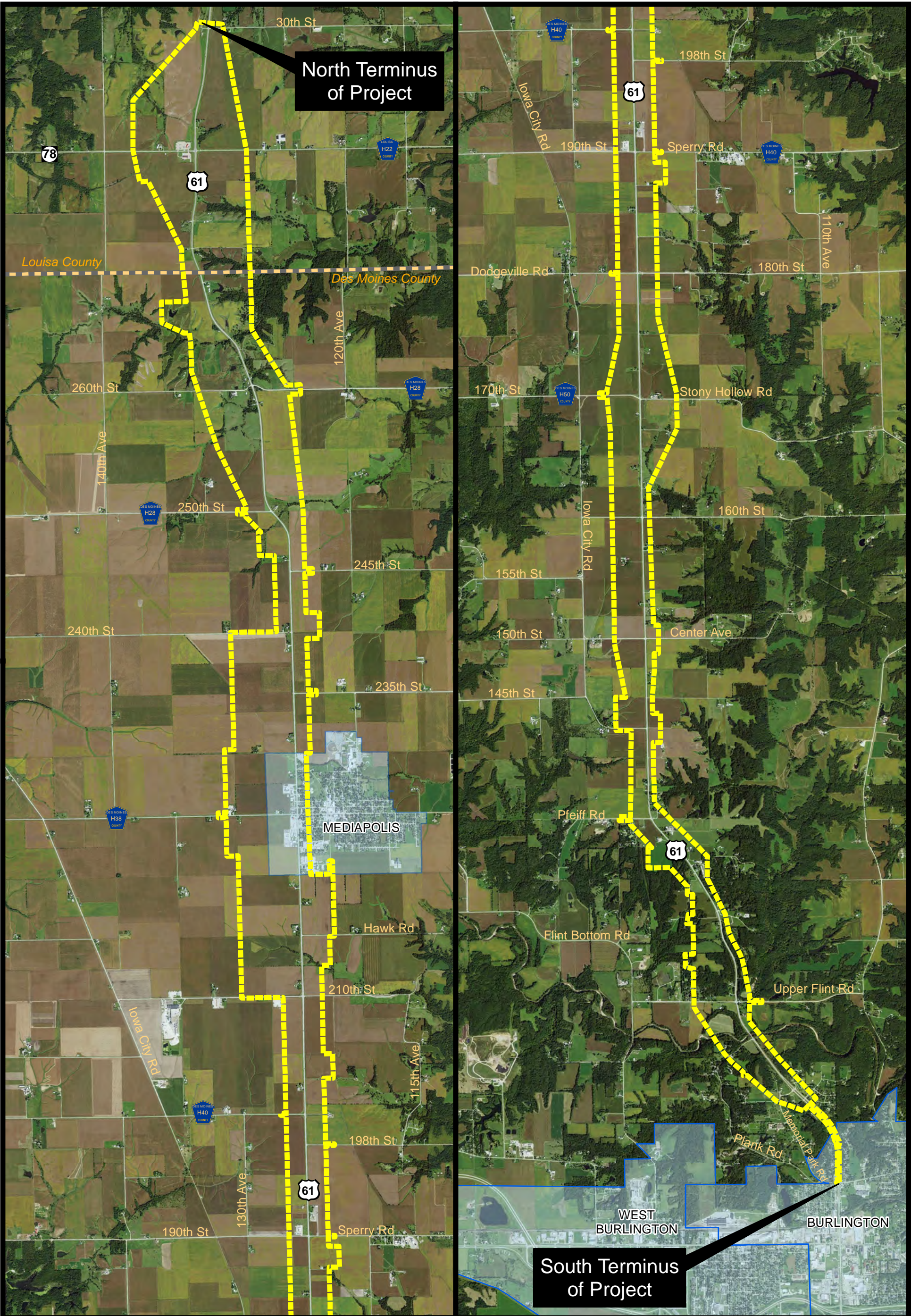
Iowa Department of Transportation (Iowa DOT) has re-initiated planning and preliminary design studies to improve U.S. 61 from Memorial Park Road in Burlington north to 1-mile north of IA 78 in Louisa County. The proposed project consists of improving approximately 18 miles of roadway from 2-lanes to 4-lanes and evaluating a potential bypass around Mediapolis. See Figure 1.


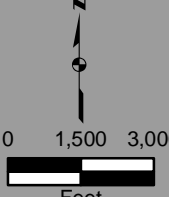

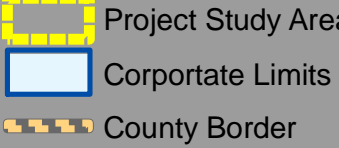
### **Project Location**

The proposed project is located in Des Moines and southern Louisa Counties, Iowa. The project study area, illustrated in Figure 1, extends in an approximately half-mile wide corridor from the end of the existing four-lane roadway near Memorial Park Road at Burlington to approximately one mile north of the IA 78 intersection in Louisa County. Currently, U.S. 61 is a two-lane highway in the study area with at-grade intersections at IA 78 and several other Des Moines and Louisa County roadways. These intersections are two-way stop control. Also, residences, farms, and field entrances have direct access onto U.S. 61 in the project study area. The roadway expands from two to three lanes as it passes through the City of Mediapolis. The section of road contains one northbound lane, one southbound lane and a center turning lane. There are several residences and businesses located along this stretch of highway that have direct access to the roadway.

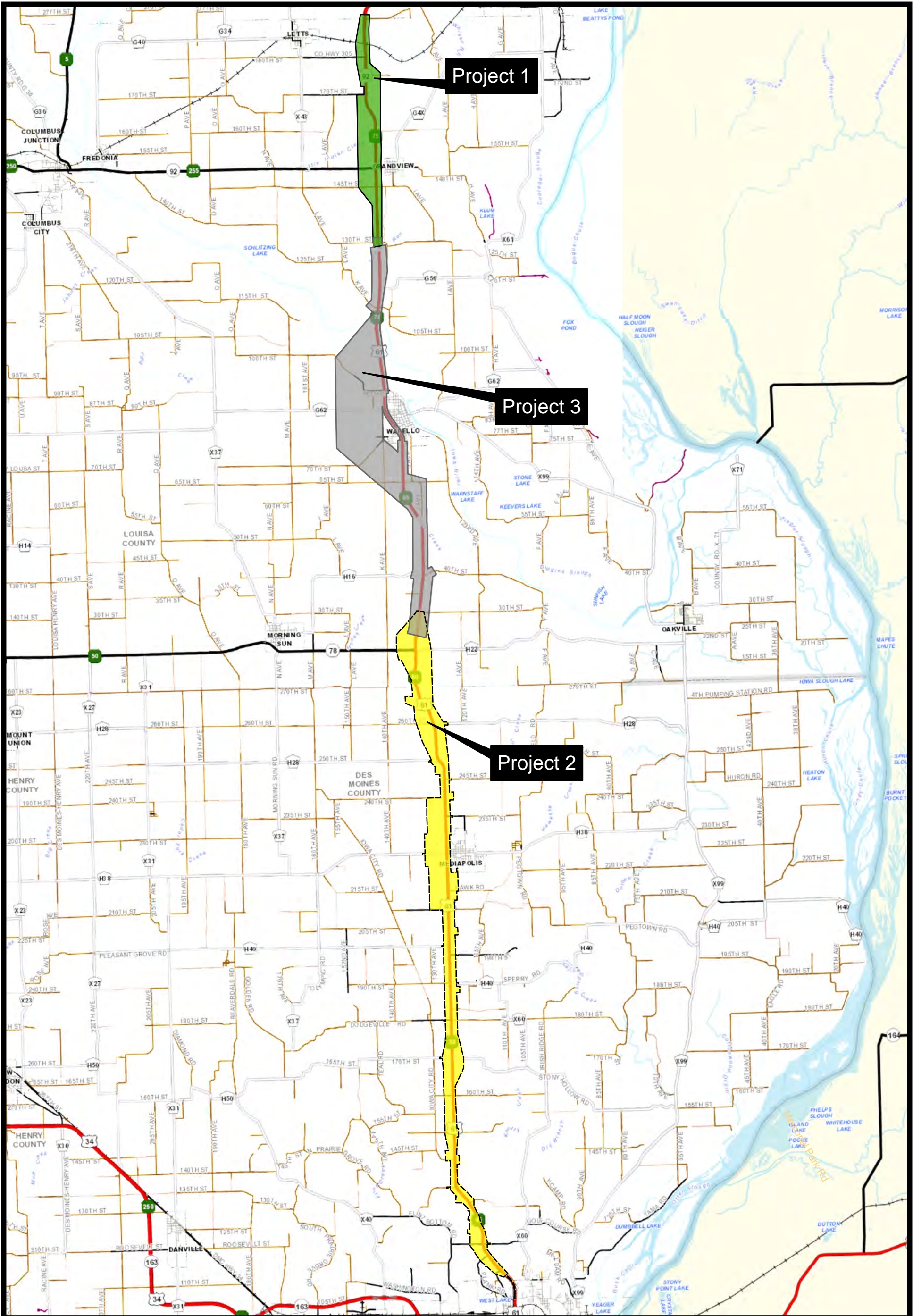
The Iowa DOT plans to improve the remaining 35 miles of two-lane highway in Des Moines and Louisa County. However, the cost of improving 35 miles of roadway would be substantial and because of the complex social, economic, and natural environment issues in the corridor that could potentially require extensive environmental studies to determine U.S. 61's future location. The Iowa DOT has determined that the roadway should be improved with three separate projects. See Figure 2. Segment one begins approximately two miles south of IA 92 and extends north to the existing four-lane roadway at the Muscatine County line. An Environmental Assessment and a Finding of No Significant Impact was completed for this segment in July of 2012 and the Iowa DOT anticipates that construction for the segment will be completed in 2019. This document will discuss segment 2 that extends from Burlington to approximately 1 mile north of IA 78 in Louisa County. Segment three begins approximately 1 mile north of IA 78 and extends to two miles south of Grandview. Environmental studies are currently being conducted for this segment.





 <p>Created April 2015 2014 Aerial</p>		 <p>Project Location within Des Moines and Louisa County</p>	 <ul style="list-style-type: none"><li>Project Study Area</li><li>Corporate Limits</li><li>County Border</li></ul>	<p><b>FIGURE 1 - PROJECT LOCATION</b> <b>NHS-61-2(50)--19-29</b> <b>US 61 Improvements</b></p> <p>North of Burlington to North of IA 78 Des Moines and Louisa Counties</p>
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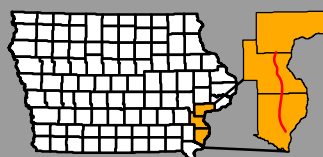
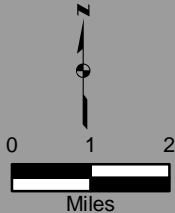
Project 1

Project 3

Project 2



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Project Locations within  
Des Moines, Louisa, and Muscatine Counties

- Project 1
- Project 3
- Project 2

FIGURE 2 - U.S. 61 PROJECTS

US 61 Improvements

North of Burlington to Muscatine County Line  
Des Moines, Louisa and Muscatine Counties



## **SECTION 2**

### **PROJECT HISTORY**

Pre-location studies were conducted for the U. S. 61 Corridor from the Iowa/Missouri State line north to the Muscatine County line in 1987 and 1989. The purpose of these studies was to identify deficiencies, consider needs, and explore potential improvements to the U.S. 61 Highway Corridor. The studies indicated the primary purpose for improvements is to improve roadway continuity between existing two-lane and four-lane divided sections.

In 1988, the Iowa DOT's Transportation Commission identified U.S. 61 as part of the State's Commercial and Industrial Network (CIN) and approved the development of U.S. 61 as a four-lane highway. As part of the CIN, other segments of U.S. 61 in the State of Iowa have been developed as four-lane expressway or freeway facilities with posted speed limits of 65 mph in rural areas. Approximately 35 miles of U.S. 61 is constructed as a two-lane highway in Louisa County and Des Moines County, Iowa, with a posted speed of 55 mph in rural areas.

In 1996 the Iowa Department of Transportation (Iowa DOT) completed an Environmental Assessment for roadway improvements along U.S. 61 in Des Moines and Louisa Counties. However, the project was put on hold and a Finding of No Significant Impact was never completed for the project. The original project area extended approximately 17.7 miles from just south of Plank Road in Burlington to approximately 0.4 miles north of the junction with Iowa 78 in Louisa County. The 1996 study evaluated impacts associated with upgrading the two-lane highway to a four-lane rural type facility with a bypass around Mediapolis and an interchange located at IA 78.

The Iowa DOT has re-initiated planning and preliminary design studies to improve U.S. 61 from Memorial Park Road in Burlington north to 1-mile north of IA 78 in Louisa County. The proposed project consists of improving the roadway from 2 lanes to 4 lanes and evaluating a potential bypass around Mediapolis and an interchange located at IA 78. See Figure 1.

In 2004, The U.S. 61 Corridor Coalition, a group of local government, business, and industry leaders with representatives of the communities along the U.S. 61 Corridor from Keokuk to Dubuque, formed to promote U.S. 61 improvements. The U.S. 61 Coalition's goal is to improve the mobility of regional traffic along U.S. 61 and to enhance trade and economic development opportunities, consistent with the CIN.

## **SECTION 3**

### **PURPOSE AND NEED FOR 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 highway, and explains the importance of the highway in Des Moines and Louisa Counties.

#### **3.1 Purpose**

The purpose of the proposed project is to improve traffic operations and improve economic development opportunities along approximately 18 miles of the existing two-lane U.S. 61, from the end of the existing four-lane roadway near Memorial Park Road at Burlington to approximately one mile north of the IA 78 intersection in Louisa County.

#### **3.2 Need**

The need for the project is based on the following factors:

- Operations
- Legislation

##### ***Operations***

The U.S. 61 roadway is not to current geometric design standards. Since the existing two-lane facility was constructed in the late 1920's, there have been minimal improvements to the roadway other than maintenance work; which includes lane widening and pavement overlays. The vertical and horizontal alignment of the roadway creates poor sight distances at curves. The route also has numerous access points such as roadways and driveways that impede the flow of traffic at these intersections.

If the roadway were to remain in its existing configuration, the crash rates will likely increase in the future as traffic volumes increase. Estimates indicate that traffic volumes will increase from an average of 6,500 ADT in 2016 to 9,800 ADT by 2041 for this roadway segment. This 34 percent increase in projected traffic volumes coupled with the fact that 13 percent of the traffic volume will be heavy commercial vehicles trucks, will increase the chances for additional conflicts in this area.

##### ***Legislation***

In 1988, the Iowa legislature directed the Transportation Commission to “identify within the primary road system a network of commercial and industrial highways.” The legislation states the purpose for developing the Commercial and Industrial Network (CIN) is “to enhance opportunities for the development and diversification of the state’s economy.” It further states,

“The purpose of this highway network shall be to improve the flow of commerce; to make travel more convenient, safe, and efficient; and to better connect Iowa with regional, national, and international markets.” U.S. 61 is included as part of the CIN.

Businesses and agricultural interests depend on an efficient highway system with connections to rail and barge facilities at the Mississippi River’s intermodal terminals to meet shipping needs. Expanding U.S.61 from two to four lanes is therefore consistent with the goals of the CIN to make U.S. 61 more reliable and decrease transportation related cost through fewer stops, higher speeds and improved safety. Decreased travel time and improved accessibility along U.S. 61 is needed to safely deliver employees, commuters and commercial vehicles between places of employment and trade.

## **SECTION 4 ALTERNATIVES**

This section will discuss the alternatives investigated to address the project's purpose and need. A range of alternatives was developed that included slight variations to the road's alignment. The No Build Alternative, the alternatives considered but dismissed, and the Proposed Alternative are discussed below.

### **4.1 No Build Alternative**

The existing U.S. 61 corridor is a 2-lane roadway with several at-grade intersections that extends approximately 18 miles from Memorial Park Road in Burlington north to one mile north of IA 78. The no-build alternative would involve performing required maintenance activities to support the continued use of the existing highway. These activities may include routine patching, crack sealing, overlays, pavement replacement and drainage structure replacement. However, these activities would do nothing to address the operational concerns that currently exist and would not provide a roadway and economic development opportunities consistent with what was identified in the CIN. This alternative is carried forward through the document for comparative purposes only.

### **4.2 Alternatives Considered But Dismissed**

In addition to the No Build alternative, three build alternatives were considered, two of which were eventually dismissed. Each dismissed alternative is briefly described below and illustrated on Figures 3-4. Table 1 below compares impacts from each alternative that were used to select the preferred alternative.

#### **Flyover Interchange at Mediapolis:**

This alternative proposes to widen U.S. 61 from two lanes to four lanes generally along existing alignment. It will include areas of realignment to reduce environmental, residential and business impacts. This alternative proposes to bypass Mediapolis on a westerly alignment using flyover ramps at the interchange at County Road H38 and includes another diamond interchange at IA 78 / County Road H22. From approximately 260<sup>th</sup> Street to just north of IA 78 the roadway would be located east of the existing alignment to avoid impacts to known cultural resource sites. See Figure 3.

As a general practice in Iowa, interchanges are normally included at crossings of state and U.S. highways as a safety improvement as they typically have higher turn volumes. Regardless of design, signing, and signalization, at-grade intersections have an ever present potential for vehicle-contact type accidents. By separating the grades of the intersecting roadways, accidents caused by crossing and turning movements can be reduced. Although there has only been one crash at this location in the past five years, it was included on this project as a preventative measure. There has already been development at the existing U.S. 61 intersection which pushed the proposed design to the east. Any future development will complicate the interchange

location, layout, and nearby access points. This interchange is included in each of the proposed alternatives for this same reason.

This alternative was eliminated from further consideration because farmland impacts were greater for this alternative as compared to the other alternatives. The public felt this interchange was more complex than a diamond interchange. The pair of flyovers has partial movements which does not meet driver expectations. Drivers expect an interchange to provide for all traffic movements. Interchange configurations that meet driver expectancy prepare the driver to respond to highway and traffic activities and process information in a predictable and successful manner, reducing crashes and increasing the safety performance of the roadway.

### **5- Lane Through Town at Mediapolis:**

This alternative proposes to widen U.S. 61 from two lanes to four lanes generally along existing alignment. It will include areas of realignment to reduce environmental, residential and business impacts. From approximately 260<sup>th</sup> Street to just north of IA 78 the roadway would be located east of the existing alignment to avoid impacts to known cultural resource sites. This alternative proposes to widen the roadway from three lanes to five lanes through Mediapolis and includes a diamond interchange at IA 78 / County Road H22. See Figure 4

This alternative was eliminated from further consideration because the need for additional right-of-way to widen the roadway from two lanes to five lanes through Mediapolis would have impacted approximately 26 businesses as compared to five impacted by the Diamond Interchange Alternative and 4 impacted by the Flyover Interchange Alternative. This alternative would also increase the number of crashes through the town of Mediapolis. The through town route would increase the number of vehicles in town which would like lead to a higher number of crashes. By passing Mediapolis would reduce the amount of traffic at local streets and access points with the result of safer intersections in town. Several Mediapolis residents voiced concerns about agricultural vehicle crossing a five lane section at the intersection of U.S. 61 and Main Street/H38 with no signalization. Currently this intersection is not signalized, but with increased traffic it would likely be warranted in the future

## **4.3 Proposed Alternative**

### **Diamond Interchange at Mediapolis:**

Diamond Interchange at Mediapolis alternative proposes to widen U.S. 61 from two lanes to four lanes generally along existing alignment. It will include areas of realignment to reduce environmental, residential and business impacts. This alternative proposes to bypass Mediapolis on a westerly alignment with a diamond interchange at County Road H38 and includes another diamond interchange at IA 78 / County Road H22. From approximately 260<sup>th</sup> Street to just north of IA 78 the roadway would be located east of the existing alignment to avoid impacts to known cultural resource sites. See Figure 5.

After reviewing the reasonable alternatives under consideration the Iowa DOT has identified the Diamond Interchange at Mediapolis as the proposed alternative because it meets the projects



purpose and need, while minimizing impacts to business and regulated material sites in the project area. Additional Environmental and Social impacts of the proposed alternative are similar to the alternatives dismissed. Table 1 provides a summary of impacts for the proposed alternative compared to the alternatives that were considered but dismissed for Environmental and Social impact categories where the impacts varied among alternatives.

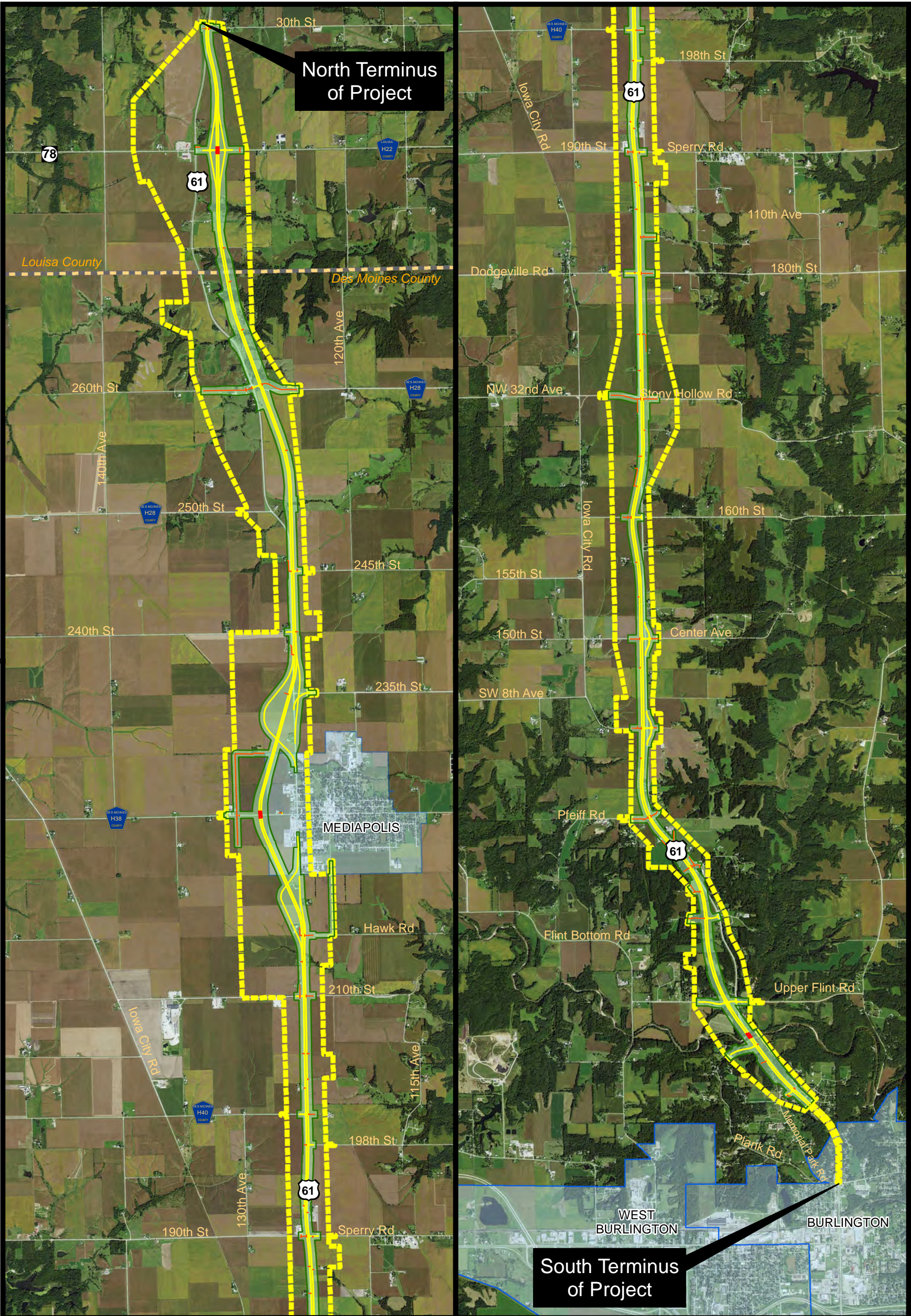
It should be noted that additional design work was performed for the proposed alternative after it was decided which alternative to carry forward in the document and changes were made to avoid sensitive resources in the project area. So, the values reported in Table 1 maybe different than impacts reported later in the document. This table compares alternative impacts with the same level of design.

**Table 1: Impacts of the Proposed Alternative Vs Alternatives Considered but Dismissed**

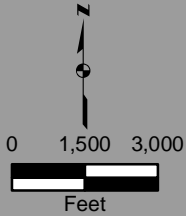
	Diamond Interchange at Mediapolis (Proposed Alternative)	Five-Lane Through Town at Mediapolis	Flyover Interchange at Mediapolis	No-Build Alternative
Regulated Materials (parcels)	5	17	4	0
Streams (Feet)	24,830	24,688	25,031	0
Wetlands (acres)	18.3	18.4	18.5	0
Farmland (acres)	1,032	873	1,151	0
Cultural Resources	5 structures 3 historic district 11 sites - 14 acres	5 structures 3 historic districts 12 sites - 14 acres	5 structures 3 historic districts 12 sites - 15 acres	0
Recreational Areas (parcels)	2	3	2	0
Homes	23	20	25	0
Businesses	5	26	4	0
Schools	0.6	0.1	0.6	0

Final selection of an alternative 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 comments. Following public and agency review of this Environmental Assessment (EA), FHWA and Iowa DOT will determine if an environmental Impact Statement (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.





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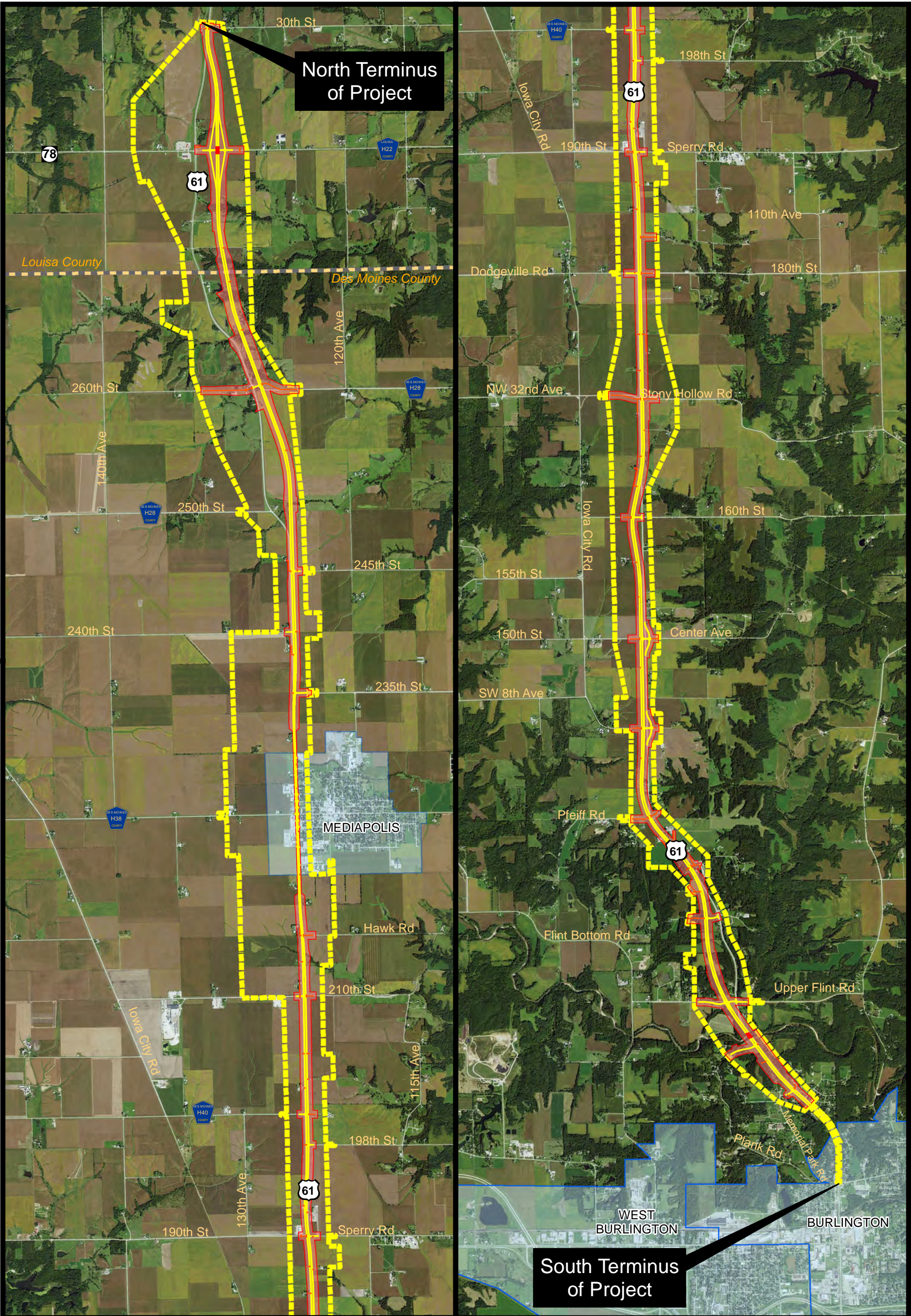


- Proposed Bridges
- Proposed Granular
- Proposed Pavement
- Impact Area
- Project Study Area
- Corporate Limits
- County Border

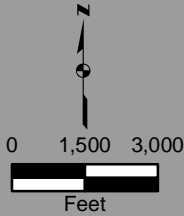
### FIGURE 3 - DISMISSED FLYOVER ALTERNATIVE NHS-61-2(50)--19-29

**US 61 Improvements**  
North of Burlington to North of IA 78  
Des Moines and Louisa Counties





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- |  |                   |  |                    |
|--|-------------------|--|--------------------|
|  | Proposed Bridges  |  | Project Study Area |
|  | Proposed Granular |  | Corporate Limits   |
|  | Proposed Pavement |  | County Border      |
|  | Impact Area       |  |                    |

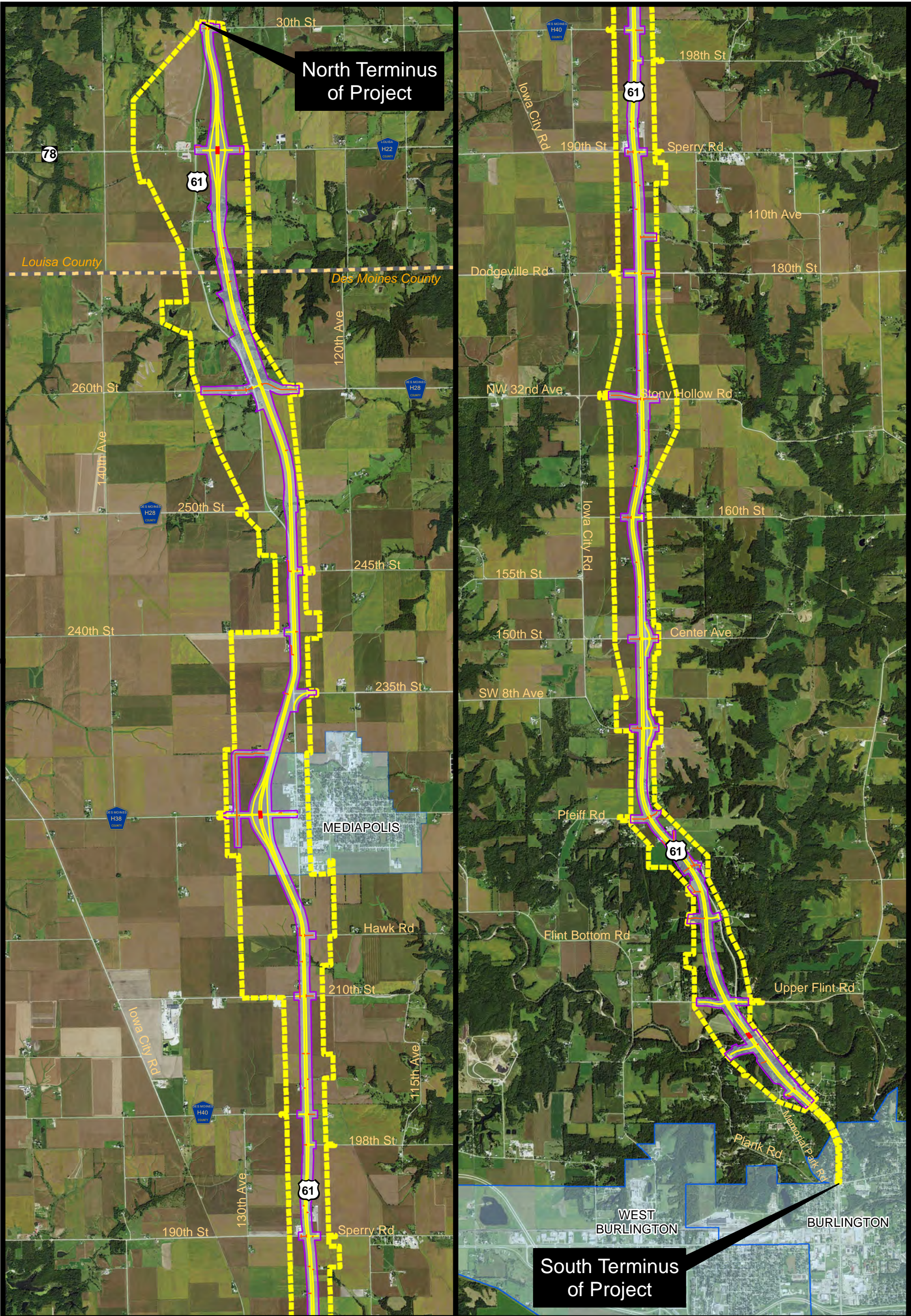
**FIGURE 4 - DISMISSED FIVE-LANE  
THROUGH TOWN ALTERNATIVE**

**NHS-61-2(50)--19-29**

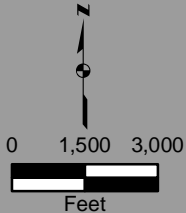
**US 61 Improvements**

North of Burlington to North of IA 78  
Des Moines and Louisa Counties





Created April 2015  
2014 Aerial



- Proposed Bridges
- Proposed Granular
- Proposed Pavement
- Impact Area
- Project Study Area
- Corporate Limits
- County Border

**FIGURE 5 - PROPOSED DIAMOND INTERCHANGE ALTERNATIVE**  
**NHS-61-2(50)--19-29**  
**US 61 Improvements**  
North of Burlington to North of IA 78  
Des Moines and Louisa Counties



## **SECTION 5**

### **ENVIRONMENTAL ANALYSIS**

This section describes the existing socioeconomic, natural, and physical environments in the project corridor that will be directly or indirectly impacted by the Proposed Alternative. The resources with a check in the second column in Table P-1, located at the beginning of this document, are discussed below.

Each resource section includes an analysis of the impacts of the No Build Alternative and the Proposed Alternative. Because it is early in the design process, a preliminary NEPA impact area was used for estimating direct and indirect impacts on the evaluated environmental resources. The preliminary NEPA impact area includes roadway right-of-way needs and the area where construction could occur. The area actually impacted by the Project will likely be less than what is portrayed within the preliminary NEPA impact area, and some impacts to resources are expected to be minimized or avoided as the Project design is refined. Consequently, the potential impacts discussed in this section of the EA are conservative, as efforts to minimize direct and indirect impacts will be made during final design.

#### **5.1 Socioeconomic Impacts**

Evaluating the direct and indirect impacts that a transportation project has on socioeconomic resources requires consideration of impacts on land use as well as the project's consistency with development and planning by a city or other public entity.

##### **5.1.1 Land Use**

Evaluation of land use as it relates to transportation projects refers to the determination of direct and indirect effects on existing land uses, such as agricultural, residential, and commercial/industrial, as well as consistency with regional development and land use planning. Direct effects on existing and future land uses were determined by comparing the preliminary impact area to the existing land uses. Indirect effects were determined by evaluating potential access restrictions, out-of-distance travel, and induced development.

Land use in the project area is dominated by agricultural areas that are identified as industrial use areas on the Des Moines County existing land use map (Figure 6). However, there are areas of incorporated land, residential areas, commercial land and areas designated as open space lands within the project corridor. The incorporated areas are located at the beginning of the project in Burlington and near the middle of the project area at Mediapolis. Land currently designated as open space lie primarily in the southern portion the study area and is associated with the Starr's Cave Nature Center. Areas of residential and commercial use are scattered throughout the project study area.

The Des Moines County future land use map found in the Des Moines County Comprehensive Plan (Figure 7) show several more areas for open space, residential and commercial areas in the project study area. Many of the areas designated as open space seem to follow stream corridors

or areas that are currently wooded. This map also shows planned residential and commercial area in northern Burlington and the area surrounding the planned interchange at County Road H38 just east of Mediapolis and areas to the north and west of town.

Louisa County has not adopted a Comprehensive Plan and therefore the consistency of the project with a local long-range planning document cannot be determined. Any changes in land use that may result from the project will be controlled by development review and local access permitting processes established by Louisa County and/or the Iowa DOT. However, Des Moines County does provide for land use control through zoning and subdivision regulation. The proposed alternative is consistent with the long range plans for Des Moines County.

### ***No Build Alternative***

The No Build Alternative would result in continued use of the highway. This continued use would not affect the overall land use.

### ***Proposed Alternative***

U.S. 61 is currently a two-lane highway with at-grade intersections and two-way stop control. Residences, farms, and field entrances have direct access onto U.S. 61. Once completed the 4-lane roadway will be access controlled with interchanges at County Road H38 and Iowa 78. The interchange at H38 will provide additional access to Mediapolis while the interchange at Iowa 78 will be a more rural connection.

Both interchanges are expected to generate new urban land use interest and commercial reinvestment in the interchange quadrants. This is especially true for the H-38 interchange near Mediapolis. Other portions of the project corridor will have access control which may limit commercial development in these areas. County-permitted zoning amendments from agricultural to urban land uses will ultimately dictate allowable land use changes near this proposed interchange.

## **5.1.2 Churches and Schools**

Churches and schools can contribute to a community's sense of identity. Therefore, the impacts of the Project on churches and schools in the Study Area relate in part to community cohesion. Churches and schools were identified through database searches and reconnaissance of the Study Area.

These searches indicate there are two churches in the project study area (Figure 8). The Cornerstone Community Bible Church is located at 102 Meadow Street in Mediapolis. This is very near the existing U.S. 61 roadway. The second church is the New Life Family Church of Southeast Iowa and is located adjacent to the existing U.S 61 in the lower third of the project study area just south of Pfeiff Road in Des Moines County.

The Mediapolis Community High School is located on the north side of Mediapolis and lies outside of the project study area but many of their school busses use U.S. 61 when bringing students to and from school. Unlike the high school, the Iowa State Extension and Outreach

Office is located in the project study area at 102 West Main Street in Mediapolis. This office offers programs that support families, horticulture, 4-H youth development, business and industry, communities, agriculture and continuing education in Des Moines County.

### ***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.

### ***Proposed Alternative***

The proposed alternative would not directly impact the Mediapolis High School but some school busses access U.S. 61 at 235<sup>th</sup> Street north of Mediapolis. Therefore the Iowa DOT decided to maintain access at this intersection to limit impacts to bus routes. Busses will also be able to access the new alignment at the interchange located along H38 west of town and by traveling south on the existing roadway through town to the new alignment. Access to new 61 will be maintained at both the north and south ends of the existing route that runs through Mediapolis. The proposed alignment will improve bus and pedestrian safety in town because traffic will be reduced and the interchange at H38 will provide safer access to U.S. 61 for busses accessing the roadway west of town. The Iowa State Extension Office would not be impacted by the project. The IADOT will transfer jurisdiction of the old U.S.61 to the county throughout much of the project study area once the proposed alignment is completed.

The proposed alignment will impact a portion of the parking lot for the New Life Family Church of Southeast Iowa that is located adjacent to the existing U.S 61 in the lower third of the project study area just south of Pfeiff Road in Des Moines County. The IADOT will work to minimize impacts and provide sufficient parking for those attending services. The Cornerstone Community Bible Church in Mediapolis will not be affected by the project.

## **5.1.3 Economic**

This section addresses the economic character of the Study Area. The sources for information are a site visit and the County assessor's database.

There is a wide range of businesses located within the project study area with the majority being in or near Mediapolis. Many of these businesses are located adjacent to the highway and provide services to the traveling public while other businesses serve the need of the local community and surrounding areas.

Business types in the project area include billboards, insurance company, a reality business trucking company, truck sales company, auto sales, auto repair business, banks, agricultural implement dealer, advertising companies, canoe rentals, hair salon, chiropractor, truck stop, restaurants, oil company, and gas stations.

### ***No Build Alternative***

The No Build Alternative would result in continued use of the highway. New development is not expected to be induced by continued use of the existing highway.

### ***Proposed Alternative***

An important consideration to business and industries which rely on highways for product movement is to be located in communities with access to free flowing highway corridors. This makes transporting goods or services more efficient saving time and money. Improving this corridor could lead to increased opportunities for business to locate in the project corridor.

In order to complete this project the Iowa DOT will likely need to acquire additional right-of way from five businesses including the total acquisition of two billboards and a canoe rental business, and approximately 0.7 acres from Reif Oil Company, 1.86 acres from Kelly's Hair Shop, and approximately 4.2 acres from Elder Implement (John Deere implement dealer). Impacts to Elder Implement will likely only impact the parking area for the business. See Figure 8. Access will be maintained to area business during and after construction and the controlled access roadway will provide safer ingress and egress to local business. The impacts to businesses may be minimized as the final design progresses.

By-passing the City of Mediapolis could negatively impact businesses along the existing highway corridor. Negative impacts could occur because of a decreased traffic volume passing by the businesses. This may be most important to businesses that are likely to serve those traveling through the area such as convenient stores, automotive repair businesses and gas stations.

#### **5.1.4 Parklands and Recreational Areas**

To assess the potential impacts associated with the Build Alternative, sources were reviewed and a site visit was performed to identify parkland and recreational areas within and near the Study Area. Parks and recreation areas were evaluated to determine the eligibility of properties or sites for protection under Section 4(f) of the U.S. Department of Transportation Act and to evaluate them relative to the alternatives being considered.

Section 4(f) of the U.S. Department of Transportation Act of 1966 (U.S. DOT ACT) was enacted as a means of protecting publically owned parks, recreation areas, and wildlife refuges, as well as historic sites of local, state or national significance from conversion to transportation uses. The provision states that the Secretary of the U.S. DOT may approve a transportation project requiring the use of publically owned land of a public park, recreation area, or wildlife and waterfowl refuge, or land from an historic site of national, state, or local significance if:

- There is no feasible and prudent alternative to using that land,
- The project includes all possible planning to minimize harm to a Section 4(f) property, or
- The Section 4(f) use is *de minimis*.

Three park or recreation areas were identified within the project area. Coordination with the Des Moines County Conservation Board (DMCC's), the city of Mediapolis and the FHWA determined that Section 4(f) applied to these three areas if they were to be impacted by the project. The parcels in question are identified on Figure 8. The following is a brief description of each potential 4(f) resource.



*Starr's Cave Park and Preserve* is located near the beginning of the project on the north side of Burlington just east of U.S. 61. This is a 184 acre park that is owned by the Iowa Department of Natural Resources and managed by the DMCC's. Amenities at the park include two miles of trails, a picnic shelter, water, restrooms and access to Flint Creek. The park also has a nature center that houses the DMCC's headquarters and a naturalist office. This facility contains nature displays, rentable meeting rooms and a kitchen.

The park also serves as a nature preserve. There are three caves located in the park. One is a large natural cave and two smaller caves are manmade. The caves are utilized by a variety of bat species and were open to the public in the past. In May 2009, public access to the caves were closed to human traffic in an effort to protect the bats from the spread of the White-Nose Syndrome disease which is effecting bat populations in several areas of the U.S.

*The Mediapolis FFA Park* is located on the east side of U.S. 61 on the north side town. The property is owned by the city of Mediapolis and is maintained by the Mediapolis FFA as a community service project. The park is open to the public for recreational use and community development or outreach projects.

*The Mediapolis Community Ball Diamonds (Centennial Park)* is also located on the north side of Mediapolis about one block east of U.S.61. The park is owned by the city of Mediapolis and is the only ball park the community utilizes for their city Teeball, baseball and softball leagues. This facility is open to the public when league games are not being played.

In addition, the Land and Water Conservation Fund (LWCF) Act provides federal funds for recreational land acquisition and development. The intent of the Act is to protect land used for outdoor recreational purposes. The Act stipulates in Section 6(f) that any land planned, improved, or developed with LWCF funds cannot be converted to any use other than outdoor recreational use, unless replacement land of at least equal fair market value and reasonably equivalent usefulness is provided. Similar to the Section 4(f) requirements, Section 6(f) requires an analysis that demonstrates no feasible or prudent alternative exists to the taking of LWCF funded land. Coordination with the Iowa Department of Natural Resources indicated that LWCF have not been used to construct or improve these sites.

### ***No Build Alternative***

The No Build Alternative would not require acquisition of any land from parks or recreational properties.

### ***Proposed Alternative***

The proposed alternative would not impact any of the parks or recreational areas. Preliminary design efforts were able to avoid impact to the Starr's Cave Park and Preserve near Burlington and this alternative will bypass Mediapolis avoiding any potential impacts to the Mediapolis FFA Park or the Mediapolis Community Ball Diamonds (Centennial Park).

### **5.1.5 Bicycle and Pedestrian Facilities**

Similar to parklands and recreational areas, bicycle and pedestrian facilities area also subject to Section 4(f) of the U.S. Department of Transportation Act of 1966 (U.S. DOT ACT). The Iowa Department of Transportation (Iowa DOT) has identified one partially completed bicycle trail within the project study area and two planned signed shared use bicycle trails. Each planned trail is described below.

*U.S. 61 Corridor Trail* This planned trail would designate a 14.2 mile segment of the U.S. corridor as a shared use trail. The designated trail would extend from Des Moines County Line north to the city of Grandview.

*Iowa 78/H22 Corridor trail* This planned trail would extend approximately 17.6 miles from the Henry County Line east to Oakville along Iowa 78/H22. This trail would share the existing roadway with vehicle traffic from the Henry County Line to Morning Sun then parallel the roadway utilizing an abandoned rail line to Oakville.

Each of these trails would currently require pedestrians to share the road with vehicle traffic and is currently unsafe due to the large number of vehicles using the roadways. Significant safety improvements would need to occur to make the roadway safe.

#### ***No Build Alternative***

The No Build Alternative would not require the use of a bicycle and pedestrian facility along the highway.

#### ***Proposed Alternative***

The proposed alternative will not directly impact the Flint River Trail but the Iowa DOT will allow DMCC to construct portions of the trail in the Iowa DOT right-of-way. This would include a trail leading from Flint bottom Road, south to the Flint River where a bridge would be constructed under the proposed new Iowa DOT bridge that would allow a safe crossing of U.S. 61. The county trail would then cross Iowa DOT ROW on the east side of the road and connect to the trail running through Starr's Cave Park and Preserve. Since the county does not currently own the property surrounding U.S. 61 Section 4(f) of the U.S. Department of Transportation Act of 1966 (U.S. DOT ACT) will not apply to this trail segment. The same is true for the U.S. 61 Corridor Trail, the Iowa 78/H22 Trail, and the Morning Sun to Wapello Trail.

### **5.1.6 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.

The vast majority of the project study area and impact area are located in rural Des Moines and Louisa Counties. There is more urban development near the beginning of project area in northern portion of Burlington and within the city of Mediapolis. Expanding the roadway from two lanes

to four lanes will require the conversion of much of the residential, commercial and agricultural land identified in the project impact area (Figure 5).

#### ***No Build Alternative***

The No Build Alternative would not require acquisition of any ROW along the highway.

#### ***Proposed Alternative***

The Proposed Alternative includes, within the preliminary impact area, a total of 282 parcels. The preliminary impact area (outside of existing ROW) includes approximately 1027 acres of agricultural land, 75 acres of residential land, 5 acres of commercial land, and 34 acres of land with an unknown zoning status. The exact amount of ROW acquisition has not yet been determined. During final design, an effort would be made to minimize ROW acquisition and relocations to the extent practicable. ROW acquisition and relocations would be conducted in accordance with the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (42 U.S. Code (USC) 4601 et seq.).

### **5.1.7 Relocation Potential**

To assess the potential impacts associated with the Proposed Alternative, ROW acquisition and property relocations were evaluated based on the conceptual design for the proposed expansion of the highway. The affected area for this analysis is the preliminary impact area.

There is a wide variety of homes styles with varying values located within the project impact area. All but two of the homes in the impact area are located in Des Moines County (Figure 9). Data was obtained from the Des Moines County Assessor that provided assessed values for the homes, additional buildings and associated land for 2015. Using the combined value of the home property and buildings it was determined that the total value of the properties that may be fully acquired equals approximately \$2,841,600 and the average cost per parcel is approximately \$142,080.

#### ***No Build Alternative***

The No Build Alternative would not require relocation or acquisition of any property.

#### ***Proposed Alternative***

Approximately 1219 acres of land would be acquired through temporary and permanent easement for the construction of the Preferred Alternative. The Preferred Alternative would require the acquisition of 8 homes, three parcels that contain outbuildings, two billboards and a canoe rental business. These properties are identified in Figure 9. There would also be approximately 1027 acres of farmland that would need to be acquired to construct this alternative.

A review of available housing in the project area revealed there are currently 197 homes and lots available in Burlington and the surrounding area. The homes range in price from \$17,000 to \$950,000. There are an additional eight homes available in or near Mediapolis ranging in price from \$67,500 to \$164,900. This indicates there are a sufficient number of homes available for those displaced by the project. Comparable rural housing seems to be in limited supply to

purchase and nearly non-existent to rent. However, the market should be able to absorb the needs of the displaced who may search for replacement properties.

Relocations would be conducted in conformance with the Uniform Relocation Assistance and Real Property Acquisition Act of 1970, as amended by the Surface Transportation Assistance Act of 1987 and 49 Code of Federal Regulations, Part 24, effective April 1989. Relocation assistance would be made available to all affected persons without discrimination.

### **5.1.8 Construction and Emergency Routes**

This section addresses potential impacts from construction routes and impacts on emergency routes. Emergency vehicles (ambulances, fire trucks, and police cruisers) respond to events using routes that are designated to reduce response times and account for access limitations.

Transportation projects have the potential for impacts on emergency routes both during and after construction. To determine emergency routes, the locations of public service providers were (hospitals, fire departments, and police stations) within or near were reviewed using public databases.

There is no hospital or emergency service facilities within the study area but emergency response service routes extend through the study area. The Great River Medical Center is located approximately 4 miles southwest of the beginning of the project areas in Burlington and serves the surrounding communities. U.S. 61 is often used by emergency response vehicles to reach and transport patients from several communities to north of Burlington. This roadway is utilized by fire, rescue and law enforcement vehicles from nearby cities such as Burlington, Mediapolis and Morning Sun and other cities farther away from the project study area. This route is also utilized by Des Moines and Louisa County law enforcement personnel when responding to emergency situations in the project study area.

#### ***No Build Alternative***

The No Build Alternative would not result in any expansion of the highway in the Study Area. There would be continued use of the two-lane highway that experiences frequent crashes and does not meet the anticipated future traffic demands. The increased risk of crashes could require occasional detours off the highway during emergency situations. Access to and from emergency service providers would continue along the same routes as currently used.

#### ***Proposed Alternative***

During construction U.S. 61 will remain open and traffic flow will be maintained either along the existing portions of the roadway, new segments of roadway or a combination of both using staged construction methods. Temporary detours will likely be needed where roads intersect with U.S. 61 just during the time it takes to improve each intersection. Several homes in the project impact area that will have direct access to the highway while other residences will access the new roadway from frontage roads that will have more than one access point. The staged construction methods will allow U.S. 61 to remain open and emergency vehicles will have access

Once the project is completed emergency vehicles will be able to access homes and business quicker than they can today due to the fact that the speed limits will increase from 55mph to 65mph with very small changes in out of distance travel being required because the proposed alignment follows the

existing alignment as much as possible. The new roadway will also be safer for emergency personnel responding to incidences in the project area and the public because the additional lanes will provide better passing opportunities for emergency vehicles and will allow more room for public vehicles to move out of the way of these vehicles. The proposed roadway would also be access limited which would reduce the number of conflict points along the route which will create a safer more efficient route for all vehicles using the roadway.

## 5.2 Cultural Impacts

According to Title 36 CFR, Part 800.8, federal agencies are encouraged to coordinate compliance of Section 106 and any steps taken to meet the requirements of NEPA. Coordination of both reviews should occur early in the process to fulfill the respective requirements.

36 CFR 800.8 also details the general principles of coordinating NEPA and Section 106, relevant NEPA actions, and the use of the NEPA process for satisfying portions of the Section 106 requirements, including standards for developing NEPA environmental documents for Section 106 purposes.

### 5.2.1 Historical Sites or Districts

Two Phase I Intensive Level Historic Architecture Surveys were completed between 2012 and October of 2013 for the Study Area. Properties were evaluated to determine their eligibility for inclusion in the National Register of Historic Places (NRHP). These surveys identified 24 historic properties including four historic districts and 20 historic structures and buildings near the project impact area that are eligible for the NRHP. The State Historical Preservation Officer of Iowa (SHPO) concurred with the eligibility of these properties for listing on the NRHP on August 04, 2014. A copy of the SHPO concurrence letter is in Appendix B which contains Agency and Tribal Coordination documents. It was later determined that one potential historic property had been demolished following the initial survey and will not be further considered. Table 2 below provides a description of the 23 remaining historical properties and potential impacts to each.

Significant historic sites that are eligible for listing on the NRHP are protected under Section 4(f). Therefore, the properties listed in Table 2 are considered to be Section 4(f) properties and acquisition of land from these properties would result in a Section 4(f) use. The proposed project is being designed to avoid these properties whenever possible and to minimize any impacts to properties that cannot be avoided.

**Table 2: Historic Property Impacts and Section 4(f) Determination**

Site Number	Name	National Register Status	Vibration Monitoring	Impact (acres)	<i>De Minimis</i>
29-00048	<i>Hawkeye School</i>	<i>Criterion A &amp; C</i>	Yes	Change Access	Yes
29-03001	<i>Theodore Hingst Farm</i>	<i>Criterion C</i>	Yes	Change Access	Yes

**Table 2: Continued**

<b>Site Number</b>	<b>Name</b>	<b>National Register Status</b>	<b>Vibration Monitoring</b>	<b>Impact (acres)</b>	<b>De Minimis</b>
<b>29-03010</b>	<b>Ripley Inn (District)</b>	<b>Criterion A, B, &amp; C</b>	<b>Yes</b>	Change Access	Yes
<b>29-03052</b>	<b>Ripley Inn</b>	<b>Criterion A, B, &amp; C</b>	<b>Yes<sup>1</sup></b>	Change Access	Yes
<b>29-03019</b>	<b>Franklin Mills School</b>	<b>Criterion A &amp; C</b>	<b>Yes</b>	Change Access	Yes
29-03056	Wright (A.) Farm: Barn I	Criterion C	No	Change Access	Yes
<b>29-03059</b>	<b>Allen Farm House</b>	<b>Criterion A &amp; C</b>	<b>Yes</b>	Change Access	Yes
<b>29-03061</b>	<b>McCullough Farm Crib</b>	<b>Criterion C</b>	<b>Yes</b>	2.0	Yes
29-03063	Wright (Alex) Farm: Barn I	Criterion C	No	0.3	Yes
29-03546	Brenneke-Bohlen Farmstead: Barn	Criterion C	No	0	No
29-03548	Frederick and Mary Taeger Farmstead: Barn	Criterion C	No	0	No
29-03550	Frederick and Henry Gieselman: Barn	Criterion C	No	0.3	Yes
29-03556	Herbert Sherfey Chittenden Estate	Criterion C	No	Change Access	Yes
29-03562	Taeger-Diewold Farmstead: Barn I	Criterion C	No	1.0	Yes
29-03563	Taeger-Diewold Farmstead: Barn II	Criterion C	No	1.0	Yes
29-03566	Franklin Mills/Oakland Mills: Barn	Criterion C	No	Change Access	Yes
29-03581	Leebrick-Vanosdol Farmstead (District)	Criterion C	No	Change Access	Yes
29-03582	Leebrick-Vanosdol Farmstead: Barn I	Criterion C	No	0	No
29-03585	Barnes-Ping-Miller Farmstead: Barn	Criterion C	No	0.1	Yes
29-03636	Levi M. Miller Farmstead (District)	Criterion A & C	No	0	No
29-03640	Railroad Bridge	Criterion A & C	No	0	No

<sup>1</sup> The Ripley Inn (29-03052) and the Ripley Inn District (29-03010) represent the same building for vibration monitoring.

**Table 2: Continued**

Site Number	Name	National Register Status	Vibration Monitoring	Impact (acres)	De Minimis
29-03694	James B. McCray Farmstead (District)	Criterion A & C	No	0.3	Yes
29-03695	Hazel Grove Cemetery	Criterion A, B, & C	No	0	No

***No Build Alternative***

The No Build Alternative would not result in any expansion of the highway in the Study Area. No construction activities would occur, and no new ROW would be needed. Therefore, the No Build Alternative would have no effect on historic structures or districts.

***Proposed Alternative***

Of the 23 properties listed in in Table 2 minor amounts right-of-way will likely be required from seven sites (Figure 10). Due to safety restrictions and design requirements, nine additional sites may have minor access changes to U.S. 61. These impacts would be minimal and would not adversely impact the features that qualify the property for protection under Section 4(f) or affect the contributing elements which qualify these properties for listing on the National Register. The FHWA has determined these impacts will have a *de minimis* impact on each of the Section 4(f) properties impacted. The SHPO concurred with FHWA's Section 4(f) *de minimis* impact determination for these properties on May 26<sup>th</sup>, 2015. See appendix B. SHPO's concurrence with the *de minimis* Section 4(f) determination is effectively a no adverse effect determination for the architectural resources impacted by the project. All 23 built resources will be clearly identified within the project plans as a historic property to be avoided by all project activities.

It is anticipated that some vibration will be created during the construction activities of the proposed undertaking. Due to the proximity of project activities to some historic properties, the Iowa DOT will require a Special Provision for Vibration Monitoring within the project contract for sites potentially affected by construction vibration.

**5.2.2 Archaeological Sites**

Three Phase I Archaeological Surveys were completed between 2012 and 2014 for the Study Area. These surveys identified hundreds of sites located throughout the project study area. Subsequently, two Phase II Archaeological Evaluations were completed between 2012 to 2014 for sites within or near the NEPA cleared area. The 2012 Phase II evaluated four archaeological sites and recommended one eligible for the National Register of Historic Places (NRHP). The 2014 Phase II evaluated 16 archaeological sites and recommended five eligible for the NRHP. Four additional sites within proximity to the project area would need further testing to determine if they are eligible for the National Register if affected by the project (Table 3).

**Table 3: Archaeological Sites Impacted**

Site Number	Cultural/Temporal Affiliation	National Register Status	Within Impact Area
13DM1400	Prehistoric Lithic Scatter	Unknown / Further testing needed	No
13DM1401	Prehistoric Lithic Scatter	Unknown / Further testing needed	No
13DM1408	Prehistoric Lithic Scatter	Unknown / Further testing needed	No
<b>13DM1432</b>	<b>Late Woodland Open Habitation</b>	<b>Eligible - Criterion D</b>	<b>Yes</b>
13DM1458	Prehistoric Scatter	Unknown / Further testing needed	No
13DM999	Prehistoric Open Habitation	Eligible - Criterion D	No
13LA900	Early Late Woodland Open Habitation	Eligible - Criterion D	No
<b>13LA904</b>	<b>Late Woodland Open Habitation</b>	<b>Eligible - Criterion D</b>	<b>Yes</b>
<b>13LA921</b>	<b>(Likely) Archaic Open Habitation</b>	<b>Eligible - Criterion D</b>	<b>Yes</b>

***No Build Alternative***

The No Build Alternative would not result in any expansion of the highway in the Study Area. No construction activities would occur, and no new ROW would be needed. Therefore, the No Build Alternative would have no effect on archeological sites.

***Proposed Alternative***

Of the hundreds of archaeological sites originally identified within the project corridor, nine sites considered eligible or potentially eligible for the NRHP remained near or partially in the project impact area (see Table 3). After much design modification, consultation, and consideration, six sites are being completely avoided by this project. Portions of the remaining three sites are within the project impact area and are unavoidable. As such, the Iowa DOT and FHWA determined the project will have an Adverse Effect on these three historic properties.

The Iowa DOT has developed a draft Memorandum of Agreement (MOA) for this project with the Advisory Council on Historic Preservation, the Office of the State Archaeologist, the Des Moines County Historical Society, the Louisa County Historical Society, the Louisa County Historical Commission, Preservation Iowa, and all applicable tribes and nations. A copy of the Draft MOA is included in Appendix D. Additional correspondence with SHPO is located in Appendix B.

**5.3 Natural Environment Impacts**



This section characterizes the natural resources in the Study Area and addresses potential impacts of the No Build Alternative and the Build Alternative. The resources discussed are wetlands, surface waters and water quality, farmlands, and woodland.

### 5.3.1 Wetlands

Waters of the United State (WUS), including wetlands, waterways, lakes, natural ponds, and impoundments, are regulated by the U.S. Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act (CWA), which requires a permit to authorize the discharge of dredged or fill material into waters of the U.S. (33 USC 1251 et seq.). Executive Order 11990, Protection of Wetlands, requires Federal agencies (including FHWA) to implement “no net loss” measures for wetlands (42 Federal Register (FR) 26951). These no net loss measures include a phased approach to wetland impact avoidance, then minimization of impacts if wetlands cannot be avoided, and finally mitigation.

Field reviews were conducted in August and September of 2012 to delineate the wetlands located within the study area (Figure 8). Prior to the field review, a desktop survey was conducted using National Wetland Inventory (NWI) data, United States Geological Survey (USGS) Quadrangle maps and the most recent aerial photographs available to identify possible WUS and areas historically prone to wetland development.

#### *No Build Alternative*

The No Build Alternative would not result in any expansion of the highway in the Study Area. No construction activities would occur, and no new ROW would be needed. Therefore, the No Build Alternative would not impact any wetlands.

#### *Proposed Alternative*

The wetland delineation identified a total of 49 wetlands that are either partially or entirely located within the impact area for the proposed alternative and would impact approximately 18.26 acres of wetlands. As design advances, efforts will be made to further reduce the impacts to wetlands. Impacts as a result of this project will require a Section 404 permit from USACE. Due to the nature and size of this project, it is assumed that a significant amount of unavoidable wetland impacts will occur. Where wetland impacts cannot be avoided, mitigation would occur at ratios determined by the USACE. Wetland mitigation credits may be available from the Brophy Creek Wetland Mitigation Bank or the Salt Creek Wetland Mitigation Bank since portions of the Study Area fall within the service areas of both banks.

**Table 4: Potential Impacts to Wetlands**

Wetland Type	Impact Area (acres)	Proposed Mitigation Ratio	Proposed Mitigation (acres)
Palustrine emergent (PEM)	8.30	1:1.5	12.45
Palustrine forested (PFO)	7.72	2:1	15.44
Palustrine sapling/shrub (PSS)	0.18	2:1	0.36
Farmed wetland (FM)	2.06	1:1.5	3.09

### **5.3.2 Surface Waters and Water Quality**

Water resources include rivers, lakes, ponds, and other surface water bodies. For the purpose of this analysis, the topic of water quality is also assumed to apply to groundwater. Important criteria in evaluating surface water and groundwater are adequate quantity and quality of these waters. Surface water features in the Study Area were determined through the use of aerial photography and topographic mapping.

On-site WUS determinations were also performed in August 2012 in accordance with guidance received from the USACE for all significant drainages within the project limits. These WUS determinations indicated approximately 25,045 feet of streams in the Study Area (Figure 7). There are no streams listed as an Outstanding Iowa Water (OIW) or other protected streams identified by IA DNR. Other sources of surface water include small agricultural drainages, roadway drainage ditches, and ponds.

#### ***No Build Alternative***

The No Build Alternative would not result in any expansion of the highway in the Study Area. The No Build Alternative would have no impact on the quality of surface water or groundwater in the Study Area.

#### ***Proposed Alternative***

The Proposed Alternative would impact approximately 25,045 linear feet of streams as shown on Figure 8. However, stream impacts are expected to decrease as the project proceeds through final design. For any unavoidable stream impacts, a Section 401 Water Quality Certification would also be required. A State 401 Water Quality Certification is issued by the Iowa Department of Natural Resources (DNR) pursuant to Section 401 of the Clean Water Act. State Certification is required by the USACE before a Section 404 permit can be issued. Section 401 Certification represents the Iowa DNR's concurrence that the project certified is consistent with Iowa's water quality standards as set forth in Chapter 61, Iowa Administrative Code 567. In addition, unavoidable stream impacts as a result of this project would need to be authorized by the USACE Section 404 permit. It is anticipated that stream mitigation will be required. Stream mitigation is usually performed at the impact locations rather than at an offsite location, however, it is determined on a case by case basis as part of the Section 404 permitting process.

The contractor would be required to implement Iowa DOT's Construction Manual to minimize temporary impacts on water quality during construction. Iowa DNR administers the Federal National Pollutant Discharge Elimination System (NPDES) program and issues general permits for stormwater discharges from construction activities. The purpose of the program is to improve water quality by reducing or eliminating contaminants in stormwater. The NPDES program requires preparation of a Stormwater Pollution Prevention Plan (SWPPP) for construction sites of more than 1 acre.

The specific sediment, erosion control, and spill prevention measures would be developed during the detailed design phase and would be included in the plans and specifications. The SWPPP would address requirements specified by Iowa DOT in its Construction Manual, which are often implemented to meet measures anticipated by Iowa DNR. Although it is not possible to speculate on specific details of the SWPPP at this stage in the design process, the SWPPP is likely to

include installation of silt fences, buffer strips, or other features to be used in various combinations as well as the stipulation that drums of petroleum products be placed in secondary containment to prevent leakage onto ground surfaces. A standard construction best management practice (BMP) is revegetation and stabilization of roadside ditches to provide opportunities for the runoff from the impermeable area to infiltrate, to reduce the runoff velocities, and to minimize increases in sedimentation. Iowa DOT would require the contractor to comply with measures specified in the SWPPP.

### **5.3.1 Floodplains**

FEMA Flood Insurance Rate Maps (FIRM), showing the 100-year floodplain and the regulatory floodway, and the USGS 7.5 minute quadrangle maps were reviewed for the study area. The Study Area includes 4 areas of FEMA mapped 100-year floodplains with a total area of acres, as displayed on Figure 8. 23 CFR 650 identifies the 100-year (base) flood as the flood having a one percent probability of being equaled or exceeded in any given year. The regulatory “floodway” is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 100-year flood discharge can be conveyed without increasing the base flood elevation more than a predetermined volume.

#### ***No Build Alternative***

The No Build Alternative would not result in any expansion of the highway in the Study Area. No construction activities would occur, and no new ROW would be needed. The No Build Alternative would have no impact on the floodplains in the Study Area.

#### ***Proposed Alternative***

Of the 150 acres of FEMA-mapped floodplain in the Study Area, approximately 64 acres from 4 areas are within the preliminary impact area. Figure 8 shows the location of floodplains relative to the preliminary impact area. The Floodplains are located along Flint Creek, Yellow Spring Creek, Paul Creek and Smith Creek. Floodplain impacts cannot be avoided because of the north/south nature of the Study Area and the east/west nature of the floodplains. Coordination with Iowa DNR and FEMA occurred as part of the early consultation process. No comments were received from either agency regarding floodplains. As design advances, efforts will be made to reduce the impacts on floodplains. In addition, an Iowa DNR Flood Plain Development Permit and Section 404 Permit would be required and applied for during final design.

### **5.3.4 Farmlands**

A Federal project, program, or other activity that requires acquisition of ROW must comply with the provisions of the Farmland Protection Policy Act (FPPA). The purpose of the FPPA Section 5 is to “minimize the extent to which Federal programs contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses, and to assure that Federal programs are administered in a manner that, to the extent practicable, will be compatible with State, local government, and private programs and policies to protect farmland” (7 USC 4201(b)).

The FPPA governs impacts on farmland only. The FPPA defines farmland as prime farmland, unique farmland, or farmland that is of state or local importance. Land that is already in or

committed to urban development or water storage does not qualify as farmland and is therefore not subject to the FPPA.

### ***No Build Alternative***

Under the No Build Alternative, no impacts on farmland or farm facilities would occur.

### ***Proposed Alternative***

Early in the engineering design process, the USDA NRCS Farmland Conversion Impact Rating for Corridor Type Projects (NRCS-CPA-106) form was completed for the generalized corridor of each of the preferred alternatives to assess the effects of this conversion on farming and farm-related services. The assessments considers the effects that the conversion of farmland as a result of a project would have on existing and future land use, the amount of existing farmable land in the county, the creation of economically non-farmable parcels, impacts on other on-farm investments, and effects on local farm services. Sites receiving a score of less than 160 points need not be given further consideration for protection.

This project will incorporate farmland from two different counties, Des Moines and Louisa, and as such has been reviewed respectively. The potential total amount of farmland (outside of the existing ROW) converted to transportation use by this alternative is approximately 1,459 acres (1,292 acres in Des Moines County and 167 acres in Louisa County).

In Des Moines County, this alternative received a score of 162 out of the possible 260 points on the NRCS-CPA-106 form (Appendix C). Because the score was more than 160 points, this alternative in Des Moines County warrants an in-depth site review for concerns in conjunction with the FPPA. Based on this score, potential means to reduce the impact on farmland for revision of the NRCSCPA- 106 form were evaluated. The proposed alternative would not create any non-farmable land and all of the farmable land in the Study Area would still be accessible from existing roads. As design advances, further efforts to reduce the number of farmland impacts will be made.

In Louisa County, this alternative received a score of 154 out of the possible 260 points on the NRCS-CPA-106 form (Appendix C). Because the score was less than 160 points, this alternative in Louisa County does not warrant an in-depth site review and is cleared from significant concerns in conjunction with the FPPA. The proposed alternative would not create any non-farmable land and all of the farmable land in the Study Area would still be accessible from existing roads.

## **5.3.5 Wildlife and Habitat**

The Iowa DNR responded to the early coordination request with a list of state-protected plants in the project area and made a recommendation for the Iowa DOT to survey the project area to identify forests, sandy soils, wetlands or prairie remnants. A list of federally threatened or endangered species potentially occurring in Louisa and Des Moines counties was obtained from the USFWS Section 7 Consultation website. A list of state-listed species known to occur in Louisa and Des Moines counties was also obtained using the IDNR Natural Areas Inventory

(NAI) website. These lists were used to identify potential habitats for both federal and state listed species.

The study area was evaluated for potential habitats during a field investigation by qualified biologists on June 21, 2012. No prairie habitat was observed within the study limits. Wetlands within the study area may provide limited suitable habitat for listed plant species. Woodland within the project study area is primarily limited to riparian corridors and wooded ravines. Woodland within the project study area is dominated by deciduous tree species was considered to be potentially suitable summer habitat for the Indiana bat.

### 5.3.6 Threatened and Endangered Species

In compliance with Section 7 of the Endangered Species Act of 1973 (Section 7) the project was evaluated to determine the likelihood of impacting threatened and/or endangered species and/or their habitat. Section 7, as amended, requires Federal agencies to consult with the Secretaries of the Interior and Commerce to ensure that actions are “not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of the critical habitat of such species.” Consultations will be conducted with the USFWS regarding a determination of potential effects to listed species.

The lists of federal and state threatened or endangered species were obtained from the USFWS 7 Consultation website and the IDNR Natural Areas Inventory website (Table 5). Potential habitat for listed species was evaluated during the 2012 field investigation by qualified biologists.

Potential habitat for the listed species was evaluated during the field investigation made by qualified biologists as documented in the **Endangered Resources Report**. A windshield survey of the proposed project area was conducted on June 21, 2012, to evaluate potential habitat for these species. A general assessment of habitat types within the project area was made and compared to the habitat requirements of species identified as potentially occurring in the project area. The report determined that potentially suitable habitat for Indiana bat (*Myotis sodalis*) and limited potentially suitable habitat for Blanding’s turtle (*Emydoidea blandingii*), listed mussels, fish and plants is present within the project study area (Figure 11).

**Table 5: Federal and State Listed Threatened and Endangered Species**

Des Moines County	Louisa County	Common Name	Scientific Name	Class	State Status	Federal Status
	Yes	Central Newt	<i>Notophthalmus viridescens</i>	AMPHIBIANS	Threatened	
Yes		Mudpuppy	<i>Necturus maculosus</i>	AMPHIBIANS	Threatened	
Yes	Yes	Barn Owl	<i>Tyto alba</i>	BIRDS	Endangered	
Yes		Henslow’s Sparrow	<i>Ammodramus henslowii</i>	BIRDS	Threatened	
	Yes	King Rail	<i>Rallus elegans</i>	BIRDS	Endangered	
Yes		Red-shouldered Hawk	<i>Buteo lineatus</i>	BIRDS	Endangered	
	Yes	Red-shouldered Hawk	<i>Buteo lineatus</i>	BIRDS	Endangered	
	Yes	Freckled Madtom	<i>Noturus nocturnus</i>	FISH	Endangered	
Yes	Yes	Grass Pickerel	<i>Esox americanus</i>	FISH	Threatened	
Yes	Yes	Orangethroat Darter	<i>Etheostoma spectabile</i>	FISH	Threatened	
Yes		Western Sand Darter	<i>Ammocrypta clara</i>	FISH	Threatened	
	Yes	Baltimore	<i>Euphydryas phaeton</i>	INSECTS	Threatened	

**Table 5 Continued**

Des Moines County	Louisa County	Common Name	Scientific Name	Class	State Status	Federal Status
Yes	Yes	Indiana Bat	<i>Myotis sodalis</i>	MAMMALS	Endangered	Endangered
	Yes	Least Shrew	<i>Cryptotis parva</i>	MAMMALS	Threatened	
Yes	Yes	Northern Long-eared Bat	<i>Myotis septentrionalis</i>	MAMMALS		Threatened
	Yes	Plains Pocket Mouse	<i>Perognathus flavescens</i>	MAMMALS	Endangered	
Yes	Yes	Butterfly	<i>Ellipsaria lineolata</i>	MUSSELS	Threatened	
Yes	Yes	Creeper	<i>Strophitus undulatus</i>	MUSSELS	Threatened	
Yes		Fat Pocketbook	<i>Potamilus capax</i>	MUSSELS		Endangered
Yes	Yes	Higgin's-eye Pearly Mussel	<i>Lampsilis higginsii</i>	MUSSELS	Endangered	Endangered
Yes		Pistolgrip	<i>Tritogonia verrucosa</i>	MUSSELS	Endangered	
Yes		Spectaclecase	<i>Cumberlandia monodonta</i>	MUSSELS	Endangered	Endangered
Yes	Yes	Yellow Sandshell	<i>Lampsilis teres</i>	MUSSELS	Endangered	
Yes		Blue Ash	<i>Fraxinus quadrangulata</i>	PLANTS	Threatened	
	Yes	Cliff Conobea	<i>Leucospora multifida</i>	PLANTS	Endangered	
	Yes	Curved-pod Corydalis	<i>Corydalis curvisiliqua ssp grandibracteata</i>	PLANTS	Endangered	
Yes		Downy Woodmint	<i>Blephilia ciliata</i>	PLANTS	Threatened	
Yes	Yes	Dwarf Dandelion	<i>Krigia virginica</i>	PLANTS	Endangered	
	Yes	Eastern Jointweed	<i>Polygonella articulata</i>	PLANTS	Endangered	
Yes	Yes	False Hellebore	<i>Veratrum woodii</i>	PLANTS	Threatened	
	Yes	Flax-leaved Aster	<i>Aster linariifolius</i>	PLANTS	Threatened	
Yes		French-grass	<i>Orbexilum onobrychis</i>	PLANTS	Endangered	
Yes		Green Arrow Arum	<i>Peltandra virginica</i>	PLANTS	Endangered	
Yes		Oval Ladies'-tresses	<i>Spiranthes ovalis</i>	PLANTS	Threatened	
	Yes	Oval Ladies'-tresses	<i>Spiranthes ovalis</i>	PLANTS	Threatened	
	Yes	Pale Green Orchid	<i>Platanthera flava</i>	PLANTS	Endangered	
Yes	Yes	Prairie bush clover	<i>Lespedeza leptostachya</i>	PLANTS		Threatened
	Yes	Philadelphia Panic Grass	<i>Panicum philadelphicum</i>	PLANTS	Threatened	
	Yes	Pinesap	<i>Monotropa hypopithys</i>	PLANTS	Threatened	
	Yes	Ricebutton Aster	<i>Aster dumosus</i>	PLANTS	Endangered	
	Yes	Slender Dayflower	<i>Commelina erecta</i>	PLANTS	Threatened	
Yes		Slender Ladies'-tresses	<i>Spiranthes lacera</i>	PLANTS	Threatened	
	Yes	Sweet Indian Plantain	<i>Cacalia suaveolens</i>	PLANTS	Threatened	
Yes		Virginia Snakeroot	<i>Aristolochia serpentaria</i>	PLANTS	Threatened	
Yes		Water Willow	<i>Justicia americana</i>	PLANTS	Endangered	
Yes		Waxleaf Meadowrue	<i>Thalictrum revolutum</i>	PLANTS	Endangered	
Yes	Yes	Western prairie fringed orchid	<i>Platanthera praeclara</i>	PLANTS		Threatened
Yes	Yes	Winged Monkey Flower	<i>Mimulus alatus</i>	PLANTS	Threatened	
Yes	Yes	Yellow Monkey Flower	<i>Mimulus glabratus</i>	PLANTS	Threatened	
	Yes	Marginal Shield Fern	<i>Dryopteris marginalis</i>	PLANTS	Threatened	
Yes	Yes	Blanding's Turtle	<i>Emydoidea blandingii</i>	REPTILES	Threatened	
	Yes	Copperbelly Water Snake	<i>Nerodia erythrogaster neglecta</i>	REPTILES	Endangered	
	Yes	Common Musk Turtle	<i>Sternotherus odoratus</i>	REPTILES	Threatened	
Yes		Copperhead	<i>Agkistrodon contortrix</i>	REPTILES	Endangered	
	Yes	Diamondback Water Snake	<i>Nerodia rhombifer</i>	REPTILES	Threatened	
	Yes	Ornate Box Turtle	<i>Terrapene ornata</i>	REPTILES	Threatened	
	Yes	Speckled Kingsnake	<i>Lampropeltis getulus</i>	REPTILES	Threatened	
	Yes	Western Hognose Snake	<i>Heterodon nasicus</i>	REPTILES	Endangered	
Yes	Yes	Western Worm Snake	<i>Carphophis amoenus</i>	REPTILES	Threatened	
Yes	Yes	Yellow Mud Turtle	<i>Kinosternon flavescens</i>	REPTILES	Endangered	

A mist net survey was conducted on June 13 -15, 19, 21-22, and 25, 2012 in a manner acceptable to the Iowa DNR and guidelines recommended by the USFWS for handling endangered species. A total of 71 bats were captured, 13 Big Brown (*Eptesicus fuscus*), 33 Red Bat (*Lasiurus borealis*), 3 Hairy Bat (*Lasiurus cinereus*), 4 Little Brown (*Myotis lucifugus*), 14 Northern Long-eared Bat (*Myotis septentrionalis*) and 4 Tri-colored Bat (*Perimyotis subflavus*). No Indiana bats were captured.

A Mussel Reconnaissance Survey was completed on May 8, 2013 to determine if streams within the corridor are suitable for mussels. Eight perennial or intermittent stream crossings were reviewed and it was determined habitat within the survey limits of Flint Creek is suitable for mussels. A presence/absence mussel survey was completed August 8, 2013 at the Flint Creek Bridge in a manner acceptable to the Iowa DNR and guidelines recommended by the USFWS for handling endangered species. Mussel catch consisted of 57 individuals of four species. No living or dead shell specimens of federal or state listed species were collected in this survey. Their absence suggests either none are present, or they are present in extremely low densities.

No bald eagles or bald eagle nests were observed within the project study area and no additional bald eagle nest surveys were recommended.

Windshield and walking surveys to assess habitat for the western worm snake and Blanding's turtle, and aquatic trapping for Blanding's turtles, were conducted within the project corridor by a qualified biologist on August 12-14, 2013. Presence/absence surveys for the orangethroat darter and western sand darter were conducted on October 3, 2013. Additional windshield and walking surveys to assess habitat for the western worm snake and Blanding's turtle were conducted within the Project corridor on July 22, 2014. The survey limits for the western worm snake and Blanding's turtle included all areas within the project corridor. Survey limits for the orangethroat and western sand darter included the area within 600 feet upstream and downstream of the existing U.S. Highway 61 crossing of Flint Creek.

No western worm snakes were found during walking surveys, intensive searches were not conducted. A total of 203.6 acres of moderately suitable habitat was found within the project corridor in three general locations. A total of 439.9 acres of low potential worm snake habitat also occurs within the project corridor. These occur scattered throughout the project corridor, with the majority being found south of Pfeiff Road or north of 260th Street.

Approximately 12.44 acres of low potential Blanding's turtle habitat was found within the project corridor including eleven small ponds, constructed farm ponds, and the area within and around Flint Creek. These areas rate as low potential due to less than suitable summer habitat and the absence of suitable nesting areas.

No orangethroat darters, nor any darter species, were captured during hand seine surveys of Flint Creek. Habitat within 600 feet upstream and downstream of the existing U.S. 61 Bridge over Flint Creek rates as low quality for orangethroat darters, due to a lack of rock riffles, moderately turbid water, and a silt/sand bottom.

No western sand darters, nor any darter species, were captured during hand seine surveys of Flint Creek. Habitat within 600 feet upstream and downstream of the existing U.S. 61 Bridge over Flint Creek rates as low quality for western darters due to the small size of Flint Creek, a silt/sand bottom, and distance from the Mississippi River.

#### ***No Build Alternative***

The No Build Alternative would not result in any expansion of the highway in the Study Area. No construction activities would occur, and no new ROW would be needed. The No Build Alternative would have no impact to threatened and endangered species in the Study Area.

#### ***Proposed Alternative***

The proposed alternative will have the potential to impact approximately 3.4 acres of low potential habitat for the Blanding's turtle. It may impact 121.2 acres of suitable habitat for both the Indiana bat and Northern long-eared bat. The Western worm snake habitat impacts may include 151.9 acres of low potential habitat and 68.3 acres of moderately suitable habitat.

The Iowa Department of Transportation has determined, under the delegated authority provided by the Federal Highway Administration that the proposed project **may affect, but is not likely to adversely affect** listed species and their habitat. The Iowa DOT will consult with USFWS and coordinate with the Iowa DNR.

### **5.3.6 Woodland**

The Iowa DOT defines woodlands as areas consisting of 3 acres or greater of forested land having at least 200 trees (3-inch diameter at breast height or greater) per acre, or an area of 0.5 acre but less than 3 acres of at least 200 trees (3-inch diameter at breast height or greater) per acre that is connected to a larger tract of forested land or a total of more than 3 acres (not including treed fencerows and trees along property lines). The study area has approximately 314 acres of woodlands.

Woodland within the project study area is primarily limited to riparian corridors and wooded ravines and is dominated by deciduous tree species that is considered to be potentially suitable summer habitat for the Indiana bat and the Northern long-eared bat.

#### ***No Build Alternative***

The No Build Alternative would not result in any expansion of the highway in the Study Area. No construction activities would occur, and no new ROW would be needed. The No Build Alternative would have no impact on the woodlands in the Study Area.

#### ***Proposed Alternative***

The proposed alternative will impact approximately 121 acres of woodland as protected under Iowa Code 314.23 (Figure 8). Woodland removed shall be replaced by plantings as close as possible to the initial site, or by acquisition of an equal amount of woodland in the general



vicinity for public ownership and preservation, or by other mitigation deemed to be comparable to the woodland removed, including, but not limited to, the improvement, development, or preservation of woodland under public ownership.

## **5.4 Physical Impacts**

### **5.4.1 Noise**

This project is considered a Type I highway project for noise because of the proposed interchanges and roadway realignments. Per Iowa DOT policy, noise analyses are conducted for all Type I Highway projects. As such, a traffic noise analysis was completed in September 2013 and revised in December 2014 to evaluate noise impacts in the Study Area. The analysis was conducted in accordance with the Iowa DOT's traffic noise policy for the purpose of meeting the requirements set forth in the FHWA "Procedures for Abatement of Highway Traffic Noise and Construction Noise" in 23 CFR 772 and all applicable state laws. The Study Area is predominantly a rural area with scattered farm residences adjacent to U.S. 61 with two high density residential areas identified. The high density residential areas include the northern portion of the city of Burlington (located at the project's south terminus) and the city of Mediapolis (located toward the project's northern terminus).

The FHWA has developed Noise Abatement Criteria (NAC) and procedures to be used in the planning and design of highways. For residential areas and cemeteries (as well as other designated sensitive land uses), the NAC is 67 dBA; for businesses, it is 72 dBA. The Iowa DOT noise policy defines a noise impact as occurring when levels approach or exceed the NAC or when predicted future noise levels are 10 dBA or more above existing levels. Iowa DOT defines "approach" as coming within 1 dBA of the NAC, which are 66 dBA for residential areas and 71 dBA for businesses.

Per Iowa DOT noise policy, a receptor is defined as a location of a noise sensitive area, primarily a residential exterior that is frequently used by people. The traffic noise analysis indicated a total of 238 noise receptors that were identified to represent noise sensitive land uses in the Study Area. Noise levels were estimated for each of the identified noise receptors using the FHWA's Traffic Noise Model (TNM) for both the existing (2010) and preferred alternative (design year 2038). The predicted noise levels were also compared to the NAC to determine noise impacts. The comparison indicated that four (4) impacts are predicted to occur under the No Build alternative and eighteen (18) impacts are predicted with the 2038 Bypass with interchange and no access to 235th Street option. These impacted receptors are identified in Table 6. Noise levels are predicted to decrease by as much as 16.7 dB(A) and increase by as much as 14.5 dB(A). The reason for these changes include moving the roadway, and thus traffic, either away from or towards existing receivers.

**Table 6: Predicted Noise Levels at Impacted Project Receptors**

Receiver	Activity Category	Noise Abatement Criteria Leq(h) (dB(A))	Distance from Existing Centerline (feet)	Leq (dB(A))		
				2010 Existing Noise Level	2038 "Bypass" w/Interchange & No Access to 235th Street Noise Level	Increase Over Existing
3	B	66	147	61.0	66.4	5.4
7	B	66	129	62.9	67.4	4.5
14	B	66	608	48.8	62.2	13.4
16	B	66	47	68.1	56.1	-12.0
17	B	66	858	45.7	58.7	13.0
19	B	66	927	45.0	58.1	13.1
38	B	66	115	62.9	66.5	3.6
45	B	66	95	63.7	66.2	2.5
47	B	66	50	67.9	64.3	-3.6
61	B	66	274	55.3	65.4	10.1
64	B	66	97	62.9	66.4	3.5
65	B	66	86	61.7	67.1	5.4
66	B	66	131	59.9	66.6	6.7
67	B	66	100	61.1	68.6	7.5
68	B	66	77	63.3	67.5	4.2
106	B	66	19	67.3	64.5	-2.8
126	B	66	51	66.1	64.5	-1.6
133	B	66	93	62.3	67.7	5.4
134	B	66	122	60.5	66.1	5.6
148	B	66	812	45.6	58.8	13.2
149	B	66	804	45.5	58.6	13.1
194	B	66	55	65.7	67.9	2.2

Note: Shading indicates a noise impact in the project's design year (2038)

According to the Iowa DOT traffic noise policy, noise abatement must be considered and evaluated for feasibility and reasonableness if traffic noise impacts are identified. Feasibility refers to the ability to provide abatement in a given location considering the acoustic and engineering limitations of the site. A noise abatement option must achieve a 5 dB(A) traffic noise reduction at an impacted receptor to be considered feasible. In addition, each of the following three factors must be met in order for noise abatement to be considered reasonable:

- Noise abatement measures shall not exceed a cost of \$40,000 per benefitted receptor.
- Noise abatement measures must provide a benefit of a minimum of 10 dB(A) for at least one benefitted receptor.
- Viewpoints of owners and residents considered benefitted by a noise abatement option that meets the above criteria must be obtained. For noise abatement to be considered reasonable, a majority of responses must be in favor.

### ***No Build Alternative***

Under the No Build Alternative, noise levels are expected to slightly increase along with increased traffic volumes. However, the alignment of the roadway would remain at its current location and not cause any additional impacts beyond what would naturally occur as a result of future increased traffic volume.

### ***Proposed Alternative***

The proposed alternative would have impacts to 18 of the 238 noise receptors in the study area (Figure 12). The majority of the impacted receptors were isolated residences, with direct access to the proposed roadway. Noise abatement in the form of a noise barrier was considered for all of receivers but was determined not to be feasible or reasonable for the receivers because the necessary breaks in the barrier to access the highway would render the barriers ineffective. Noise barriers must be long and continuous to work effectively. Breaks for driveways and intersecting roadways compromise the ability of the noise barrier to reduce noise levels. Additionally, in accordance with Iowa DOT policy, noise barriers are generally not constructed for individual residences or businesses. Therefore, noise barriers were not recommended for any of the receivers.

The width of the FHWA Noise Abatement Criteria noise contour is provided in Table 7. Local planning agencies can use this information as a guide to ensure that noise impacts are minimized in the event of land use changes. A copy of this report will be provided to the appropriate local planning authorities in order to assist in the development of compatible land use criteria.

**Table 7: Noise Contours**

Roadway Segment	Activity Category	Noise Level Leq(h) dB(A)	Approximate Width of FHWA Noise Abatement Criteria (Distance in feet from edge of Proposed Roadway)						
			2038 Build Alternative						
			Sunnyside Ave to Upper Flint Road	Upper Flint Road to 190th Street	190th Street to Pleasant Grove Road	Pleasant Grove Road to 210th Street	210th Street to Bypass (south)	Bypass (Bypass to Main Street)	Bypass (Main Street to IA 78)
US 61	A	56	355	420	420	430	435	470	370
US 61	B & C	66	40	150	155	160	160	165	115
US 61	E	71	15	55	60	60	60	60	35

In addition to the traffic noise level, construction noise must also be identified and a level of effort must be made to minimize its effects. Noise from on-site construction equipment and

construction activities would add to the noise environment in the immediate Study Area. The driving and operation of construction equipment would also generate ground vibrations. The vibrations are not projected to be of a sufficient magnitude to affect normal activities of occupants in the Study Area. Increased truck traffic on area roadways would also generate noise associated with the transport of heavy materials and equipment. The noise increase and vibrations from construction activities would be temporary in nature and are expected to occur during normal daytime working hours. 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. Although construction noise impacts would be temporary, the following are mitigation measures for construction noise:

- **Design Considerations:** Plans includes measures and specifications to minimize or eliminate adverse noise impacts.
- **Community Awareness:** Local residents should be made aware of the possible inconvenience and to know its approximate duration so that they can plan their activities accordingly. It is Iowa DOT policy that information concerning the upcoming project construction be submitted to all local news media.
- **Source Control:** This involves reducing noise impacts from construction by controlling the noise emissions at their source. Install and maintain effective mufflers on equipment.
- **Site Control:** This involves limiting unnecessary idling of equipment, use of temporary noise barriers in front of equipment and operating stationary equipment as far away from sensitive areas as possible.
- **Time and Activity Restraints:** Whenever possible, limiting work hours on a construction site can be very beneficial during the hours of sleep or on Sundays and holidays.

#### **5.4.2 Contaminated and Regulated Materials Sites**

Properties in 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 purchase, the potential cleanup costs, and safety concerns related to exposure to contaminated soil, surface water, or groundwater.

A Phase I Environmental Site Assessment (ESA) was conducted to identify and describe regulated materials sites found within and near a 1,000-foot-wide corridor centered on the center line of the highway. This Phase I ESA involved a windshield survey to determine uses of properties and to observe any releases of regulated materials; it also involved an in-depth assessment conducted by reviewing agency records and/or interviewing property owners and/or operators, where necessary. For this Phase I ESA, all properties considered to be regulated materials sites were identified and evaluated as having recognized environmental conditions (RECs) (date). The potential environmental risk of each REC was assessed using high, moderate, low, and minimal risk criteria from Iowa DOT's Office of Location and Environment Manual (Iowa DOT, August 2009).

During the Phase I ESA survey 61 parcels were identified as known RECs located in the project study area (Figure 13). Nine of those parcels could be affected by the proposed alternative and

are described in Table 8. Four parcels are owned by Mediapolis Fast Break and contain underground storage tanks that could potentially be leaking. One junk yard is located in the project impact area and it is unknown if hazardous materials are present at the site but these sites often contain hazardous material due to the nature of the business. Similarly, the two parcels owned by Valley Environmental Services and the one owned by Mediapolis Farm Equipment contain businesses that have received an EPA hazardous waste generator number because these types of business produce potentially hazardous material.

**Table 8. Potentially Hazardous Material Sites in the Project Impact Area.**

<b>Parcel Name</b>	<b>RCRA_CERCL Number</b>	<b>DNR_UST Number</b>	<b>DNR_Lust Number</b>	<b>Impact (Acres)</b>
Mediapolis Farm Equipment	IAR000501353	NA	NA	4.23
Klein Property/Junkyard	NA	NA	NA	1.86
Valley Environmental Services	IAR000001859	NA	NA	0.09
Valley Environmental Services	IAR000001859	NA	NA	0.50
Mediapolis Fast Break	NA	198608975	7LTC24	0.39
Mediapolis Fast Break	NA	198608975	7LTC24	0.30
Mediapolis Fast Break	NA	198608975	7LTC24	0.01
Mediapolis Fast Break	NA	198608975	7LTC24	0.0007
Rays Battery Salvage	IAD984568683	NA	NA	0.74

### ***No Build Alternative***

The No Build Alternative would not involve construction of the Project, and regulated materials sites would not be affected. Any contamination at the sites has the potential to migrate. Petroleum contamination could possibly degrade naturally over time.

### ***Proposed Alternative***

The proposed alternative would have varying degrees of impact on each parcel ranging from 0.01 acres to 4.2 acres. The majority of these impacts will not impact areas of concern except for the Klien Property Junkyard. This parcel may need to be fully acquired and it is unknown if the property contains any underground storage tanks or other hazardous materials. The 4.23 acres of potential right-of-way needed from Mediapolis Farm Equipment will not impact the building where potential hazardous material may exist.

If any contamination above regulatory limits is encountered at any of these sites, work would be stopped and Iowa DOT would be notified. Proper handling and disposal of any contaminated soil (including decontamination of equipment) would be warranted.

### **5.4.3 Visual**

As one travels north from the beginning of the project in northern Burlington you will first see scattered residential areas located within the city limits as you move north the landscape view from the roadway turns to wooded areas with intermixed residential areas as you enter the Flint Creek river valley and continue north past Pheiff Road. At this point the view shed turns to a rural landscape dominated agricultural use with intermixed rural residential homes and continues throughout the remainder of the proposed project impact area. The only notable acceptance is near the city of Mediapolis where the existing highway passes through town where it is surrounded by businesses and residential areas. The proposed alternative will bypass the town. Those living near the existing highway currently see a two-lane highway throughout the existing corridor

#### ***No Build Alternative***

The No Build Alternative would have no impact on visual features.

#### ***Proposed Alternative***

The proposed project will not significantly change the view shed for those traveling along the roadway since the majority of the project will be constructed using as much of the existing corridor as possible. The only notable changes will be a much more rural view along the proposed bypass area. Instead of passing through Mediapolis where travelers can view portions of the city and local business the view will be of agricultural land. Additionally, travelers will be passing through a wider four-lane road corridor as compared to the existing two-lane roadway. Similarly, the view shed of those living along the corridor will change to a view of a 4-lane roadway instead of the existing two-lane facility.

### **5.4.4 Utilities**

The potential for the Project to affect utilities in the Study Area was considered by identifying utility locations and orientation in relation to the highway. Potential effects were evaluated with respect to major utilities crossed by or located within the ROW for the Proposed Alternative.

Throughout the proposed project corridor there are several companies that provide utility service to area residence and businesses including electricity, water, gas and communication services. There are three companies that provide electricity and energy resources to residents and businesses located along the project corridor. These include Alliant Energy, Eastern Iowa Light and Power and the Interstate Power and Light Company. Six companies that provide communication service that including Iowa Communications Network, Mediapolis Telephone Company, CTLQL – Century Link, Windstream Communications, Mutual Telephone Company of Morning Sun, and Mediacom. In addition to the utility services and communication services

Rathbun Regional Water Service provide water resources to many of those in the project area. Lastly the ANR Pipeline Company transmits natural gas through a pipeline that crosses U.S. 61 near upper Flint Road and 260<sup>th</sup> Street (Figure 13).

### ***No Build Alternative***

Under the No Build Alternative, the highway would not be expanded and utility line relocation would not affect utility service.

### ***Proposed Alternative***

Many of these utilities that serve residents and businesses in the proposed project area and are located either within or near Iowa DOT right-of-way and may need to be relocated during project construction. As detailed design plans are developed for the Proposed Alternative, construction activities would be coordinated with public utilities to avoid potential conflicts and to minimize planned interruptions of service. When service interruptions are unavoidable, an effort would be made to limit their duration.

## **5.5 Cumulative**

Cumulative impacts are those that result from past, present, and reasonably foreseeable actions, combined with the potential impacts of the proposed improvements. Cumulative impacts can result from individually minor, but collectively substantial impacts taking place over a period of time. A cumulative impact assessment looks at the collective effects imposed by individual land use plans and projects in the same vicinity of the proposed project.

### **Past Actions**

In 1988 the State Legislature directed the Transportation Commission to “identify within the primary road system a network of commercial and industrial highways.” The purpose of this highway network shall be to improve the flow of commerce; to make travel more convenient, safe and efficient; and to better connect Iowa with regional, national, and international markets. Following this directive the Iowa DOT developed the Commercial and Industrial Network Improvement and Programming Policy which identified the need to improve U.S. 61 by converting the roadway from two lanes to four.

At this time the majority of the road was two-lanes between Dubuque and the Missouri border. The only four-lane sections were found near the larger cities of Dubuque, between Dewitt and Davenport, around Muscatine and Burlington. Since that time U.S. 61 has been converted to four-lanes from Dubuque to the Muscatine County Line and from Burlington to the Missouri border. Currently, the only remaining portions that are not four-lane extend from the Muscatine County Line to Burlington.

All of U.S. 61 was considered a primary route for development as a four-lane highway in 1998. U.S. 61 is a four lane roadway from I-280 in Davenport, Iowa to the Muscatine/Louisa County line. The Iowa DOT has been upgrading this portion of U.S. 61 since about 1994. The

remaining portions of the U.S. 61 corridor will be upgraded to four-lanes as funding becomes available.

## **Present Actions**

In October of 2011 the Iowa DOT has completed an Environmental Assessment and a finding of No Significant Impact to improve approximately 6 miles of U.S 61 from the Muscatine County Line to Turkey Run. Construction is scheduled to begin in 2017 for this portion of the roadway. The Iowa DOT is also in the process of studying environmental impacts for upgrading U.S. 61 from two-lanes to four-lanes from Turkey Run to the northern termini of this project. Once the Environmental Assessment is completed and funding is identified this project will be constructed.

## **Future Actions**

As mentioned above the Iowa DOT plans to improve the remaining sections of U.S. 61 that have not been converted to four-lanes. Over the past 20 year Des Moines County has seen a large increase in development and these trends are expected to continue in the future. The Iowa DOT is interested in continuing to four-lane U.S. 61 north to the existing 4-lane roadway located near the Louisa/Muscatine County line when funding becomes available.

As a result of this project it is also likely that Des Moines County will want to remove access to U.S. 61 at 210th Street and pave an alternate route north to H38 to allow truck traffic generated by a gypsum supply company better access to U.S. 61 near the interchange located west of Mediapolis.

## **Summary of Cumulative Impacts**

Once this project and the others mentioned above are completed we anticipate travel will become safer and more efficient between the Muscatine County Line and Burlington as well as the entire U.S.61 corridor. Having four-lanes of highway from Dubuque to the Iowa Boarder will allow the shipping industry to transport goods more efficient along the corridor. It also has the potential to attract new business in Iowa that would like to be located near the corridor. By bypassing Mediapolis the project will likely reduce the amount of traffic passing through the town and local businesses may see a slight decrease in business.

The proposed project in conjunction with planned improvements to the remainder of the corridor will also have a cumulative impact on environmental resources in the corridor including minor losses of habit for threatened and endangered species, woodland, floodplains, farmland, surface waters and water quality, wetlands and land-uses. Impacts to these resources will be unavoidable due to expanding the width of the corridor to accommodate the planned improvements.

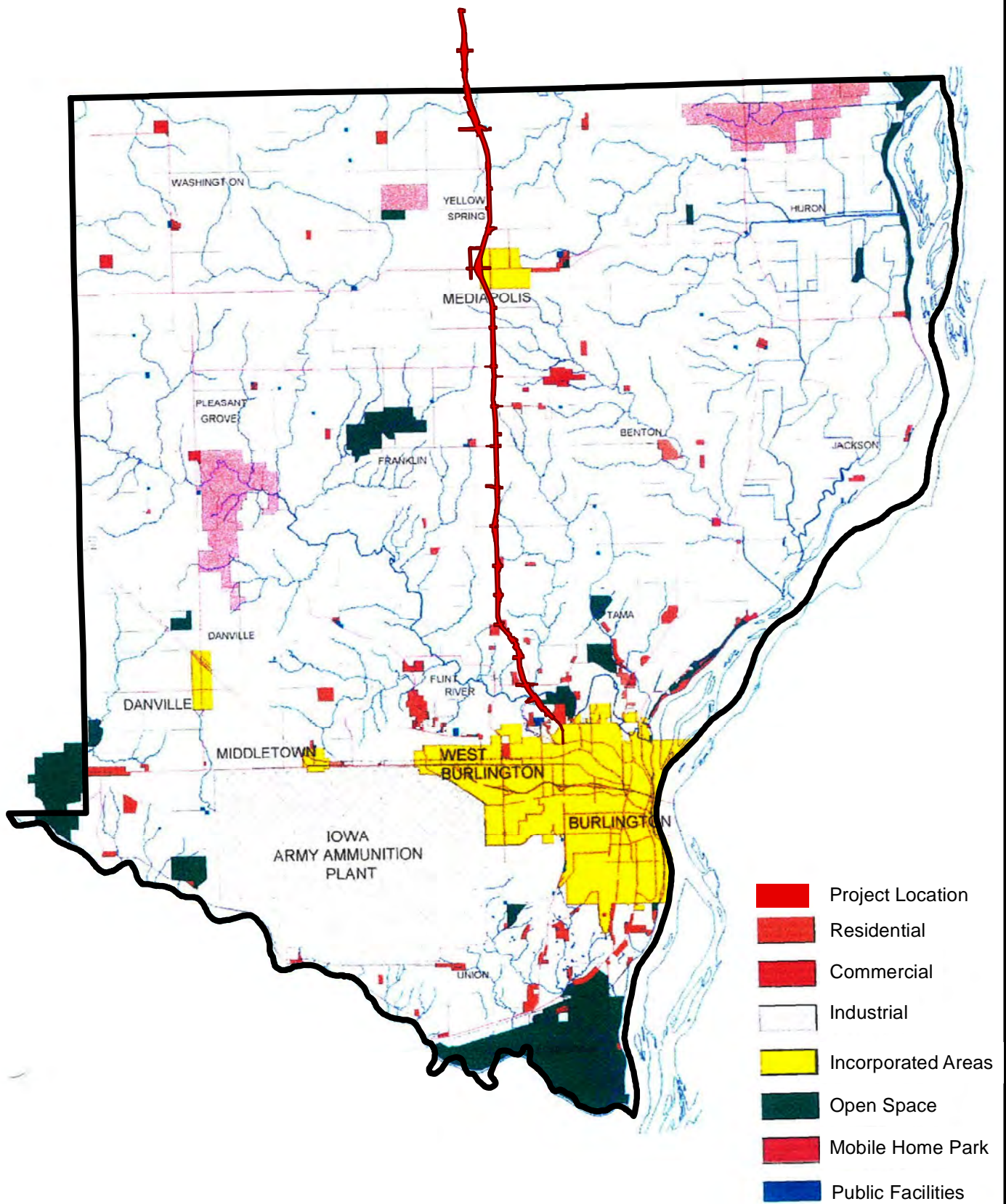


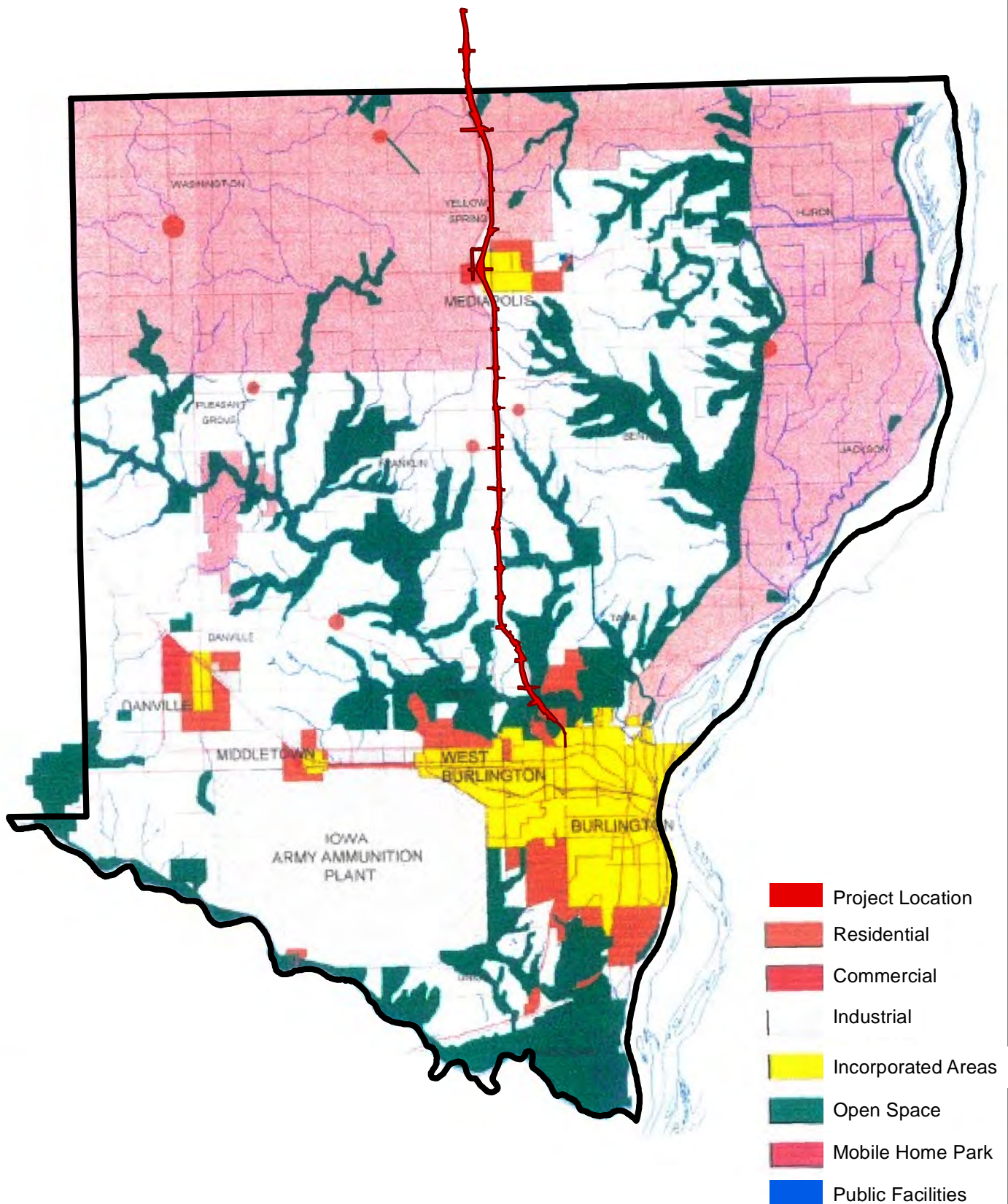
## 5.6 Streamlined Resource Summary

Resources not discussed in the body of the EA are located in the Streamlined Resource Summary, Appendix A. The summary includes information about the resources, the method used to evaluate them, and when the evaluation was completed. Table 9 summarizes the impacts to resources discussed in this document.

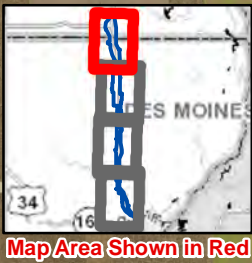
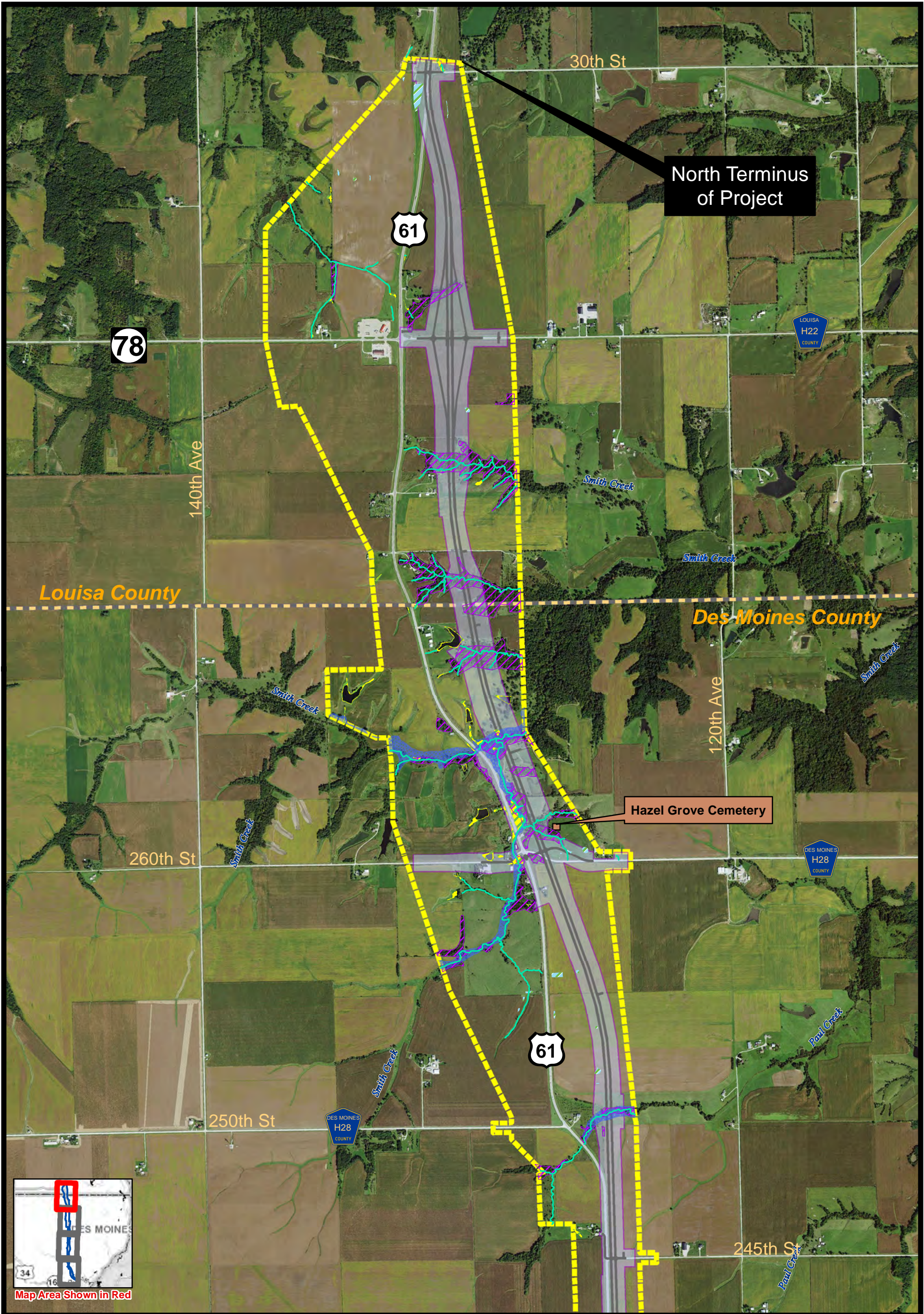
**Table 9: Summary of Impacts**

Resource	No Build Alternative	Proposed Alternative
Land Use	0	Beneficial Impact
Churches and Schools	0	1
Environmental Justice	0	0
Parkland and Recreational Areas	0	0
Bicycle and Pedestrian Facilities	0	0
Right-of-Way (ac)	0	1459
Relocation Potential (homes & businesses)	0	20
Construction and Emergency Routes	0	0
Transportation	0	0
Historical Sites or Districts (sites)	0	13
Archaeological Sites	0	3
Cemeteries	0	0
Wetland Impacts (ac)	0	18.26
Surface Water Impacts (Ponds) (ac)	0	25,045
Floodplains (ac )	0	64
Wildlife and Habitat	0	121
Threatened and Endangered Species	0	121
Woodland Impacts (ac)	0	121
Farmland Impacts (ac)	0	1027
Noise Impacts (Number of Receptors)	0	18
Contaminated and Regulated Material Sites	0	9
Visual	0	0
Utilities	0	1





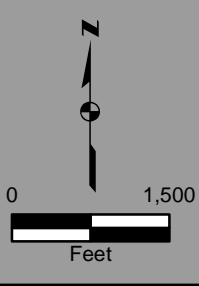




Map Area Shown in Red

**IOWA DOT**  
SMARTER SIMPLER FASTER SERVICE

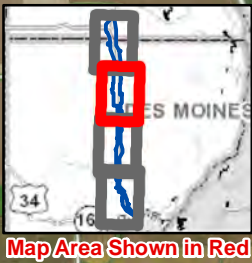
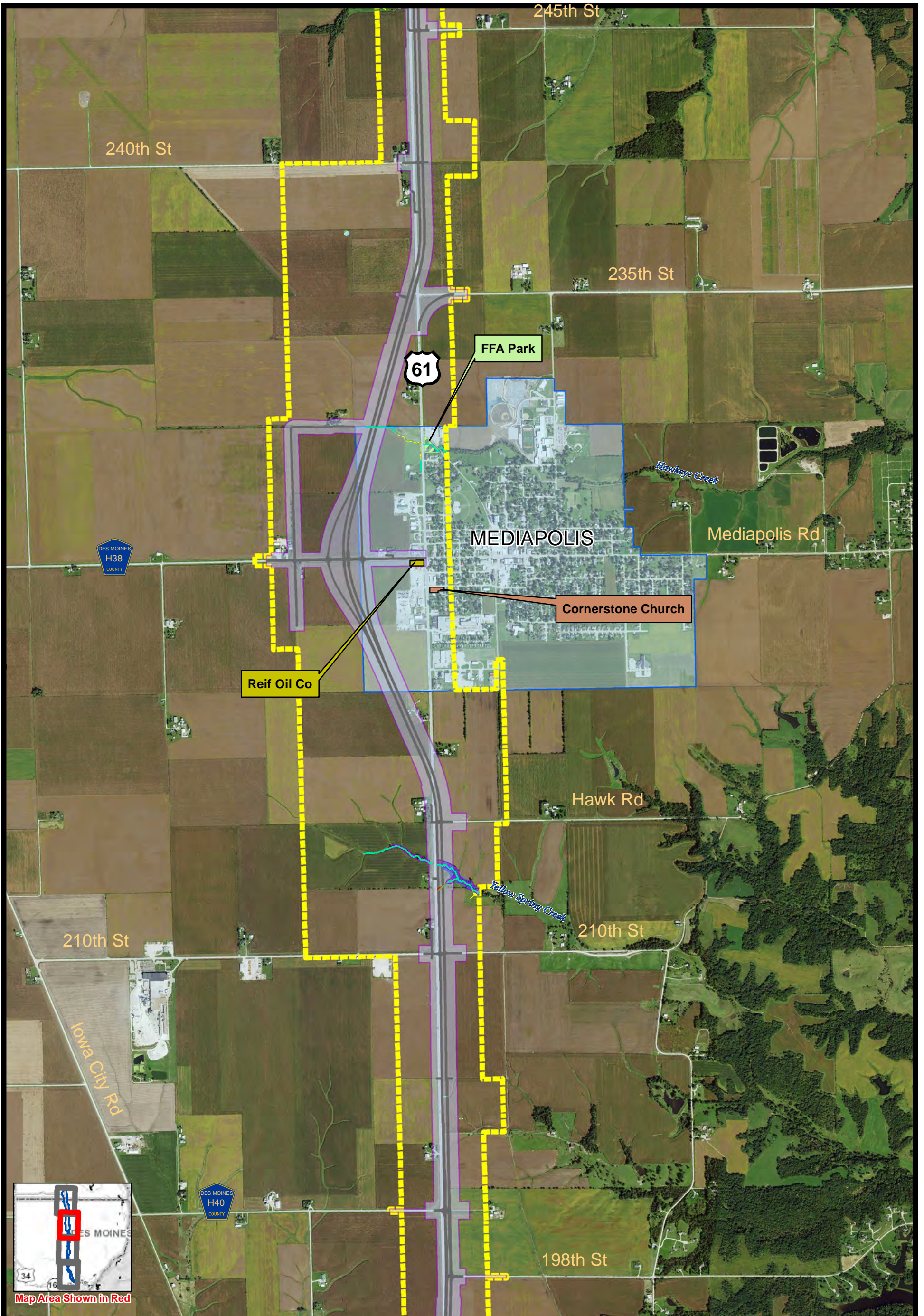
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- |                             |                            |                    |
|-----------------------------|----------------------------|--------------------|
| Floodplains                 | Farmed Wetlands            | Impact Area        |
| Recreation Areas            | PEMA/PEMC Wetlands         | Project Study Area |
| Special Rivers              | PFOA Wetlands              | County Border      |
| Streams                     | PSSA Wetlands              |                    |
| Church/Cemetery             | Potential Business Impacts |                    |
| Woodlands                   | Corporate Limits           |                    |
| Starr's Cave State Preserve | Proposed Alignment         |                    |

**FIGURE 8 - ENVIRONMENTAL CONSTRAINTS**  
Page 1 of 4  
NHS-61-2(50)--19-29  
**US 61 Improvements**  
North of Burlington to North of IA 78  
Des Moines and Louisa Counties







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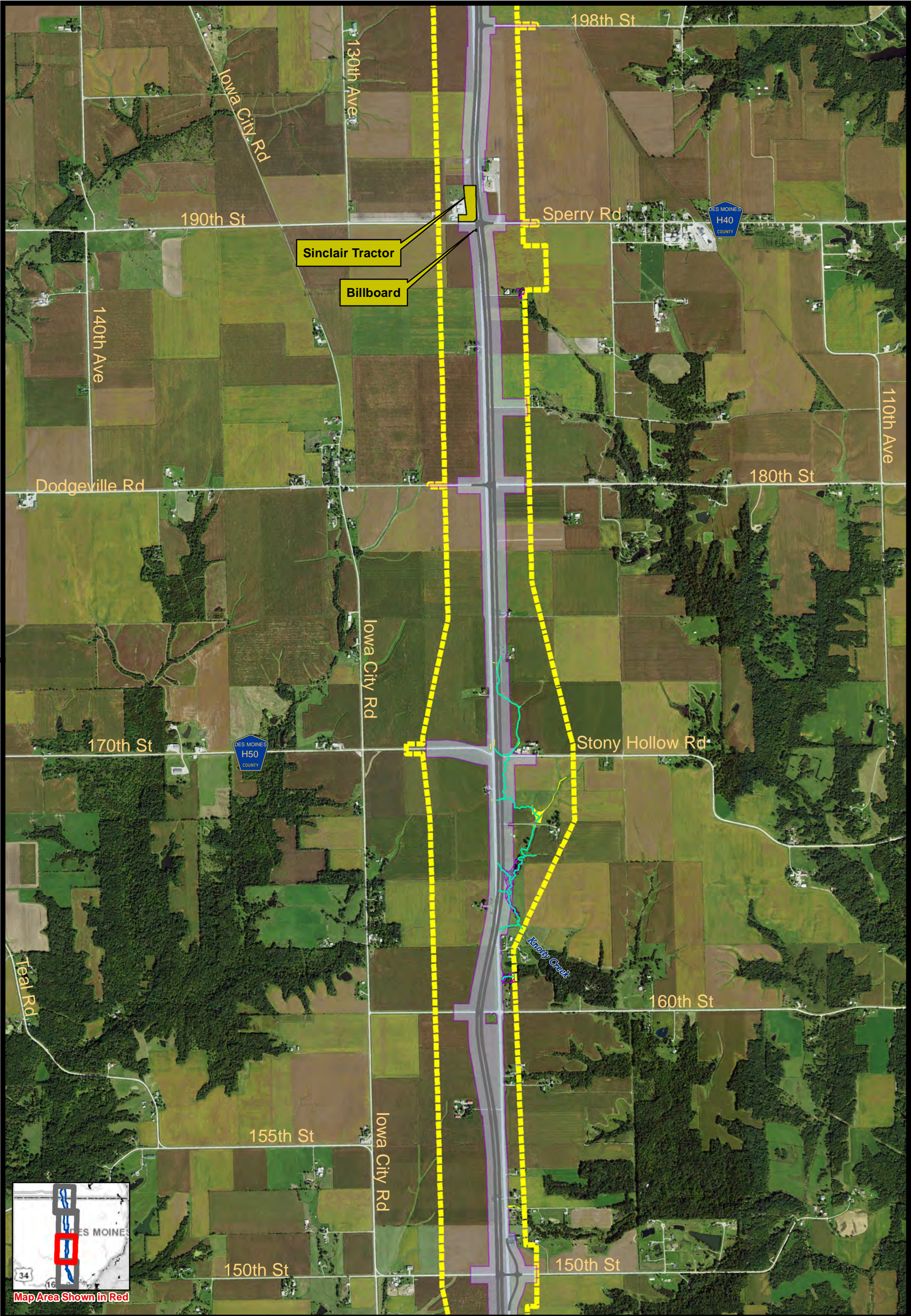


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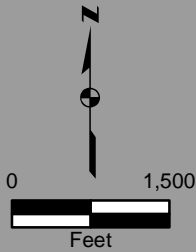
Floodplains	Farmed	Impact Area
Recreation Areas	PEMA/PEMC	Project Study Area
Special Rivers	PFOA	County Border
Streams	PSSA	
Church/Cemetery	Potential Business Impacts	
Woodlands	Corporate Limits	
Starr's Cave State Preserve	Proposed Alignment	

**FIGURE 8 - ENVIRONMENTAL CONSTRAINTS**  
Page 2 of 4  
NHS-61-2(50)--19-29  
US 61 Improvements  
North of Burlington to North of IA 78  
Des Moines and Louisa Counties





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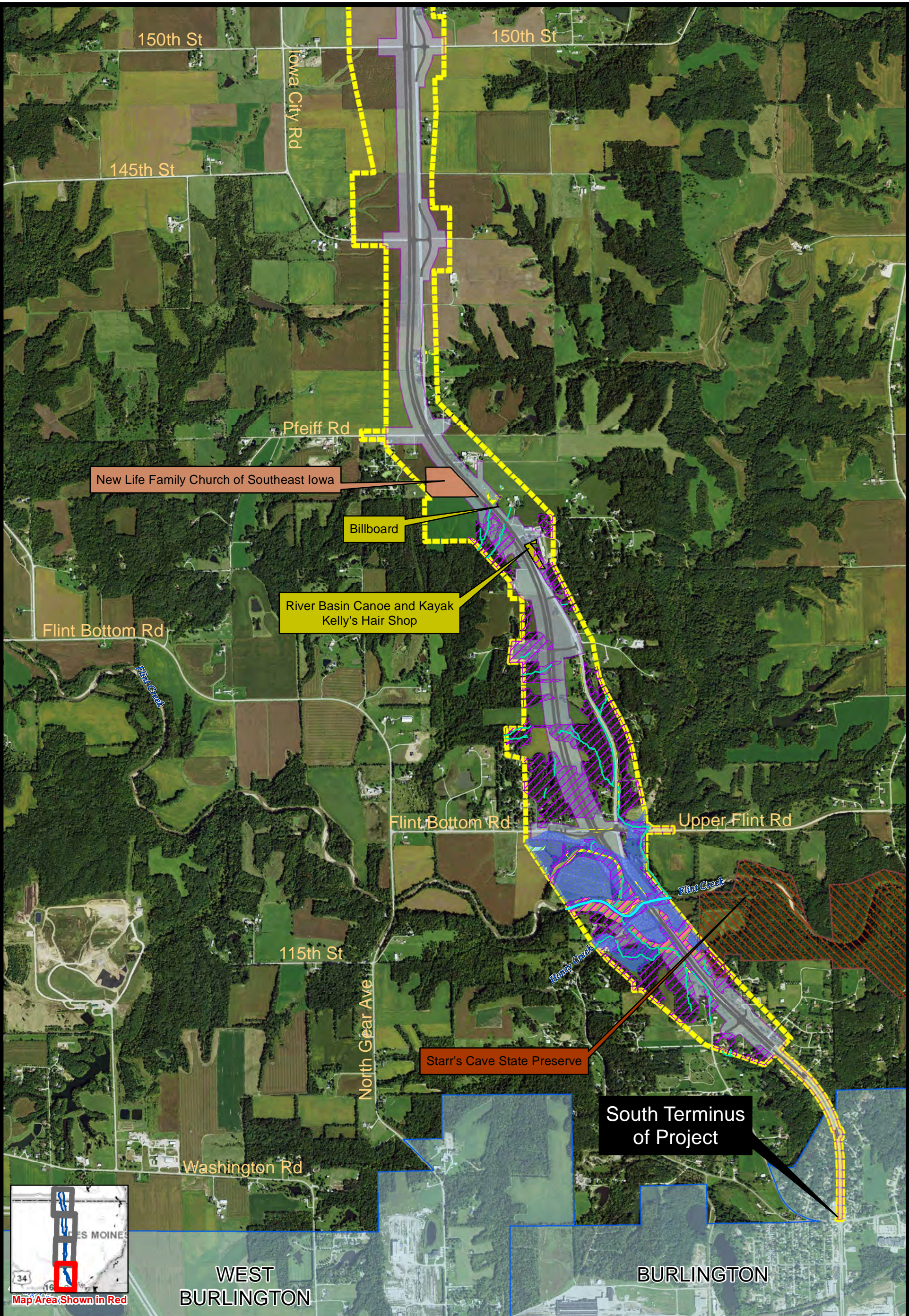
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|-----------------------------|----------------------------|--------------------|
| Floodplains                 | Farmed Wetlands            | Impact Area        |
| Recreation Areas            | PEMA/PEMC Wetlands         | Project Study Area |
| Special Rivers              | PFOA Wetlands              | County Border      |
| Streams                     | PSSA Wetlands              |                    |
| Church/Cemetery             | Potential Business Impacts |                    |
| Woodlands                   | Corporate Limits           |                    |
| Starr's Cave State Preserve | Proposed Alignment         |                    |


## FIGURE 8 - ENVIRONMENTAL CONSTRAINTS

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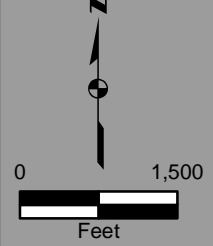
**US 61 Improvements**  
North of Burlington to North of IA 78  
Des Moines and Louisa Counties







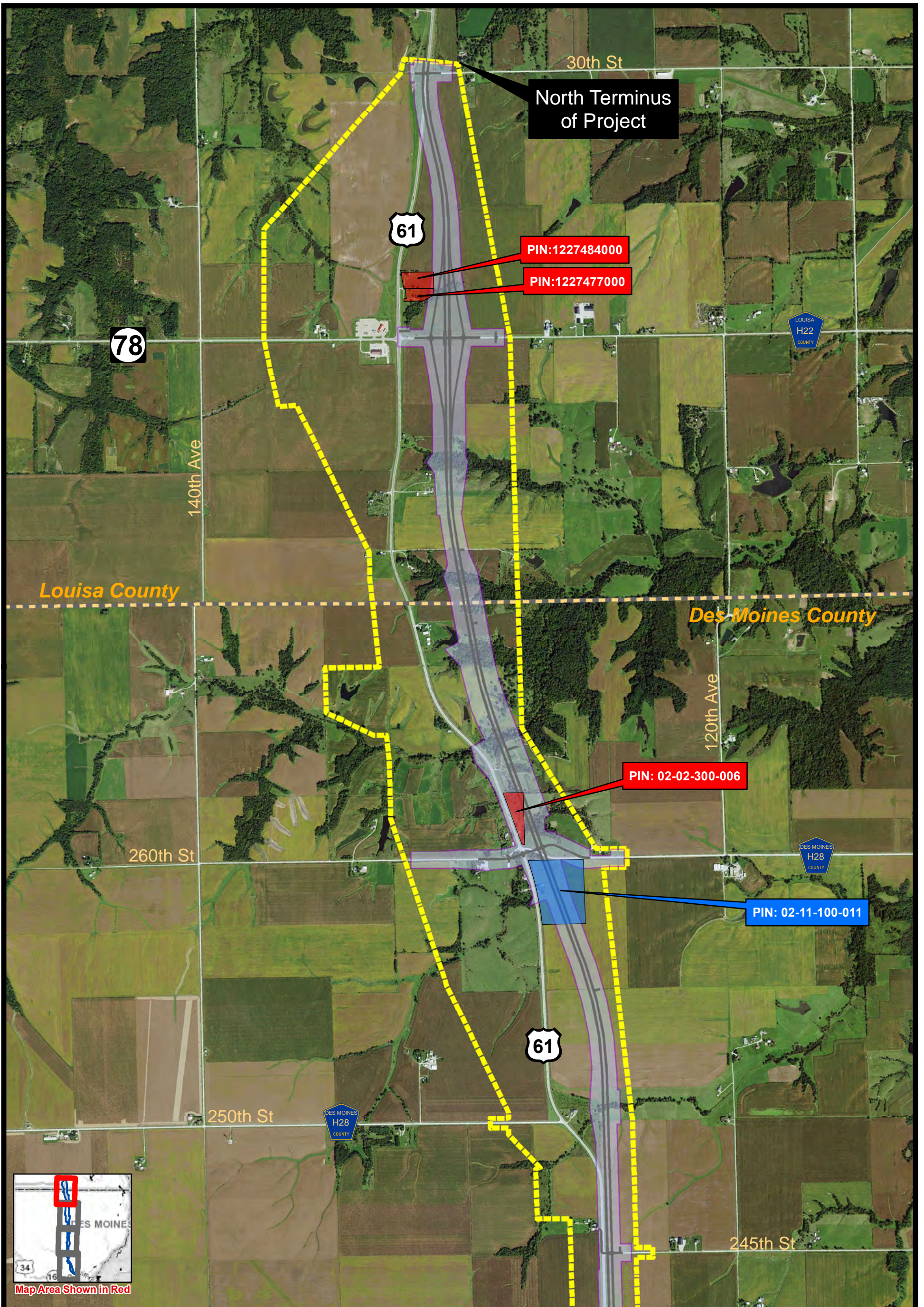
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Floodplains	Farmed Wetlands	Impact Area
Recreation Areas	PEMA/PEMC Wetlands	Project Study Area
Special Rivers	PFOA Wetlands	County Border
Streams	PSSA Wetlands	
Church/Cemetery	Potential Business Impacts	
Woodlands	Corporate Limits	
Starr's Cave State Preserve	Proposed Alignment	

**FIGURE 8 - ENVIRONMENTAL CONSTRAINTS**  
Page 4 of 4  
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US 61 Improvements  
North of Burlington to North of IA 78  
Des Moines and Louisa Counties





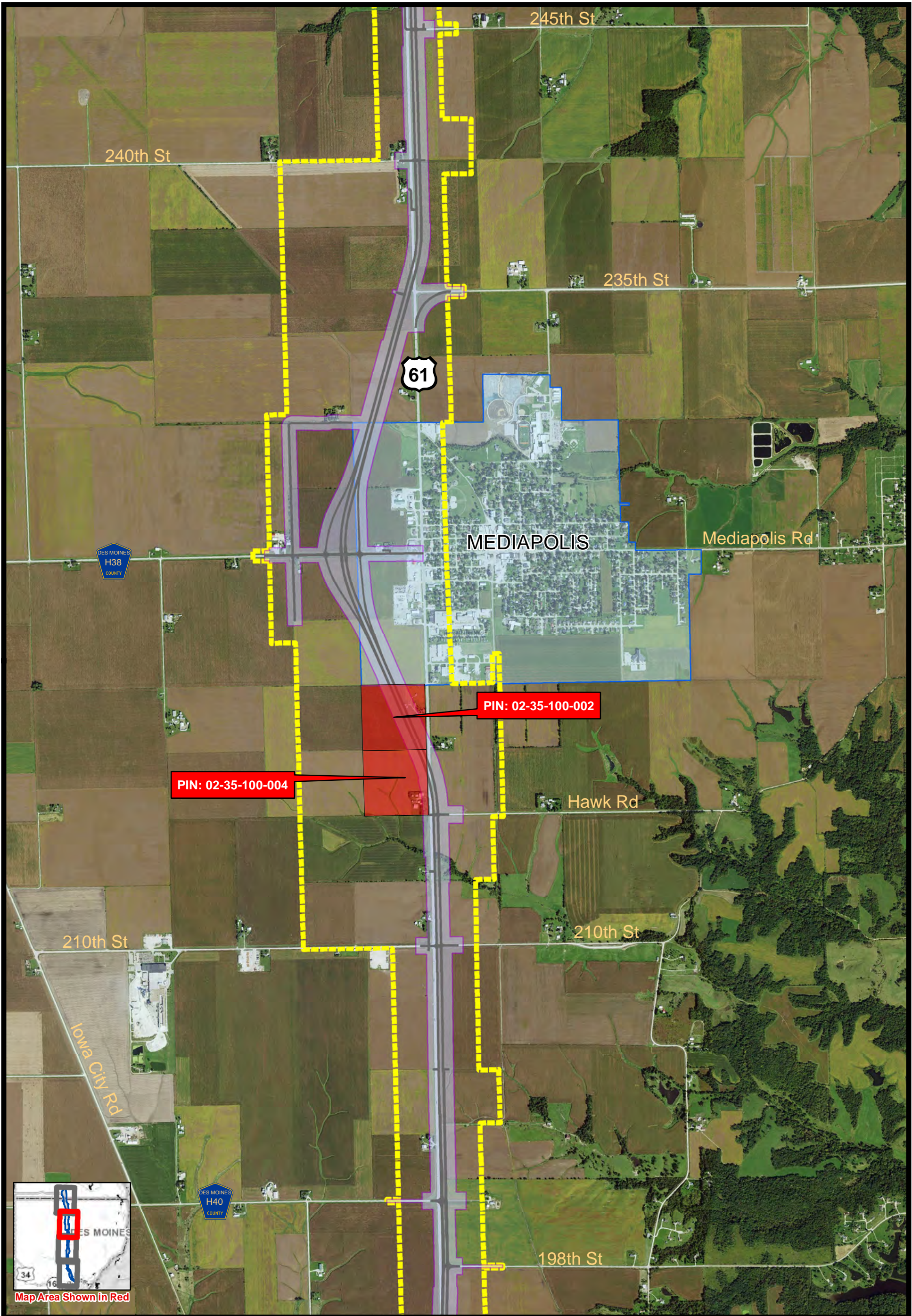
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Billboard	Impact Area
Outbuildings	Project Study Area
Commercial	County Border
Residential	Corporate Limits
Proposed Alignment	

**FIGURE 9 - POTENTIAL AQUISITIONS**  
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**US 61 Improvements**  
North of Burlington to North of IA 78  
Des Moines and Louisa Counties





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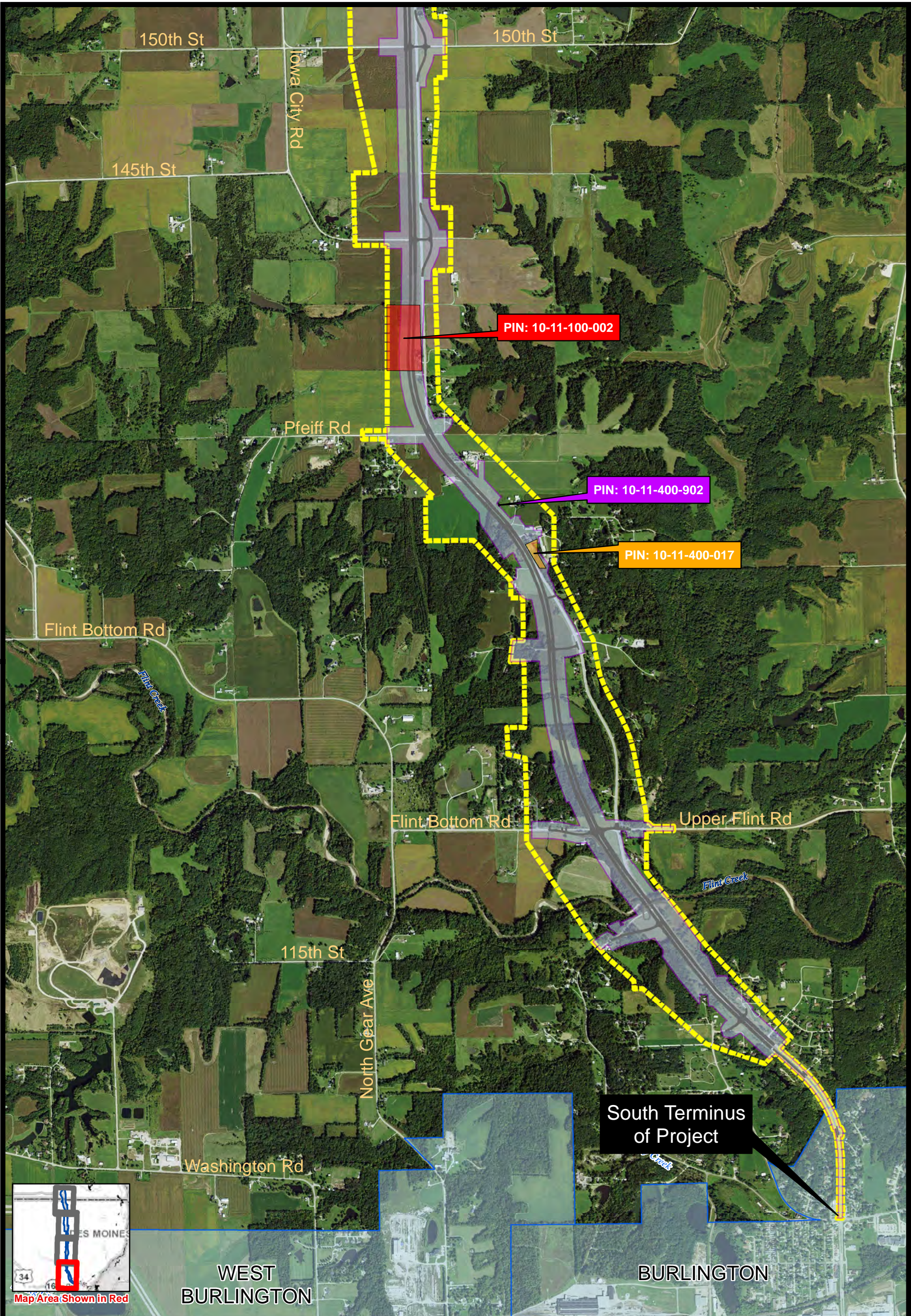
Billboard	Impact Area
Outbuildings	Project Study Area
Commercial	County Border
Residential	Corporate Limits
Proposed Alignment	

**FIGURE 9 - POTENTIAL AQUISITIONS**  
Page 2 of 4  
**NHS-61-2(50)--19-29**  
**US 61 Improvements**  
North of Burlington to North of IA 78  
Des Moines and Louisa Counties

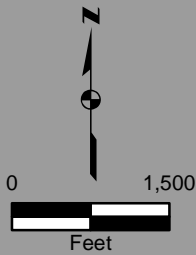








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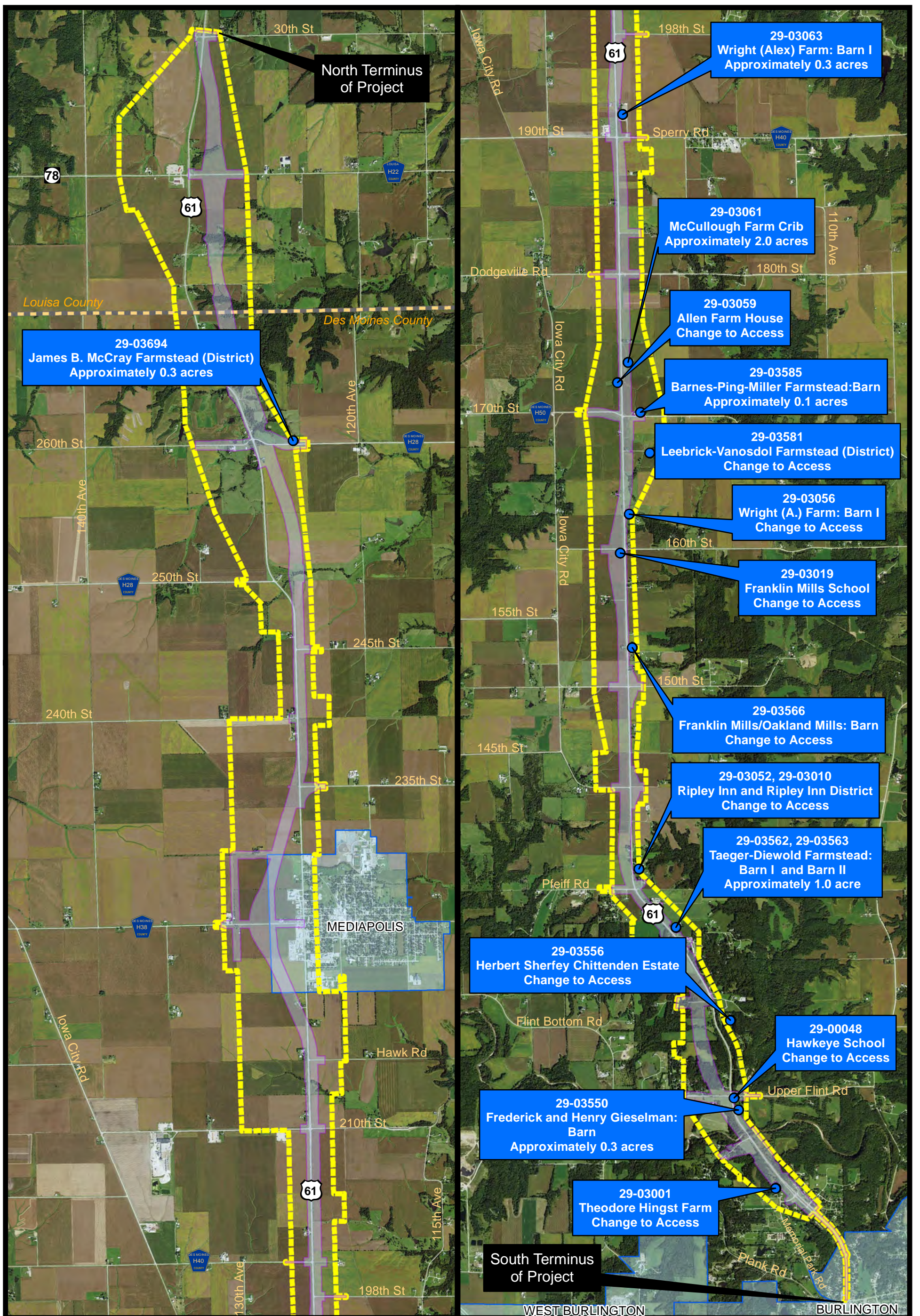
- Billboard
- Outbuildings
- Commercial
- Residential
- Proposed Alignment

- Impact Area
- Project Study Area
- County Border
- Corporate Limits

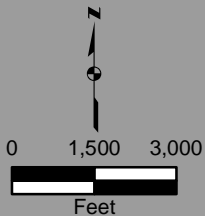
**FIGURE 9 - POTENTIAL AQUISITIONS**  
Page 4 of 4  
**NHS-61-2(50)--19-29**  
**US 61 Improvements**

North of Burlington to North of IA 78  
Des Moines and Louisa Counties





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- Cultural Sites
- Corporate Limits
- Proposed Impact Area
- County Border
- Project Study Area

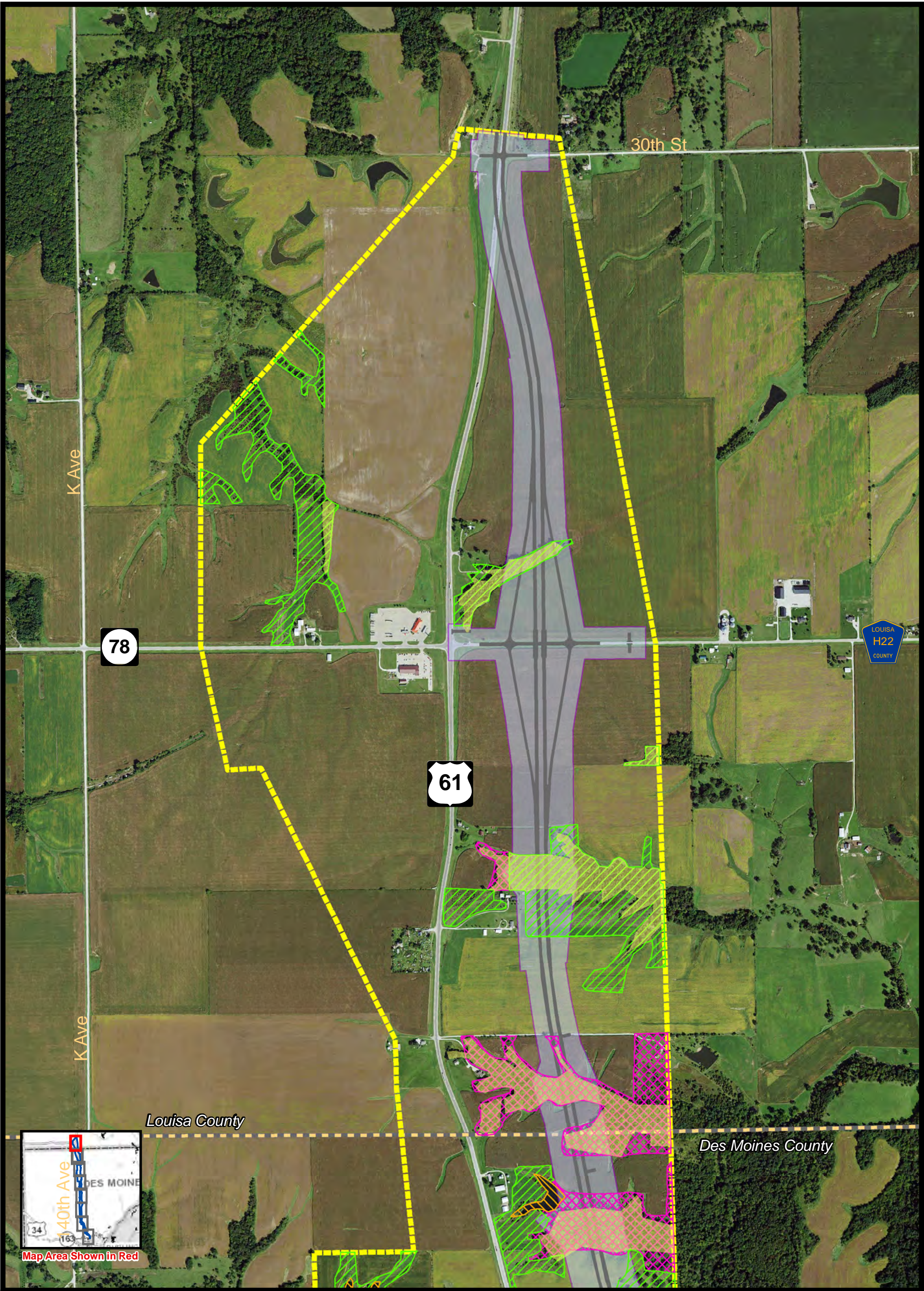
## FIGURE 10 - HISTORIC PROPERTIES AFFECTED

NHS-61-2(50)--19-29

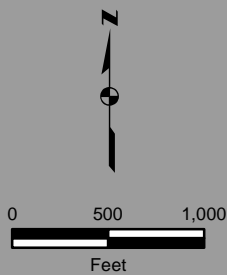
US 61 Improvements

North of Burlington to North of IA 78  
Des Moines and Louisa Counties





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- Woodland
- Blanding's Turtle Habitat Low Potential
- Worm Snake Habitat Low Potential
- Worm Snake Habitat Moderate Potential

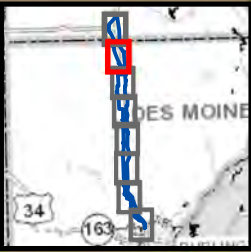
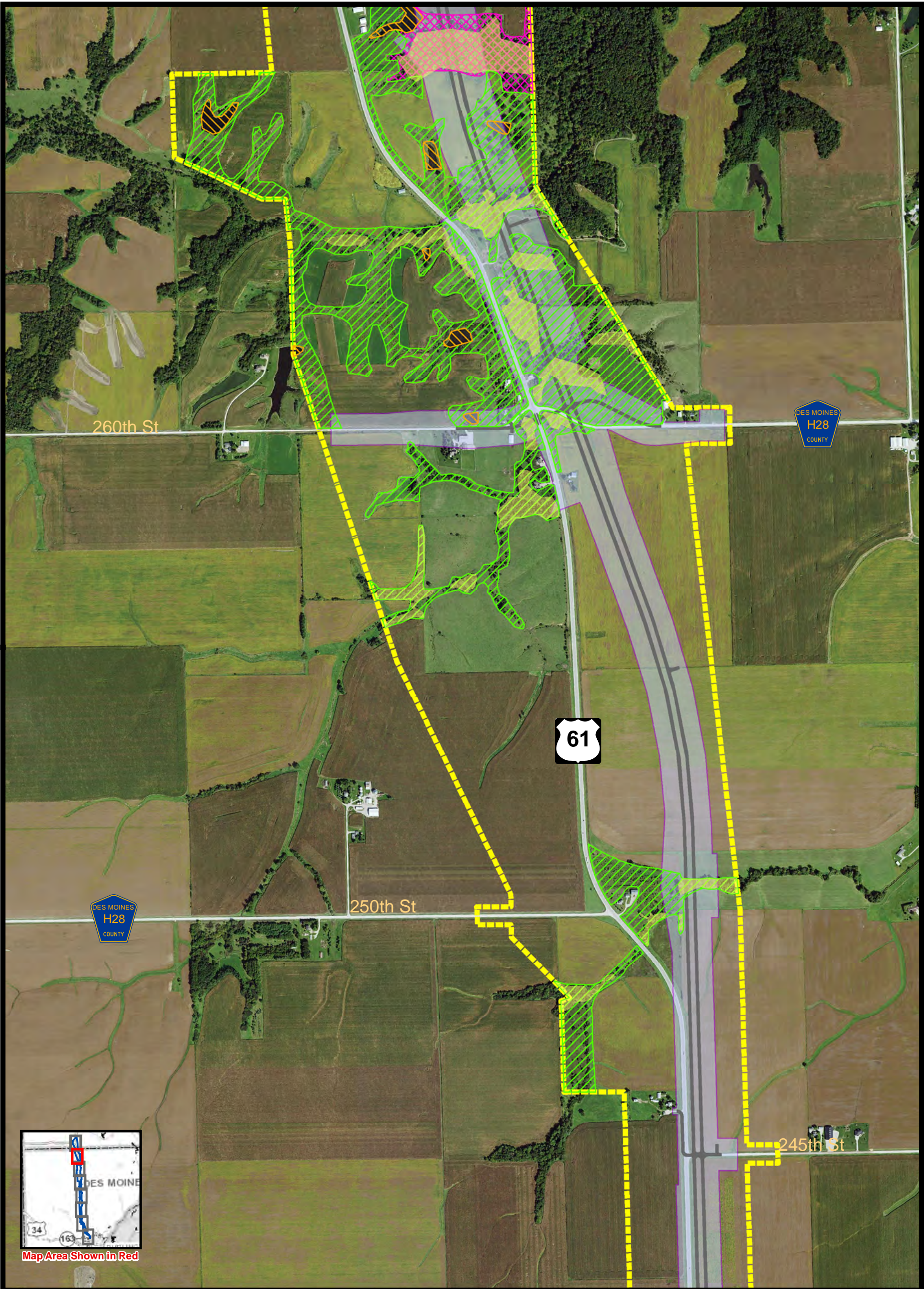
- Proposed Alignment
- Impact Area
- Study Area
- Corporate Limits
- County Border

## FIGURE 11 - THREATENED AND ENDANGERED SPECIES

Page 1 of 8  
NHSX-61-3(61)--3H-58

US 61 Improvements  
North of Burlington to North of IA 78  
Louisa County, Iowa

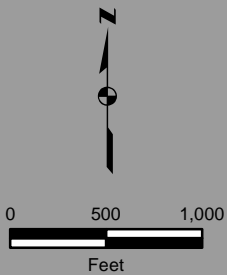




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- Woodland
- Blanding's Turtle Habitat Low Potential
- Worm Snake Habitat Low Potential
- Worm Snake Habitat Moderate Potential

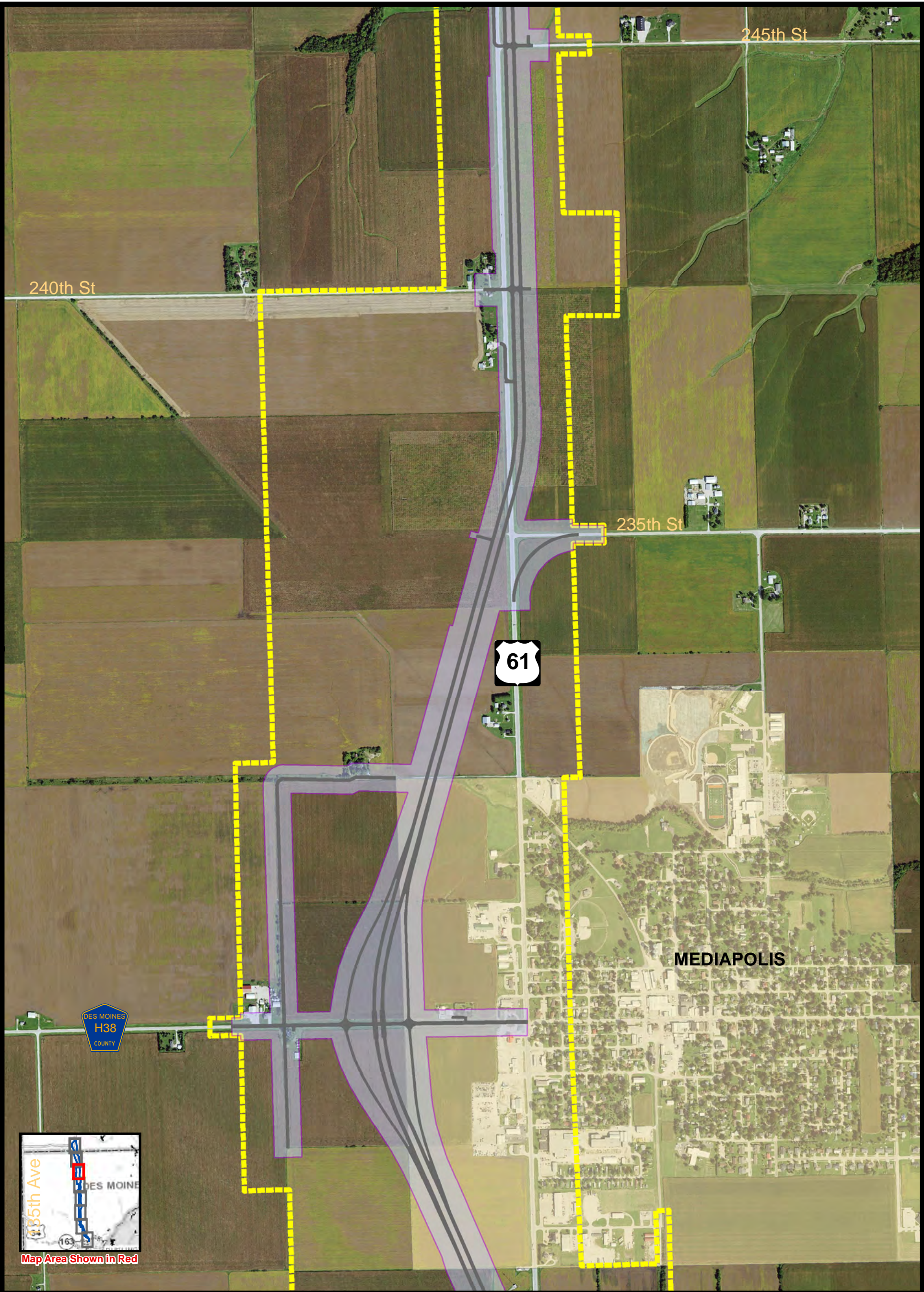
- Proposed Alignment
- Impact Area
- Study Area
- Corporate Limits
- County Border

## FIGURE 11 - THREATENED AND ENDANGERED SPECIES

Page 2 of 8  
NHSX-61-3(61)--3H-58


US 61 Improvements  
North of Burlington to North of IA 78  
Louisa County, Iowa
















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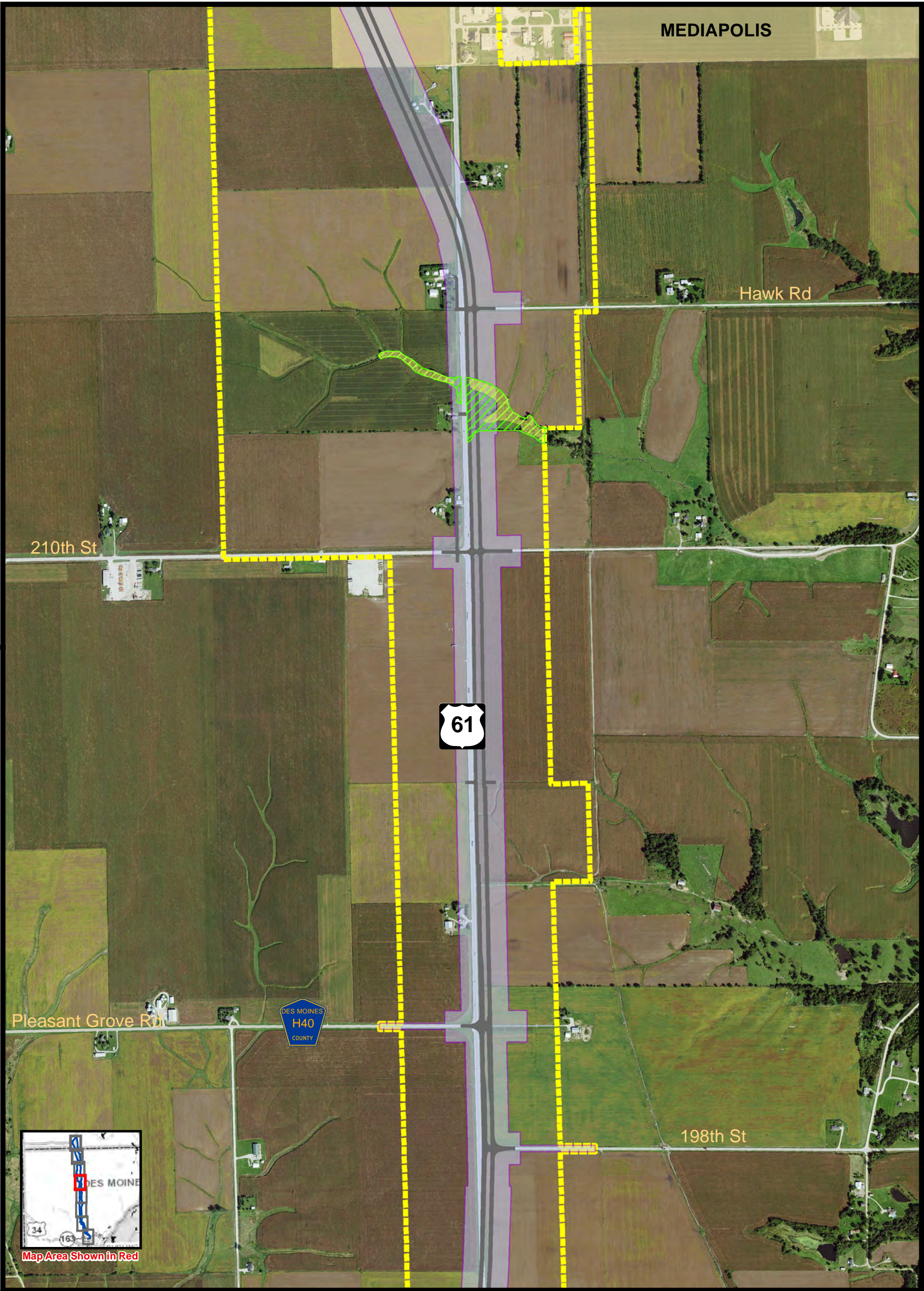
	Woodland		Proposed Alignment
	Blanding's Turtle Habitat Low Potential		Impact Area
	Worm Snake Habitat Low Potential		Study Area
	Worm Snake Habitat Moderate Potential		Corporate Limits
			County Border

**FIGURE 11 - THREATENED AND  
ENDANGERED SPECIES**

**Page 3 of 8**  
**NHSX-61-3(61)--3H-58**

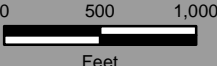

**US 61 Improvements**  
**North of Burlington to North of IA 78**  
**Louisa County, Iowa**
















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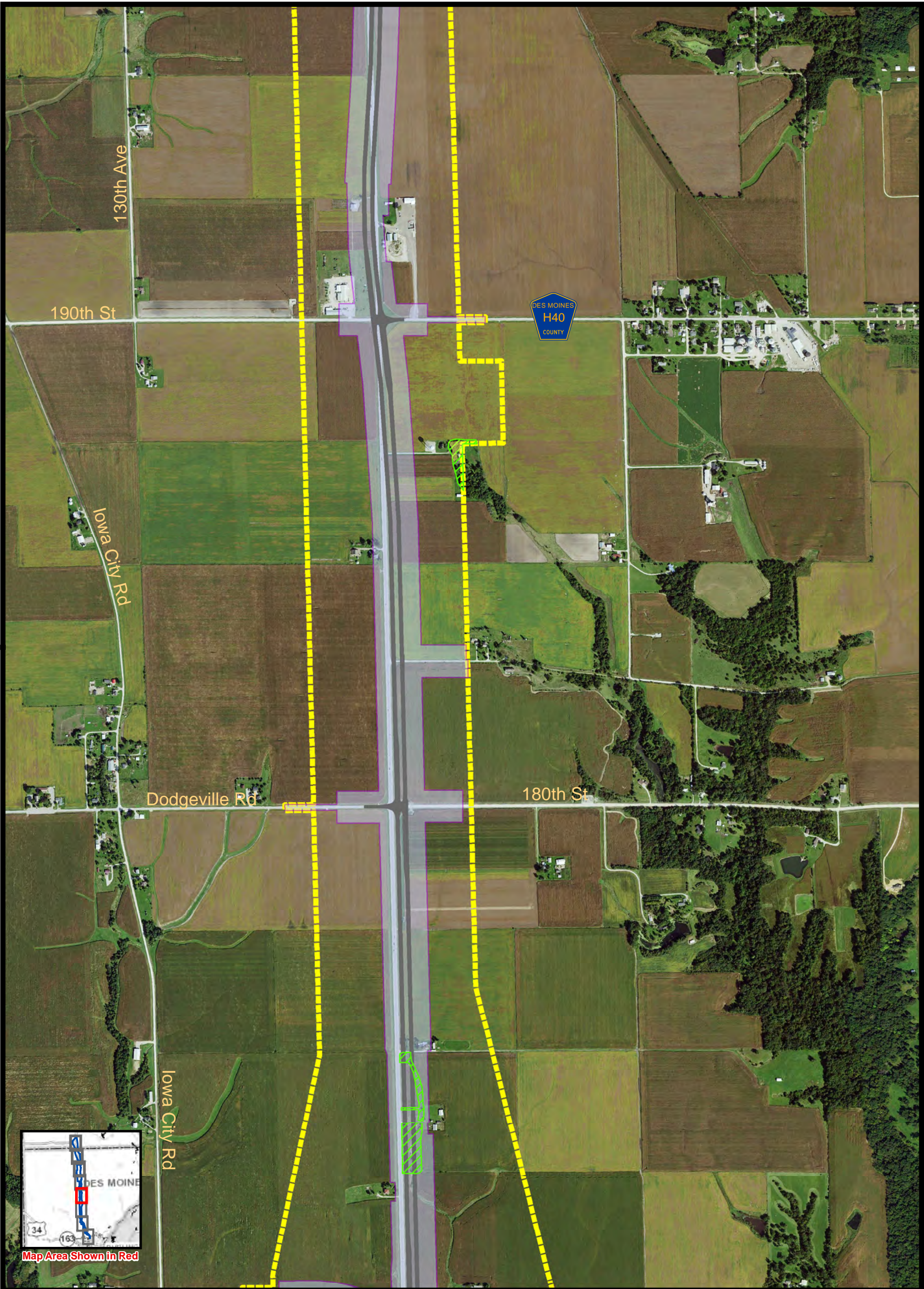
	Woodland		Proposed Alignment
	Blanding's Turtle Habitat Low Potential		Impact Area
	Worm Snake Habitat Low Potential		Study Area
	Worm Snake Habitat Moderate Potential		Corporate Limits
			County Border

**FIGURE 11 - THREATENED AND  
ENDANGERED SPECIES**

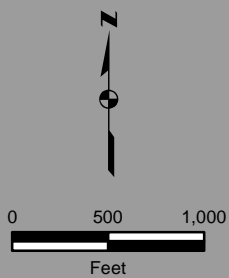
**Page 4 of 8**  
**NHSX-61-3(61)--3H-58**

**US 61 Improvements**  
**North of Burlington to North of IA 78**  
**Louisa County, Iowa**





Created April 2015  
2014 Aerial



- Woodland
- Blanding's Turtle Habitat Low Potential
- Worm Snake Habitat Low Potential
- Worm Snake Habitat Moderate Potential

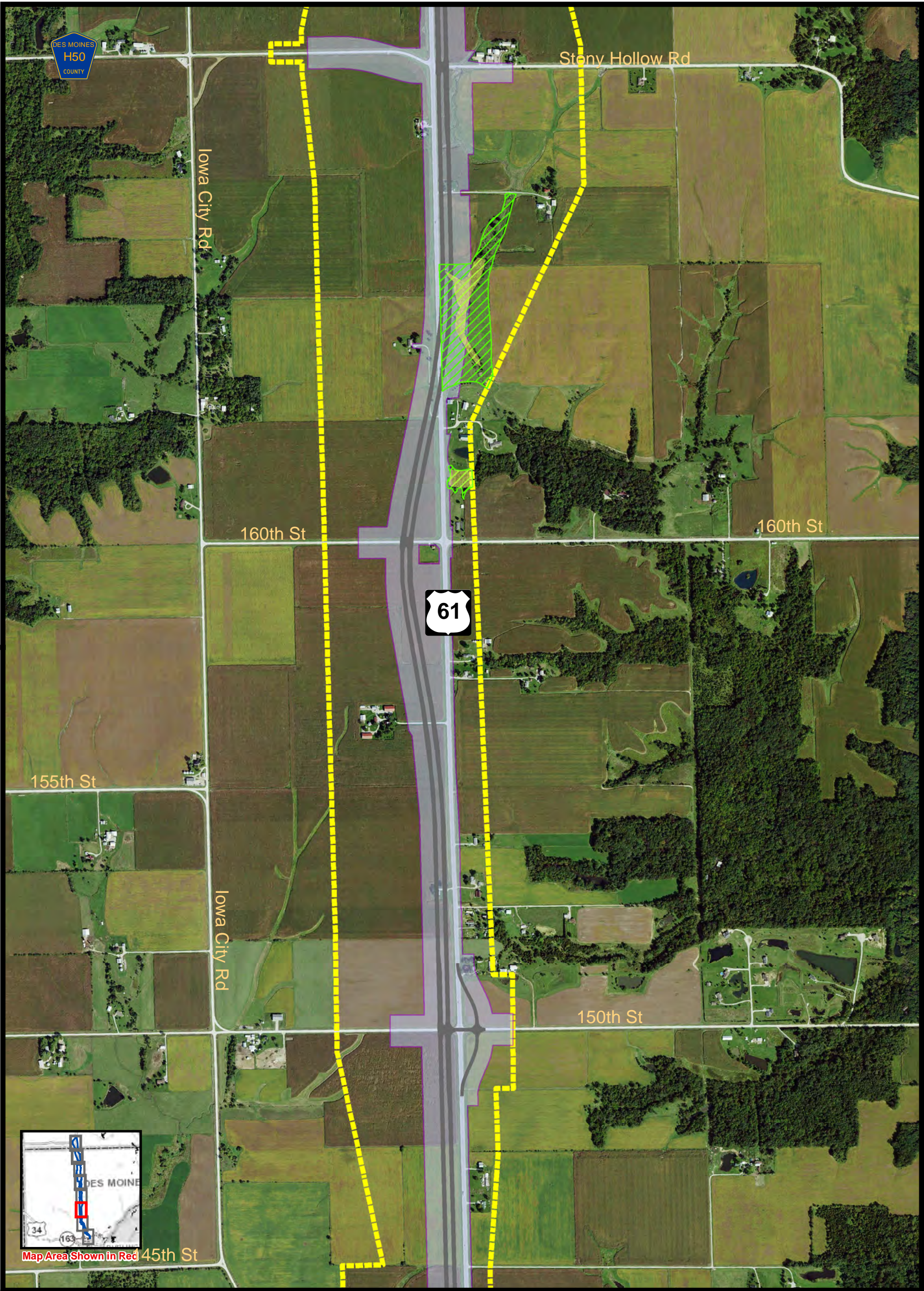
- Proposed Alignment
- Impact Area
- Study Area
- Corporate Limits
- County Border

## FIGURE 11 - THREATENED AND ENDANGERED SPECIES

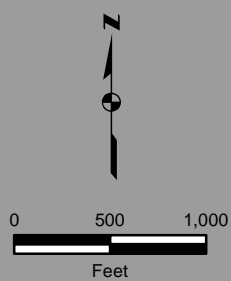
Page 5 of 8  
NHSX-61-3(61)--3H-58

US 61 Improvements  
North of Burlington to North of IA 78  
Louisa County, Iowa





Created April 2015  
2014 Aerial



- Woodland
- Blanding's Turtle Habitat Low Potential
- Worm Snake Habitat Low Potential
- Worm Snake Habitat Moderate Potential

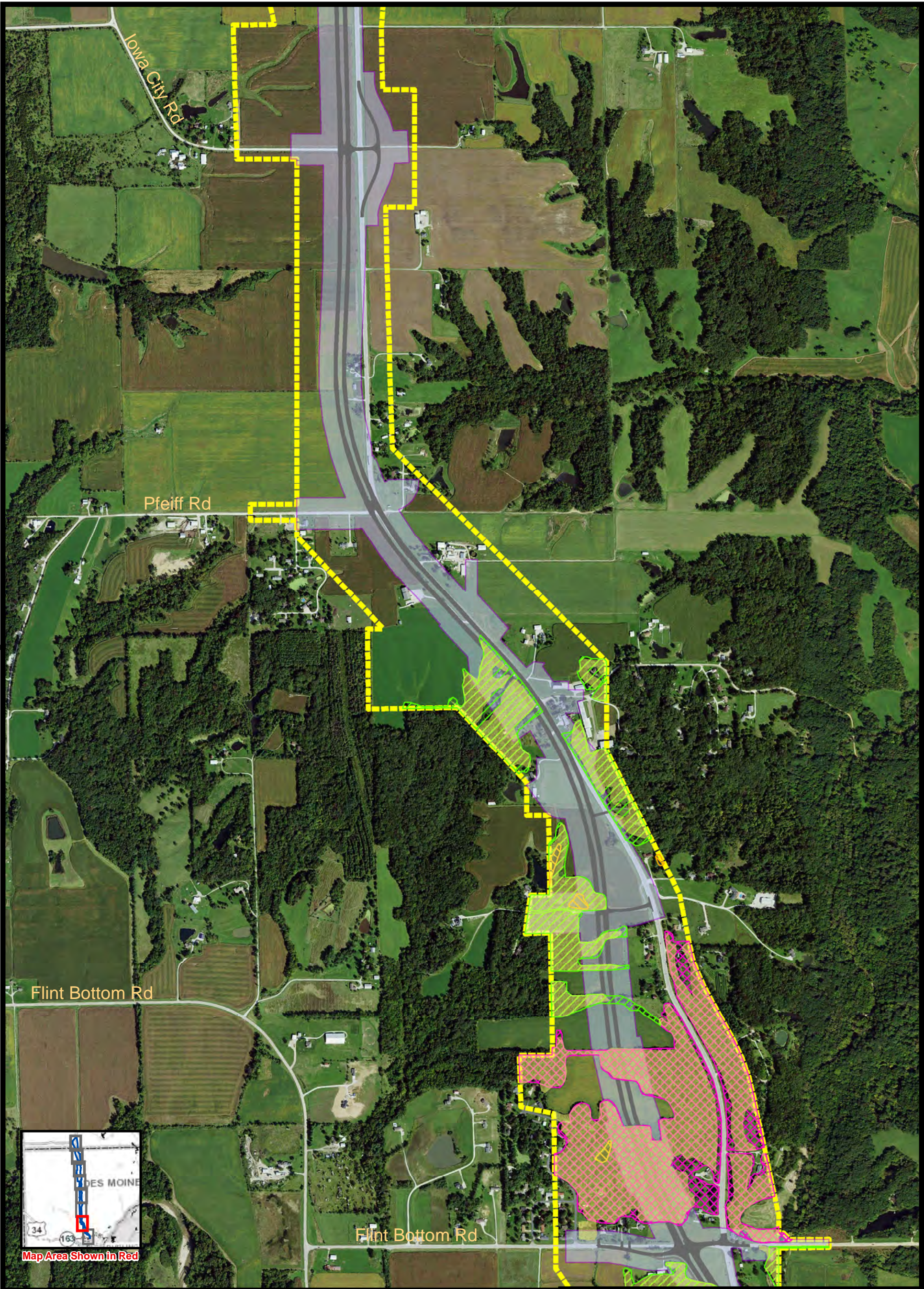
- Proposed Alignment
- Impact Area
- Study Area
- Corporate Limits
- County Border

## FIGURE 11 - THREATENED AND ENDANGERED SPECIES

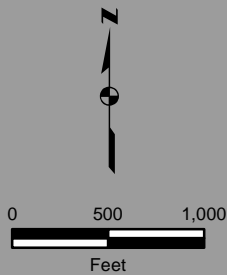
Page 6 of 8  
NHSX-61-3(61)--3H-58

US 61 Improvements  
North of Burlington to North of IA 78  
Louisa County, Iowa





Created April 2015  
2014 Aerial



- Woodland
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- Worm Snake Habitat Moderate Potential

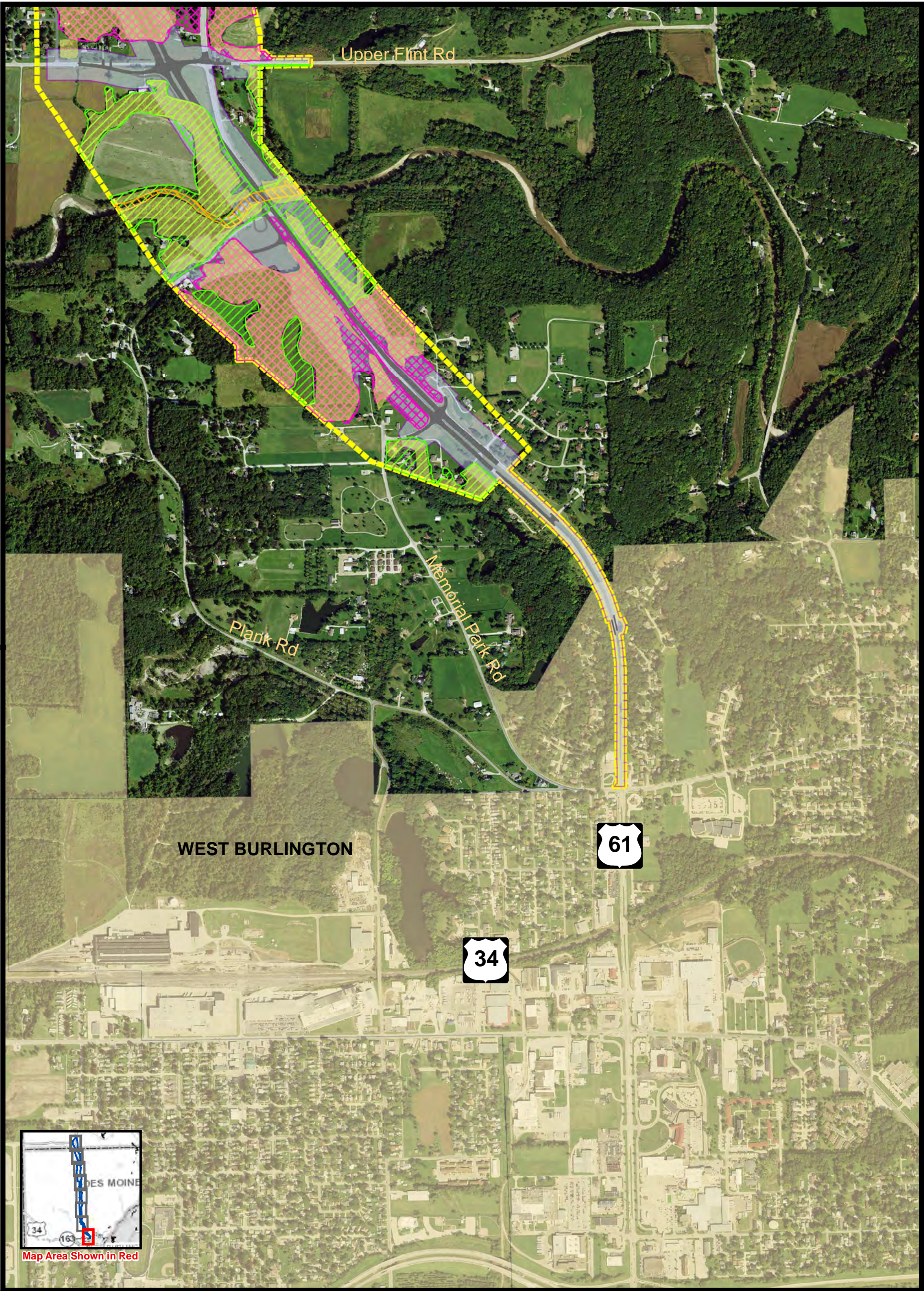
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- Impact Area
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- Corporate Limits
- County Border

## FIGURE 11 - THREATENED AND ENDANGERED SPECIES

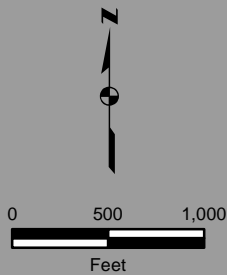
Page 7 of 8  
NHSX-61-3(61)--3H-58

US 61 Improvements  
North of Burlington to North of IA 78  
Louisa County, Iowa





Created April 2015  
2014 Aerial



- Woodland
- Blanding's Turtle Habitat Low Potential
- Worm Snake Habitat Low Potential
- Worm Snake Habitat Moderate Potential

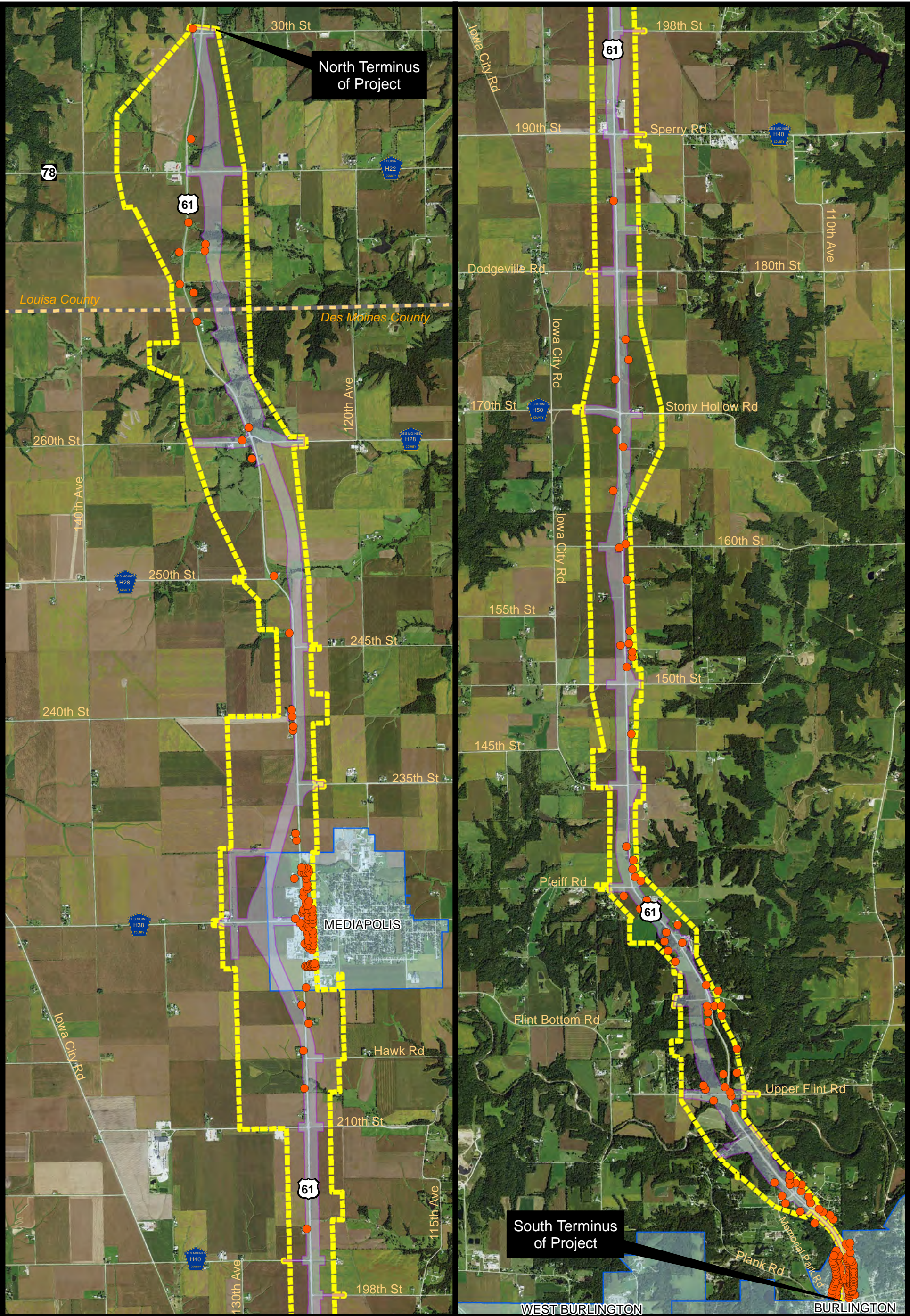
- Proposed Alignment
- Impact Area
- Study Area
- Corporate Limits
- County Border

## FIGURED 11 - THREATENED AND ENDANGERED SPECIES

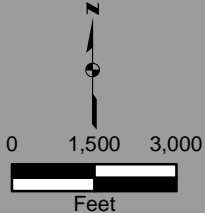
Page 8 of 8  
NHSX-61-3(61)--3H-58

US 61 Improvements  
North of Burlington to North of IA 78  
Louisa County, Iowa





Created April 2015  
2014 Aerial

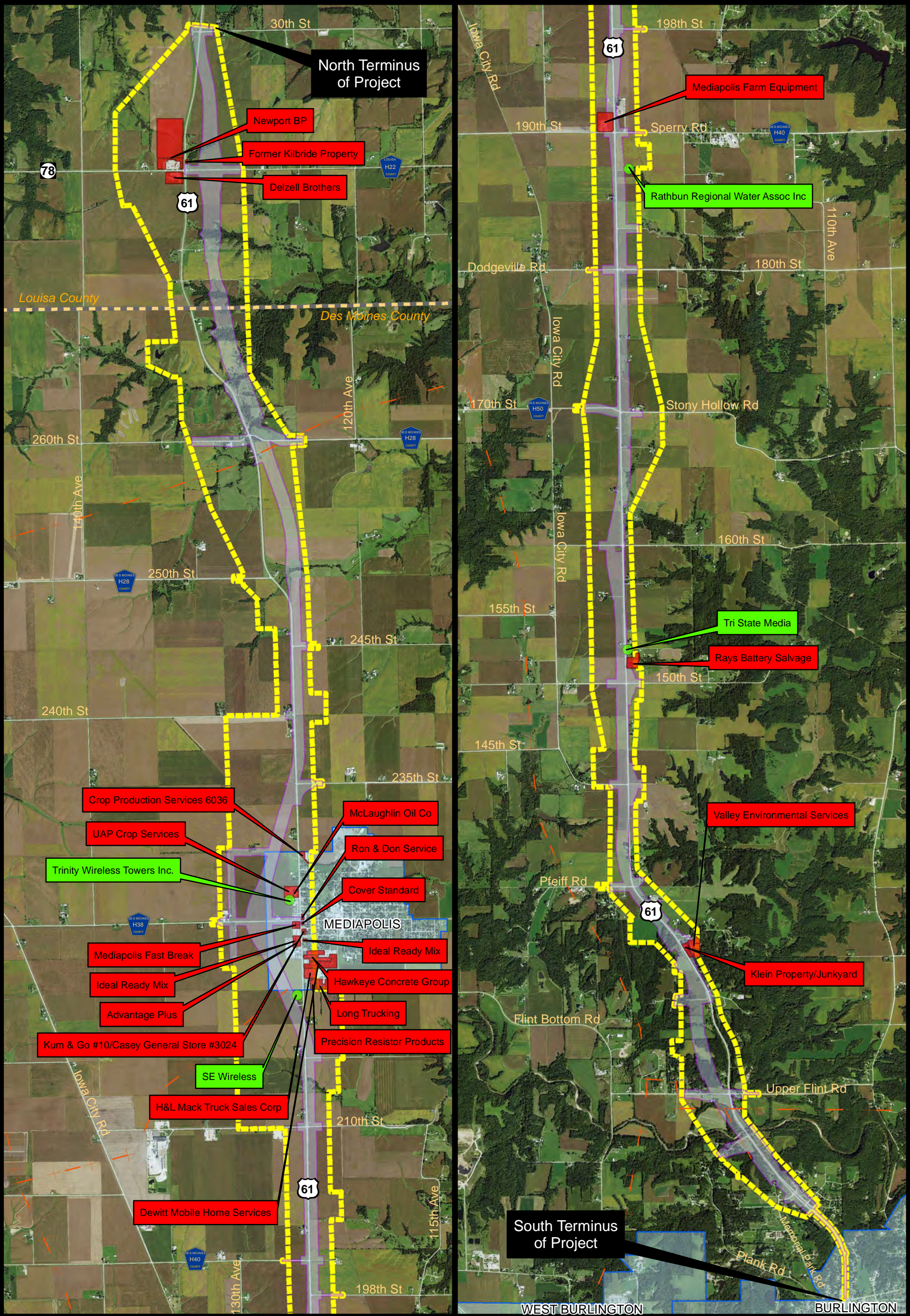



- Receptors
- Corporate Limits
- Proposed Impact Area
- County Border
- Project Study Area

**FIGURE 12 - NOISE RECEPTORS**  
**NHS-61-2(50)--19-29**  
**US 61 Improvements**

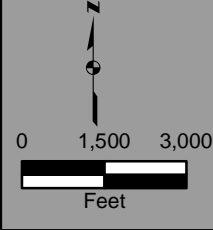
North of Burlington to North of IA 78  
Des Moines and Louisa Counties














Created April 2015  
2014 Aerial



0 1,500 3,000  
Feet

 Regulated Material Sites	 Project Study Area
 Utilities	 Corporate Limits
 Pipeline	 County Border
 Proposed Impact Area	

**FIGURE 13 - REGULATED MATERIAL SITES AND UTILITIES**  
**NHS-61-2(50)--19-29**  
**US 61 Improvements**  
North of Burlington to North of IA 78  
Des Moines and Louisa Counties



## **SECTION 6 DISPOSITION**

This Streamlined EA concludes that the proposed project is necessary for safe and efficient travel within the project corridor and that the proposed project meets the purpose and need. The project would have no significant adverse social, economic, or environmental impacts of a level that would warrant an environmental impact statement. Alternative selection will occur following completion of the public review period and public hearing.

This EA is being distributed to the agencies and organizations listed. Individuals receiving this EA are not listed for privacy reasons.

### **Federal Agencies**

Federal Aviation Administration  
Federal Emergency Management Agency  
U.S. Army Corps of Engineers – Rock Island District (Regulatory) and Omaha District (Planning)  
U.S. Department of Agriculture – Natural Resources Conservation Service  
U.S. Department of the Interior – Office of Environmental Policy and Compliance  
U.S. Environmental Protection Agency – Region 7, National Environmental Policy Act Team  
U.S. Fish & Wildlife Service – Rock Island Field Office

### **State Agencies**

Iowa Department of Agriculture and Land Stewardship  
Iowa Department of Natural Resources – State Office and Field Office #6  
Iowa Soil and Water Conservation  
State Historical Society of Iowa

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

Des Moines County Board of Supervisors  
Des Moines County Conservation Board  
Des Moines County Engineer  
Des Moines County Historical Society  
Louisa County Board of Supervisors  
Louisa County Conservation Board

Louisa County Engineer  
Louisa County Historical Society  
City of Burlington– Mayor, Public Works Department, City Clerk  
City of Mediapolis– Mayor

## **Locations Where this Document Is Available for Public Review:**

Mediapolis Public Library  
128 N. Orchard  
Mediapolis, Iowa 52637

Burlington Public Library  
210 Court Street  
Burlington, Iowa 52601

Federal Highway Administration  
105 6<sup>th</sup> Street  
Ames, IA 50010

Iowa Department of Transportation  
800 Lincoln Way  
Ames, IA 50010  
<http://www.iowadot.gov/ole/OLESite/nepadocuments.aspx>

Iowa Department of Transportation – District 5 Office  
307 W. Briggs  
Fairfield, IA 52556

The following permits may be required for the project:

- Department of Army Permit from U.S. Army Corp of Engineers, Rock Island District (Section 404 Wetland Permit)
- Section 401 Water Quality Certification from Iowa DNR (Section 401 Water Quality Permit)
- Iowa DNR National Pollutant Discharge Elimination System General Permit No. 2 for Storm Water Discharge Associated with Construction Activities (NPDES Storm Water Permit)

Unless significant impacts are identified as a result of public review or at the public hearing, a Finding of No Significant Impact (FONSI) will be prepared for this proposed action as a basis for federal-aid corridor location approval.

The Five Year Program includes US 61 from Memorial Park Road in Burlington to north of 210th St (approximately one mile south of Mediapolis). This project will be included in the 2016-2019 STIP that will be approved for the beginning of the federal fiscal year on October 1. The remaining northerly portion of the proposed project may be considered during the preparation of future transportation programs.





## SECTION 7

### COMMENTS AND COORDINATION

#### Agency and Tribal Coordination

Appropriate federal, state, regional, county, and local agencies were contacted by letter on November 2, 2011 as a part of the early coordination process. This process requested agency comments concerning this proposed project. Table 10 lists the agencies that were contacted and the response date, if applicable. Written responses to the early coordination request are provided in Appendix B.

**Table 10. Agencies Contacted During Early Agency Coordination**

<b>Agency Type</b>	<b>Agency</b>	<b>Date of Response</b>
Federal	Federal Aviation Administration	11/22/11
Federal	Federal Emergency Management Agency	
Federal	Federal Railroad Administration	
Federal	Federal Transit Administration	
Federal	National Park Service	
Federal	Natural Resource Conservation Service	
Federal	U.S. Army Corps of Engineers	11/16/11
Federal	U.S. Coast Guard	11/09/11
Federal	U.S. Department of Agriculture	
Federal	U.S. Department of Housing and Urban Development	11/22/11
Federal	U.S. Fish and Wildlife Service	
Federal	U.S. Office of Environmental Policy and Compliance	
Federal	U.S. Environmental Protection Agency	
State	Iowa Department of Natural Resources – Budget & Finance	11/09/11
State	Iowa Department of Natural Resources – Environmental Services Division	12/02/11
State	Iowa Department of Agriculture and Land Stewardship	
State	State Historical Society of Iowa	11/08/11
County	Des Moines County Board of Supervisors	
County	Louisa County Board of Supervisors	
County	Des Moines County Engineer	
County	Louisa County Engineer	
County	Des Moines County Soil and Water Conservation District	
County	Louisa County Soil and Water Conservation District	
County	Des Moines County Conservation	11/22/11
Local	City of Burlington- Mayor, Planning & Development, Public Works	
Local	City of Mediapolis- Mayor, Public Works	
Local	Greater Burlington Partnership	

The comments received from federal, state, regional, county, and local agencies are summarized as follows:

- The Iowa Tribe of Kansas and Nebraska did not have a comment but requested continued notification on this project.
- The U.S. Army Corps of Engineers indicated that because the project involves filling of wetland and/or streams, we will need a Section 404 permit application and wetland delineation.
- Department of Homeland Security (U.S. Coast Guard) determined that Flint Creek, located in the project area, is not a waterway over which the Coast Guard exercises jurisdiction for bridge administration purposes and that a Coast Guard bridge permit is not needed.
- The U.S. Department of Interior requested additional digital maps.
- The U.S. DOT - Federal Aviation Administration had no comment on environmental matters. However, they did recommend reviewing websites to determine if navigable airspace would be impacted and the formal notice and review procedures required for that.
- The U.S. Department of Housing and Urban Development has no objections to the proposed improvements.
- The Iowa Department of Natural Resources, Budget & Finance Bureau determined that no state or federal funded park projects are within the project boundary.
- The Iowa Department of Natural Resources, Environmental Services Division indicated that any proposed dredge or fill material placed in streams or wetland impacts will require a Section 404 permit. They also provided a list of listed species in Des Moines and Louisa Counties and provided general guidelines to minimize impacts to Orangethroat Darter and Indiana Bats.
- The Iowa Department of Cultural Affairs (State Historic Preservation Office) reminded us that we will need to comply with Section 106 of the National Historic Preservation Act of 1966 and its implementing regulations, 36 CFR Part 800 and with the National Environmental Policy Act.
- Des Moines County Conservation requested that new turn lanes be installed on U.S. 61 at the intersection with Pleasant Grove Road and would also like a recreational trail to be considered as part of the project from Burlington to Pleasant Grove Road.



As part of the Early Coordination process, Iowa DOT also notified the Tribes of initiation of the U.S. 61 project and solicited their feedback. The Tribes contacted are listed in Table 11. Responses received are in Appendix B.

**Table 11: Tribal Coordination and Responses**

<b>Tribe</b>	<b>Response</b>	<b>Date of Response</b>
Sac and Fox Tribe of the Mississippi in Iowa	None received.	
Sac and Fox Nation of Missouri in Kansas and Nebraska	None received.	
Iowa Tribe of Oklahoma	None received.	
Otoe-Missouria Tribe	None received.	
Iowa Tribe of Kansas and Nebraska	Letter response received; stated that they do not have a comment at this time but request continued notification on the project	11/28/11
Sac and Fox Nation of Oklahoma	None received.	
Pawnee Nation of Oklahoma	Letter response received, stated that they do not need to consult on this project	12/28/11
Peoria Tribe of Indians of Oklahoma	None received.	
Miami Nation of Oklahoma	None received.	
Ho-Chunk Nation	None received.	
Omaha Tribe of Nebraska	None received.	
Yankton Sioux Tribe	None received.	

## NEPA/404 Merge Coordination

FHWA and Iowa DOT coordinated with resource agencies using the Iowa DOT concurrence point process. The process incorporates planning, design, agency coordination, and public involvement elements, and it integrates compliance with NEPA and Section 404 of the Clean Water Act. The transportation agencies request agency concurrence regarding four points in the NEPA process: Concurrence Point 1, Purpose and Need; Concurrence Point 2, Alternatives to be Analyzed; Concurrence Point 3, Alternatives to be Carried Forward; and Concurrence Point 4, Preferred Alternative.

Concurrence Points 1 and 2 were addressed at a meeting on December 4, 2012 with the Iowa DOT, the USACE, the U.S. Environmental Protection Agency (EPA), the U.S. Fish and Wildlife Service (FWS), and the Iowa DNR. At the meeting, the agencies were provided information on the project purpose and need and alternatives to be analyzed, including figures depicting the study area, descriptions and figures of the alternatives, and information on resources in the study area and estimates of each alternative's potential impact to the resources. The USACE, FWS, Iowa DNR, and EPA, concurred during the meeting with the project's purpose and need and alternatives to be analyzed.

On November 13, 2013, a meeting was held to address Concurrence Point 3, Alternatives to be Carried Forward. The agencies were provided information on the alternatives to be carried forward and environmental impacts for each alternative via email prior to the meeting. Iowa DNR, USACE and EPA were all in attendance and concurred at the meeting; concurrence from FWS was received later on December 16, 2013.

## **Public Involvement**

Three public meetings have been held to date. The first public information meeting was held on November 4, 2010 at Mediapolis High School, located at 725 North Northfield Street, Mediapolis, Iowa. Advertisement of the meeting and the meeting information was provided in both English and Spanish. The purpose of the meeting was to discuss the initiation of environmental and field studies for the project. The meeting was held from 5:00 to 7:00 PM and was attended by 87 people. Comments received were generally in support of the project but concerns included historic properties and/or significant structures in the project area, safety, effects on farmland, and impacts to businesses in Mediapolis and right of way impacts to property.

The second public information meeting was held on September 6, 2012 and was also at Mediapolis High School. The purpose of the meeting was to discuss improvement alternatives for the U.S. 61 corridor in Des Moines County from just north of Burlington to approximately 1 mile north of Iowa 78. The meeting was held from 5:00 to 7:00 PM and was attended by 138 people. Advertisement of the meeting and the meeting information was provided in both English and Spanish. Comments received indicated that the public were concerned with impacts to historic properties along the roadway, right-of-way needs and property impacts, and access to the proposed roadway.

The third public meeting was held on September 10, 2013, also at the Mediapolis High School. The purpose of the meeting was to discuss the proposed four-lane improvement of U.S. 61 from Burlington north to 1 mile north of Iowa 78. The meeting was held from 5:00 to 7:00 p.m. and was attended by 146 people. Two different build alternatives were presented. Advertisement of the meeting and the meeting information was provided in both English and Spanish. Comments received indicated that the public were concerned with generally the same items as before-impacts to historic properties along the roadway, right-of-way needs and property impacts, access to the proposed roadway, safety, farmland impacts and timing of construction.



## **APPENDIX A**

### **STREAMLINED RESOURCE SUMMARY**



**SOCIOECONOMIC IMPACTS SECTION:**

<b>Community Cohesion</b>	
Evaluation:	Resource is in the study area but will not be impacted
Method of Evaluation:	Field Review/Field Study
Completed by and Date:	OLE Staff, 9/23/2013
<b>Environmental Justice</b>	
Evaluation:	Resource is in the study area but will not be impacted
Method of Evaluation:	Database
Completed by and Date:	OLE Staff, 4/11/2014
<b>Joint Development</b>	
Evaluation:	Resource is not in the study area
Method of Evaluation:	Other
Completed by and Date:	OLE NEPA Manager, 9/23/2013
<b>Transportation</b>	
Evaluation:	Resource is not in the study area
Method of Evaluation:	Field Review/Field Study
Completed by and Date:	OLE NEPA Manager, 9/23/2013

**CULTURAL IMPACTS SECTION:**

<b>Cemeteries</b>	
Evaluation:	Resource is in the study area but will not be impacted
Method of Evaluation:	Field Review/Field Study
Completed by and Date:	OLE NEPA Manager, 9/23/2013

**NATURAL ENVIRONMENT IMPACTS SECTION:**

<b>Wild and Scenic Rivers</b>	
Evaluation:	Resource is not in the study area
Method of Evaluation:	Field Review/Field Study
Completed by and Date:	OLE NEPA Manager, 9/23/2013



**PHYSICAL IMPACTS SECTION:**

<b>Air Quality</b>	
Evaluation:	Resource is not in the study area
Method of Evaluation:	Database
Completed by and Date:	OLE NEPA Manager, 9/23/2013
<b>MSATs</b>	
Evaluation:	<p>This project has been determined to generate minimal air quality impacts for CAAA criteria pollutants and has not been linked with any special MSAT concerns. As such, this project will not result in changes in traffic volumes, vehicle mix, basic project location, or any other factor that would cause an increase in MSAT impacts of the project from that of the no-build alternative.</p> <p>Moreover, EPA regulations for vehicle engines and fuels will cause overall MSAT emissions to decline significantly over the next several decades. Based on regulations now in effect, an analysis of national trends with EPA's MOBILE6.2 model forecasts a combined reduction of 72 percent in the total annual emission rate for the priority MSAT from 1999 to 2050 while vehicle-miles of travel are projected to increase by 145 percent. This will both reduce the background level of MSAT as well as the possibility of even minor MSAT emissions from this project.</p>
Method of Evaluation:	FHWA Interim Guidance Update on Mobile Source Air Toxic Analysis in NEPA Documents, September 30, 2009
Completed by and Date:	OLE NEPA Manager, 4/30/2015
<b>Energy</b>	
Evaluation:	Resource is not in the study area
Method of Evaluation:	Field Review/Field Study
Completed by and Date:	OLE NEPA Manager, 4/30/2015



## **APPENDIX B**

### **AGENCY AND TRIBAL COORDINATION**





U.S. Department  
Of Transportation

**Federal Aviation  
Administration**

Central Region  
Iowa, Kansas  
Missouri, Nebraska

901 Locust  
Kansas City, Missouri 64106-2325

November 22, 2011

Mr. Randy Hyler  
Iowa Department of Transportation  
800 Lincoln Way  
Ames, Iowa 50010

Re: US 61 from Memorial Park Rd. in Burlington North to 1 Mile North of IA 78,  
Des Moines and Louisa counties – Environmental Assessment  
NHS-061-2(50)-19-29

Dear Mr. Hyler:

The Federal Aviation Administration (FAA) reviews other federal agency environmental documents from the perspective of the FAA's area of responsibility; that is, whether the proposal will have negative effects on aviation. We generally do not provide comments from an environmental standpoint. Therefore, we have reviewed the material furnished with your letter dated 11/2/11 and have no comments regarding environmental matters.

Airspace Considerations

The project may require formal notice and review for airspace review under Federal Aviation Regulation (FAR) Part 77, Objects Affecting Navigable Airspace. To determine if you need to file with FAA, go to <http://oeaaa.faa.gov> and click on the "Notice Criteria Tool" found at the left-hand side of the page.

If you determine that filing with FAA is required, I recommend a 120-day notification to accommodate the review process and issue our determination letter. Proposals may be filed at <http://oeaaa.faa.gov>.

More information on this process may be found at:  
<http://www.faa.gov/airports/central/engineering/part77/>

If you have questions, please contact me at [scott.tener@faa.gov](mailto:scott.tener@faa.gov) or 816-329-2639.

Sincerely,

Scott Tener, P.E.  
Environmental Specialist

**NOTE: This letter was e-mailed to [randy.hyler@dot.iowa.gov](mailto:randy.hyler@dot.iowa.gov). No hard copy will follow.**



**From:** [Miller, William R](#)  
**To:** [Hyler, Randy \[DOT\]](#)  
**Subject:** US 61 Environmental Assessment  
**Date:** Tuesday, November 22, 2011 2:39:06 PM

---

ATTN: Randy Hyler

Upon review of the materials provided by your office regarding the US-61 Development Project, this HUD / PIH office has no objections to the proposed improvements.

William R. Miller, HUD Facilities Management Specialist





# Iowa Department of Transportation

## TRIBAL NOTIFICATION

Form 536002  
08-05

Date November 15, 2011 IA DOT contact Libby Wielenga  
 IADOT project # NHS-061-2(50)--19-29 Phone # IA DOT - 515-239-1035 FHWA - 515-233-7300  
 Location Des Moines & Louisa Counties E-mail Libby.Wielenga@dot.iowa.gov  
 Description Early Coordination: US 61 from Memorial Park Rd. in Burlington North to 1 Mile North of IA 78

### Type of Project (see map)

VERY SMALL - Disturb less than 12-inch depth (*plow zone*)  
 SMALL - Grading on existing road, shouldering, ditching, etc.  
 SMALL - Bridge or culvert replacement

X LARGE - Improve existing road from 2 lanes to 4 lanes  
 LARGE - New alignment  
 OTHER - Borrow Area

### Type of Coordination/Consultation Points

X 1 - Early project notification (*project map and description*)  
 2 - Notification of survey findings (*Phase I*)  
 2a - Notification of site evaluation (*Phase II*)

3 - Consultation regarding site treatment  
 4 - Data Recovery Report  
 5 - Other

### Type of Findings

No American Indian site found  
 --Section 106 Consultation Process ends\*  
 American Indian sites found but not eligible for National Register listing -- Section 106 Consultation Process ends\*  
 Avoided American Indian sites eligible for National Register listing (*see map and list of sites*)  
 --Section 106 Consultation Process may or may not end

Potentially significant American Indian sites found (*see map and list of sites*)  
 American Indian sites eligible for National Register listing cannot be avoided (*see map*)  
 Burial site found

\* In the event of a late discovery, consultation will be reopened

\_\_\_\_\_ # of non-significant prehistoric sites  
 \_\_\_\_\_ # of potentially significant prehistoric sites  
 \_\_\_\_\_ # of National Register-eligible prehistoric sites

### Affected National Register Properties

Investigating avoidance or minimizing harm options  
 Avoided

Protected  
 Data Recovery/MOA

\*\*\*\*\*Please Respond\*\*\*\*\*

Who should we contact for site/project-related discussions?

Name \_\_\_\_\_ Street Address \_\_\_\_\_ City, Zip Code \_\_\_\_\_  
 Phone \_\_\_\_\_ E-mail \_\_\_\_\_

Do you know of any sensitive areas within or near the project the FHWA/DOT should avoid (*please describe*)?

- |  |   |
|--|---|
| <input type="checkbox"/> Thank you for the information; however, we do not need to consult on this particular project.         | <input type="checkbox"/> Thank you for the information. We are satisfied with the planned site treatment. |
| <input checked="" type="checkbox"/> We do not have a comment at this time, but request continued notification on this project. | <input type="checkbox"/> We have concerns and wish to consult.  |
| <input type="checkbox"/> Please send a copy of the archaeology report.   | <input type="checkbox"/> We wish to participate in the Memorandum of Agreement for this project.          |

### Comments

ALAN KELLE  
Name

IOWA TRIBE OF KS & NE  
Tribe name

11-28-11  
Date

(Comments continued on back)





# STATE OF IOWA

TERRY E. BRANSTAD, GOVERNOR  
KIM REYNOLDS, LT. GOVERNOR

DEPARTMENT OF NATURAL RESOURCES  
ROGER L. LANDE, DIRECTOR

December 2, 2011

Mr. Randy Hyler  
Iowa Department of Transportation  
800 Lincoln Way  
Ames, IA 50010

RE: US 61 from Memorial Park Rd. (in Burlington) to 1 mile north of IA 78 – Environmental Assessment  
Des Moines and Louisa Counties NHS-061-2(50)—19-29 PIN: 97-29-061-010  
IDNR Sovereign Lands Tracking Number 6775  
Sections 26, 27, 34, 35, Township 73N, Range 3W  
Section 2, 3, 11, 14, 23, 26, 35, Township 72N, Range 3W  
Section 2, 11, 14, 23, 26, 35, Township 71N, Range 3W  
Section 2, 11, 13, 14, 24, Township 70N, Range 3W

Dear Mr. Hyler:

This letter is in response to the November 2, 2011 letter concerning the above referenced project. Thank you for inviting our comments on the above referenced project.

As you are aware, waters of the United States (includes wetlands) should not be disturbed if a less environmentally damaging alternative exists. Unavoidable adverse impacts should be minimized to the extent practicable. Any remaining adverse impacts should be adequately compensated for through restoration, enhancement, creation and/or preservation activities. We would ask that Best Management Practices be used to control erosion and protect water quality near the project.

Any proposed placement of dredged or fill material into waters of the United States (including jurisdictional wetlands) requires Department of the Army authorization. When detailed plans are available, please complete and submit the joint application form to the Rock Island District Corps of Engineers (1 copy) and Iowa Department of Natural Resources (2 copies) for processing.

Construction must avoid in-stream work during the fish spawning season of March 15 through June 30. Culverts placed in streams must be installed to maintain low flow conditions and do not block fish passage.

DNR has records of several listed species in Des Moines and Louisa Counties. For the Orangethroat Darter and Indiana bat, you will need to check for suitable habitat and may need to conduct surveys depending how creeks are bridged and how much timber is removed. Questions regarding these surveys should be directed to Daryl Howell at 515-281-8524.

Listed plants in Des Moines County:

Dwarf Dandelion (*Krigia virginica*, Endangered), sandy soil  
French-grass (*Orbexilum onobrychis*, Endangered), forested bluffs  
Green Arrow Arum (*Peltandra virginica*, Endangered), floodplain forest  
Blue Ash (*Fraxinus quadrangulata*, Threatened), forested bluffs



Downy Woodmint (*Blephilia ciliata*, Threatened), forest  
Virginia Snakeroot (*Aristolochia serpentaria*, Threatened), forest  
Winged Monkey Flower (*Mimulus alatus*, Threatened), floodplain forest  
Oval Ladies'-tresses (*Spiranthes ovalis*, Threatened), forest  
Slender Ladies'-tresses (*Spiranthes lacera*, Threatened), prairie remnants  
Bent Milk-vetch (*Astragalus distortus*, Special Concern), sandy soil  
Hill's Thistle (*Cirsium hillii*, Special Concern), prairie remnants  
Hortulan Plum (*Prunus hortulana*, Special Concern)  
Paw Paw (*Asimina triloba*, Special Concern), forest  
Rose Turtlehead (*Chelone obliqua*, Special Concern), floodplain forest  
Rough Buttonweed (*Diodia teres*, Special Concern), sandy soil  
Sessile-leaf Tick-trefoil (*Desmodium sessilifolium*, Special Concern), forest edges  
Small Morning Glory (*Ipomoea lacunosa*, Special Concern), sandy soil  
Softleaf Arrow-wood (*Viburnum molle*, Special Concern), forest  
Spring Avens (*Geum vernum*, Special Concern)  
Stiff Yellow Flax (*Linum medium*, Special Concern), sandy soil  
Sumpweed (*Iva annua*, Special Concern), sandy soil  
Toothcup (*Rotala ramosior*, Special Concern), sandy soil  
Veined Skullcap (*Scutellaria nervosa*, Special Concern), forest  
Broom Sedge (*Andropogon virginicus*, Special Concern), old fields  
False Hellebore (*Veratrum woodii*, Special Concern), forest  
Green Fringed Orchid (*Platanthera lacera*, Special Concern), forest openings  
Ovate Spikerush (*Eleocharis ovata*, Special Concern), wetlands  
Shallow Sedge (*Carex lurida*, Special Concern), wetlands  
Slender Crabgrass (*Digitaria filiformis*, Special Concern), sandy soil  
Southern Adder's-tongue (*Ophioglossum vulgatum*, Special Concern), forest

We recommend you perform a survey of project areas that would impact forests, sandy soils, wetlands, or prairie remnants. Questions regarding these surveys should be directed to John Pearson at 515-281-3891.

Due to the potential for impact to the endangered Indiana bat (*Myotis sodalis*), if trees must be cleared for this project, you should contact the U.S. Fish and Wildlife Service at 309-757-5800 for further assistance.

If you have any questions, please call me at (515) 281-6615.

Sincerely,



Christine Schwake  
Environmental Specialist  
Section 401 Water Quality Certification





**Main Office**  
13700 Washington Road  
West Burlington, IA 52655  
319-753-8260  
dmccnbd@co.des-moines.ia.us

**Starr's Cave Nature Center**  
11627 Starr's Cave Road  
Burlington, IA 52601  
319-753-5808  
starcave@co.des-moines.ia.us  
www.dmcconservation.com

**RECEIVED**

**NOV 28 2011**

22 November 2011

**Office of Location & Environment**

Randy Hyler  
NEPA Document Manager  
Office of Location & Environment  
IDOT  
800 Lincoln Way  
Ames, IA 50010

Mr. Hyler,

The following are a few points I would like to be considered for the US 61 project from Memorial Park Road North to 1 Mile North of IA 78. Des Moines County Conservation has an 800 acre park west of Highway 61 called Big Hollow Recreation Area. The main road to take visitors to this park is Pleasant Grove Road which is in the proposed area of the project. I would like a separate turn lane onto Pleasant Grove Road be considered from both north and south directions off of Highway 61. On a sunny summer day there are at least 200 visitors who come to the park to enjoy the swimming beach. I feel having a separate turn lane will help ease the congestion of traffic turning on to Pleasant grove Road.

Also I would like the construction of a Recreational Trail to be considered from Burlington to Pleasant Grove Road along the new highway. There are many road bike enthusiasts that enjoy riding to our park and this would give them a safe lane to do it in.

Please feel free to call me if you have any questions about my comments 319.753.8251.

Sincerely,

Kim Perlstein

Des Moines County Conservation Director



**From:** [Schwake, Christine \[DNR\]](#)  
**To:** [Hyler, Randy \[DOT\]](#)  
**Subject:** NHS-061-2(50)--19-29 comments  
**Date:** Friday, December 02, 2011 10:08:17 AM  
**Attachments:** [us 61.pdf](#)

---

Hi Randy –

Here are my comments. Kelly Poole is working on her letter. A hard copy of the letter will be sent by mail.

Have a great weekend! Chris





Iowa Department of Transportation  
TRIBAL NOTIFICATION

Form 536002  
08-05

Date November 15, 2011 IA DOT contact Libby Wielenga  
IADOT project # NHS-061-2(50)--19-29 Phone # IA DOT - 515-239-1035 FHWA - 515-233-7300  
Location Des Moines & Louisa Counties E-mail Libby.Wielenga@dot.iowa.gov  
Description Early Coordination: US 61 from Memorial Park Rd. in Burlington North to 1 Mile North of IA 78

**Type of Project (see map)**

VERY SMALL - Disturb less than 12-inch depth (*plow zone*)  
SMALL - Grading on existing road, shouldering, ditching, etc.  
SMALL - Bridge or culvert replacement

X LARGE - Improve existing road from 2 lanes to 4 lanes  
LARGE - New alignment  
OTHER - Borrow Area

**Type of Coordination/Consultation Points**

X 1 - Early project notification (*project map and description*)  
2 - Notification of survey findings (*Phase I*)  
2a - Notification of site evaluation (*Phase II*)

3 - Consultation regarding site treatment  
4 - Data Recovery Report  
5 - Other

**Type of Findings**

No American Indian site found  
--Section 106 Consultation Process ends\*  
  
American Indian sites found but not eligible for National Register listing -- Section 106 Consultation Process ends\*  
  
Avoided American Indian sites eligible for National Register listing (*see map and list of sites*)  
--Section 106 Consultation Process may or may not end

Potentially significant American Indian sites found (*see map and list of sites*)  
  
American Indian sites eligible for National Register listing cannot be avoided (*see map*)  
  
Burial site found

\* In the event of a late discovery, consultation will be reopened

\_\_\_\_\_ # of non-significant prehistoric sites  
\_\_\_\_\_ # of potentially significant prehistoric sites  
\_\_\_\_\_ # of National Register-eligible prehistoric sites

**Affected National Register Properties**

Investigating avoidance or minimizing harm options  
Avoided

Protected  
Data Recovery/MOA

\*\*\*\*\*Please Respond\*\*\*\*\*

Who should we contact for site/project-related discussions?

Name \_\_\_\_\_ Street Address \_\_\_\_\_ City, Zip Code \_\_\_\_\_  
Phone \_\_\_\_\_ E-mail \_\_\_\_\_

Do you know of any sensitive areas within or near the project the FHWA/DOT should avoid (*please describe*)?

- ☒ Thank you for the information; however, we do not need to consult on this particular project. ☐ Thank you for the information. We are satisfied with the planned site treatment.
- ☐ We do not have a comment at this time, but request continued notification on this project. ☐ We have concerns and wish to consult.
- ☐ Please send a copy of the archaeology report. ☐ We wish to participate in the Memorandum of Agreement for this project.

Comments \_\_\_\_\_

GEORGE STRACK, TRAP  
Name

MIAMI TRIBE OF OKLAHOMA  
Tribe name

12/7/11  
Date

(Comments continued on back)



Additional Comments \_\_\_\_\_

(TAPE--DO NOT STOP)

(TAPE-Do NOT Staple)



DEC 15 2011

**BUSINESS REPLY MAIL**

FIRST-CLASS MAIL PERMIT NO. 651 AMES, IA.

POSTAGE WILL BE PAID BY ADDRESSEE

OFFICE OF LOCATION AND ENVIRONMENT  
CULTURAL RESOURCES SECTION  
IOWA DEPARTMENT OF TRANSPORTATION  
800 LINCOLN WAY  
AMES IA 50010-9902



*[Faint handwritten notes at the bottom of the page]*



Your request for comment by the State Historic Preservation Officer has been received.

Date Received: **4/20/2012**

End of Review Period: **5/20/2012**

Agency: **FHWA**

SHPO R&C #: **971129050**

**NHS-061-2[50]--19-29 - PROPOSED U.S. 61 RECONSTRUCTION PROJECT - EVALUATION OF 4 SITES - PH II ARCHAEOLOGICAL INVEST ALONG U.S. 61 CORRIDOR, PRIMARY ROADS PROJECT NHS-61-2(50)--19-29 , DES MOINES & LOUISA CO. [UIA PCR VOL 34, NO. 22]**

In accord with federal regulations, our office will respond **ONLY** when:

- The SHPO has received incomplete information or inadequate documentation under 36CFR800 11(a), (d), and (e) **OR**
- The SHPO objects to your definition of the Area of Potential Effect (APE) for the undertaking **OR**
- The SHPO objects to your finding of whether a property is or is not eligible for listing on the National Register of Historic Places **OR**
- The SHPO objects to your finding of the project's effect on a historic property **OR**
- The project is proposed to have a "No Adverse Effect," with or without conditions, and where the SHPO disagrees with the finding **OR**
- The project is determined to have an "Adverse Effect" on a historic property and the federal agency is consulting with SHPO on how to resolve such "Adverse Effects"

Otherwise, at the end of the 30-day period, you may either proceed to the next step in the process based on the finding or determination, or consult with the Advisory Council on Historic Preservation in lieu of the SHPO. In order to determine the next step in the process, please review the appropriate section of the federal regulations [36CFR800.4(d)(1) or the Programmatic Agreement under which your project is being reviewed.

Be advised that the successful conclusion of consultation with the SHPO does not fulfill the agency's responsibility to consult with other parties who may have an interest in properties that may be affected by this project. Nor does it override the sovereign status of federally recognized American Indian Tribes in the Section 106 consultation process.

We have made these comments and recommendations according to our responsibility defined by Federal law pertaining to the Section 106 process. The responsible federal agency does not have to follow our comments and recommendations to comply with the Section 106 process. It also remains the responsible federal agency's decision on how you will proceed from this point for this project.

Should you have any questions please contact me at the number or email below, **referencing the R&C # above.**

SHPO Review & Compliance Coordinator  
(515) 281-8743





# STATE OF IOWA

TERRY E. BRANSTAD, GOVERNOR  
KIM REYNOLDS, LT. GOVERNOR

DEPARTMENT OF NATURAL RESOURCES  
**RECEIVED**  
ROGER L. LANDE, DIRECTOR

December 12, 2011

DEC 15 2011

Iowa Department of Natural Resources  
Attn: Randy Hyler  
800 Lincoln Way  
Ames, IA 50010

Office of Location & Environment

RE: Environmental Review for Natural Resources  
US 61 from Memorial Park Rd in Burlington to 1 Mile North of IA 78  
NHS-061-2(50)—19-29 PIN: 97-29-016-010  
Des Moines and Louisa Counties  
Section 26,27, 34,35, Township 72N, Range 3W  
Section 2, 3, 11, 14, 23, 26, 35, Township 72N, Range 3W  
Section 2, 11, 14, 23, 26, 35, Township 71N, Range 3W  
Section 2, 11, 13, 14, 24, Township 70N, Range 3W

Dear Mr. Hyler:

Thank you for inviting Department comment on the impact of this project. The Department has numerous records of state-protected plants (Table 1) in the project area and therefore recommends survey of project areas that would impact forests, sandy soils, wetlands, or prairie remnants. Department records and data are not the result of thorough field surveys. If listed species or rare communities are found during the planning or construction phases, additional studies and/or mitigation may be required.

Table 1. State-protected plant species and associated habitat types known to occur in Des Moines and Louisa counties.

Dwarf Dandelion ( <i>Krigia virginica</i> , Endangered), sandy soil
French-grass ( <i>Orbexilum onobrychis</i> , Endangered), forested bluffs
Green Arrow Arum ( <i>Peltandra virginica</i> , Endangered), floodplain forest
Blue Ash ( <i>Fraxinus quadrangulata</i> , Threatened), forested bluffs
Downy Woodmint ( <i>Blephilia ciliata</i> , Threatened), forest
Virginia Snakeroot ( <i>Aristolochia serpentaria</i> , Threatened), forest
Winged Monkey Flower ( <i>Mimulus alatus</i> , Threatened), floodplain forest
Oval Ladies'-tresses ( <i>Spiranthes ovalis</i> , Threatened), forest
Slender Ladies'-tresses ( <i>Spiranthes lacera</i> , Threatened), prairie remnants
Bent Milk-vetch ( <i>Astragalus distortus</i> , Special Concern), sandy soil
Hill's Thistle ( <i>Cirsium hillii</i> , Special Concern), prairie remnants
Hortulan Plum ( <i>Prunus hortulana</i> , Special Concern), old fields
Paw Paw ( <i>Asimina triloba</i> , Special Concern), forest
Rose Turtlehead ( <i>Chelone obliqua</i> , Special Concern), floodplain forest
Rough Buttonweed ( <i>Diodia teres</i> , Special Concern), sandy soil



Sessile-leaf Tick-trefoil ( <i>Desmodium sessilifolium</i> , Special Concern), forest edges
Small Morning Glory ( <i>Ipomoea lacunosa</i> , Special Concern), sandy soil
Softleaf Arrow-wood ( <i>Viburnum molle</i> , Special Concern), forest
Spring Avens ( <i>Geum vernum</i> , Special Concern), forest
Stiff Yellow Flax ( <i>Linum medium</i> , Special Concern), sandy soil
Sumpweed ( <i>Iva annua</i> , Special Concern), sandy soil
Toothcup ( <i>Rotala ramosior</i> , Special Concern), sandy soil
Veined Skullcap ( <i>Scutellaria nervosa</i> , Special Concern), forest
Broom Sedge ( <i>Andropogon virginicus</i> , Special Concern), old fields
False Hellebore ( <i>Veratrum woodii</i> , Special Concern), forest
Green Fringed Orchid ( <i>Platanthera lacera</i> , Special Concern), forest openings
Ovate Spikerush ( <i>Eleocharis ovata</i> , Special Concern), wetlands
Shallow Sedge ( <i>Carex lurida</i> , Special Concern), wetlands
Slender Crabgrass ( <i>Digitaria filiformis</i> , Special Concern), sandy soil
Southern Adder's-tongue ( <i>Ophioglossum vulgatum</i> , Special Concern), forest

The Indiana bat (*Myotis sodalis*), a state- and federally-endangered species, is known to inhabit this area of the state and may occur in the area of this project. Indiana bats are found in areas of mature upland forest and along wooded corridors of small streams. The bats forage for insects beneath the canopy. Female Indiana bats form maternity colonies under loose tree bark.

Trees nine inches or greater in diameter as described in the attached guidelines are potential roost trees. If trees of this size are to be cleared between April 15 and September 15, please contact Daryl Howell at (515) 281-8524. You may need to survey habitat in the construction zone to determine if the area is potential summer habitat for the Indiana bat.

If it appears that you will disturb potential Indiana bat summer habitat, we suggest that you contact the U.S. Fish and Wildlife Service regarding this project. The Rock Island Field Office may be reached at (309) 757-5800 or 1511 47th Ave. Moline, IL, 61265-7022.

This letter is a record of review for protected species, rare natural communities, state lands and waters in the project area, including review by personnel representing state parks, preserves, recreation areas, fisheries and wildlife but does not include any comment from the Environmental Services Division of this Department. This letter does not constitute a permit. Other permits may be required from the Department or other state or federal agencies before work begins on this project.

Any construction activity that bares the soil of an area greater than or equal to one acre including clearing, grading or excavation may require a storm water discharge permit from the Department. Construction activities may include the temporary or permanent storage of dredge material. For more information regarding this matter, please contact Ruth Rosdail at (515) 281-6782.

The Department administers regulations that pertain to fugitive dust IAW Iowa Administrative Code 567-23.3(2)"c." All persons shall take reasonable precautions to prevent the discharge of visible emissions of fugitive dusts beyond the lot line of property during construction, alteration, repairing or demolishing of buildings, bridges or other vertical structures or haul roads. All questions regarding fugitive dust regulations should be directed to Jim McGraw at (515) 242-5167.

Please reference the following IDNR Environmental Review/Sovereign Land Program tracking number assigned to this project in all future correspondence related to this project: 6775. If you have questions about this letter or require further information, please contact me at (515) 281-8967.



Sincerely,

A handwritten signature in black ink, appearing to read "Kelly Poole". The signature is fluid and cursive, with the first name "Kelly" and last name "Poole" clearly distinguishable.

Kelly Poole  
Environmental Specialist  
Conservation and Recreation Division

FILE COPY: Kelly Poole

Tracking Number: 6775

CC: Chris Schwake, Iowa DNR (email)  
U.S. Fish and Wildlife Service, Rock Island Field Office, 1511 47<sup>th</sup> Ave., Moline, IL 61265-7022



**From:** [Newell, Deeann \[DOT\]](#)  
**To:** [Hyler, Randy \[DOT\]](#); [Oetker, Matthew \[DOT\]](#); [Thomas, Terisa \[DOT\]](#); [Vine, Janet \[DOT\]](#); [Zamora, Jorge \[DOT\]](#)  
**Subject:** FW: Louisa 61 comments from DNR  
**Date:** Wednesday, December 28, 2011 7:51:34 AM  
**Attachments:** [DNR comments on Louisa US 61 EA 12 21 11.pdf](#)

---

FYI

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**From:** Marler, Scott [DOT]  
**Sent:** Friday, December 23, 2011 3:56 PM  
**To:** Abbett, Terri [DOT]; Rudloff, Jill [DOT]; Azeltine, Brad [DOT]; Wielenga, Libby [DOT]  
**Cc:** Newell, Deeann [DOT]; Swenson, Mark A [DOT]; Powell, Kim [DOT]; Claman, David [DOT]; Harris, Gary [DOT]  
**Subject:** Louisa 61 comments from DNR

Attached is a letter from DNR with comments about the EA for Louisa 61, NHS-061-3(48)—19-58. DeeAnn has the original. The DNR included a Sovereign Lands tracking number. Please be sure to use this number when sending letters and applications to DNR. This is one of the “improvements” that was negotiated between the two agencies.

Kim, we need to get this DNR tracking number into PSS. Many sections within OLE, as well as the Bridge office, will need to reference the DNR tracking number when submitting materials to DNR. Submittals by different groups will happen at different times over a period of years. How should we proceed?

Scott

--

Scott C. Marler  
Environmental Resources Manager  
Office of Location & Environment  
Iowa Department of Transportation  
800 Lincoln Way  
Ames, Iowa 50010  
515/239-1510  
515/239-1726 FAX  
[scott.marler@dot.iowa.gov](mailto:scott.marler@dot.iowa.gov)





# STATE OF IOWA

TERRY E. BRANSTAD, GOVERNOR  
KIM REYNOLDS, LT. GOVERNOR

DEPARTMENT OF NATURAL RESOURCES  
ROGER L. LANDE, DIRECTOR

December 21, 2011

Mr. Jim Rost  
Director, Office of Location & Environment  
Iowa Department of Transportation  
800 Lincoln Way  
Ames, IA 50010

RE: US 61 IA 92 – Environmental Assessment  
Louisa County NHS-061—3(48)—19-58  
IDNR Sovereign Lands Tracking Number 4259  
Sections 4, 9, 10, 15, 16, 21, 22, 27, 28, 33, 34, Township 75N, Range 3W  
Section 3, 4, Township 74N, Range 3W

Dear Mr. Rost:

This letter is in response to the letter concerning the above referenced project. Thank you for inviting our comments on the above referenced project.

As you are aware, waters of the United States (includes wetlands) should not be disturbed if a less environmentally damaging alternative exists. Unavoidable adverse impacts should be minimized to the extent practicable. Any remaining adverse impacts should be adequately compensated for through restoration, enhancement, creation and/or preservation activities. We would ask that Best Management Practices be used to control erosion and protect water quality near the project.

Any proposed placement of dredged or fill material into waters of the United States (including jurisdictional wetlands) requires Department of the Army authorization. When detailed plans are available, please complete and submit the joint application form to the Rock Island District Corps of Engineers (1 copy) and Iowa Department of Natural Resources (2 copies) for processing.

Due to the potential for impact to the endangered Indiana bat (*Myotis sodalis*), if trees must be cleared for this project, you should contact the U.S. Fish and Wildlife Service at 309-757-5800 for further assistance.

If you have any questions, please call me at (515) 281-6615.

Sincerely,

A handwritten signature in cursive script that reads "Christine M. Schwake".

Christine Schwake  
Environmental Specialist  
Section 401 Water Quality Certification





# Iowa Department of Transportation TRIBAL NOTIFICATION

Form 536002  
08-05

Date November 15, 2011 IA DOT contact Libby Wielenga  
IA DOT project # NHS-061-2(50)--19-29 Phone # IA DOT - 515-239-1035 FHWA - 515-233-7300  
Location Des Moines & Louisa Counties E-mail Libby.Wielenga@dot.iowa.gov  
Description Early Coordination: US 61 from Memorial Park Rd. in Burlington North to 1 Mile North of IA 78

## Type of Project (see map)

VERY SMALL - Disturb less than 12-inch depth (plow zone)  
SMALL - Grading on existing road, shouldering, ditching, etc.  
SMALL - Bridge or culvert replacement

X LARGE - Improve existing road from 2 lanes to 4 lanes  
LARGE - New alignment  
OTHER - Borrow Area

## Type of Coordination/Consultation Points

X 1 - Early project notification (project map and description)  
2 - Notification of survey findings (Phase I)  
2a - Notification of site evaluation (Phase II)

3 - Consultation regarding site treatment  
4 - Data Recovery Report  
5 - Other

## Type of Findings

No American Indian site found  
--Section 106 Consultation Process ends\*  
American Indian sites found but not eligible for National Register listing -- Section 106 Consultation Process ends\*  
Avoided American Indian sites eligible for National Register listing (see map and list of sites)  
--Section 106 Consultation Process may or may not end

Potentially significant American Indian sites found (see map and list of sites)  
American Indian sites eligible for National Register listing cannot be avoided (see map)

Burial site found

\_\_\_\_\_ # of non-significant prehistoric sites

\_\_\_\_\_ # of potentially significant prehistoric sites

\_\_\_\_\_ # of National Register-eligible prehistoric sites

\* In the event of a late discovery, consultation will be reopened

## Affected National Register Properties

Investigating avoidance or minimizing harm options  
Avoided

Protected  
Data Recovery/MOA

\*\*\*\*\*Please Respond\*\*\*\*\*

Who should we contact for site/project-related discussions?

GORDON ADAMS P.O. Box 470  
Name Street Address  
918.762.7227 X 30  
Phone

Pawnee, OK 74058  
City, Zip Code  
GORDON.A.DAMS@PAWNEENATION.ORG  
E-mail

Do you know of any sensitive areas within or near the project the FHWA/DOT should avoid (please describe)?

NO

☒ Thank you for the information; however, we do not need to consult on this particular project.

☐ Thank you for the information. We are satisfied with the planned site treatment.

☐ We do not have a comment at this time, but request continued notification on this project.

☐ We have concerns and wish to consult.

☐ Please send a copy of the archaeology report.

☐ We wish to participate in the Memorandum of Agreement for this project.

## Comments

Gordon Adams  
Name

Pawnee Nation of Oklahoma  
Tribe name

12/28/2011  
Date

(Comments continued on back)



Additional Comments \_\_\_\_\_

Fold first

(TAPE--Do NOT Staple)

*Palmer Nation of Oklahoma*  
*P.O. Box 470*  
*Palmer, OK 74058*

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NO POSTAGE  
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UNITED STATES

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JAN 11 2012

Office of Location & Environment

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OFFICE OF LOCATION AND ENVIRONMENT  
CULTURAL RESOURCES SECTION  
IOWA DEPARTMENT OF TRANSPORTATION  
800 LINCOLN WAY  
AMES IA 50010-9902



Fold last





# Iowa Department of Transportation

800 Lincoln Way, Ames, Iowa 50010

515-239-1795

Fax: 515-239-1726

July 11, 2012

Ref. NHS-061-2(50)--19-29

Primary System  
Des Moines County  
Louisa County  
PCR 34(23) 2012

Mr. Doug Jones  
State Historic Preservation Office  
600 East Locust  
Des Moines, Iowa 50319

R&C: 971129050

**RE: Phase I Archaeological Survey of Primary Roads NHS-61-2(50)--19-29 Des Moines and Louisa Counties; Proposed US 61 Reconstruction; No Determination of Effect**

Dear Doug:

Enclosed for your review and comment is the phase I archaeological survey report for the proposed reconstruction of US 61 in Des Moines and Louisa Counties. As you will note this study builds on previous work within and near the present corridor (Anderson 1993; Morrow 1997; Perry et al. 2003). As you may estimate the Iowa DOT is continuing to assess multiple alternatives for this reconstruction, therefore the impacts to historic properties for this project are not yet known.

The following sites have been recommended for no further investigations:

13DM202	13DM882	13DM1328	13DM1355	13LA704	13LA728
13DM203	13DM884	13DM1331	13DM1356	13LA705	13LA729
13DM224	13DM885	13DM1332	13DM1358	13LA706	13LA730
13DM738	13DM887	13DM1333	13DM1359	13LA707	13LA731
13DM740	13DM889	13DM1334	13DM1360	13LA708	13LA732
13DM746	13DM890	13DM1335	13DM1361	13LA709	13LA733
13DM753	13DM891	13DM1336	13DM1362	13LA710	13LA734
13DM784	13DM892	13DM1337	13DM1363	13LA711	13LA735
13DM793	13DM904	13DM1338	13DM1364	13LA712	13LA736
13DM803	13DM912	13DM1339	13DM1366	13LA713	13LA737
13DM809	13DM917	13DM1340	13DM1368	13LA714	13LA738
13DM840	13DM921	13DM1342	13LA381	13LA715	13LA739
13DM845	13DM924	13DM1343	13LA382	13LA716	13LA740
13DM852	13DM925	13DM1344	13LA383	13LA717	13LA741
13DM854	13DM1000	13DM1345	13LA384	13LA718	13LA742
13DM855	13DM11003	13DM1346	13LA385	13LA719	13LA743
13DM856	13DM1007	13DM1347	13LA386	13LA720	13LA744
13DM857	13DM1014	13DM1348	13LA473	13LA721	13LA745
13DM858	13DM1024	13DM1349	13LA697	13LA722	13LA746
13DM859	13DM1029	13DM1350	13LA698	13LA723	
13DM860	13DM1324	13DM1351	13LA699	13LA724	
13DM862	13DM1325	13DM1352	13LA700	13LA725	
13DM863	13DM1326	13DM1353	13LA702	13LA726	
13DM864	13DM1327	13DM1354	13LA703	13LA727	

Mr. Doug Jones  
July 11, 2012

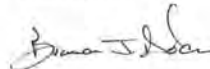
NHS-61-2(50)--19-20

Our office agrees with the recommendations for no further archaeological work at the sites listed above. The following sites have been recommended for further testing to determine their eligibility for National Register listing if they cannot be avoided by project effects; 13DM1341, 13DM1357 and 13LA701. Again, our office agrees with this recommendation. As you will recall Site 13DM999 was evaluated as eligible for nomination to the National Register of Historic Places earlier this spring (letter signed 5/1/2012). The current investigation expanded the boundaries of 13DM999; however, nothing about the National Register eligibility of the site has changed.

Again, we are presently considering multiple alternatives for this undertaking and have not yet made a determination of effect. At this time we request your concurrence with the above described recommendations. If you concur please sign below, add any comments you may have, and return this letter to our office. As with any Iowa Department of Transportation project, should any new important archaeological, historical, or architectural materials be encountered during construction, project activities should cease and the Office of Location and Environment should be contacted immediately.

If you have any questions, please contact me at (515) 239-1795 or [brennan.dolan@dot.iowa.gov](mailto:brennan.dolan@dot.iowa.gov).

Sincerely,



Brennan J. Dolan  
Office of Location and Environment

BJD:sm  
Enclosures

cc: Jim Armstrong – District 5 Engineer  
Brad Hofer – Location Engineer  
DeeAnn Newell – NEPA Section Leader  
Carl Merry – Highway Archaeology Program

Concur: Douglas W. Jones  
SHPO Archaeologist

Date: 8/13/2012

Comments:





# Iowa Department of Transportation

800 Lincoln Way, Ames, Iowa 50010

515-239-1795 Fax 515-239-1726

August 1, 2012

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

Ref. No: NHS-061-2(50)--19-29  
Des Moines County  
Louisa County  
Primary  
PCR 34(17) 2012

R&C: 971129050

Dear Ralph:

## **RE: Intensive Historic Architectural Survey for Southern U.S. 61 Road Reconstruction Project**

Enclosed for your review and comment is the intensive level historic architectural survey for the above referenced federally funded project. This project proposes to reconstruct 17.7 miles of U.S. 61 expanding the existing two lanes to four lanes from Memorial Park Road in Burlington in Des Moines County to one mile north of Iowa 78 in Louisa County. This survey reviewed known resources previously determined eligible for the National Register of Historic Places (NRHP) and identified resources previously unrecorded within the study area. All of these resources were reviewed to determine their current eligibility to the NRHP.

A total of seventeen previously identified NRHP eligible or potentially eligible properties within the study area were reevaluated during this survey. Of these, nine properties were recommended eligible for the NRHP. These properties are all eligible under Criterion C. The Hawkeye School and the Franklin Mills School are also eligible under Criterion A. The Ripley Inn is also eligible under Criterion A, B, and D. These properties are listed as follows:

- Hawkeye School (29-00048)
- Hingst/McElhinney House (29-03001)
- Ripley Inn (29-03010)
- Marshall/Birkenstock Barn (29-03018) ← 29-03054
- Franklin Mills School (29-03019)
- Wright/Felkman Barn 1 (29-03056)
- Allen/Schulty House (29-03024) ← 29-03059
- McCullogh/Chase Hewn Crib (29-03025) ← 29-03061
- Wright/Myer Barn 1 (29-03063)

This survey also identified 198 previously unrecorded properties within the study area. A total of 115 properties were identified as modern and did not qualify for the NRHP under any Criterion Considerations. The survey also identified a total of 83 properties over 50 years old. Of these, 72 properties were recommended as not eligible for the

NRHP due to their diminished integrity and level of significance. Many were identified as common examples of typical building types or with significant alterations to their original design.

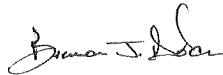
A total of ten previously unrecorded individual properties and one farmstead were evaluated and recommended eligible for the NRHP under Criterion C. These properties are listed as follows:

- Brenneke-Bohlen Farmstead Barn (29-03546)
- Frederick and Mary Taeger Farmstead Barn (29-03548)
- Frederick and Henry Gieselman Barn (29-03550)
- Herbert Sherfey Chittenden Estate (29-3556)
- Taeger-Diewold Farmstead Barn 1 (29-03562)
- Taeger-Diewold Farmstead Barn 2 (29-03563)
- Franklin Mills/Oakland Mills Barn (29-03566)
- Leebrick-Vanosdol Farmstead (29-03581)
- Leebrick-Vanosdol Farmstead Barn 1 (29-03582)
- Barnes-Ping-Miller Farmstead Barn (29-03585)

The Iowa DOT agrees with the recommendations outlined in this survey. A project determination of effect will be established after all investigations have been completed, project alignment information becomes available, the Area of Potential Effect (APE) has been determined, and consultation regarding all historic properties has occurred. If you concur with the results of this historic architectural evaluation, please sign the concurrence line below, add your comments, and return this letter.

If you have any questions, please contact me at (515) 239-1795 or [brennan.dolan@dot.iowa.gov](mailto:brennan.dolan@dot.iowa.gov).

Sincerely,

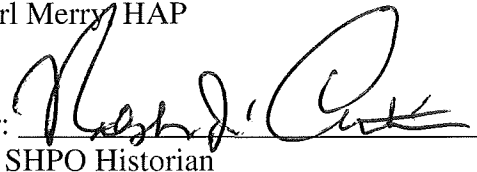


Brennan J. Dolan  
Office of Location and Environment

Enclosure

cc: Jim Armstrong, District 5 Engineer  
Roger Larson, Location / OLE  
Randy Hyler, NEPA / OLE  
Carl Merry HAP

Concur:

  
SHPO Historian

Date:

Aug 13, 2012

Comments:





# Iowa Department of Transportation

800 Lincoln Way, Ames, Iowa 50010

515-239-1035

Fax: 515-239-1726

September 6, 2013

Ref. No: NHS-061-2(50)--19-29  
Des Moines/Louisa Counties  
Primary  
PCR 35(17)

Mr. Doug Jones  
State Historical Society of Iowa  
600 East Locust  
Des Moines, IA 50319-0290

R&C: 971129050

Dear Doug:

**RE: Phase I Archaeological Investigation within expanded study area of proposed U.S. 61 Reconstruction Project; *No Determination of Effect***

Enclosed for your review and comment is the phase I archaeological investigation of the expanded study area associated with the above referenced federally funded project. This project proposes to reconstruct U.S. 61 by expanding and realigning the roadway from a two-lane to four-lane facility from Memorial Park Road in Burlington in Des Moines County to one mile north of Iowa 78 in Louisa County.

The enclosed archaeological investigation of this expanded study area consists of an archival and site records search, pedestrian survey, and subsurface testing. This investigation identified, reviewed, and confirmed previously recorded and newly recorded sites within this expanded study area. The project study area totals 1,690.8 ac (684.2 ha).

This investigation identified and reviewed a total of 145 sites within the study area, including 13 previously recorded and 132 newly recorded sites. Of these total sites, this investigation recommended 127 sites not eligible for the National Register of Historic Places. These sites are listed immediately below and no further work is recommended for these sites.

13DM814	13DM1384	13DM1404	13DM1423	13DM1448	13LA617	13LA913
13DM840	13DM1385	13DM1405	13DM1424	13DM1449	13LA702	13LA914
13DM841	13DM1386	13DM1406	13DM1426	13DM1450	13LA746	13LA917
13DM909	13DM1387	13DM1407	13DM1428	13DM1451	13LA896	13LA918
13DM1338	13DM1388	13DM1409	13DM1429	13DM1452	13LA897	13LA919
13DM1346	13DM1389	13DM1410	13DM1430	13DM1453	13LA898	13LA922
13DM1361	13DM1390	13DM1411	13DM1434	13DM1454	13LA899	13LA923
13DM1362	13DM1391	13DM1412	13DM1435	13DM1455	13LA901	13LA924
13DM1374	13DM1392	13DM1413	13DM1436	13DM1456	13LA902	13LA925
13DM1375	13DM1393	13DM1414	13DM1439	13DM1457	13LA903	13LA926
13DM1376	13DM1394	13DM1415	13DM1440	13DM1459	13LA905	13LA927
13DM1377	13DM1395	13DM1416	13DM1441	13DM1460	13LA906	13LA928
13DM1378	13DM1396	13DM1417	13DM1442	13DM1464	13LA907	13LA929
13DM1379	13DM1397	13DM1418	13DM1443	13DM1465	13LA908	13LA930

13DM1380	13DM1398	13DM1419	13DM1444	13DM1466	13LA909	13LA931
13DM1381	13DM1399	13DM1420	13DM1445	13DM1467	13LA910	13LA933
13DM1382	13DM1402	13DM1421	13DM1446	13DM1468	13LA911	13LA934
13DM1383	13DM1403	13DM1422	13DM1447	13DM1469	13LA912	13LA935
						13LA936

Of the 145 sites identified, 18 sites were recommended for avoidance or further testing. These sites are considered potentially eligible and are identified immediately below. The Iowa DOT agrees with the site recommendations outlined in this report.

13DM1400	13DM1425	13DM1432	13DM1438	13LA900	13LA916
13DM1401	13DM1427	13DM1433	13DM1458	13LA904	13LA920
13DM1408	13DM1431	13DM1437	13LA701	13LA915	13LA921

As you will recall, you previously concurred with the recommendations for avoidance or additional testing to determine National Register eligibility for sites 13DM1341 and 13DM1357 within this study area. Therefore, a total of 20 sites within this project study area are recommended for avoidance or additional testing to determine eligibility. One additional site within this study area, 13DM999, has previously undergone additional testing and has been recommended eligible for the National Register of Historic Places. The Iowa DOT plans to avoid or conduct further consultation and study of this site. Also, the Hazel Grove Cemetery, identified as Site 13DM1367 and Site Inventory 29-03695 was not evaluated within this archaeological report, but was evaluated and discussed within the corresponding intensive level historical architecture report. The Hazel Grove Cemetery will be avoided by this project along with a 50 foot buffer.

A project determination of effect will be established after project alignment information becomes available, the Area of Potential Effect (APE) has been determined, and consultation regarding all historic properties has occurred. If you concur with the results of this archaeological investigation, please sign the concurrence line below, add your comments, and return this letter. If you have any questions, please contact me at 515-239-1035 or libby.wielenga@dot.iowa.gov.

Sincerely,



Libby Wielenga  
Office of Location and Environment

LW:sm

Enclosure

cc: Jim Armstrong, District 5 Engineer – DOT  
Matt Oetker, NEPA / OLE – DOT  
Roger Larson, Location / OLE – DOT  
Carl Merry, Highway Archaeology Program

Concur: Douglas W. Jones  
SHPO Archaeologist

Date: 7/23/2013

Comments:





RC# 971129050  
[www.iowadot.gov](http://www.iowadot.gov)

**Office of Location & Environment**

800 Lincoln Way, Ames, IA 50010

Phone: 515-239-1035 | Email: libby.wielenga@dot.iowa.gov

April 4, 2014

Ref No: NHS-061-2(50)--19-29

Des Moines/Louisa County

Primary

PCR 35(11) 2014

R & C: 971129050

**RECEIVED**

APR 11 2014

by SHPO

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

Dear Doug:

**RE: Phase I Archaeological Investigation within expanded study area of proposed Southern U.S. 61 Reconstruction Project; *No Determination of Effect***

Enclosed for your review and comment is the phase I archaeological investigation of the recently expanded study area associated with the above referenced federally funded project. This project proposes to reconstruct U.S. 61 by expanding and realigning the roadway from a two-lane to four-lane facility from Memorial Park Road in Burlington in Des Moines County to one mile north of Iowa 78 in Louisa County.

The enclosed archaeological investigation of this expanded study area consists of an archival and site records search, landowner interviews, a pedestrian survey, and subsurface test excavations. A total of three project locations encompassing 6.34 ac (2.5 ha) were surveyed as part of this investigation. No cultural resources were identified within Project Locations 1 and 2. No further work is recommended for these two locations.

Within Project Location 3 is one previously recorded historic architectural property, known as the James B. McCray Farmstead (29-03694). This farmstead district was previously recommended eligible for listing on the National Register of Historic Places, and received concurrence from your office on September 17, 2013. During the course of project planning, the Iowa DOT will continue working to avoid this historic property.

During this investigation, two previously unrecorded archaeological sites were documented within Project Location 3, including 13DM1503 and 13DM1504, both prehistoric light-density lithic artifact scatters. Based on this investigation, neither site is recommended eligible for listing on the National Register of Historic Places. The Iowa DOT agrees with the site recommendations outlined in this report.

A project determination of effect will be established after project alignment information becomes available, the Area of Potential Effect (APE) has been determined, and consultation regarding all historic properties has occurred. If you concur with the results of this archaeological investigation, please sign the concurrence line below, add your comments, and return this letter. If you have any questions, please contact me at 515-239-1035 or libby.wielenga@dot.iowa.gov.

Sincerely,



Libby Wielenga  
Office of Location and Environment

LW

Enclosure

cc: Jim Armstrong, District 5 Engineer  
DeeAnn Newell, NEPA – OLE  
Roger Larson, Location – OLE  
Carl Merry, HAP

Concur: Douglas W. Jones Date: 4/23/2014  
SHPO Archaeologist

Comments:



RC# 971129050


[www.iowadot.gov](http://www.iowadot.gov)
**Office of Location & Environment**

800 Lincoln Way, Ames, IA 50010

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July 22, 2014

Ref No: NHS-061-2(50)--19-29

Des Moines &amp; Louisa Counties

Primary

**RECEIVED**

JUL 24 2014

R &amp; C: 971129050

by SHPO

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

Dear Ralph:

**RE: Section 1 of the Southern U.S. 61 Road Reconstruction Project, Preliminary Design**

Enclosed for your review and comment is additional information regarding the above referenced federally funded project. As we've previously consulted, this project proposes to reconstruct 17.7 miles of U.S. 61 expanding the existing two lanes to four lanes from south of Memorial Park Road in Burlington in Des Moines County to one mile north of Iowa 78 in Louisa County. The Iowa DOT has completed preliminary design on Section 1 of this project, which extends approximately 10.1 miles from south of Memorial Park Road to just north of 210<sup>th</sup> Street.

The preliminary design of Section 1 identifies potential effects to historic properties within this project area. As you know, there are a number of eligible and potentially eligible properties within this 17.7 mile corridor and the 10.1 miles of Section 1 is no exception. Based on the current design, a total of 20 historic properties, including 17 buildings and three districts are within the current project area for Section 1 and will likely be included in the final project Area of Potential Effect (APE). Please note, the properties listed below only include the built environment historic properties within Section 1; archaeological investigations for this portion of the project are still ongoing.

<b>Buildings</b>	<b>Inventory ID</b>	<b>Eligibility Criterion</b>
Brenneke-Bohlen Farmstead: Barn	29-03546	C
Frederick and Mary Taeger Farmstead: Barn	29-03548	C
Fredrick and Henry Gieselman: Barn	29-03550	C
Taeger-Diewold Farmstead: Barn 1	29-03562	C
Taeger-Diewold Farmstead: Barn 2	29-03563	C
Franklin Mills/Oakland Mills: Barn	29-03566	C
Leebrick-Vanosdol Farmstead: Barn 1	29-03582	C
Barnes-Ping-Miller Farmstead: Barn	29-03585	C
Hawkeye School	29-00048	A & C
Theodore Hingst Farm: House	29-03001	C

Marshall Farm Barn I	29-03054	C
Franklin Mills School	29-03019	A & C
Wright (A.) Farm: Barn I	29-03056	C
McCullough Farm Crib	29-03061	C
Wright (Alex) Farm: Barn I	29-03063	C
Ripley Inn	29-03052	A, B, & C
Allen Farm House	29-03059	A & C
<b>Districts</b>		
Leebrick-Vanosdol Farmstead	29-03581	C
Ripley Inn District	29-03010	A, B, & C
Levi M. Miller Farmstead	29-03636	A & C

As you'll note on the enclosed maps, none of these historic properties will be removed as part of this proposed project. However, due to safety requirements associated with the proposed four-lane expressway, some of the driveways for these historic properties will need to be adjusted. None of the proposed driveway modifications will alter the integrity or significance of these historic properties.

Vibration is expected to occur during the demolition and reconstruction of U.S. 61. Either vibration monitoring or a plan note within the construction documents will occur as part of this project to avoid adversely affecting these properties. The specific vibration recommendations for each property will occur within future consultation for this project.

A project determination of effect will be established for the entire 17.7 mile project corridor after all investigations have been completed, project alignment information becomes available for all sections, consultation regarding the entire project Area of Potential Effect (APE) has been finalized, and consultation regarding all historic properties, including vibration effects, has occurred. If you have any comments or concerns regarding the preliminary design for Section 1 of this project, please add your comments and return this letter. If you feel a face-to-face meeting is necessary to discuss this project and the number of resources, please let me know. And as always, if you have any questions, feel free to contact me.

Sincerely,



Libby Wielenga  
Office of Location and Environment

LW:sm

Enclosure

cc: Jim Armstrong, District 5 Engineer – DOT

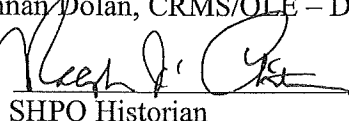
Jeff Hillegonds, Stanley Consultants

Randy Hyler, NEPA / OLE

Roger Larson, Location / OLE

Brennan Dolan, CRMS/OLE – DOT

Concur:



SHPO Historian

Date: 8-4-14

Comments:

No Comments at this time. Given the numerous properties along the corridor, the project will have to be made after all the preliminary are completed



**Office of Location and Environment**

800 Lincoln Way I Ames, Iowa 50010

Phone: 515.239.1035 | Email: [libby.wielenga@dot.iowa.gov](mailto:libby.wielenga@dot.iowa.gov)

November 19, 2014

**RECEIVED**

**NOV 20 2014**

**by SHPO**

Ref.: NHS-061-2(50)--19-29

Primary System

Des Moines and Louisa Counties

Technical Report # 13

R&C: 19971129050

Mr. Doug Jones  
State Historic Preservation Office  
600 East Locust  
Des Moines, IA 50319

RE: Phase II Evaluations of 16 Sites Along U.S. 61, Burlington to 78, Des Moines and Louisa Counties; *No Agency Determination*

Dear Doug:

Enclosed for your review and comment is the phase II report for the southern segment of the U.S. 61 reconstruction project in Des Moines and Louisa Counties. Previously your office has reviewed a number of investigations for this project including a phase II report from other parts of this segment where Site 13DM999 was identified as eligible for listing in the National Register of Historic Places. As you know our office is currently working to avoid numerous historic properties along this route. This investigation has now tested and reported on another 16 sites and has recommended four of them eligible for the National Register.

The field effort for this project employed two geophysical instruments, as well as various testing methods (test units, auger tests, slot trenching), in addition to soils and landform assessment. Laboratory methods included standard artifact analysis, assessment of archaeobotanical remains, and radiocarbon dating. All in all this report presents a thorough approach to evaluation research. Regarding National Register recommendations, the report authors followed an approach used previously for the Fort Madison Bypass project (Thompson et al. 2007). As you will read the recommendations offered are concise. Table 1 below provides some basic information about the sites tested as part of this project. Sites 13DM1432, 13LA900, 13LA904, and 13LA921 have been recommended eligible for the National Register, and the remaining twelve sites have been recommended not eligible. Our office agrees with the recommendations provided in this report.

Due to additional safety considerations, the project area has expanded at five side roads to U.S. 61 (Upper Flint Road, Dodgeville Road, Sperry Road, 198<sup>th</sup> Street, and Pleasant Grove Road). The project area has also expanded south to Sunnyside Road in Burlington. All of these expanded areas remain at least within the existing right of way. The southern extension of the project area will remain within the roadway shoulder and will not expand beyond the shoulder into the right of way, except at Timberidge Drive (see Figures 1-6). Due to the small size of these additional areas, and previous roadway and bridge construction activities, they have a relatively low potential for containing intact archaeological deposits. No additional work will occur within these areas.

The final alignment for this project has not yet been selected, and therefore, no agency determination of effect can be made. At this time we are requesting your concurrence with the recommendations offered in this report for these 16 sites. If you concur, please sign and date this letter, add any comments, and return it to our office.

Table 1

Site Number	Type	Cultural/Temporal Affiliation	National Register Status
13DM1341	Open habitation / Historic scatter	Woodland / Euro American	Not eligible
13DM1357	Open habitation / Historic scatter	Early Archaic / Euro American	Not eligible
13DM1425	Open habitation / Historic scatter	Woodland / Euro American	Not eligible
13DM1427	Open habitation / Historic scatter	Late Archaic / Euro American	Not eligible
13DM1431	Lithic scatter	Undetermined prehistoric	Not eligible
13DM1432	Open habitation	Late Woodland	<b>Eligible</b>
13DM1433	Lithic scatter	Woodland	Not eligible
13DM1437	Lithic scatter	Undetermined prehistoric	Not eligible
13DM1438	Lithic scatter	Middle-Late Woodland	Not eligible
13LA900	Open habitation	Early Late Woodland	<b>Eligible</b>
13LA904	Open habitation	Late Woodland	<b>Eligible</b>
13LA701	Open habitation	Undetermined prehistoric	Not eligible
13LA915	Lithic scatter	Undetermined prehistoric	Not eligible
13LA916	Lithic scatter	Undetermined prehistoric	Not eligible
13LA920	Lithic scatter / Historic scatter	Likely Archaic / Euro American	Not eligible
13LA921	Open habitation	Likely Archaic	<b>Eligible</b>

If you have any questions, please contact me at (515) 239-1035 or libby.wielenga@dot.iowa.gov.

Sincerely,




Libby J.C. Wielenga  
Office of Location and Environment

LJCW:sm

Enclosures

cc: Tribal Consulting Parties – Des Moines and Louisa Counties Interest  
Jim Armstrong – District 5 Engineer  
Mark Van Dyke – Assistant District 5 Engineer  
Brad Hofer – Office of Location and Environment  
Randy Hyler – NEPA Project Manager  
Carl Merry – Office of the State Archaeologist

Concur:

  
SHPO Archaeologist

Date:

12/4/2014

Comments:





www.iowadot.gov

Office of Location & Environment

800 Lincoln Way | Ames, IA 50010

Phone: 515-239-1035 | Email: libby.wielenga@dot.iowa.gov

May 11, 2015

Ref.: NHS-061-2(50)--19-29

Primary System

Des Moines and Louisa Counties

R&C: 19971129050

RECEIVED

MAY 19 2015

by SHPO

Mr. Doug Jones  
Mr. Ralph Christian  
State Historic Preservation Office  
600 East Locust  
Des Moines, IA 50319

RE: U.S. 61, From the City of Burlington to north of Iowa 78, Des Moines and Louisa Counties; *Adverse Effect*

Dear Doug and Ralph:

Enclosed for your review and comment is the proposed design for the southern segment of the U.S. 61 reconstruction project in Des Moines and Louisa Counties. Previously your office has reviewed and concurred with a number of investigations for this project, the latest being a phase II evaluation (Perry et. al 2014) recommending four archaeological sites eligible for listing on the National Register of Historic Places (NRHP). Through consultation with your office, applicable tribes, and interested parties, the project engineers have worked to avoid the numerous historic properties along this route. The enclosed figures illustrate the proposed alignment, impact area, Area of Potential Effect (APE), and relevant historic properties for this project.

Previously, the Marshall/Birkenstock Farm Barn I (29-03054) was recorded along this route and recommended eligible for listing on the NRHP. Your office concurred with this recommendation on August 13, 2012. Recently, the Iowa DOT learned this barn has been removed or demolished. Enclosed are photographs and maps identifying the property as non-extant. No further work or consideration will occur on this property as part of this project.

Within the proposed APE remain 26 historic properties; this includes three archaeological sites, four historic districts, and 19 historic structures and buildings. Due to safety restrictions and design requirements, some of the built historic properties may have access modifications; however, none of these access modifications will affect the contributing elements which qualify these properties for listing on the National Register. All 23 built resources will be clearly identified within the project plans as a historic property to be avoided by all project activities. Project plans will include a 100 foot buffer around the Hazel Grove Cemetery identifying this area as a "Restricted Area" to be avoided by all project activities.

It is anticipated that some vibration will be created during the construction activities of the proposed undertaking. Due to the proximity of project activities to some historic properties, the Iowa DOT will require a Special Provision for Vibration Monitoring within the project contract. The following steps will be detailed within the Special Provision to avoid any adverse effects to these properties:

- A preconstruction survey of these structures [29-00048, 29-03001, 29-03010/29-03052, 29-03019, 29-03059, 29-03061, 29-03063] will be completed to document their present condition. The preconstruction survey will also establish a peak particle velocity (PPV) threshold for vibration.

REC MVDNR

MAY 14 2015

- Sensors (crack and/or seismic) will be installed and tested daily. If 80 percent of the PPV threshold is reached sensors will alert the contractor and in turn the construction engineer.
- If the PPV is reached, a meeting with the contractor and the construction engineer will identify alternative demolition/construction methods and/or equipment to be used to minimize project vibration.
- A post construction survey will be performed.

In addition, following Section 4(f) requirements, it is FHWA's intent to make a *de minimis* impact determination on the properties as identified in Table 1.

Table 1

<u>Site Number</u>	<u>Name</u>	<u>National Register Status</u>	<u>Vibration Monitoring</u>	<u>De Minimis</u>
29-00048	<i>Hawkeye School</i>	<i>Criterion A &amp; C</i>	Yes	Yes
29-03001	<i>Theodore Hingst Farm</i>	<i>Criterion C</i>	Yes	Yes
29-03010	<i>Ripley Inn (District)</i>	<i>Criterion A, B, &amp; C</i>	Yes	Yes
29-03052	<i>Ripley Inn</i>	<i>Criterion A, B, &amp; C</i>	Yes <sup>1</sup>	Yes
29-03019	<i>Franklin Mills School</i>	<i>Criterion A &amp; C</i>	Yes	Yes
29-03056	<i>Wright (A.) Farm: Barn I</i>	<i>Criterion C</i>	No	Yes
29-03059	<i>Allen Farm House</i>	<i>Criterion A &amp; C</i>	Yes	Yes
29-03061	<i>McCullough Farm Crib</i>	<i>Criterion C</i>	Yes	Yes
29-03063	<i>Wright (Alex) Farm: Barn I</i>	<i>Criterion C</i>	No	Yes
29-03546	Brenneke-Bohlen Farmstead: Barn	Criterion C	No	No
29-03548	Frederick and Mary Taeger Farmstead: Barn	Criterion C	No	No
29-03550	<i>Frederick and Henry Gieselman: Barn</i>	<i>Criterion C</i>	No	Yes
29-03556	<i>Herbert Sherfey Chittenden Estate</i>	<i>Criterion C</i>	No	Yes
29-03562	<i>Taeger-Diewold Farmstead: Barn I</i>	<i>Criterion C</i>	No	Yes
29-03563	<i>Taeger-Diewold Farmstead: Barn II</i>	<i>Criterion C</i>	No	Yes
29-03566	<i>Franklin Mills/Oakland Mills: Barn</i>	<i>Criterion C</i>	No	Yes
29-03581	<i>Leebrick-Vanosdol Farmstead (District)</i>	<i>Criterion C</i>	No	Yes
29-03582	Leebrick-Vanosdol Farmstead: Barn I	Criterion C	No	No
29-03585	<i>Barnes-Ping-Miller Farmstead: Barn</i>	<i>Criterion C</i>	No	Yes
29-03636	Levi M. Miller Farmstead (District)	Criterion A & C	No	No
29-03640	Railroad Bridge	Criterion A & C	No	No
29-03694	<i>James B. McCray Farmstead (District)</i>	<i>Criterion A &amp; C</i>	No	Yes
29-03695	Hazel Grove Cemetery	Criterion A, B, & C	No	No

Of the hundreds of archaeological sites originally identified within the project corridor, nine sites considered eligible or potentially eligible for the NRHP remained along the project corridor (see Table 2). After much design modification, consultation, and consideration, six sites are being completely avoided by this project. The remaining three sites are within the APE and are unable to be avoided. As such, the Iowa DOT and FHWA are considering this project's effects on these three historic properties as an Adverse Effect.

<sup>1</sup> The Ripley Inn (29-03052) and the Ripley Inn District (29-03010) represent the same building for vibration monitoring.



Table 2

<u>Site Number</u>	<u>Cultural/Temporal Affiliation &amp; Type</u>	<u>National Register Status</u>	<u>Within APE</u>
13DM1400	Prehistoric Lithic Scatter	Unknown / Further testing needed	No
13DM1401	Prehistoric Lithic Scatter	Unknown / Further testing needed	No
13DM1408	Prehistoric Lithic Scatter	Unknown / Further testing needed	No
<b>13DM1432</b>	<b>Late Woodland Open Habitation</b>	<b>Eligible - Criterion D</b>	<b>Yes</b>
13DM1458	Prehistoric Scatter	Unknown / Further testing needed	No
13DM999	Prehistoric Open Habitation	Eligible - Criterion D	No
13LA900	Early Late Woodland Open Habitation	Eligible - Criterion D	No
<b>13LA904</b>	<b>Late Woodland Open Habitation</b>	<b>Eligible - Criterion D</b>	<b>Yes</b>
<b>13LA921</b>	<b>(Likely) Archaic Open Habitation</b>	<b>Eligible - Criterion D</b>	<b>Yes</b>

After notification of the Advisory Council on Historic Preservation, we anticipate the development of a Memorandum of Agreement for this project. We will continue consultation with your office as well as the Office of the State Archaeologist, the Des Moines County Historical Society, the Louisa County Historical Society, the Louisa County Historical Commission, Preservation Iowa, and all applicable tribes and nations. We continue to request your input regarding any other potential consulting parties.

At this time we are requesting your concurrence with the determination of **Adverse Effect** for this project as well as concurrence with FHWA's intent for *De Minimis* for the properties as identified in Table 1. If you concur, please sign and date this letter, add any comments, and return it to our office.

If you have any questions, please contact me at (515) 239-1035 or libby.wielenga@dot.iowa.gov.

Sincerely,



Libby J.C. Wielenga  
Office of Location and Environment

LJCW:sm

Enclosures

cc: Mike LaPietra, FHWA  
Jim Armstrong – District 5 Engineer  
Randy Hyler – NEPA Project Manager

Concur:  SHPO Archaeologist

Date: 5/26/2015

Comments:

Concur:  SHPO Historian

Date: 5/26/15

Comments:

## **APPENDIX C**

### **FARMLAND PROTECTION FORM**



**FARMLAND CONVERSION IMPACT RATING  
FOR CORRIDOR TYPE PROJECTS**

<b>PART I (To be completed by Federal Agency)</b>		3. Date of Land Evaluation Request <b>3/31/15</b>	4. Sheet 1 of <b>2</b>
1. Name of Project <b>U.S. 61 Des Moines &amp; Louisa County</b>		5. Federal Agency Involved <b>Federal Highway Administration</b>	
2. Type of Project <b>Highway Improvement Project</b>		6. County and State <b>Des Moines County, Iowa</b>	
<b>PART II (To be completed by NRCS)</b>		1. Date Request Received by NRCS	2. Person Completing Form
3. Does the corridor contain prime, unique statewide or local important farmland? (If no, the FPPA does not apply - Do not complete additional parts of this form). YES <input type="checkbox"/> NO <input type="checkbox"/>		4. Acres Irrigated   Average Farm Size	
5. Major Crop(s)	6. Farmable Land in Government Jurisdiction Acres: %	7. Amount of Farmland As Defined in FPPA Acres: %	
8. Name Of Land Evaluation System Used	9. Name of Local Site Assessment System	10. Date Land Evaluation Returned by NRCS	

<b>PART III (To be completed by Federal Agency)</b>	Alternative Corridor For Segment			
	Corridor A	Corridor B	Corridor C	Corridor D
A. Total Acres To Be Converted Directly	<b>896</b>			
B. Total Acres To Be Converted Indirectly, Or To Receive Services	<b>0</b>			
C. Total Acres In Corridor	<b>1292</b>			

<b>PART IV (To be completed by NRCS) Land Evaluation Information</b>				
A. Total Acres Prime And Unique Farmland				
B. Total Acres Statewide And Local Important Farmland				
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted				
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value				

<b>PART V (To be completed by NRCS) Land Evaluation Information Criterion Relative value of Farmland to Be Serviced or Converted (Scale of 0 - 100 Points)</b>				
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<b>PART VI (To be completed by Federal Agency) Corridor Assessment Criteria (These criteria are explained in 7 CFR 658.5(c))</b>	Maximum Points				
1. Area in Nonurban Use	15	<b>14</b>			
2. Perimeter in Nonurban Use	10	<b>10</b>			
3. Percent Of Corridor Being Farmed	20	<b>20</b>			
4. Protection Provided By State And Local Government	20	<b>20</b>			
5. Size of Present Farm Unit Compared To Average	10	<b>10</b>			
6. Creation Of Nonfarmable Farmland	25	<b>0</b>			
7. Availability Of Farm Support Services	5	<b>5</b>			
8. On-Farm Investments	20	<b>3</b>			
9. Effects Of Conversion On Farm Support Services	25	<b>0</b>			
10. Compatibility With Existing Agricultural Use	10	<b>0</b>			
<b>TOTAL CORRIDOR ASSESSMENT POINTS</b>	<b>160</b>	<b>82</b>	<b>0</b>	<b>0</b>	<b>0</b>

<b>PART VII (To be completed by Federal Agency)</b>					
Relative Value Of Farmland (From Part V)	100	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Total Corridor Assessment (From Part VI above or a local site assessment)	160	<b>82</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>TOTAL POINTS (Total of above 2 lines)</b>	<b>260</b>	<b>82</b>	<b>0</b>	<b>0</b>	<b>0</b>

1. Corridor Selected: <b>A.</b>	2. Total Acres of Farmlands to be Converted by Project: <b>896</b>	3. Date Of Selection:	4. Was A Local Site Assessment Used? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
------------------------------------	---	-----------------------	---

5. Reason For Selection:

**This alternative minimized impacts to homes and business in Mediapolis, to cultural resources and environmental resources in the project study area.**

Signature of Person Completing this Part: Randy Heller DATE 3/31/15

NOTE: Complete a form for each segment with more than one Alternate Corridor

**FARMLAND CONVERSION IMPACT RATING  
FOR CORRIDOR TYPE PROJECTS**

<b>PART I (To be completed by Federal Agency)</b>		3. Date of Land Evaluation Request <b>3/31/15</b>	4. Sheet 1 of <b>2</b>
1. Name of Project <b>U.S. 61 Des Moines &amp; Louisa County</b>		5. Federal Agency Involved <b>Federal Highway Administration</b>	
2. Type of Project <b>Highway Improvement Project</b>		6. County and State <b>Louisa County, Iowa</b>	
<b>PART II (To be completed by NRCS)</b>		1. Date Request Received by NRCS	2. Person Completing Form
3. Does the corridor contain prime, unique statewide or local important farmland? (If no, the FPPA does not apply - Do not complete additional parts of this form). YES <input type="checkbox"/> NO <input type="checkbox"/>		4. Acres Irrigated   Average Farm Size	
5. Major Crop(s)	6. Farmable Land in Government Jurisdiction Acres: %	7. Amount of Farmland As Defined in FPPA Acres: %	
8. Name Of Land Evaluation System Used	9. Name of Local Site Assessment System	10. Date Land Evaluation Returned by NRCS	

<b>PART III (To be completed by Federal Agency)</b>		<b>Alternative Corridor For Segment</b>			
		Corridor A	Corridor B	Corridor C	Corridor D
A. Total Acres To Be Converted Directly		<b>131</b>			
B. Total Acres To Be Converted Indirectly, Or To Receive Services		<b>0</b>			
C. Total Acres In Corridor		<b>167</b>			
<b>PART IV (To be completed by NRCS) Land Evaluation Information</b>					
A. Total Acres Prime And Unique Farmland					
B. Total Acres Statewide And Local Important Farmland					
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted					
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value					
<b>PART V (To be completed by NRCS) Land Evaluation Information Criterion Relative value of Farmland to Be Serviced or Converted (Scale of 0 - 100 Points)</b>					
<b>PART VI (To be completed by Federal Agency) Corridor Assessment Criteria (These criteria are explained in 7 CFR 658.5(c))</b>		Maximum Points			
1. Area in Nonurban Use	15	<b>15</b>			
2. Perimeter in Nonurban Use	10	<b>10</b>			
3. Percent Of Corridor Being Farmed	20	<b>20</b>			
4. Protection Provided By State And Local Government	20	<b>20</b>			
5. Size of Present Farm Unit Compared To Average	10	<b>0</b>			
6. Creation Of Nonfarmable Farmland	25	<b>0</b>			
7. Availability Of Farm Support Services	5	<b>5</b>			
8. On-Farm Investments	20	<b>3</b>			
9. Effects Of Conversion On Farm Support Services	25	<b>0</b>			
10. Compatibility With Existing Agricultural Use	10	<b>0</b>			
<b>TOTAL CORRIDOR ASSESSMENT POINTS</b>		<b>160</b>	<b>73</b>	<b>0</b>	<b>0</b>
<b>PART VII (To be completed by Federal Agency)</b>					
Relative Value Of Farmland (From Part V)		<b>100</b>	<b>0</b>	<b>0</b>	<b>0</b>
Total Corridor Assessment (From Part VI above or a local site assessment)		<b>160</b>	<b>73</b>	<b>0</b>	<b>0</b>
<b>TOTAL POINTS (Total of above 2 lines)</b>		<b>260</b>	<b>73</b>	<b>0</b>	<b>0</b>
1. Corridor Selected:  <b>A.</b>	2. Total Acres of Farmlands to be Converted by Project:  <b>131</b>	3. Date Of Selection:	4. Was A Local Site Assessment Used?  YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>		

5. Reason For Selection:

**This alternative minimized impacts to homes and business in Mediapolis, to cultural resources and environmental resources in the project study area.**

  
Signature of Person Completing this Part:

**3/31/15**  
DATE

NOTE: Complete a form for each segment with more than one Alternate Corridor



## **APPENDIX D**

### **DRAFT MEMORANDUM OF AGREEMENT**



[www.iowadot.gov](http://www.iowadot.gov)

**Office of Location & Environment**

800 Lincoln Way I Ames, IA 50010

Phone: 515-239-1035 | Email: [libby.wielenga@dot.iowa.gov](mailto:libby.wielenga@dot.iowa.gov)

November 2, 2015

Ref.: NHS-061-2(50)--19-29

Primary System

Des Moines and Louisa Counties

R&C: 19971129050

Mr. Doug Jones  
Mr. Ralph Christian  
State Historic Preservation Office  
600 East Locust  
Des Moines, IA 50319

**RE: MOA for Adverse Effects to Sites 13DM1431, 13LA904, and 13LA921; U.S. 61 Reconstruction Project in Des Moines and Louisa Counties**

Dear Doug and Ralph:

Enclosed for your review and comment is the draft Memorandum of Agreement (MOA), including the proposed scope-of-work for Sites 13DM1431, 13LA904, and 13LA921, associated with the above referenced project. All signatories and consulting parties have been provided these documents for their review. We request you provide any comments on these documents within the next 30 days. Once the Iowa DOT has completed negotiations with each property owner, the timeframe for data recovery will be discussed.

If you have any questions, please contact Brennan Dolan at 515-239-1795 or [brennan.dolan@dot.iowa.gov](mailto:brennan.dolan@dot.iowa.gov).

Sincerely,

Libby J.C. Wielenga  
Office of Location and Environment

LW:sm

Enclosures

cc: Mike LaPietra, FHWA  
Jim Armstrong – District 5 Engineer  
Randy Hyler – NEPA  
Brennan Dolan – Cultural Resources



MEMORANDUM OF AGREEMENT  
BETWEEN THE FEDERAL HIGHWAY ADMINISTRATION  
AND THE IOWA STATE HISTORIC PRESERVATION OFFICE  
REGARDING THE U.S. HIGHWAY 61 RECONSTRUCTION PROJECT,  
DES MOINES AND LOUISA COUNTY, IOWA;  
NHS-061-2(50)--19-29;  
IOWA SHPO REVIEW AND COMPLIANCE NUMBER 19971129050

**WHEREAS**, the Federal Highway Administration (FHWA) plans to fund the southern segment of the U.S. 61 Reconstruction Project in Des Moines and Louisa County (undertaking) pursuant to Section 106 of the National Historic Preservation Act, 54 U.S.C. § 306108 (the Act), and its implementing regulations (36 CFR§ 800); and

**WHEREAS**, this undertaking consists of the development of a four lane highway facility between the city of Burlington in Des Moines County, to one mile north of Iowa 78 in Louisa County; and

**WHEREAS**, the FHWA has defined the undertaking's area of potential effects (APE) as described in Appendix A; and

**WHEREAS**, the FHWA has determined that this undertaking may have an adverse effect on archaeological sites 13DM1432, 13LA904, and 13LA921 which are eligible for listing on the National Register of Historic Places, and has consulted with the Iowa State Historic Preservation Office (SHPO) pursuant to 36 CFR § 800, the regulations implementing Section 106 of the National Historic Preservation Act (54 U.S.C. § 306108); and

**WHEREAS**, the FHWA has determined that this undertaking should not have an adverse effect on the twenty-three built historic properties, including one historic cemetery, all identified in Appendix B, which are listed on or eligible for listing on the National Register of Historic Places, and has consulted with the Iowa State Historic Preservation Office (SHPO) pursuant to 36 CFR § 800, the regulations implementing Section 106 of the National Historic Preservation Act (54 U.S.C. § 306108); and

**WHEREAS**, the FHWA has consulted with the Flandreau Santee Sioux; Ho-Chunk Nation; Iowa Tribe of Kansas and Nebraska; Iowa Tribe of Oklahoma; Mandan, Hidatsa, Arikara; Miami Nation of Oklahoma; Omaha Tribe of Nebraska; Otoe-Missouria Tribe; Pawnee Nation of Oklahoma; Peoria Tribe of Indians of Oklahoma; Ponca Tribe of Nebraska; Prairie Band Potawatomi Nation; Sac and Fox Tribe of the Mississippi in Iowa; Sac and Fox Tribe of Oklahoma; Sisseton-Wapaheton Oyate; Spirit Lake Tribe; Winnebago Tribe of Nebraska; and Yankton Sioux Tribe, for which no specific historic properties within the APE have been expressed as having religious and cultural significance; and

**WHEREAS**, the interested tribes and nations from the list above have been provided information regarding the effects of the undertaking on historic properties and have been invited to sign this Memorandum of Agreement (MOA) as concurring parties; and

**WHEREAS**, the FHWA has consulted with the Iowa Department of Transportation (Iowa DOT) and the University of Iowa's Office of the State Archaeologist Bioarchaeology Program (OSA), regarding the effects of the undertaking on historic properties and has invited them to sign this MOA as invited signatories; and

**WHEREAS**, the FHWA has consulted with the Des Moines County Historical Society, Louisa County Historic Preservation Commission, Louisa County Historical Society, and Preservation Iowa regarding the effects of the undertaking on historic properties and has invited them to sign this MOA as concurring parties; and

**WHEREAS**, this undertaking has continued to be developed with appropriate public involvement pursuant to 36 CFR 800.2(d) and 800.6(a), having been coordinated with the scoping, public review and comment, and public hearings conducted to also comply with National Environmental Policy Act and its implementing regulations; and

**WHEREAS**, in accordance with 36 CFR § 800.6(a)(1), the FHWA has notified the Advisory Council on Historic Preservation (ACHP) of its adverse effect determination with specified documentation, and the ACHP has chosen *not to* participate in the consultation pursuant to 36 CFR § 800.6(a)(1)(iii); and

**NOW, THEREFORE**, the FHWA and the SHPO agree that the undertaking shall be implemented in accordance with the following stipulations in order to take into account the effect of the undertaking on historic properties.

## **STIPULATIONS**

The FHWA shall ensure that the following measures are carried out:

### **I. MITIGATION OF ADVERSE EFFECTS**

- A. The Iowa DOT shall implement the planned phase III data recovery in Appendix C, prior to and in coordination with construction activities.
- B. The Iowa DOT shall ensure that all historic preservation work pursuant to this agreement is carried out by or under the direct supervision of an archeologist meeting the Secretary of the Interior's Professional Qualifications Standards for prehistoric archeologist (48 FR 44738-9).
- C. The SHPO will be provided an opportunity to make a site visit to review the data recovery field work for thoroughness and compliance with the planned phase III data recovery, so that at its completion, the letting of the construction project may be allowed to proceed and will not be delayed while the laboratory analysis and writing of the report are being finished.
- D. Tribes choosing to act as consulting parties to this agreement will be provided an opportunity to make a site visit to review the data recovery field work for thoroughness and compliance with the planned phase III data recovery.
- E. Archeological investigations and data recovery activities may be terminated at sites 13DM1432, 13LA904, and 13LA921 if the FHWA, SHPO, and Iowa DOT and agree that significant information is not being recovered.



- F. The Iowa Code protects all human burials in the state of Iowa. Ancient remains are also protected under Chapter 263B, 523I.316(6) and 716.5 of the Iowa Code and the provisions of the Native American Graves Protection and Repatriation Act (25 U.S.C. 3001 through 3005).
- i. In the event that human remains or burials are encountered during additional archaeological investigations or construction activities, the Iowa DOT shall cease work in the area, take appropriate steps to secure the site, and notify the signatories to this agreement within 24 hours.
  - ii. If the remains appear to be ancient (i.e., older than 150 years), the Bioarchaeology Program at the OSA shall have jurisdiction to ensure Iowa law, NAGPRA and the implementing regulations (43CFR10) are observed. In keeping with the policy and procedures of Bioarchaeology Program, the disposition of the remains will be arranged in consultation with the culturally affiliated tribe(s) or the Indian Advisory Council, following the procedures in the OSA/tribal NAGPRA agreement for culturally unidentifiable human remains, if the affiliation is not known.
  - iii. If the remains appear to be less than 150 years old, the burial may be legally protected under Chapters 113.34, 144.34, 523I.316, 56 and 716.5 of the Iowa Code and the Iowa Department of Health will be notified.
- G. The FHWA and Iowa DOT shall ensure that all final archeological reports resulting from actions pursuant to this agreement are responsive to contemporary professional standards and to the Department of the Interior's Format Standards for Final Reports of Data Recovery Program (42 FR 5377-79). Precise locational data may be provided only in a separate appendix if it appears that release of such data could jeopardize archeological deposits. The FHWA and Iowa DOT shall also ensure that the final written report of the testing and data recovery shall be distributed to the signatories and consulting parties.
- H. The FHWA and Iowa DOT shall ensure that all materials and records resulting from the testing and data recovery conducted at archeological sites 13DM1432, 13LA904, and 13LA921 are curated in accordance with 36 CFR Part 79 at a facility within the State of Iowa.
- I. If the FHWA, SHPO, and Iowa DOT can agree that sufficient data has been collected, the FHWA and Iowa DOT shall ensure the development of a for public media (i.e. blogpost, booklet, video) that may be printed and/or hosted on the Iowa DOT website.

## II. AVOIDANCE OF ADVERSE EFFECTS

### A. VIBRATION: Monitoring

- i. FHWA and Iowa DOT shall ensure a pre-construction survey of the six (6) individual historic properties identified in Appendix B Part I is completed to document their present condition. The preconstruction

survey will also establish a peak particle velocity (PPV) threshold for vibration.

- ii. FHWA and Iowa DOT shall ensure sensors (crack and/or seismic) are installed and tested daily. If eighty (80) percent of the PPV threshold is reached sensors will alert the contractor and in turn the construction engineer.
- iii. If the PPV is reached, a meeting with the contractor and the construction engineer will identify alternative demolition/ construction methods and/or equipment to be used to minimize project vibration.
- iv. If damage to these properties occurs during construction or demolition, all activities will cease until approval from the construction engineer occurs. The SHPO will be immediately notified by the Iowa DOT if this occurs.
- v. FHWA and Iowa DOT shall ensure a post-construction survey is performed and distributed to the SHPO sixty (60) days after construction completion.
- vi. Items under Stipulation II.C will be captured in a Special Provision of the construction documents.

#### B. VIBRATION: Plans

- i. FHWA and Iowa DOT shall ensure the construction plans contain a plan note identifying the sixteen (16) properties listed in Appendix B Part II are listed or considered eligible for listing on the National Register of Historic Places.
- ii. FHWA and Iowa DOT shall ensure the construction plans contain a plan note identifying that all demolition and construction methods and equipment used shall achieve low project vibration levels when working near these properties.
- iii. If damage to these properties occurs during construction or demolition, all activities will cease until approval from the construction engineer occurs. The SHPO will be immediately notified if this occurs.
- iv. FHWA and Iowa DOT shall provide check plans to the SHPO for their review and comment.
- v. FHWA and Iowa DOT shall provide final plans to the SHPO for their information.

### III. DURATION



This MOA will expire if its terms are not carried out within five (5) years from the date of its execution. Prior to such time, the FHWA may consult with the other signatories to reconsider the terms of the MOA and amend it in accordance with Stipulation VII below.

#### IV. POST-REVIEW DISCOVERIES

If properties are discovered that may be historically significant or unanticipated effects on historic properties found, the FHWA shall implement the discovery plan of this stipulation.

##### A. DISCOVERY PLAN: 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 SHPO of the discovery and proceed with the following stipulation. If the discovery includes human remains, Stipulation IV.B will be followed.

- i. The SHPO, or an archaeologist retained by the Iowa DOT that meets or exceeds 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 then continue in the area outside the archaeological resource as it is defined by the DOT's retained archaeologist in consultation with the SHPO.
- ii. Within fourteen (14) days of the original notification of discovery, the Iowa DOT, in consultation with the 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 seven (7) days by providing written notice to the SHPO prior to the expiration date of said 14-day calendar period.
- iii. 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 the SHPO for review and comment. The Iowa DOT will notify all consulting parties of the unanticipated discovery and provide the proposed treatment plan for their consideration. The SHPO and consulting parties will have seven (7) days to provide comments on the proposed treatment plan to the FHWA and Iowa DOT upon receipt of the information.
- iv. Work in the affected area shall resume upon either:
  1. the development and implementation of an appropriate data recovery plan or other recommended mitigation procedures; or
  2. agreement by the SHPO that the newly located archaeological materials are not eligible for inclusion on the National Register.

##### B. DISCOVERY PLAN: *Human Graves*

The Iowa Code protects all human burials in the state of Iowa. Ancient remains are protected under Chapter 263B, 523I.316(6), and 716.5 of the Iowa Code and the provisions of the Native American Graves Protection and Repatriation Act (25 U.S.C. 3001 through 3005).

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:

- i. Cease work in the area and take appropriate steps to secure the site.
- ii. Notify the Office of the State Archaeologist (OSA) and the SHPO.
- iii. If the remains appear to be ancient (i.e., older than 150 years), the Bioarchaeology Program at the OSA shall have jurisdiction to ensure Iowa law, NAGPRA and the implementing regulations (43CFR10) are observed. In keeping with the policy and procedures of Bioarchaeology Program, the disposition of the remains will be arranged in consultation with the culturally affiliated tribe(s) or the Indian Advisory Council, following the procedures in the OSA/tribal NAGPRA agreement for culturally unidentifiable human remains, if the affiliation is not known.
- iv. If the remains appear to be less than 150 years old, the remains may be legally protected under Chapters 113.34, 144.34, 523I.316, and 716.5 of the Iowa Code and the Iowa Department of Health will be notified.

## V. MONITORING AND REPORTING

Each year following the execution of the MOA until it expires or is terminated, the Iowa DOT shall provide all parties to this MOA a summary report detailing work undertaken pursuant to its terms. Such report shall include any scheduling changes proposed, any problems encountered, and any disputes and objections received in the FHWA's efforts to carry out the terms of this MOA.

## VI. DISPUTE RESOLUTION

Should any signatory or concurring party to this MOA object at any time to any actions proposed or the manner in which the terms of this MOA are implemented, FHWA shall consult with such party to resolve the objection. If FHWA determines that such objection cannot be resolved, FHWA will:

- A. Forward all documentation relevant to the dispute, including the FHWA's proposed resolution, to the ACHP. The ACHP shall provide the FHWA with its advice on the resolution of the objection within thirty (30) days of receiving adequate documentation. Prior to reaching a final decision on the dispute, the FHWA shall prepare a written response that takes into account any timely advice or comments regarding the dispute from the ACHP, signatories, and concurring



parties, and provide them with a copy of this written response. The FHWA will then proceed according to its final decision.

- B. If the ACHP does not provide its advice regarding the dispute within the thirty (30) day time period, the FHWA may make a final decision on the dispute and proceed accordingly. Prior to reaching such a final decision, the FHWA shall prepare a written response that takes into account any timely comments regarding the dispute from the signatories and concurring parties to the MOA, and provide them and the ACHP with a copy of such written response.
- C. The FHWA's responsibilities to carry out all other actions subject to the terms of this MOA that are not the subject of the dispute remain unchanged.

## VII. AMENDMENTS

This MOA may be amended when such an amendment is agreed to in writing by all signatories. The amendment will be effective on the date a copy signed by all of the signatories is filed with the ACHP.

## VIII. TERMINATION

If any signatory to this MOA determines that its terms will not or cannot be carried out, that party shall immediately consult with the other parties to attempt to develop an amendment per Stipulation VII above. If within thirty (30) days (or another time period agreed to by all signatories) an amendment cannot be reached, any signatory may terminate the MOA upon written notification to the other signatories. Once the MOA is terminated, and prior to work continuing on the undertaking, the FHWA must either (a) execute a MOA pursuant to 36 CFR § 800.6 or (b) request, take into account, and respond to the comments of the ACHP under 36 CFR § 800.7. The FHWA shall notify the signatories as to the course of action it will pursue.

Execution of this MOA by the FHWA and the SHPO, and implementation of its terms is evidence that the FHWA has taken into account the effects of this undertaking on historic properties and afforded the ACHP an opportunity to comment.

This agreement is binding upon the signatories hereto not as individuals, but solely in their capacity as officials of their respective organizations, and acknowledges proper action of each organization to enter into the same.

MEMORANDUM OF AGREEMENT  
BETWEEN THE FEDERAL HIGHWAY ADMINISTRATION  
AND THE IOWA STATE HISTORIC PRESERVATION OFFICE  
REGARDING THE U.S. HIGHWAY 61 RECONSTRUCTION PROJECT,  
DES MOINES AND LOUISA COUNTY, IOWA;  
NHS-061-2(50)--19-29;  
IOWA SHPO REVIEW AND COMPLIANCE NUMBER 19971129050

SIGNATORY:

FEDERAL HIGHWAY ADMINISTRATION – IOWA DIVISION

\_\_\_\_\_ Date \_\_\_\_\_  
Michael LaPietra  
Environment and Realty Manager



MEMORANDUM OF AGREEMENT  
BETWEEN THE FEDERAL HIGHWAY ADMINISTRATION  
AND THE IOWA STATE HISTORIC PRESERVATION OFFICE  
REGARDING THE U.S. HIGHWAY 61 RECONSTRUCTION PROJECT,  
DES MOINES AND LOUISA COUNTY, IOWA;  
NHS-061-2(50)--19-29;  
IOWA SHPO REVIEW AND COMPLIANCE NUMBER 19971129050

SIGNATORY:

IOWA STATE HISTORIC PRESERVATION OFFICER

\_\_\_\_\_ Date \_\_\_\_\_  
Steve King  
Deputy State Historic Preservation Officer

MEMORANDUM OF AGREEMENT  
BETWEEN THE FEDERAL HIGHWAY ADMINISTRATION  
AND THE IOWA STATE HISTORIC PRESERVATION OFFICE  
REGARDING THE U.S. HIGHWAY 61 RECONSTRUCTION PROJECT,  
DES MOINES AND LOUISA COUNTY, IOWA;  
NHS-061-2(50)--19-29;  
IOWA SHPO REVIEW AND COMPLIANCE NUMBER 19971129050

INVITED SIGNATORIES:

IOWA DEPARTMENT OF TRANSPORTATION

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



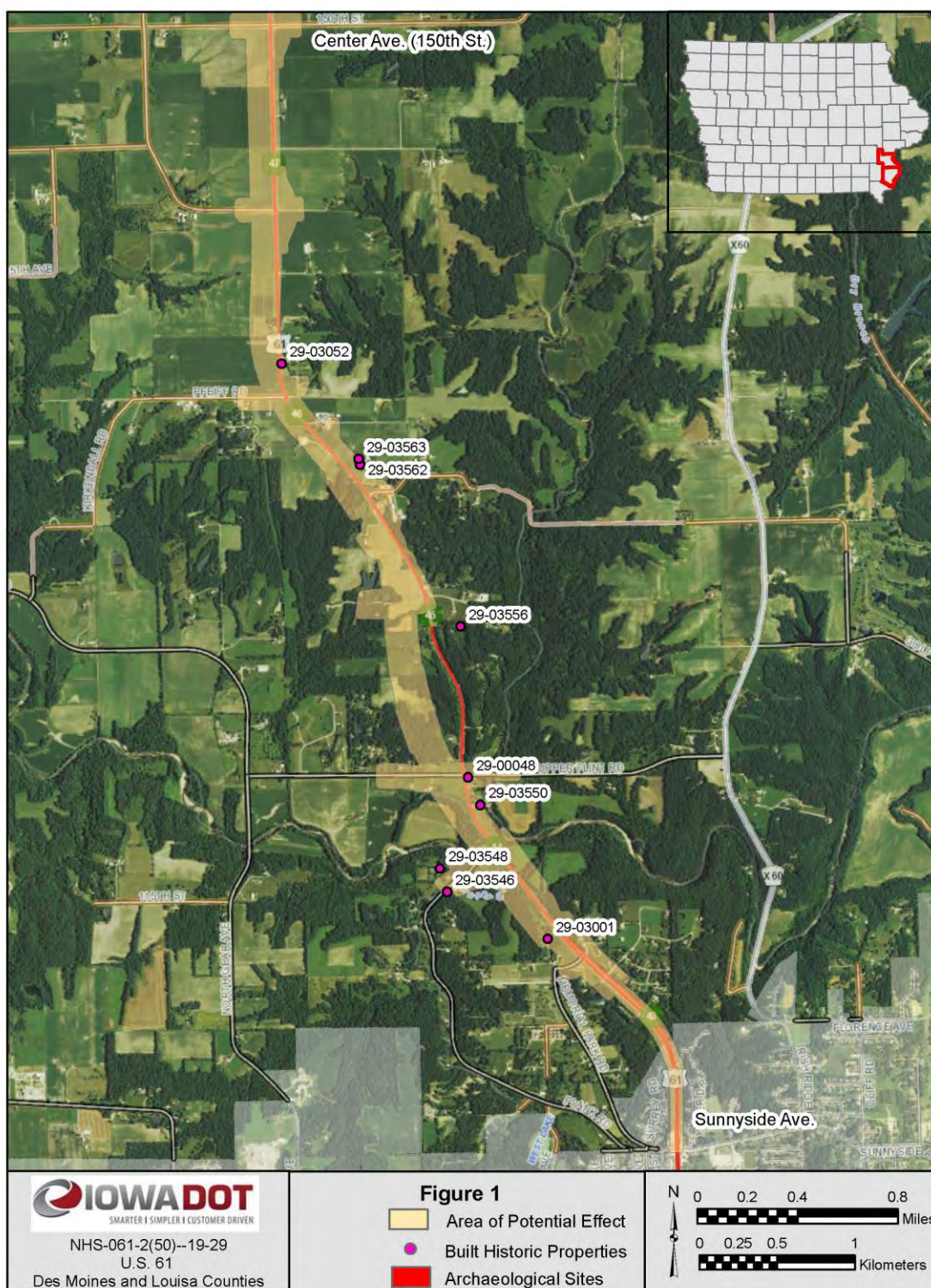
MEMORANDUM OF AGREEMENT  
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DES MOINES AND LOUISA COUNTY, IOWA;  
NHS-061-2(50)--19-29;  
IOWA SHPO REVIEW AND COMPLIANCE NUMBER 19971129050

INVITED SIGNATORIES:

THE OFFICE OF THE STATE ARCHAEOLOGIST

\_\_\_\_\_ Date \_\_\_\_\_  
John Doershuk  
State Archaeologist

## Appendix A Area of Potential Effects



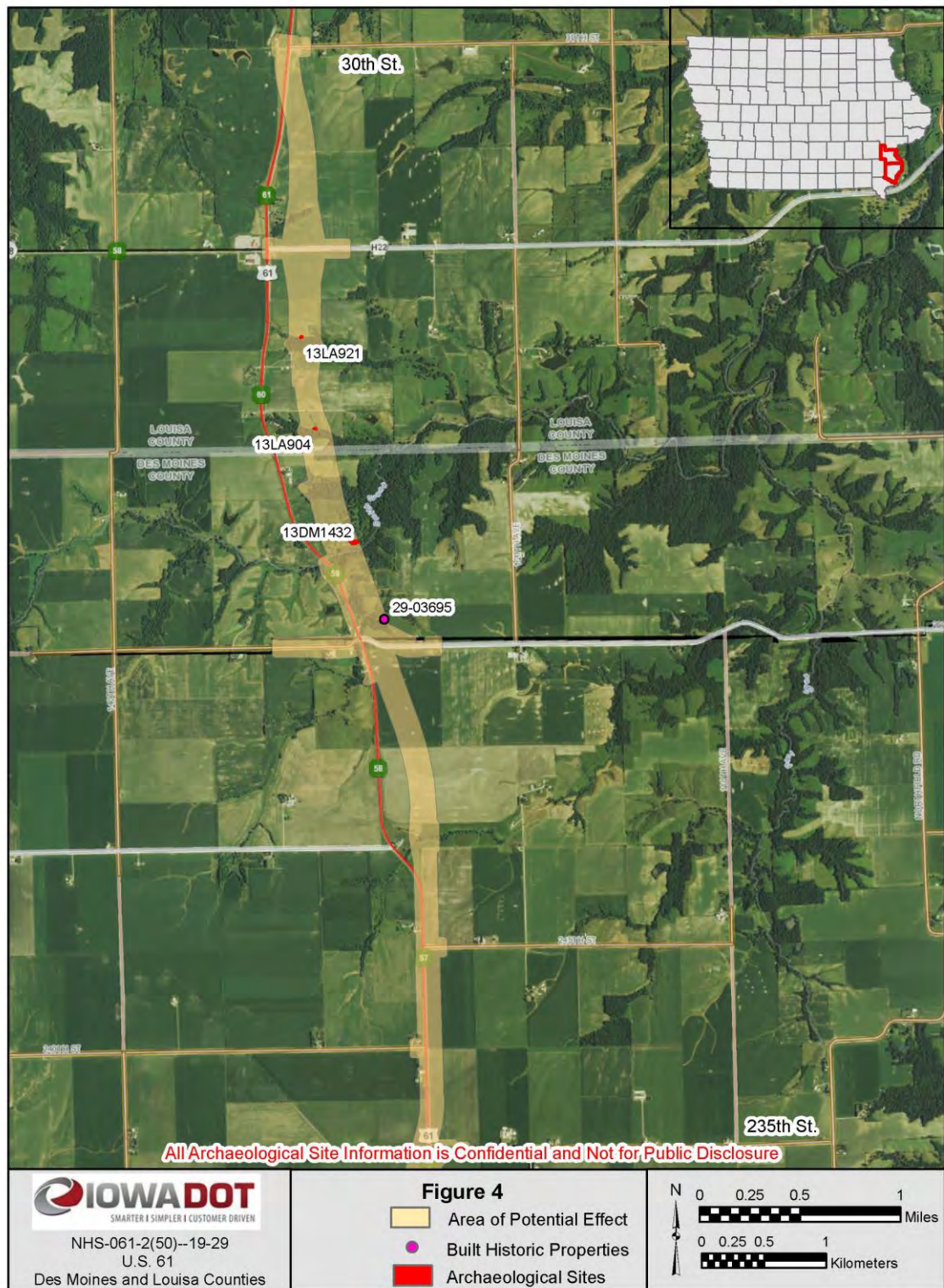












## Appendix B

### **Part I - Historic Properties with Vibration Monitoring**

Historic Properties		Site Inventory Number	Address			
1	Hawkeye School	29-00048	11753	Upper Flint	Rd	Burlington
2	Theodore Hingst Farm	29-03001	11237	Memorial Park	Rd	Burlington
3	Ripley Inn (District)	29-03010	13684	US Hwy 61		Burlington
4	Ripley Inn [1]	29-03052	13684	US Hwy 61		Burlington
5	Franklin Mills School	29-03019	11348	160th	St	Burlington
7	Allen Farm House	29-03059	17201	US Hwy 61		Sperry
8	McCullough Farm Crib	29-03061	17358	US Hwy 61		Mediapolis

<sup>[1]</sup> The Ripley Inn (29-03052) and the Ripley Inn District (29-03010) represent the same building for vibration monitoring.

### **Part II - Historic Properties with Vibration Plan Note**

Historic Properties		Site Inventory Number	Address			
1	Wright (A.) Farm: Barn I	29-03056	16296	US Hwy 61		Burlington
4	Wright (Alex) Farm: Barn I	29-03063	19196	US Hwy 61		Mediapolis
5	Brenneke-Bohlen Farmstead: Barn	29-03546	11578	Plank	Rd	Burlington
6	Frederick and Mary Taeger Farmstead: Barn	29-03548	11617	Plank	Rd	Burlington
7	Frederick and Henry Gieselman: Barn	29-03550	11886	US Hwy 61		Burlington
8	Herbert Sherfey Chittenden Estate	29-03556	12646	US Hwy 61		Burlington
9	Taeger-Diewold Farmstead: Barn I	29-03562	13158	US Hwy 61		Burlington
10	Taeger-Diewold Farmstead: Barn II	29-03563	13158	US Hwy 61		Burlington
11	Franklin Mills/Oakland Mills: Barn	29-03566	15296	US Hwy 61		Burlington
12	Leebrick-Vanosdol Farmstead (District)	29-03581	16734	US Hwy 61		Sperry
13	Leebrick-Vanosdol Farmstead: Barn I	29-03582	16734	US Hwy 61		Sperry
14	Barnes-Ping-Miller Farmstead: Barn	29-03585	12372	Stony Hollow	Rd	Sperry
15	Levi M. Miller Farmstead (District)	29-03636	12292	182nd	St	Sperry
16	Railroad Bridge	29-03640	20304	US Hwy 61		Mediapolis
17	James B. McCray Farmstead (District)	29-03694	12474	260th	St	Mediapolis
18	Hazel Grove Cemetery	29-03695		260th	St	Mediapolis



## **Appendix C**

### **Scope of Work**

Data Recovery Plan for 13LA904, 13LA921, and 13DM1432  
Primary Roads Project NHS-061-2(50)--19-29  
Louisa and Des Moines Counties, Iowa

by  
Michael J. Perry  
John G. Hedden  
Project Archaeologists

Submitted to the  
Office of Location and Environment  
Iowa Department of Transportation  
Ames, Iowa 50010

Carl Merry and Melody Pope  
Co-Principal Investigators

Technical Report 176

October 5, 2015

Office of the State Archaeologist  
The University of Iowa  
700 Clinton Street Building  
Iowa City, Iowa 52242-1030



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## Introduction

This archaeological data recovery plan for sites 13LA904, 13LA921, and 13DM1432 has been prepared by the University of Iowa Office of the State Archaeologist at the request of the Iowa Department of Transportation. The plan is designed to assist the Iowa DOT in meeting its obligations under Section 106 of the National Historic Preservation Act and 36 CFR Part 800 as amended. It was developed in accordance with the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation (48 FR 44716), "The Treatment of Archaeological Properties" published in 1980 by the Advisory Council on Historic Preservation, and in the Section 106 Programmatic Agreement for Federal Aid Highway Program in Iowa (Iowa Department of Transportation 2012).

Prehistoric components at these sites are considered eligible to the National Register of Historic Places (NRHP), and cannot be avoided by proposed construction of U.S. 61 highway improvements. An Archaic period occupational area at 13LA921, and Late Woodland period occupational areas at 13LA904 and 13DM1432 are the subjects of this Phase III data recovery plan. The sites are located just north of Mediapolis near the present junction of U.S. 61 and Iowa 78 (Figure 1). Archaeological materials obtained during the 2012–2013 Phase I surveys (Hawkins et al. 2013) and the 2013–2014 Phase II testing programs (Perry et al. 2014) are curated at the Office of the State Archaeologist, The University of Iowa, Iowa City.

## Background

Phase III data recovery from the Archaic component at 13LA921 and the Late Woodland components at 13LA904 and 13DM1432 will obtain information that contributes substantively to important research questions in local and regional prehistory. "Regional," as referred to here, includes southeastern Iowa and adjacent areas of western Illinois and northeastern Missouri. "Local," for purposes of this project, refers to the lower Iowa and Skunk rivers and the Mississippi River valley, comprising the area surrounding Burlington, Iowa. The regional prehistory is best known from major excavations at U.S. 61 corridor sites and studies at Mississippi valley sites sponsored by the U.S. Army Corps of Engineers in Muscatine, Louisa, and Lee counties to the north and south of the present study area. Des Moines County is also one of the more extensively surveyed areas of Iowa due to the presence of the Iowa Army Ammunition Plant west of Burlington and a number of large- and small-scale public works and industrial development projects over the past 30 years (see Perry et al. 2014:11–13 for a summary of CRM reports). Analyses and syntheses of the Archaic and Woodland period archaeology pertinent to the study area can be found in Benn and Green (2000), Benn and Thompson (2009), Thompson et al. (2007), Tiffany (1986), and Benn (2012a).

The landscapes of the southeast Iowa locality include steeply rolling hills, level upland divides, stepped erosion surfaces, and dendritic drainage networks. Uplands are mantled by a moderate to thick cover of Wisconsinan-age loess. Pre-Illinoian glacial drift and underlying sedimentary bedrock are exposed within the deeper stream valleys. Southeast Iowa is dominated by broad, level upland divides that represent undissected remnants of surfaces developed during the Yarmouth and Sangamon stages on a Pre-Illinoian drift plain. The areal extent of undissected uplands decreases with distance westward, and stepped hillslopes and deep valleys dominate the south-central part of the state (Prior 1991).

## Site Descriptions and Statements of Significance

### 13DM1432

#### *Site Description*

Site 13DM1432 is a Late Woodland occupation on a cultivated low terrace in the Smith Creek valley (Hawkins et al. 2013; Perry et al. 2014) (Figures 2 and 3). The southern and western limits correspond to the gentle escarpment of the terrace, which descends to paleochannel segments of Smith Creek. The site's northern boundary is based on the absence of artifacts in a series of posthole/bucket auger tests which lie in backswamp areas of the terrace and separate 13DM1432 from nearby 13DM1433. The eastern third of the site lies beyond the estimated impact area of the proposed highway and will not be subjected to data recovery. The portion requiring data recovery spans approximately 1,324 m<sup>2</sup> (0.3 acre).

The low terrace consists of early to middle Holocene-age Gunder Member alluvial deposits capped by a thin increment of Roberts Creek Member alluvium (Figure 4). The artifacts are associated with the Ap, A, E, and EB horizons of the surface soil developed into the alluvium. The upper 30–40 cm of deposits are possibly late Holocene in age but on-going soil formation has blurred the boundary between increments of younger and older sediment. Nonetheless, the cultural deposit has been buried by the accumulation of alluvial sediments. Sediment accumulation has been slow and soil formation has been ongoing. As part of the soil-forming process, bioturbation and frost heaving have also affected the cultural deposit by displacing artifacts to positions within soils that overlie or underlie the level of the original occupation surface. The result has been a blurring of the prehistorically occupied surface as well as of the sediment layers that accumulated after the site was abandoned.

The Phase II investigation included geophysical surveys, posthole/bucket auger tests, two slot trenches, and five 1-x-2 m test units. The geophysical surveys identified soil and geomorphic features, historical disturbance features, and anomalies of possible prehistoric origin. Artifact density in Test Unit 3 was relatively high. An occupational horizon represented by excavation levels with peak artifact frequency underlies the plowzone at depths of 30–60 cm. The cultural deposit in the area of Test Unit 3 appears to have been detected by the magnetometer survey, which identified a large, roughly elliptical anomaly with dimensions of approximately 7 x 8 m that contains a relatively dense artifact scatter possibly representing the remains of a prehistoric structure or midden.

A second occupational horizon may be indicated by flaking debris and fire-cracked rock recovered at depths of 80–120 cm in Phase I and Phase II bucket auger tests northwest of the magnetometer anomaly. Time limitations during the Phase II testing prevented a more thorough evaluation of this somewhat deeper component that is associated with B horizon soils. The age or cultural affiliation of this possible occupation zone is uncertain. A third occupational area is suggested by the results of Test Unit 2, located east of the estimated impact area of the proposed U.S. 61 alignment.

Test unit excavations recovered flaking debris, modified flakes, ground stone tools, prehistoric pottery, fire-cracked igneous rock, burned limestone, carbonized botanical remains, and bone in a 70-cm-thick cultural deposit. Diagnostic artifacts at 13DM1432 are limited to the prehistoric pottery sherds recovered in Test Unit 3. The recovered sherds lack decorative elements or distinctive paste characteristics, and therefore indicate a general Woodland period component. Sherd thickness, however, is in the range for pottery types that post-date the Middle Woodland (cf. Braun 1977:139–140). If so, the site may be a component of the Mephitis phase of the early Late Woodland period, A.D. 250–650 (Benn and Green 2009:442–444) or the Louisa phase of the Cordage horizon, A.D. 650–800 (Benn and Green 2009:453–460). Charcoal samples suitable for radiocarbon dating, which might be useful in narrowing the time range of the occupation, were not recovered. A single component may be suggested by the artifacts associated with the large magnetometer anomaly since other diagnostics have not been found, but the



recovery of four of the five sherds in the plowzone while the majority of the artifacts occurred at greater depths makes the association of the sherds with the buried remains tenuous.

### *Significance*

Remains of a Woodland period occupation at 13DM1432 lie shallowly buried in a forest soil on a low terrace formation within the Smith Creek bottoms. Site 13DM1432 occupies a mid-valley position in a small valley setting and contains a relatively high density of artifacts per square meter, largely due to the preponderance of fire-cracked rock and burned limestone, which suggests a cold season occupation. The available data on Late Woodland sites in interior southeastern Iowa indicate the typology of ceramics associated with these phases is beginning to be understood, and the high density of sites within a few miles of the Mississippi, Des Moines, Skunk, and Iowa River valleys led Thompson et al. (2007:8) to conclude that all available environmental niches were used. Thompson et al. (2007:57) further postulate that the usage of small valley and upland habitats differed from that of large valley settlements, possibly related to seasonality. In the Fort Madison locality, site types initially proposed for the Prairie Procurement System of the Big Sioux River watershed in northwestern Iowa (Benn 1987a) were applied to the small valley and upland settings of the U.S. 61 corridor at Fort Madison (Thompson et al. 2007). The U.S. 61 corridor north of Burlington presents a comparable array of sites and environmental settings, indicating that the site classification of the Prairie Procurement System appears to be equally applicable. In this context, 13DM1432 has the potential to yield important information regarding the settlement pattern of these Woodland period small valley and upland encampments. Important typological data regarding Woodland pottery may also be present at the site.

Phase I and Phase II investigations have yielded evidence of flintknapping (waste flakes, shatter, cores, introduced chert fragments, and micro-debitage) and processing tasks including cutting/scraping (modified flakes), grinding and pounding (grinding stone), and heating (pottery sherds, fire-cracked igneous rock, and burned limestone). Subsistence resources associated with the local environment may have been exploited using the recovered modified flakes, but occupational episodes may not have resulted in storage of food surpluses. Evidence of the types of resources exploited has not survived based on the absence of charred seeds in light fractions of flotation-processed soil samples and the lack of pit features in the test excavations. However, large clusters of artifacts indicated by differential artifact frequency in the test units across the site suggest residential loci or activity areas, with the site serving as a temporary extractive and processing camp. Magnetometer data supports the inferred presence of a residential locus in the western part of the site. Burial of the artifacts derived from the prehistoric use of the site was the result of post-occupation overbank sedimentation along with pedogenic up-building through bioturbation. While the prehistoric occupation surface is not distinguishable as a result of ongoing soil formation, a zone of high artifact frequency in the soil BE horizon within the average 70 cm-deep cultural deposit is recognized as the prehistoric occupational horizon. The average artifact density per square meter of test unit excavation is about 56 specimens, which is at the high end of the expected artifact density range for single component sites in the Fort Madison locality (Thompson et al. 2007:58).

13LA904

### *Site Description*

Site 13LA904 consists of a buried Late Woodland period occupation on a low terrace of an intermittent Smith Creek tributary (Hawkins et al. 2013; Perry et al. 2014). The tree-and-brush-covered site is bordered on the south by the 1.5-m-deep stream channel (Figure 5). A first-order drainageway occupying a shallow channel enters the main channel area from the north, forming the site's eastern limit. The moderate to steep nose slope of an upland ridge rises northwest of the site. Phase II test unit and shovel test excavations indicate the site area is underlain by early to middle Holocene-age deposits representing

the Flack and Gunder members of the DeForest Formation. The Flack and Gunder members interfinger throughout the valley bottom in this locality. The Gunder Member is distinguished from the Flack Member on the basis of soil characteristics, with the Gunder Member containing grayish subsoils and the Flack containing brownish subsoil colors. The interfingering of these members is evident in the soil profile of Test Unit 1, located on the Gunder Member, which is abruptly different from those of Test Units 2 and 3, located slightly higher on the toeslope, on deposits identified as the Flack Member. The historic-age Camp Creek Member is also identified in the vertical stratigraphic sequence overlying both the Flack and Gunder Members in portions of the site. Cutbank sections of the creek channel indicate soils associated with the Gunder Member in this area have been truncated and filled with moderately thick Camp Creek Member sediment. The Camp Creek Member deposits are associated with continued hillslope erosion and are likely also attributable to the small first order drainage along the east boundary of the site. These historic colluvium/alluvium deposits are extremely localized at the site. The differential thickness of the Camp Creek deposits is reflected in the varying depths of the cultural deposits below the modern surface.

Artifacts recovered from the Phase I and Phase II excavations indicate that the occupation of site 13LA904 occurred during the Late Woodland period. Rim sherds recovered from two test units show similar decoration to ceramics identified as Burris Cord/Fabric Impressed and Burris Cord Roughened types (Benn 2012a:40, 346). A single projectile point fragment recovered from the site has been identified as representing a Koster type, which has been dated to Late Woodland time periods throughout the upper Mississippi River valley (T. Morrow 1984:78). Charcoal buried at 93 cm below surface in Test Unit 1 was radiocarbon dated to 1860 years B.P., calibrated to 3–335 A.D. This charcoal sample was recovered at the base of the cultural deposits just below the levels of the highest frequencies of the cultural material recovered.

Burial of the cultural deposit appears to be related to footslope-floodplain alluvial and colluvial processes, with relatively small amounts of sediment accumulating over the site area and on-going soil formation after the occupation. The cultural material has likely been affected by pedoturbation and other natural factors causing dispersal through the soil profile. During historic period, with the advent of agricultural practices upslope from the site, accumulation appears to have been more rapid, although the historical sediments are variable in thickness. The historic sediments have helped preserve the site by sealing the cultural material associated with the Late Woodland occupation.

The recovered artifacts from the Phase II investigations indicate activities related to prehistoric flintknapping, hunting, and resource processing including butchering, cooking, hideworking, light duty cutting and scraping, and grinding or processing of plant materials, occurred at the site. Based on the inferred activities, a short-term habitation is suggested. While the artifacts recovered suggest only a Late Woodland occupation the radiocarbon date of  $1,860 \pm 70$  years B.P. on charcoal at the base of the occupational level suggests that the site may have been occupied during more than just the Late Woodland period. However, no artifacts dating to an earlier occupation were encountered in any of the excavations. As the site is located at the base of a south-facing slope in a protected valley, the occupation may have occurred during the winter months. No evidence of shelter was identified in any of the test excavations but the presence of artifacts related to numerous types of activities suggests that specialized activity areas may be present.

### *Significance*

Site 13LA904 consists of a buried Late Woodland occupation located at the base of a sideslope and on a terrace of a tributary of Smith Creek. Phase II investigations of this site identified a dense scatter of prehistoric cultural material located in the A and E horizons of Flack Member alluvium and in the A and upper Btg horizons of Gunder Member deposits. The site area has never been plowed and the cultural deposit has not been disturbed by agricultural activities. The Phase II investigations indicate that activities



related to flintknapping, cooking, resource processing, hunting and/or butchering, and light duty cutting and scraping occurred at the site area. The concentration of materials encountered in the test excavations suggests that the site represents a habitation area and a structure may be present. Carbonized botanical remains encountered during the excavations and within soil flotation samples indicate the site was located in a forest environment, similar to the current vegetation in the area. Diagnostic artifacts recovered from the investigations include ceramics identified as representing Louisa phase Burris ware and a Koster type projectile point. While the artifact assemblage suggests a single component, an early radiocarbon date on charcoal from the base of the cultural horizon may indicate additional components that were not recognized in the recovered artifacts.

Most of the investigated Late Woodland sites in southeastern Iowa are known from the bluffs and bottomlands of the Mississippi River and represent the Louisa phase with its characteristic Burris ware pottery. The Louisa phase is proposed to cover much of the southeastern quarter of the state along the Des Moines, Skunk, and Iowa Rivers (Benn and Green 2000:455). Beyond the Mississippi River valley very few components have been identified, but a high density of sites within a few miles of the Mississippi River suggests that all available environmental niches were used, with the usage of small valley and upland habitats likely differing from that of large valley settlements, possibly related to seasonality (Thompson et al. 2007:8). Overviews of Woodland settlement and subsistence patterns in Illinois have suggested a multi-stage sequence of cultural adaptive practices during the Woodland period (Green 1993). According to this model Late Woodland populations employed a series of settlement strategies geared toward fulfilling subsistence needs. These adaptations resulted in dispersed households and communities and a reduction in social stratification. The Late Woodland period in southeastern Iowa corresponds to this model's florescent stage of upland settlement where primary occupation units were dispersed communities of scattered individual households (Green 1993:207). During this period populations used a diversified approach to resource exploitation concentrating on nut and acorn use, and native seed plants. The Late Woodland occupation at 13LA904 likely represents the remains of a single household given its limited spatial extent, physiographic setting, and artifact content.

## 13LA921

### *Site Description*

This prehistoric occupation lies on the upper nose slope of a southeasterly-trending ridge overlooking the Smith Creek watershed (Hawkins et al. 2013; Perry et al. 2014). The site was encountered in a brushy field border between a cultivated tract to the north and an unused tree-and-brush-covered slope to the south (Figure 6). The site is bordered on the east, south, and west by moderate slopes. Moderately eroded Inton series soils, which developed in loess under forest vegetation, are mapped on the ridge. A single shovel test yielded artifacts associated with the site during Phase I survey. The shovel test soil profile consisted of an 18-cm-deep A horizon overlying a silt loam BE and a clay loam 2Bt horizon. Flaking debris, fire-cracked rocks, and a core fragment were recovered from the upper 40 cm. The recovered artifacts are not culturally diagnostic but suggest the location of activities involving stone heating and flintknapping. The lack of artifacts in posthole tests placed on the ridge summit northwest of the site indicates that 13LA921 covers a localized area on the end of the ridge.

Phase II investigations included one 2-x-1-m test unit and five 1-x-1-m test units. Three shovel tests were also excavated in a bisecting transect to determine the extent of the buried cultural materials. Based on the distribution of materials recovered from the excavations the site boundaries were revised to cover a 20-x-30-m area. The test units revealed a cultural deposit extending to depths of up to 50 cm throughout the site area, with a concentration of materials located between 20 and 40 cm below surface. Excavations yielded a total of 670 prehistoric artifacts. The recovered artifacts consist primarily of flaking debris and

included 460 waste flakes and 85 pieces of shatter. Two cores, one hammerstone, one biface fragment, four edge-modified flakes, and 117 fragments of fire-cracked rock were also recovered. Flotation samples yielded one unidentifiable charred seed, four small charcoal fragments, and 719 pieces of microdebitage.

One intact cultural feature was encountered in the excavations and is identified as Feature 1. This feature consisted of a concentration of lithic materials first encountered in the northwest corner of Shovel Test 1; the shovel test was later expanded into Test Unit 5. The feature, identified as a large ovoid-shaped concentration of percussion and pressure flakes and a small amount of fire-cracked rock, was encountered at 38 cm below surface and extended to a depth of 45 cm below surface. The feature's horizontal extent covered 55 cm north-south and 45 cm east-west. The feature was identified in the BE soil horizon and extended to the top of the Bt horizon. Artifacts recovered from the feature and surrounding matrix included one edge modified flake, an exhausted core, 323 waste flakes, 35 pieces of shatter, and 23 fragments of fire-cracked rock. The feature is interpreted as the remains of a flintknapping locus.

The artifacts and features encountered at 13LA921 represent the remains of an occupation of unknown temporal affiliation where activities associated with flintknapping, chipped stone tool production, light-duty cutting and scraping, and cooking or fire-building occurred. Based on the recovered lithic assemblage it appears that all stages of lithic reduction were occurring at the site. These include the initial reduction of cores, as well as the production of chipped stone tools and likely the maintenance and resharpening of these tools. The presence of an intact feature buried at a depth 38–45 cm below surface indicates that disturbances related to historic agricultural activities have not impacted this site since its location is within the wooded and brushy area along the valley margin. Plowzone depths of up to 34 cm below surface have been documented in the agricultural field immediately north of the site boundary. It is possible that the site originally extended into these areas, but Phase I and Phase II testing (Hawkins et al. 2013; Perry et al. 2014) encountered no artifacts.

The burial of cultural materials at 13LA921 in an upland setting appears to be the result of post-occupational bioturbation activities. Numerous studies in the Midwest have demonstrated that burial of artifacts on stable upland surfaces is a predictable and natural consequence of pedogenic processes (Balek 2002:42) including the burrowing activities of small mammals, which results in a biomantle of upward-building soil material (Abbott and Tiffany 1986; Balek 2002; Van Nest 1993, 2002). These processes can also cause the down-working of artifacts within the soil. Recent studies in western Illinois suggest that not enough time has elapsed to bury Woodland period (post-2,500 year B.P.) artifacts at subplowzone depths by pedogenic up-building alone. However, burial of Archaic period sites (>3,500 years B.P.) at subplowzone depths has been documented (Van Nest 2002:54, 83). Based the lack of any ceramic artifacts in the test excavations conducted so far, and the association of Archaic period remains with B horizon soils as documented elsewhere, it is inferred that the materials encountered at site 13LA921 date to the Archaic period.

### *Significance*

Site 13LA921 consists of a small intact, shallowly buried, archaeological site of unknown temporal affiliation. The site has yielded an assemblage of chipped and ground stone tools, cores, lithic manufacturing debris, fire-cracked rock, charred botanical remains, and an intact feature. While not conclusive, evidence suggests the material is associated with an Archaic period occupation. The remains are interpreted as having been buried and preserved in this upland setting through the processes of biomantle upbuilding and through the fortunate circumstance of having never been subjected to cultivation. It has been shown that valuable contextual information is conserved in the process of biomantle upbuilding and these buried components have much to offer for archaeological study (Van Nest 2002:56). Investigations in western Illinois indicate that these upland valley-rimming sites consist of more than ephemeral hunting camps represented by chipped stone tools and flaking debris. Many contain substantial quantities of fire-cracked rock and ground stone tools. Though charcoal is scarce in these



buried sites, datable remains and informative archaeobotanical assemblages are recoverable in flotation samples from large-scale excavations (Van Nest 2002:83). As a vast majority of the upland areas of southeast Iowa have been subjected to long-term agricultural activities this site is a rare example of an undisturbed buried upland occupation associated with the Archaic time period.

## Project Area

### 13DM1432

Data recovery at 13DM1432 will focus on the Woodland component within the project area, representing the maximum area required for highway construction as presently envisioned by DOT. The portion of the site beyond the proposed construction limits is considered beyond the project area. The proposed construction limits at 13DM1432 covers approximately 1324 m<sup>2</sup>, or 63 percent of the 0.2 ha site. Within the proposed construction limits the apparent residential locus detected by the magnetometer survey covers approximately 56 m<sup>2</sup>, representing 4 percent of the portion within the impact area. The Woodland component is bordered by the terrace escarpment forming the sites western limit. This area includes Phase I Shovel Test 145-3 and Phase II Test Unit 3. Test Units 4 and 5 appear to be on the outer margin of the occupational locus. Surface elevations of the shovel tests and test units within the area of the Woodland stratum range approximately 204.5 m (671 feet). The depth to the occupational horizon ranges 30–40 cm, indicating an elevation of 204.1–204.2 m. The thickness of the occupational horizon is estimated at 40 cm, based on the test unit results. The elevation of the bottom of the Woodland horizon thus ranges approximately 203.7–203.8 m, and its volume within the proposed construction limits is estimated at 45 m<sup>3</sup>.

The artifacts recovered from Posthole/Auger Tests 145-7 and 145-22 may represent a second occupational locus within the project area, lying at a depth of 80–120 cm below surface or at an elevation of 203.3–203.7 m. The extent of this locus is uncertain as its depth appears too great to have been detected by the geophysical surveys and test unit excavations were not conducted. Assuming a maximum area of 10 x 10 m for this potential occupational locus, a volume of up to 50 m<sup>3</sup> may be expected. Together the two occupational loci have an estimated volume of 95 m<sup>3</sup>. Additional cultural material beyond the apparent residential loci is likely. Supplemental mechanical excavation within the project limit but beyond the block excavations may be necessary after agency consultation. Any additional mechanical excavation will be monitored by a small crew to excavated features as needed.

### 13LA904

Data recovery at 13LA904 will focus on the NRHP-eligible buried Late Woodland component within the project area. The entirety of the site is located within the project area, covering approximately 400 m<sup>2</sup>. The Late Woodland component is bordered on the south by the channel of the Smith Creek tributary, on the east by a small first order drainageway and to the north and west by the moderate to steep nose slope that rises from the narrow valley. Surface elevations of the shovel tests and test units with the area of the Late Woodland stratum range approximately 210.3–212.8 m. Peak surface elevations occur around Test Unit 2, and the surface slopes gently to the south and east. The depth to the Late Woodland component at the site ranged from 30–100 cm below surface within the Gunder Member deposits and from near surface to depths of 40–70 cm in the Flack Member deposits. The thickness of the Late Woodland occupational horizon is estimated to range from 40–70 cm across the site. The volume within the proposed construction limits is estimated at 200 m<sup>3</sup>. Supplemental mechanical excavation beyond the block excavations may be necessary after agency consultation. Any additional mechanical excavation will be monitored by a small crew to excavated features as needed.

## 13LA921

Site 13LA921 covers approximately 420 m<sup>2</sup> and is located entirely within the area of potential effect for this project. The intact Archaic component at the site is confined to the brushy field border between a cultivated tract to the north and an unused tree-and-brush-covered slope to the south. The site area is on a gentle sloping upland ridge. The intact component is located from immediately below the surface to a depth of up to 50 cm with the thickest concentration of materials located between 20 and 50 cm. The volume of the deposits within the construction limits is estimated to be approximately 210 m<sup>3</sup>. Supplemental mechanical excavation beyond the block excavations may be necessary after agency consultation. Any additional mechanical excavation will be monitored by a small crew to excavated features as needed.

## Research Design

This section establishes the historic context of 13LA904, 13LA921 and 13DM1432 in relation to important research questions in local and regional prehistory. Contextual information is derived primarily from references identified above in the section entitled “Background.” In addition to the following research questions, other questions may emerge which could be addressed with data recovered from the excavations.

## CULTURE HISTORY

### *Context*

National Register eligible components associated with the Archaic Period (13LA921) and the Late Woodland Period (13DM1432 and 13LA904) were identified in the Phase I and Phase II investigations of these three sites. The Archaic period in Iowa covers the longest temporal span of any other defined archaeological context. The Archaic has been subdivided into three periods, Early Archaic (8500–5500 B.C.), the Middle Archaic (5500–3000 B.C.), and the Late Archaic (3000–800 B.C.) (Alex 2000:63). While Archaic period sites are frequently encountered in upland settings, most have been heavily impacted by agricultural practices or have mixed components (Morrow 1996:21). More information is provided by buried Archaic components located in alluvial fans or other Holocene alluvial deposits (Benn and Thompson 2009:491; Pope et al. 2014). However, the depth of these deposits hampers their identification and examination. Based on the high frequencies of Early Archaic sites in these locales, combined with the low population densities at that time, it has been speculated that Early Archaic groups utilized upland settings more frequently than other later populations (Benn and Thompson 2009:496).

Benn and Green (2000) subdivided the Late Woodland period into early and late subperiods, placing southeastern Iowa archaeological components located west of the Mississippi valley extending up the Des Moines, Skunk, and Iowa rivers into central Iowa in the Mephitis and Louisa phases. The early Late Woodland Mephitis phase components are associated with small habitation sites containing Henry ware ceramics and stemmed Steuben-like projectile points, and mounds with rock features. Radiocarbon dates for Mephitis phase components are few, ranging about A.D. 250–650. Coeval with the Mephitis phase are the better-dated Gast phase in the Mississippi trench, which is dominated by Weaver ceramics, and the Randolph phase of central and south-central Iowa. Among the few excavated Mephitis phase components are Hickenbottom (13JF52) (Thompson and Fisher 1977), Hoenig Fan (13LE42) (Benn 2008), 13LE700 (Thompson et al. 2007), and perhaps the Cormorant site (13MA387) (Moffatt et al. 1987), leading Benn and Green (2000:443) to conclude that our understanding of the distribution of early Late Woodland pottery is incomplete.



The Louisa phase with its hallmark Burris cord impressed ceramics is represented by scattered southeastern Iowa components dating roughly A.D. 650–850 (Benn and Green 2000:453–459). Burris ware marks the beginning of a trend toward pottery with squared and castellated orifices typified by the later Minotts ware of eastern Iowa (Anderson 1971; Logan 1976; Tiffany 1986). Louisa phase components are both more numerous and better documented, although sites in the Mississippi trench or on landforms immediately adjacent to the Mississippi trench have received most of the attention (cf. Benn and Green 2000:459). Sand Run West (13LA38) and Horseshoe (13LA27) (Benn 1987b) are good examples of intensive investigations of Louisa phase components representing small villages on low terraces and footslopes. Bivouacs and similar short-term occupations are also recognized. West of the Mississippi River only widely scattered Louisa phase components may be identified, often occurring in mixed or disturbed contexts (cf. Benn and Green 2000:459). Exceptions might include the Coppers Creek site (13VB460), located on a Des Moines River tributary about 50 km upstream from the Mississippi (Hudson 1991), and the recently identified sites 13LA900 and 13LA904 along the U.S. 61 corridor north of Burlington (Perry et al. 2014).

#### *Data Requirements*

To contribute to the culture history of the southeast Iowa locality, radiocarbon dates, and diagnostic artifacts, particularly projectile points and ceramics, are necessary. Both data sets are needed to determine the type of Archaic occupation at 13LA921, whether 13DM1432 is related to the Mephitis, Louisa, or some other phase and to confirm the dates of the Louisa phase occupation at 13LA904. Potsherds available at 13DM1432 are needed to address problems in Late Woodland ceramic typology. If radiocarbon evidence is also available, the range of culture-historical research problems addressable at all three sites may be expanded.

#### *Specific Research Questions*

13LA921: What is the date range of the upland Archaic occupation of this site? What types of diagnostic artifacts are associated with the component(s) present?

13DM1432 and 13LA904: What is the date range of Mephitis phase or Louisa phase occupational sites? What kinds of chipped stone tools and ground stone tools are associated with components of these phases? What are the metric differences in decoration and vessel form that distinguish Burris or Henry ware from other Late Woodland wares in Iowa and the upper Midwest?

### SETTLEMENT PATTERNS

#### *Context*

Benn and Thompson (2009:497–498) postulate six site types employed by Archaic populations in eastern Iowa. These include resource-procurement stations, bivouacs, temporary base camps, seasonal base camps, villages, and burial sites. Resource-procurement stations generally produce very limited numbers and types of artifacts at places where specific resources were collected. Bivouac sites tend to have thin surface hearths suggesting brief heating activities, tools, and flaking debris not exceeding three or four types and a narrow range of use-wear types. Structural and storage facilities tend to be absent. Bivouac sites also tend to be associated with resource-procurement activities (Benn and Thompson 2009:497). Temporary base camps were occupied for longer periods and structures must have been present to shelter the site inhabitants. Seasonal base camps contain a full range of tool types and the occupational zone usually contains multiple houses and evidence of reoccupation. Villages are long term occupations representing one or more human generations living at the same place. These sites contain debris middens, evidence of multiple structures and a complete range of tool types. Burials are often

located in or near villages (Benn and Thompson 2009:498). An analysis of upland Archaic sites identified in highway surveys in Iowa indicates that 65 percent of those identified consist of resource procurement sites, 32 percent bivouac sites, and 2 percent base camps (Stanley 1994).

Late Woodland period settlement pattern research has largely focused on the “ring” villages of the Mississippi trench exemplified by the Gast (13AL12) and Oak Village (13LA582). Sites in small valley settings near Fort Madison have been investigated mainly at the Phase I and Phase II levels but have been hampered by a lack of features, eroded soil conditions resulting from agricultural use, mixed multiple components, and poor preservation of organic remains. One exception appears to be 13LE700, located well up the valley of a small tributary of Devil’s Creek, where two pit features, a possible projectile point, and several dozen sherds of possible Late Woodland period manufacture were found in 5 m<sup>2</sup> of test excavations. Site 13LE700 is otherwise similar to 13DM1432 in its landform setting, soil/stratigraphic associations, general range of artifact categories, and site function (Thompson et al. 2007:40–48). Although the site is considered eligible for the NRHP, data recovery excavations apparently have not been conducted at 13LE700. Site 13DM1432 occupies a mid-valley position in a somewhat larger valley setting and contains a greater density of artifacts per square meter, largely due to the preponderance of fire-cracked rock and burned limestone, which suggests a cold season occupation. Excavations at 13DM1432 can provide baseline data for comparative studies with occupations located in southeastern Iowa’s small valley floodplain settings.

#### *Data Requirements*

Recovery and analysis of features and artifacts provides information for interpreting how sites were used and how people moved through a landscape. Diagnostic subsistence remains were not recovered in the test excavations but carbonized botanical remains were recovered from flotation samples and additional botanical remains are therefore expected at each site, especially if features are identified, providing direct evidence of floral resource procurement. To interpret site locational strategies, knowledge of resource zonation, both spatially and seasonally, must be obtained for the Smith Creek locality. A variety of data sources are available for this task, including GLO land surveys that record vegetation as it existed at the time of early Euro-American settlement (Hodgson 1992), modern vegetation studies (Lammers 1983), and evidence for available resources as indicated by food remains recovered from sites (e.g., Powell and Lopinot 2012).

Since the Woodland components at 13DM1432 appear to be horizontally and vertically separable, the nondiagnostic artifacts associated with each occupational locus stratum can be reasonably inferred to be associated with the diagnostic specimens, permitting interpretations based on the full range of available artifact types. The recovered data can be used in comparative studies of geomorphic and paleoenvironmental contexts to determine Woodland settlement types and distribution. At 13DM1432 and 13LA904, excavation of the site to locate post molds, hearth features, and associated activity loci or refuse disposal areas will permit evaluation of the use of space within the site area. The data can then be applied in comparative analyses.

#### *Specific Research Questions*

13DM1432 and 13LA904: Do occupational sites in the interior valleys of southeastern Iowa represent short-term field camps, longer-term residential bases, or perhaps wintering camps? How do occupations in medium sized valleys like Smith Creek differ from those in large and small valleys? If the large magnetometer anomaly represents a structure, are Mephitis or Louisa phase structures similar to those at southeastern Iowa sites like Sweeting (13WS61) (Lensink 1986:112–113) or the early Late Woodland houses in the Mississippi trench (Benn 2012b) and central Des Moines River valley (Timberlake 1981; Thompson and Benn 1999)?



13LA921: The recovery of sufficient spatial data in the form of feature location and content and tool frequencies, informed by use-wear and other artifact analyses, to interpret the function of the site is a major goal of the Phase III investigation. Can the site be classified within existing models of settlement and subsistence or does the site perhaps represent some other kind of occupation? Can specific activity areas be identified at the site to provide information concerning the variety of activities that were occurring at the site? How many differing types of tools are present? Can gender roles be postulated based on the identification of specific types of activity areas? The answer will involve tool function identification through use-wear analysis and the study of the distribution of tool and ceramic classes and their associations with other kinds of artifacts.

## SITE FORMATION PROCESSES

### *Context*

Sites 13DM1432, 13LA904, and 13LA921 are located in markedly different geomorphic contexts, consisting of an alluvial terrace, a small valley footslope/floodplain, and the shoulder of a loess-mantled upland ridge, respectively. Use of these locations reflects settlement decisions involving not only resource proximity but also the suitability of given landforms for human occupation.

The processes resulting in the shallow burial of archaeological components on uplands and Wisconsinan terraces are becoming better understood as a result of excavations at sites such as 13MK357 (Benn and Thompson 1999). Discussions of hillslope evolution in the Midwest during the Holocene provide useful contextual models for evaluating site formation processes from the perspective of pedogenic processes and artifact depth distributions (e.g., Bettis and Hajic 1995:90–92; Hajic 1990; Van Nest 1993, 1997).

How sites were used and the duration of occupation are also topics of particular interest to the present project. Repeated occupation of the low terrace formation at 13DM1432 is evident from the Phase I and Phase II investigations, but 13LA904 and 13LA921 apparently represent single occupational episodes. The functions may be reflected in differences in artifact types, density, and distribution that are the result of human as well as natural factors.

Soil micromorphology is also proving to be useful tools in understanding site formation processes. Soil micromorphology, involving the microscopic analysis of thin sections provides insights into microstratigraphy that is invisible to the naked eye, and even to physical and chemical soils analysis (Artz et al. 2000; Goldberg and MacPhail 2006; Josephs 2009; Lillios et al. 2010; Stoops et al. 2010).

### *Data Requirements*

Detailed field descriptions of soils and sediments, supported by laboratory data on soil physical and chemical properties, and soil micromorphology analysis will provide the basic data for reconstructing landscape evolution at 13DM1432, 13LA904 and 13LA921. Provenience information for recovered artifacts and features must be sufficiently detailed to accurately determine the associations of artifact and feature classes within and between prehistoric cultural strata and their relationship to geomorphic surfaces, geological deposits, and soil horizons.

### *Specific Research Questions*

13DM1432, 13LA904 and 13LA921: How do the distributions of artifacts and features compare between sites located in small valleys, large valleys and uplands? Do the differences reflect occupations of longer or shorter duration or repeated events?

13DM1432: What geomorphological processes are reflected in the stratigraphic record of the low terrace? Did terrace aggradation occur as overbank sedimentation or footslope deposition? When did the

downcutting event that formed the terrace occur, and how did that event affect the site? Does the alluvial record preserve evidence of paleoclimatology context of the site?

13LA904: What are the geomorphological processes that occurred at the juncture of the Flack and Gunder Member deposits to bury and preserve the Late Woodland materials identified at the site? Can rates of footslope deposition be identified? Does the alluvial record preserve evidence of paleoclimatology context of the site? How does the geological history of the site improve the regional understanding of the evolution of these archaeologically significant landforms?

13LA921: Burial of artifacts on stable upland surfaces is becoming widely recognized, but interpretations of the processes working to bury the remains vary (e.g., Benn 2010:16–25; Van Nest 2002:54, 83). What processes can be identified at 13LA921 to explain the deposition and burial of the cultural material on this upland ridge? Correlation with diagnostic artifacts or radiocarbon dates should provide information concerning rates of burial. Is the data from western Illinois comparable to the deposition rates at 13LA921?

## Methods

The data recovery plan for each site contains the following major task groups that structure background, field, laboratory, and reporting activities into an integrated project.

**TASK GROUP 1:** Pre-field Research and Project Start-up

**TASK GROUP 2:** Excavations

**TASK GROUP 3:** Processing and Analysis

**TASK GROUP 4:** Report Preparation

Specific activities included in each task group are detailed in the following sections. Pre-field background research, and post-field laboratory processing, analysis, and reporting for 13DM1432, 13LA904, and 13LA921 involve the same general activities and procedures. For this reason, activities under Task Groups 1, 3, and 4 are listed only once. Plans for fieldwork, in contrast, vary considerably for each site due to differences in stratigraphic context and data requirements. A separate discussion of Task Group 2 is presented for each site.

### **TASK GROUP 1 (13DM1432, 13LA904, AND 13LA921): PRE-FIELD RESEARCH AND PROJECT START-UP**

1. Background research including, but not limited to, a review of previous archaeological studies in southeastern Iowa, northeastern Missouri, and western Illinois including Phase I and II reports and artifact assemblages, and other pertinent literature and resources.
2. Pre-field meeting with the Iowa DOT cultural resources staff, and the Iowa SHPO archaeologist if possible, to discuss details of timing, field methods, and report format.
3. On-site visitation for orientation and initial preparation of datums and other important excavation location reference points.
4. Establish appropriate field and office logistical systems for tracking of project related materials, correspondence, and scheduling of DOT and SHPO field visits.

### **TASK GROUP 2A: 13DM1432 MECHANICAL AND HAND EXCAVATION**

M. Perry, Field Director; C. Merry, Principal Investigator. It is recommended that excavation at site 13DM1432 proceed as follows:

1. Locate the limit of the Project area and establish metric vertical and horizontal datums for reference during the excavation. A contour map of the site, with a maximum contour interval of



60 cm, shall be produced showing locational coordinates and elevations of all excavations. Existing topographic coverage in the form of CAD files, if available from DOT, may be used in preparing the contour map.

2. A Giddings hydraulic corer or comparable device capable of extracting solid cores with a minimum diameter of 7.6 cm (3 inches). Coring shall be conducted in the gridded Project area. The objectives of systematic coring are to:
  - a) obtain information about paleotopography at the site by laterally tracing buried soils, geomorphic surfaces, and stream channels;
  - b) identify artifacts and cultural features, if encountered;
  - c) determine the potential for buried prehistoric components to occur beneath the depth of those documented in Phases I and II.

Cores shall be advanced until pre-Holocene (till, bedrock) or refusal on impenetrable gravels or saturated sands are encountered. In valleys the size of the one at 13DM1432, this is typically 4 m or less. Cores may be placed at judgmentally determined locations but a minimum of five cores shall be extracted at intervals along one or more transects designed to provide a stratigraphic cross section revealing paleotopography. The results and interpretations of the coring shall be transferred to the OSA within three weeks of completion of the geomorphological fieldwork.

3. Employ a road grader or similar earthmoving equipment to remove the plowzone within the Project area. Test excavation has shown the plowzone to contain relatively few artifacts associated with the occupational loci at 13DM1432. Plowzone stripping should extend to depths of 20–30 cm to permit efficient access to the undisturbed deposits containing the majority of the cultural deposits for hand excavation under more carefully controlled conditions. No screening of this overburden is required. Stripped surfaces will be inspected to identify possible prehistoric features, which may be used to guide hand excavation.
4. Employ a backhoe to excavate a trench in the northern part of the site perpendicular to the western escarpment of the terrace containing 13DM1432 (Figure 2). The backhoe trench should extend to a maximum depth of 1.5 m (5 feet) to over a maximum distance of 30 m (100 feet) in order to expose the soil stratigraphy and possibly buried landform surfaces within the Project area. The trench excavation should meet OSHA excavation standards. The trench excavation should be carefully monitored to avoid undue disturbance of buried cultural features. At least one trench wall should be smoothed by trowelling or shovel scraping and inspected by a geomorphologist to aid in stratigraphic interpretation. Sufficient stratigraphic information shall be obtained from coring and the stratigraphic backhoe trench to permit the construction of three dimensional models of changes through time in paleotopography in the Project area, using graphic means such as fence diagrams, isopach maps, or paleosurface maps.
5. Excavate the disturbed fill of a drainage tile trench by either hand or backhoe. This will prevent mixing of artifacts from disturbed and undisturbed contexts in the area of the occupational locus identified by the magnetometer, and provide a stratigraphic exposure of the occupational horizon in this portion of the site.
6. Test blocks measuring 5 x 5 m shall be excavated in areas identified during the Phase I and Phase II investigations and the stratigraphic mapping, particularly the magnetometer-detect anomaly. The test blocks will provide information on artifact and feature content of use in determining whether larger scale block excavations in the area are warranted. A minimum of four and a maximum of six test blocks shall be hand excavated to depths of 60–100 cm below the machine-excavated surface, or to the base of the occupational horizon. The hand excavation of at least two 1-x-1m units within each block should proceed in 10 cm levels and the matrix should be screened

through ¼ in (6.4 mm) wire mesh. Minimally, 5-liter flotation samples should be recovered from every level excavated through the cultural deposit. Additionally, all tools and all debris larger than 2.5 cm (1 inch) in any dimension should be piece-plotted in three dimensions, numbered and individually bagged. The remaining areas of the block shall be excavated by careful shovel skimming and troweling to expose artifacts for piece-plotting in three dimensions. An electronic bar code will be affixed to specimen field bags to identify specimen provenience and facilitate laboratory processing. Narrative notes and maps should be kept for each level of each 1-x-1 m unit. Photographs should be taken of all significant field situations. In undertaking exploratory testing, appropriate steps shall be taken to ensure excavation safety. It is recommended that overburden excavation extend at least 2 m beyond the limits of the targeted test blocks to ensure that the maximum slope ratio from the modern land surface to the base of the hand excavation blocks does not exceed 1H:1V (see Safety Considerations, below). Provisions should also be made for the use of pumps or other water removal system should the local water table lie within 2 m of the surface at the start of the project.

7. Expansion of one or more of the test blocks into larger block excavations shall be determined in telephone or email consultation with DOT and SHPO officials. Test blocks yielding features, significant artifact distributions, or both, may be expanded as needed to permit recovery of additional associated remains to the limit of the Project area. The test blocks may be expanded to 10-x-10 m blocks, and a minimum area of 225 m<sup>2</sup> should be excavated. This area would represent approximately 17 percent of the portion within the Project area, but contain nearly all of the area determined by the Phase II investigation to consist of significant buried cultural deposits. Criteria to consider in selecting target areas include, but are not limited to, the following:
  - a) The target area contains sufficient feature and artifact density to yield adequate samples for addressing research questions.
  - b) Each target area must include a living surface or complex of surfaces that are preserved to a sufficient extent that spatial relationships created among artifacts and features during the prehistoric occupation are retained.
  - c) It must be possible to excavate the target stratum without endangering project personnel.
8. Excavation of the expanded blocks should then be completed by hand. Excavation of the expanded block(s) should proceed according to the methods and provisions outlined above for the initial test blocks, including the excavation of screened units and collection of flotation samples. All features (e.g., hearths, pits, post molds) and possible features shall be identified, exposed, mapped, and excavated as individual provenience units. All features should be cross-sectioned along their long axis and profiles will be mapped. The remaining half of features shall be excavated in strata, following observed stratigraphic boundaries. If no stratigraphic boundaries are identified within features, the second half of each feature will be excavated in 10 cm levels. Flotation samples, measuring 10 liters if possible, will be taken from each stratum of each feature. Feature fill not collected as flotation samples will be screened through 6.4 mm (¼ inch) hardware cloth. Field photos will be taken of features, selected unit profiles, and in situ distinctive artifacts or artifact concentrations. For planning purposes, a minimum of one feature for every 5 m<sup>2</sup> of excavation area should be expected. If a significant number of features are encountered, their excavation, fill processing, and analysis will necessitate additional costs.
9. Samples of materials suitable for radiometric dating, including small samples suitable for dating by the AMS technique, and other samples potentially useful for specialized analysis will be recovered as encountered. A minimum of two standard and two samples for AMS dating will be submitted to a reputable dating laboratory.
10. All excavations shall be backfilled to the level of the present ground surface.



## **TASK GROUP 2B: 13LA904 EXCAVATION**

J. Hedden, Field Director; C. Merry, Principal Investigator. It is recommended that excavation at site 13LA904 proceed as follows:

1. Establish metric vertical and horizontal datums for reference during the excavation. A contour map of the site, with a maximum contour interval of 60 cm, shall be produced showing locational coordinates and elevations of all excavations. Existing topographic coverage in the form of CAD files, if available from DOT, may be used in preparing the contour map.
2. A Giddings hydraulic corer or comparable device capable of extracting solid cores with a minimum diameter of 7.6 cm (3 inches). Coring shall be conducted in the archaeological gridded area. The objectives of systematic coring are to:
  - a) obtain information about paleotopography at the site by laterally tracing buried soils, geomorphic surfaces, and stream channels;
  - b) identify artifacts and cultural features, if encountered;
  - c) determine the potential for buried prehistoric components to occur beneath the depth of those documented in Phases I and II.

Cores shall be advanced until pre-Holocene (till, bedrock) or refusal on impenetrable gravels or saturated sands are encountered. In valleys the size of the one at 13LA904, this is typically 4 m or less. Cores may be placed at judgmentally determined locations but a minimum of five cores shall be extracted at intervals along one or more transects designed to provide a stratigraphic cross section revealing paleotopography. A minimum of five additional cores shall be taken at judgmentally determined locations intended to improve 3D reconstruction of paleotopography. Sufficient stratigraphic information shall be obtained from coring to permit the construction of three dimensional models of changes through time in paleotopography in the project area, using graphic means such as fence diagrams, isopach maps, or paleosurface maps. The results and interpretations of the coring shall be transferred to the OSA within three weeks of completion of the geomorphological fieldwork.

3. Two test blocks measuring 5 x 5 m shall be excavated in areas identified during the Phase I and Phase II investigations that have the highest potential to provide significant data. The test blocks will provide information on artifact and feature content of use in determining where larger scale block excavations are warranted (Figure 5). The hand excavation of at least two 1-x-1m units within each block should proceed in 10 cm levels and the matrix should be screened through ¼ in (6.4 mm) wire mesh. Minimally, 5-liter flotation samples should be recovered from every level excavated through the cultural deposit. Additionally, all tools and all debris larger than 2.5 cm (1 inch) in any dimension should be piece-plotted in three dimensions, numbered and individually bagged. An electronic bar code will be affixed to specimen field bags to identify specimen provenience and facilitate laboratory processing. The remaining areas of the block shall be excavated by careful shovel skimming and troweling to expose artifacts for piece-plotting in three dimensions. Narrative notes and maps should be kept for each level of each 1-x-1 m unit. Photographs should be taken of all significant field situations.
4. Expansion of one or more of the test blocks into larger block excavations. Test blocks yielding features, significant artifact distributions, or both, may be expanded as needed to permit recovery of additional associated remains to the limit of the Project area. The test blocks may be expanded to 10-x-10 m blocks, and a minimum area of 125 m<sup>2</sup> should be excavated. The excavation area

would comprise approximately 31 percent of the site area and contain all of the area known to contain significant remains. Criteria to consider in selecting target areas include, but are not limited to, the following:

- a) The target area contains sufficient feature and artifact density to yield adequate samples for addressing research questions.
  - b) Each target area must include a living surface or complex of surfaces that are preserved to a sufficient extent that spatial relationships created among artifacts and features during the prehistoric occupation are retained.
  - c) It must be possible to excavate the target stratum without endangering project personnel.
5. Excavation of the expanded blocks should then be completed by hand. Excavation of the expanded block(s) should proceed according to the methods and provisions outlined above for the initial test blocks, including the excavation of screened units and collection of flotation samples. All features (e.g., hearths, pits, post molds) and possible features shall be identified, exposed, mapped, and excavated as individual provenience units. All features should be cross-sectioned along their long axis and profiles will be mapped. The remaining half of features shall be excavated in strata, following observed stratigraphic boundaries. If no stratigraphic boundaries are identified within features, the second half of each feature will be excavated in 10 cm levels. Flotation samples, measuring 10 liters if possible, will be taken from each stratum of each feature. Feature fill not collected as flotation samples will be screened through 6.4 mm (¼ inch) hardware cloth. Field photos will be taken of features, selected unit profiles, and in situ distinctive artifacts or artifact concentrations. For planning purposes, a minimum of one feature for every 5 m<sup>2</sup> of excavation area should be expected. If a significant number of features are encountered, their excavation, fill processing, and analysis will necessitate additional costs.
  7. Samples of materials suitable for radiometric dating, including small samples suitable for dating by the AMS technique, and other samples potentially useful for specialized analysis will be recovered as encountered. A minimum of two standard and two samples for AMS dating will be submitted to reputable dating laboratory.
  8. All excavations shall be backfilled to the level of the present ground surface.

#### **TASK GROUP 2C: 13LA921 EXCAVATION**

J. Hedden Field Director; C. Merry, Principal Investigator. It is recommended that excavation at site 13LA921 proceed as follows:

1. Establish metric vertical and horizontal datums for reference during the excavation. A contour map of the site, with a maximum contour interval of 60 cm, shall be produced showing locational coordinates and elevations of all excavations. Existing topographic coverage in the form of CAD files, if available from DOT, may be used in preparing the contour map.
2. Two small test blocks measuring 5 x 5 m shall be excavated in areas identified during the Phase I and Phase II investigations that have the highest potential to provide significant data. These small test blocks will provide information on artifact and feature content of use in determining where larger scale block excavations are warranted (Figure 6). The hand excavation of at least two 1-x-1m units within each block should proceed in 10 cm levels and the matrix should be screened through ¼ in (6.4 mm) wire mesh. Minimally, 5-liter flotation samples should be recovered from every level excavated through the cultural deposit. Additionally, all tools and all debris larger than 2.5 cm (1 inch) in any dimension should be piece-plotted in three dimensions, numbered and individually bagged. An electronic bar code will be affixed to specimen field bags to identify specimen provenience and facilitate laboratory processing. The remaining areas of the block shall



be excavated by careful shovel skimming and troweling to expose artifacts for piece-plotting in three dimensions. Narrative notes and maps should be kept for each level of each 1-x-1 m unit. Photographs should be taken of all significant field situations.

3. Expansion of one or more of the test blocks into larger block excavations. Test blocks yielding features, significant artifact distributions, or both, may be expanded as needed to permit recovery of additional associated remains to the limit of the Project area. The test blocks may be expanded to 10-x-10 m blocks, and a minimum area of 175 m<sup>2</sup> should be excavated. The total area to be excavated represents 42 percent of the total site area and covers all of the area revealed by the Phase II investigation to consist of significant archaeological deposits. Criteria to consider in selecting target areas include, but are not limited to, the following:
  - a) The target area contains sufficient feature and artifact density to yield adequate samples for addressing research questions.
  - b) Each target area must include a living surface or complex of surfaces that are preserved to a sufficient extent that spatial relationships created among artifacts and features during the prehistoric occupation are retained.
  - c) It must be possible to excavate the target stratum without endangering project personnel.
4. Excavation of the expanded blocks should then be completed by hand. Excavation of the expanded block(s) should proceed according to the methods and provisions outlined above for the initial test blocks, including the excavation of screened units and collection of flotation samples. All features (e.g., hearths, pits, post molds) and possible features shall be identified, exposed, mapped, and excavated as individual provenience units. All features should be cross-sectioned along their long axis and profiles will be mapped. The remaining half of features shall be excavated in strata, following observed stratigraphic boundaries. If no stratigraphic boundaries are identified within features, the second half of each feature will be excavated in 10 cm levels. Flotation samples, measuring 10 liters if possible, will be taken from each stratum of each feature. Feature fill not collected as flotation samples will be screened through 6.4 mm (¼ inch) hardware cloth. Field photos will be taken of features, selected unit profiles, and in situ distinctive artifacts or artifact concentrations. For planning purposes, to a minimum of one feature for every 5 m<sup>2</sup> of excavation area should be expected. If a significant number of features are encountered, their excavation, fill processing, and analysis will necessitate additional costs.
5. Samples of materials suitable for radiometric dating, including small samples suitable for dating by the AMS technique, and other samples potentially useful for specialized analysis will be recovered as encountered. A minimum of two standard and two samples for AMS dating will be submitted to a reputable dating laboratory.
6. All excavations shall be backfilled to the level of the present ground surface.

### **TASK GROUP 3 (13DM1432, 13LA904, AND 13LA921): PROCESSING AND ANALYSIS**

1. Process all recovered materials; clean, catalog, and identify screen-recovered and piece-plotted artifacts. Prepare for final curation per OSA standards.
2. Flotation process soil samples for the recovery of light and heavy fractions using water and chemical flotation. Catalog, identify, and prepare for curation all light and heavy fraction artifacts not submitted for destructive analytical processes. Noncultural residue may be discarded.
3. Analysis shall involve recording, describing, and tabulating all feature types and distribution, ceramic types and attributes, chert tools and debitage, ground stone tools and debitage. Any recovered seeds, nuts, and wood shall be identified and the results integrated into a regional perspective on cultigens. While very little faunal material is expected from the excavations, all

mammal, bird, fish, reptile, and mollusk remains shall be identified and a comparison of riverine, woodland, and prairie faunal exploitation made. The faunal and floral results can be used to determine the seasonal occupation of the site. The analysis shall be tailored to assist in answering the research questions outlined in the research design. Specific analysis concerns are outlined for the following material classes:

- a) Lithic material. Prehistoric lithic artifacts shall be segregated into tool/debitage classes, categorized by raw material type, and analyzed for thermal alteration. Emphasis shall be placed on identification of use-wear, lithic reduction technology, and raw material types. The services of a specialist in lithic use-wear analysis will be necessary.
  - b) Ceramic material. Ceramics shall be analyzed according to vessel part, surface treatment, paste color, and temper. Particular attention shall be paid to identification of decorative motifs. Compare the recovered ceramics with other Woodland collections from eastern Iowa, Illinois, and northeastern Missouri.
  - c) Faunal and floral remains. Services of specialists in faunal and floral analysis shall be utilized during this stage of analysis.
  - d) Radiometric dating. If appropriate samples are recovered, radiocarbon dating techniques shall be applied.
4. Identify and catalog all photographic images.
  5. Compile and prepare draft field maps, site maps, geomorphic profiles, sketches, drawings and any other site-related figures.

**TASK GROUP 4 (13DM1432, 13LA904, and 13LA921): REPORT PREPARATION**

1. Prepare monthly progress reports.
2. Separate reports describing the excavation results and interpretations from each site shall be prepared.
3. Draft and final reports shall meet recommendations of the Secretary of Interior's Standards and Guidelines. The written report shall minimally include:
  - a) Description of the study area; relevant background research; the field studies as actually implemented, including any deviation from the research design and the reason for the changes;
  - b) All field observations; analyses and results, illustrated with appropriate tables, charts, and graphs;
  - c) Evaluation of the investigation in terms of goals and objectives, including discussion of how well the needs dictated by the planning process were served;
  - d) Recommendations for updating the relevant historic contexts and planning goals and priorities, and generation of new or revised information needs;
  - e) Information on the location of original data in the form of field notes, photographs, and other materials.
4. Draft reports shall be submitted within ten months of the completion of the fieldwork.
5. The final technical reports on each site's data recovery investigation in will be submitted within two months following receipt of comments on the draft report, and should conform to these standards with the goal of producing a report that could be published with only minor editorial revisions.



## Safety Considerations

Worker safety concerns may arise by possible deep excavations at 13DM1432. Deep archaeological excavations pose grave risks to workers from caving excavation walls, falling objects and soil material, and other hazards (Bergman and Doershuk 1995; Niquette 1997). The Iowa Division of Labor Services (1993) has adopted federal (OSHA) occupational safety and health standards (29 CFR Part 1926) concerning general safety (Subpart C) and open excavations in the earth's surface (Subpart P). A safety plan for block excavations which conforms to OSHA standards developed by the Office of the State Archaeologist (Merry and Hedden 1995), and a reference book on OSHA standards, excavations, trenches, and soil mechanics by Mickle (1990), will be used in the development of a safety plan specific to the conditions at 13DM1432. The safety plan will specify:

- 1) how workers will be protected from the hazards of excavations exceeding 5 feet (1.52 m), water accumulation or seepage, and falling objects;
- 2) the means of safe ingress and egress from the excavations;
- 3) any other safety considerations and precautions

## Human Remains

Although human skeletal remains have not been encountered in any of the Phase I or II investigations, such remains may still be encountered during the Phase III excavations. The discovery of prehistoric human burial features or skeletal remains will be handled sensitively, efficiently, and in accordance with procedures outlined by the Bioarchaeology Program, Office of the State Archaeologist. Iowa DOT staff will coordinate consultation regarding discoveries of human remains with the OSA Bioarchaeology Program, Iowa SHPO, and other parties or agencies. Additional procedures for appropriate treatment of human burial features and skeletal remains are outlined in the "Guidelines for Archaeological Investigations in Iowa" (Kaufmann 1999).

## Curation of Specimens and Associated Documents

All artifacts and other cultural materials collected, and all notes, photographs, and other data generated during the performance of services shall remain public property and be available for research and educational purposes. The materials shall be maintained by the Office of the State Archaeologist in perpetuity. An inventory or catalog system to facilitate such acceptance by the OSA Curation Services will be prepared.

## Staff, Facilities, Equipment, and Consultants

Data recovery operations will be conducted under the direct supervision of a qualified Principal Investigator who meets the minimum qualifications set forth by the Secretary of the Interior. The data recovery program will provide for adequate personnel, facilities, and equipment to fully implement the plan. The data recovery program also should provide for adequate consultation with scholars whose research interests or specialties would enable them to contribute to the program.

The OSA staff have utilized extensive piece plotting of in situ artifacts on other data recovery projects. However, use of a bar code printer and scanner in combination with total station mapping to document artifact provenience in the field and translate that information into the catalog database is a new approach for OSA. The process has been proven effective by other researchers, and we are confident the approach

can be implemented, but expect some support from OSA's IT staff will be needed to assure this method works smoothly.

## Public Benefit and Outreach

Archaeological investigations at 13LA904, 13LA921, and 13DM1432 can provide an excellent means of communicating archaeological goals, such as how the cultural landscape of southeast Iowa has changed through time, to the public. However, no public outreach activities will be conducted during the excavations, and OSA will consult with Iowa DOT staff concerning outreach activities following the excavations. Communicating such goals may be accomplished through publication of the results. In accordance with "Guidelines for Archaeological Investigations in Iowa" (Kaufmann 1999:3–51), and the Secretary of the Interior's Standards for Archaeological Documentation (48FR44734), interested individuals and public organizations may be invited to participate in the investigations associated with this data recovery plan. Dissemination may be in the form of public lectures, development of electronic documents and pamphlets, written articles, and artifact exhibits. Costs of public dissemination of appropriate information gained from the excavation and analysis may be covered under a supplemental agreement between OSA and Iowa DOT.

## Flexibility

This plan is based on the available Phase I and II sample data. Situations may arise or data may be encountered that were not anticipated in designing this data recovery plan, requiring modification of the data recovery plan to cope with unforeseen discoveries or unexpected circumstances. If so, consultation between SHPO, DOT, and the OSA staff will be necessary to devise appropriate solutions. Innovative approaches to data recovery are encouraged as long as the basic purpose to preserve significant information is addressed.

It is assumed the cost of the data recovery work will be reimbursable under the terms of the current contract for services between DOT and the OSA. If the project is initiated in Fiscal Year (FY) 2016, it is likely that the data recovery, laboratory processing, and report preparation will extend into FY 2017. Cost estimates to implement this data recovery plan are based on estimated FY 2017 rates, and may necessitate review of labor rates and other actual costs.

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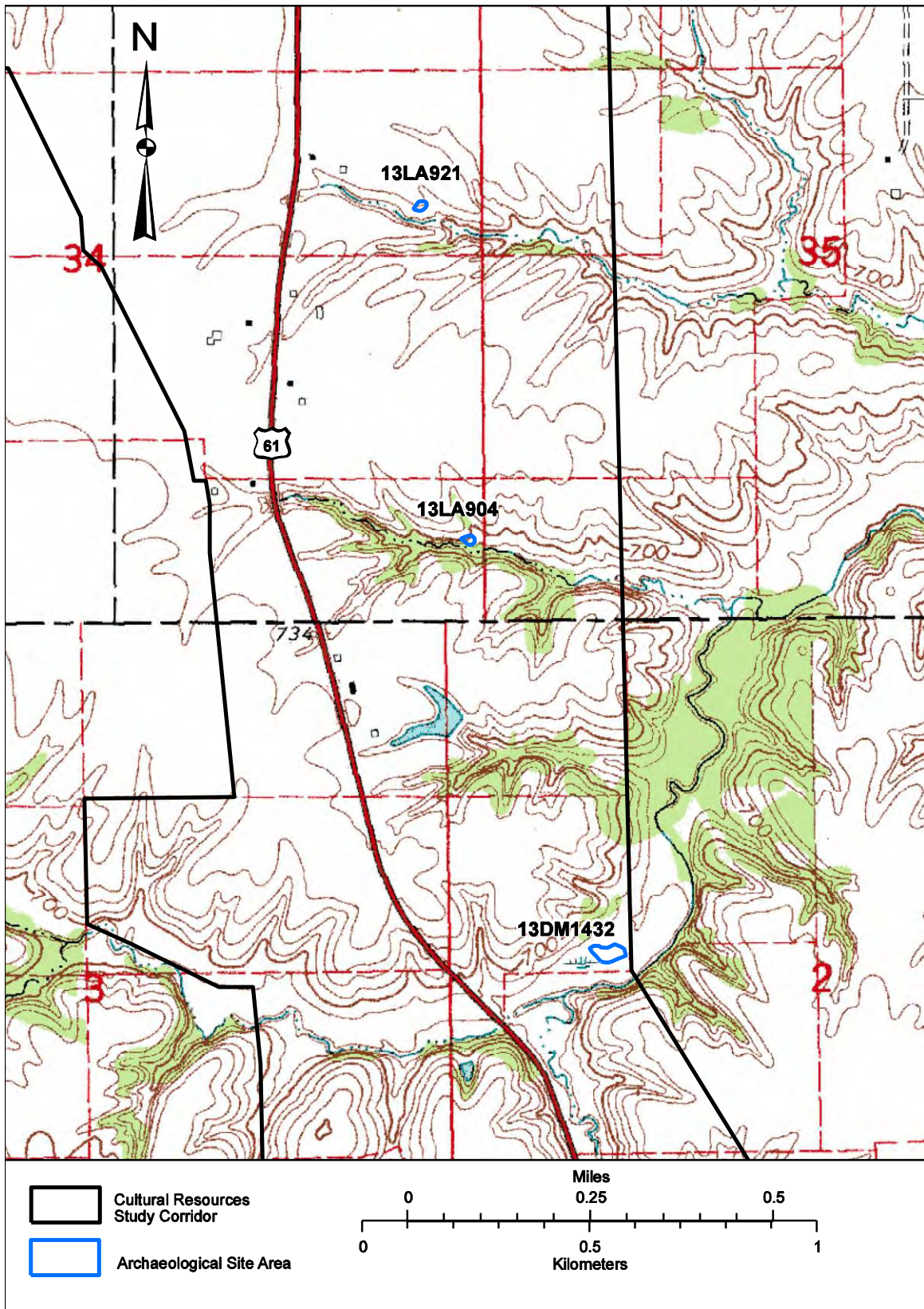


Figure 1. Location of 13DM1432, 13LA904 and 13LA921 in relation to surrounding topography and the study corridor. From U.S.G.S. Mediapolis, 1965, 7.5' series quadrangle map. Scale = 1:24,000.

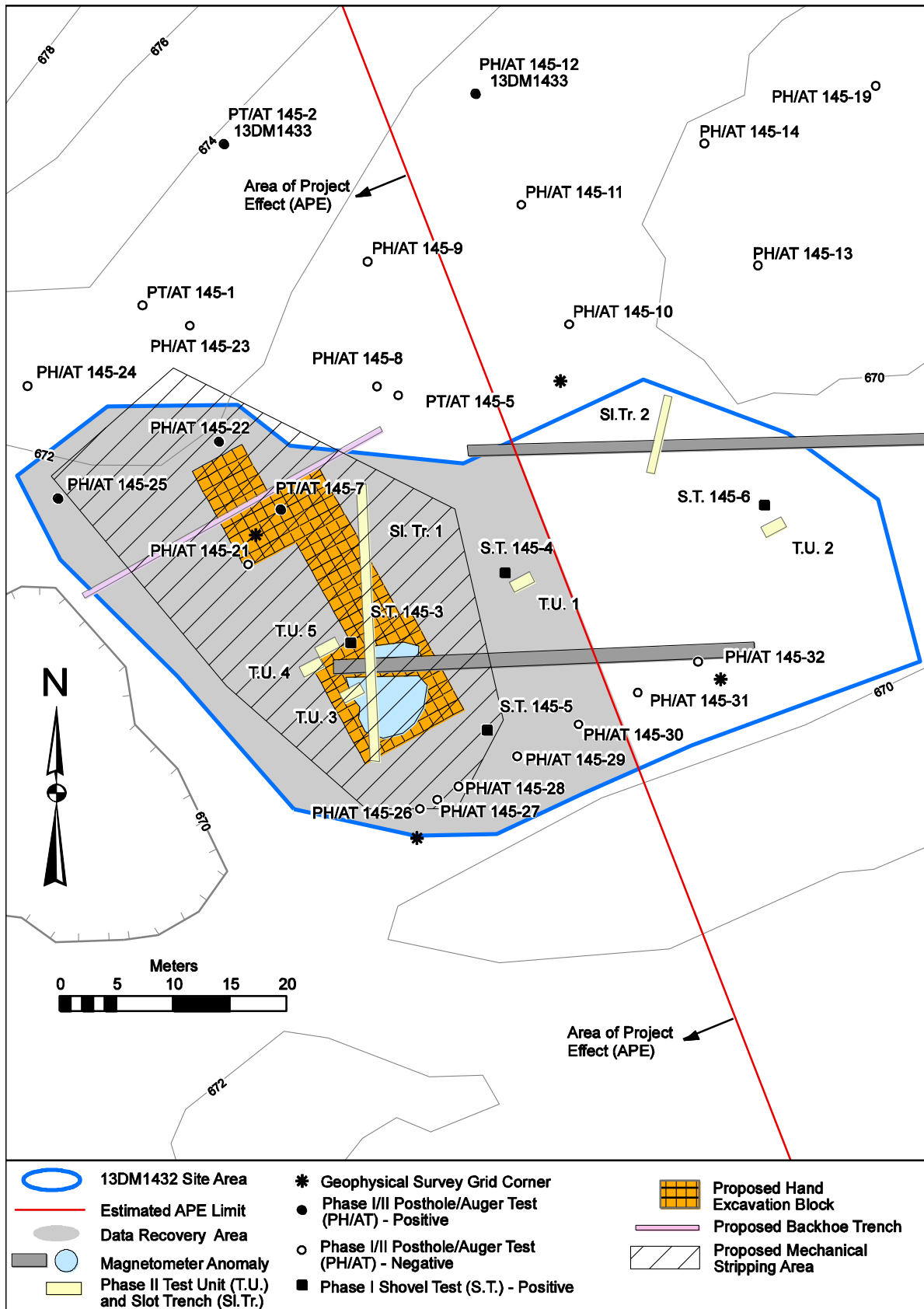


Figure 2. Phase III Data Recovery Excavation Plan for 13DM1432.



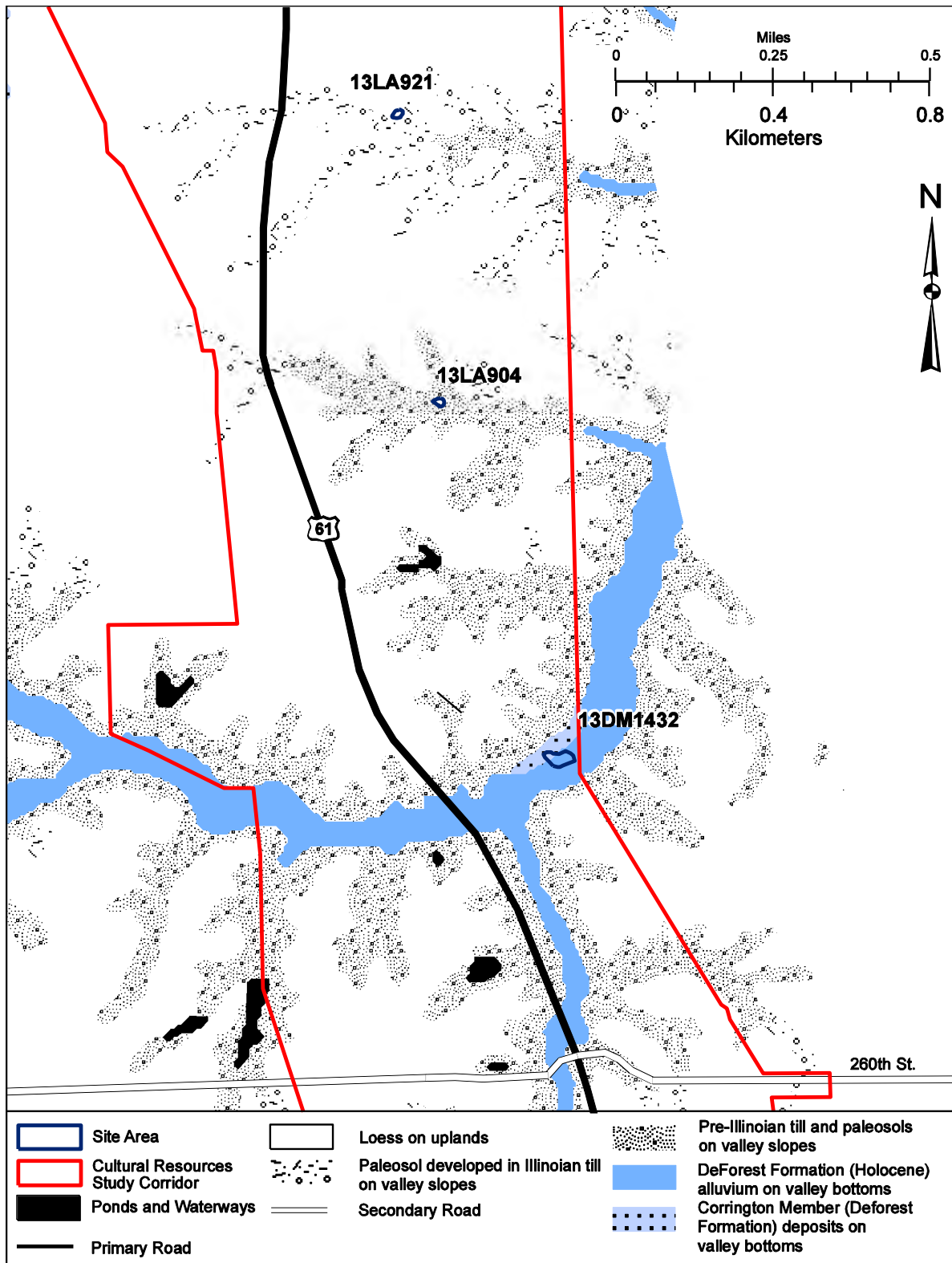


Figure 3. Distribution of soil parent material types in relation to 13DM1432, 13LA904 and 13LA921. Adapted from Perry et al. (2014:140, Figure 8).

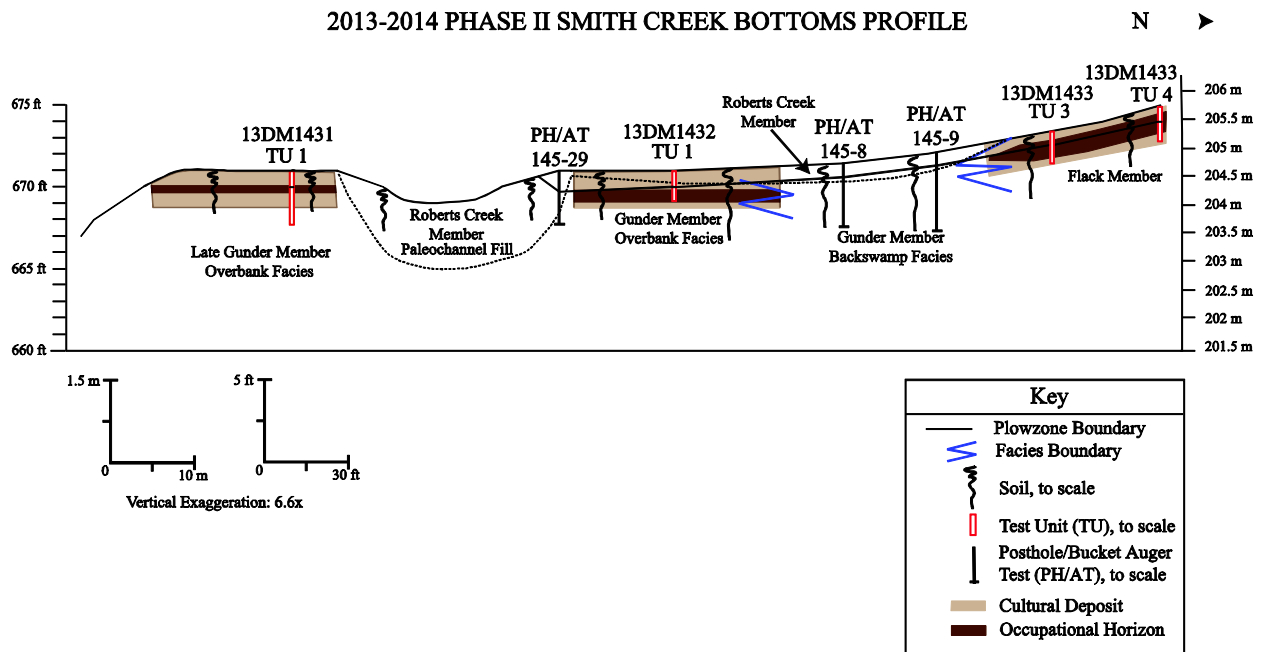


Figure 4. Profile of natural and cultural deposits at 13DM1432. From Perry et al. (2014:190, Figure 58).



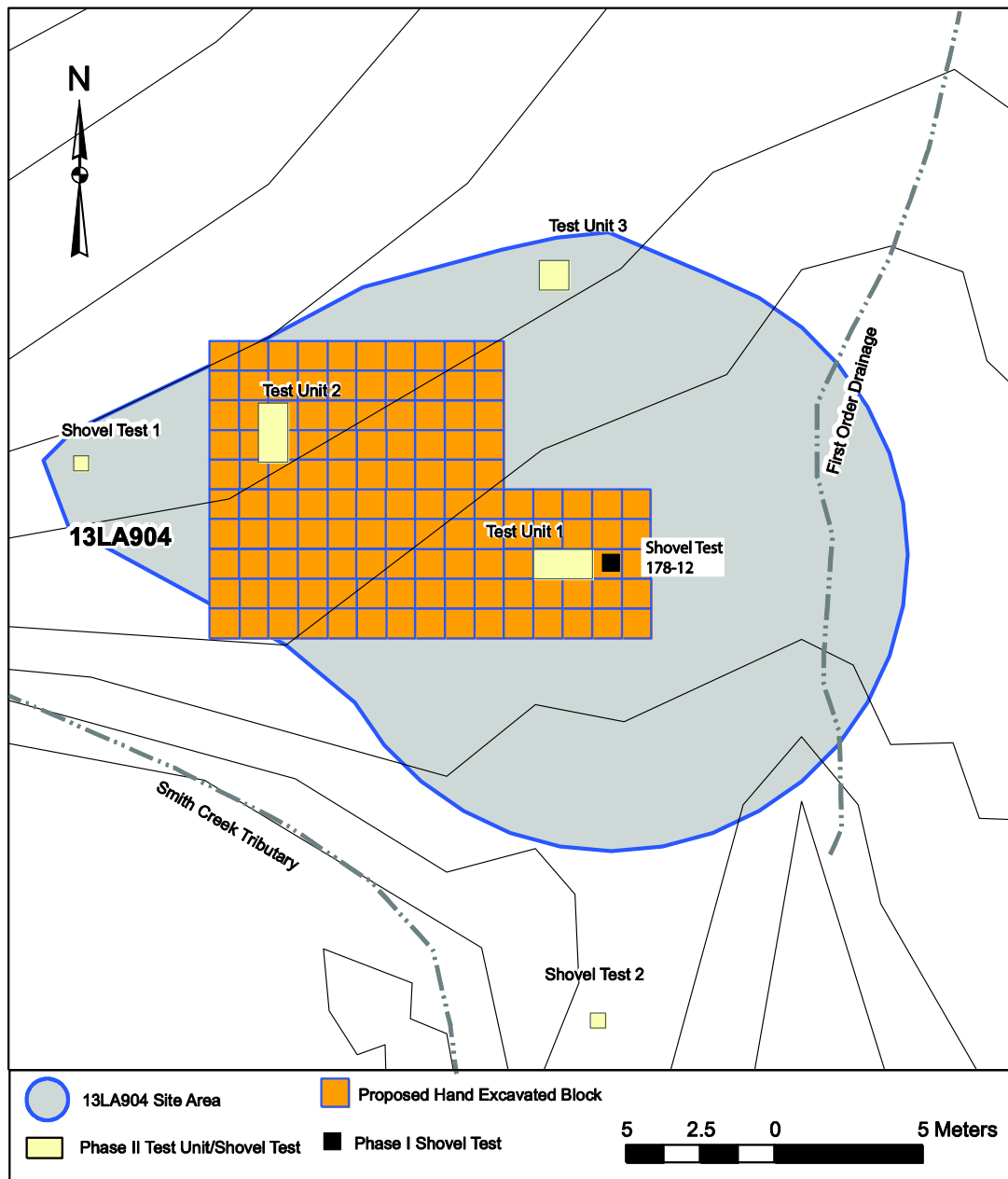


Figure 5. Phase III Data Recovery Excavation Plan for 13LA 904.

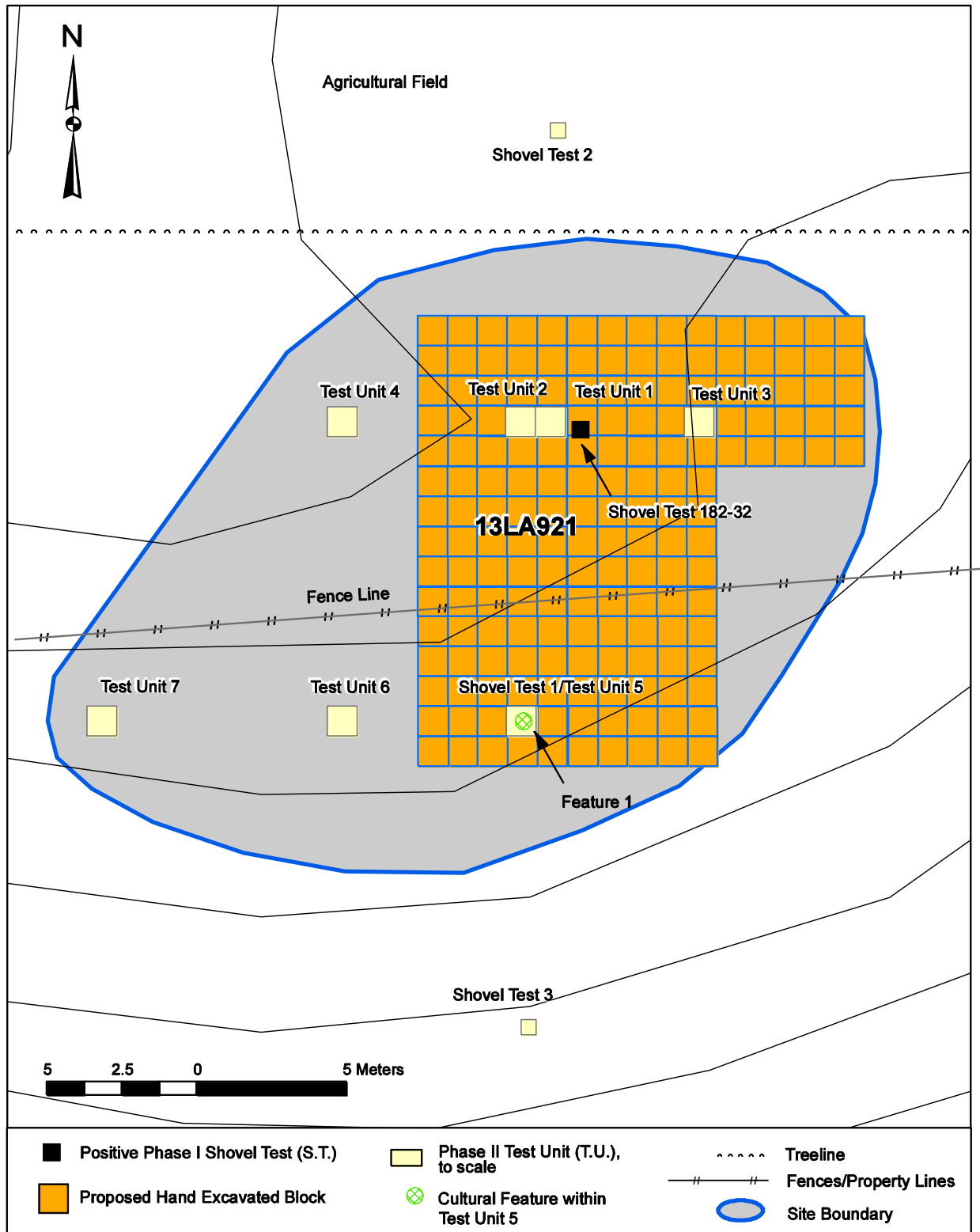


Figure 6. Phase III Data Recovery Excavation Plan for 13LA921.