

**I-380 IMPROVEMENTS, TOWER TERRACE ROAD INTERCHANGE,
& BOYSON ROAD INTERCHANGE IMPROVEMENTS
IN HIAWATHA AND CEDAR RAPIDS, LINN COUNTY, IOWA
Project # IM-380-6(224)25--13-57**

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



Date of Approval for Public Availability

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PREFACE

The Transportation Equity Act of the 21st 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 1: Resources Considered

| SOCIOECONOMIC | NATURAL ENVIRONMENT |
|--|--|
| <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Land Use <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Community Cohesion <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Churches and Schools <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Environmental Justice <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Economic <input type="checkbox"/> <input type="checkbox"/> Joint Development <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Parklands and Recreational Areas <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Bicycle and Pedestrian Facilities <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 checked="" type="checkbox"/> Transportation | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Wetlands <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Surface Waters and Water Quality <input type="checkbox"/> <input type="checkbox"/> Wild and Scenic Rivers <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Floodplains <input checked="" type="checkbox"/> <input type="checkbox"/> Wildlife and Habitat <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Threatened and Endangered Species <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Woodlands <input checked="" type="checkbox"/> <input type="checkbox"/> Farmlands |
| CULTURAL | PHYSICAL |
| <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Historical Sites or Districts <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Archaeological Sites <input type="checkbox"/> <input type="checkbox"/> Cemeteries | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Noise <input type="checkbox"/> <input type="checkbox"/> Air Quality <input checked="" type="checkbox"/> <input type="checkbox"/> Mobile Source Air Toxics (MSATs) <input 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"/> CONTROVERSY POTENTIAL: Low. | |
| <input type="checkbox"/> Section 4(f): No impacts to Section 4(f) resources. | |

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1.0 Description of the Proposed Action

The proposed action is to add capacity improvements along the four-lane divided Interstate-380 (I-380) from Collins Road (Iowa 100) to County Home Road, to construct a new interchange on I-380 at Tower Terrace Road and reconstruct the existing interchange at Boyson Road. These improvements would be constructed to:

- Improve traffic operations at existing interchanges on I-380;
- Accommodate future traffic growth in the study area; and
- Support regional travel needs for planned economic development and land use.

1.1 Project Location

The I-380 corridor study area is approximately 5 miles in length and is located between Iowa 100/Collins Road at the south terminus and County Home Road at the north terminus. The south terminus of the study area, located between the I-380 and Collins Road and Blairs Ferry Road interchanges, lies within the City of Cedar Rapids. The remaining south half of the study area from Blairs Ferry Road north to Tower Terrace Road is within the City of Hiawatha, except for a small portion of the City of Cedar Rapids on the south side of Tower Terrace Road. The northern half of the study area, from Tower Terrace Road to the County Home Road interchange, lies along the west edge of the City of Robins, along the northernmost portions of Hiawatha, and unincorporated portions of Linn County near the I-380 and County Home Road interchange. The project study area is approximately 2,000 to 2,400 feet in width along the I-380 mainline, and approximately 3/4-mile wide at the Boyson Road and County Home Road interchanges and at Tower Terrace Road. **Exhibit 1-1** shows the project location within the greater Cedar Rapids metropolitan area. **Exhibit 1-2** displays the project study area and surrounding roadway network.

2.0 Project History

Within the project study area, I-380 was designed and constructed in the late 1970's and early 1980's. Preliminary designs of the I-380 facility included an interchange at Tower Terrace Road. However, as the design process progressed, construction of the interchange was deferred. Although the proposed interchange was removed from immediate construction plans, the Iowa Department of Transportation (Iowa DOT) purchased right of way for a standard diamond interchange at Tower Terrace Road, in anticipation of the future need for access to I-380 at this location.

In 2007, Iowa DOT completed an Interchange Justification Report (IJR) for the existing Boyson Road and the proposed Tower Terrace Road interchanges with I-380. This report identified the need for long-term improvements at the Boyson Road interchange and analyzed the need for a new interchange at Tower Terrace Road. The Federal Highway Administration (FHWA) approved the long-term improvements at the Boyson Road interchange, but declined to approve the new interchange at Tower Terrace Road at that time, based upon the need to make further improvements to the supporting local transportation system.

In 2010, Iowa DOT worked with local agencies on an I-380 corridor feasibility study to evaluate potential solutions for corridor improvements. This provided a broad perspective on corridor issues and needs, and evaluated a range of concepts. The study identified that further investigation would be needed to evaluate improvements at Boyson Road with an interchange at Tower Terrace Road, and expanded capacity of I-380.

The *Tower Terrace Road Corridor Management Plan*, initially prepared in 2010 for the Corridor Metropolitan Planning Organization (MPO) and currently being updated, identified the need to preserve the proposed Tower Terrace Road alignment for a future eastward extension to Highway 13 at the eastern edge of the Cedar Rapids metropolitan area. The study suggested an upgrade of Tower Terrace Road from a two-lane rural roadway to a modern five-lane arterial with raised medians and left turn lanes, and a speed limit of 35 or 40 mph, from I-380 east to Highway 13.

In 2011, the Iowa DOT initiated an IJR and Environmental Assessment (EA) for improvements at I-380 and Tower Terrace Road. These studies were not completed, as it was determined that a larger study area that included potential improvements to I-380 from Collins Road to County Home Road, the Boyson Road interchange, and the local system needed to be considered.

In Spring of 2016, the Iowa DOT initiated this current study phase encompassing a larger study area than the 2011 study to address existing and forecasted future traffic congestion within the I-380 corridor. Two concurrent studies are being completed by Iowa DOT; this EA and an IJR that will be reviewed, and if appropriate, approved by the FHWA.

3.0 Purpose of the Proposed Action

The purpose of the proposed action is to accommodate increased travel demands in the I-380 corridor between Collins Road and County Home Road.

3.1 Need for the Proposed Action

To meet increased travel demands in the project area, the proposed action is expected to:

- Improve traffic operations at ramp terminals and on I-380;
- Accommodate future traffic growth; and
- Support planned economic development and land uses.

Improve traffic operations at ramp terminals and on I-380

Analysis of recent 2016 traffic data provided by the Corridor Metropolitan Planning Organization (MPO) and Iowa Department of Transportation (DOT) for the I-380 mainline facility and the Boyson Road and County Home Road interchanges with I-380, demonstrated that traffic congestion at three locations in the project study area are

currently operating at unacceptable levels. Traffic congestion is measured by the level-of-service (LOS) scale, with LOS A representing free-flow conditions and LOS F representing gridlock. In this study area, Iowa DOT considers LOS C to be the lowest level of acceptable congestion. Based on the LOS scale, the following locations are currently operating below acceptable LOS:

- The signalized Boyson Road northbound ramp terminal intersection operates at LOS E during the afternoon peak period;
- The unsignalized County Home Road northbound ramp terminal intersection operates at LOS F during the afternoon peak period; and
- The I-380 northbound merge area between the Blairs Ferry Road on-ramp and Boyson Road off-ramp operates at LOS D during the afternoon peak period.

The location of these interchanges and the connecting local roadway network are displayed on **Exhibit 1-2**

Accommodate future traffic growth

Future traffic analyses, which included analysis of the I-380 mainline, interchange ramps, ramp terminal intersections, and the connecting local roadway network, demonstrated that many elements of the roadway network exhibit unacceptable operational issues in both the future morning and afternoon peak travel periods in 2040 if no improvements are made. This is primarily due to substantial growth in traffic volumes in the project corridor. Projected traffic growth on I-380 ranges from slightly above 1% annually on the north side of the project area to over 1.6% annual growth on the south side of the corridor. Cross streets, including County Home Road, Boyson Road, and Blairs Ferry Road are forecasted to experience annual growth rates more than 1.5% to exceeding 2.0% annually. The result of projected increases in traffic in the project study area is unacceptable LOS in 2040 at many locations both on I-380, at existing interchange ramp terminals, and on the local roadway network. **Table 3-1** displays 2040 no-build LOS for I-380 freeway segments in the project area, while **Table 3-2** shows 2040 no-build LOS for interchange ramp terminals and other local system intersections.

Table 3-1: 2040 No-Build LOS for I-380 Freeway Segments

| I-380 Segment Description | Segment type | AM LOS | PM LOS |
|--|---------------------|---------------|---------------|
| Southbound I-380 | | | |
| SB County Home Road Off-Ramp | diverge | C | B |
| SB Between County Home Road Ramps | basic | F | B |
| SB County Home Road On-Ramp | merge | F | B |
| SB County Home Road On-Ramp to Boyson Road Off-Ramp | basic | F | B |
| SB Boyson Road Off-Ramp | diverge | F | F |
| SB Between Boyson Road Ramps | basic | C | B |
| SB Boyson Road On-Ramp to Blairs Ferry Road Off-Ramp | weave | E | C |
| Northbound I-380 | | | |
| NB Blairs Ferry Road On-Ramp to Boyson Road Off-Ramp | merge | F | F |
| NB Between Boyson Road Ramps | basic | B | C |
| NB Boyson Road On-Ramp | merge | B | C |
| NB Boyson Road On-Ramp to County Home Road Off-Ramp | basic | B | D |
| NB County Home Road Off-Ramp | diverge | B | F |
| NB Between County Home Road Ramps | basic | A | B |
| NB County Home Road On-Ramp | merge | A | B |

Table 3-2: 2040 No-Build LOS for Ramp Terminals and Other Local System Intersections

| Ramp Terminal or Intersection | Intersection type | AM | PM |
|---|--------------------------|-----------|-----------|
| I-380 Interchange Ramp Terminals | | | |
| Blairs Ferry Road SB | signalized | C | F |
| Blairs Ferry Road NB | signalized | B | F |
| Boyson Road SB | signalized | F | F |
| Boyson Road NB | signalized | F | F |
| County Home Road NB | unsignalized | C | F |
| County Home Road SB | unsignalized | F | B |
| Other Local System Intersections | | | |
| Boyson Road & Center Point Road | signalized | F | F |
| Blairs Ferry Road & Center Point Road | signalized | D | F |
| County Home Road & N. Center Point Road | signalized | B | B |
| County Home Road & Edgewood Road | unsignalized | A | A |
| Tower Terrace Road & Center Point Road | unsignalized | F | F |
| Tower Terrace Road and Edgewood Road | unsignalized | F | F |
| Tower Terrace Road & Miller Road | unsignalized | F | E |
| Boyson Road & Miller Road | unsignalized | F | F |

Support planned economic development and land uses

The cities of Hiawatha, Cedar Rapids, and Robins each have jurisdiction within or near the project study area; the City of Marion is located approximately two miles to the east. Unincorporated areas of Linn County are adjacent to the west side of the project study area. The cities' adopted future land use plans include a mix of residential, commercial, and industrial development focused on vacant land between the Boyson Road and County Home Road interchanges. However, these two interchanges are located approximately 3.5 miles apart and do not provide the desired direct access to property targeted for future development. The jurisdictions' comprehensive land use plans rely upon access to and from I-380, the extension of Edgewood Road, and planned improvements to Center Point Road and Tower Terrace Road to provide the supporting transportation infrastructure for access to planned future development in this area.



I-380 Improvements
in Linn County, IA
Environmental
Assessment

Legend

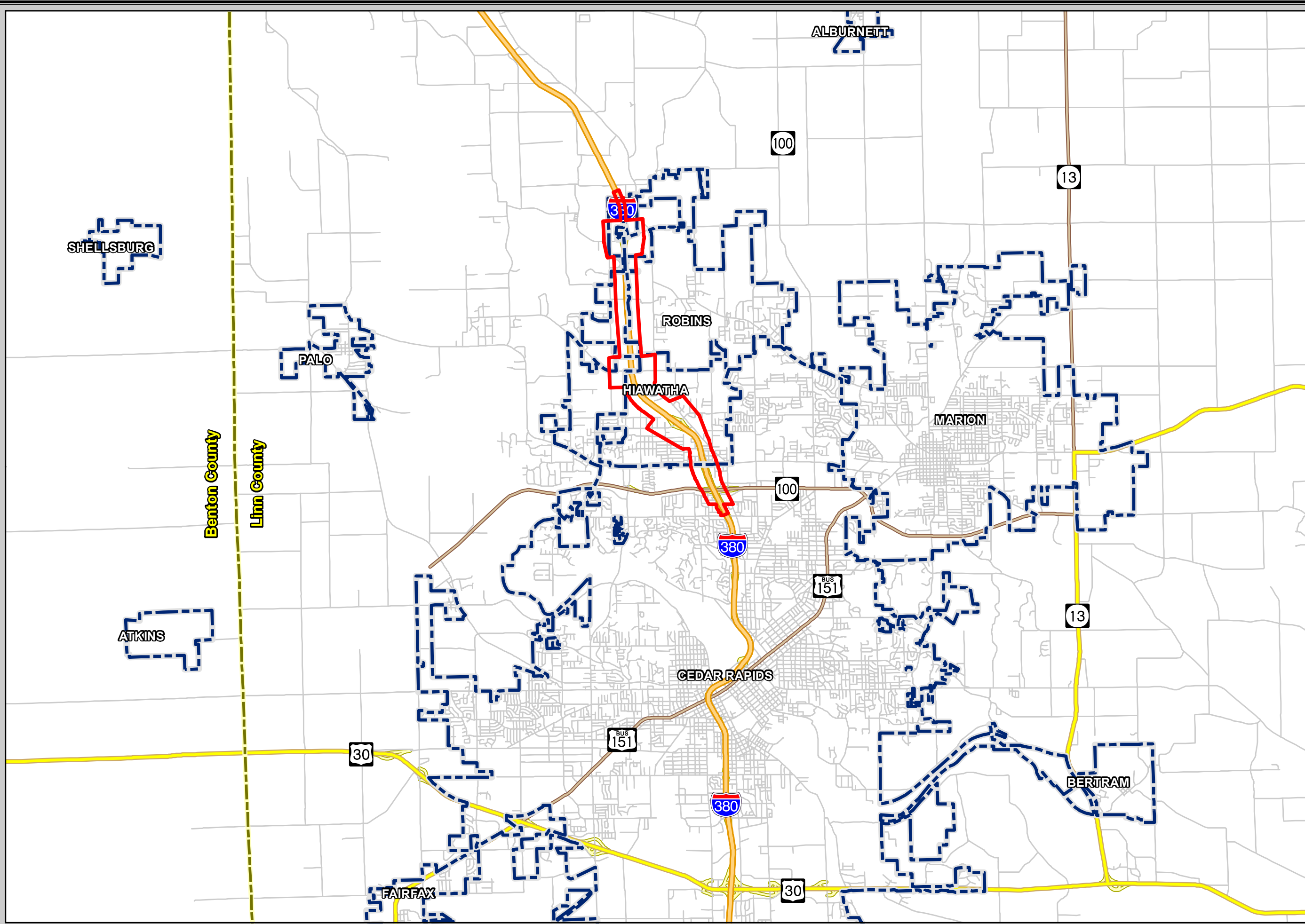
- Study Area
- Cities
- Counties



0 0.35 0.7 1.4 Miles

Exhibit 1-1
Project
Location



June 1, 2018





I-380 Improvements in Linn County, IA Environmental Assessment

Legend

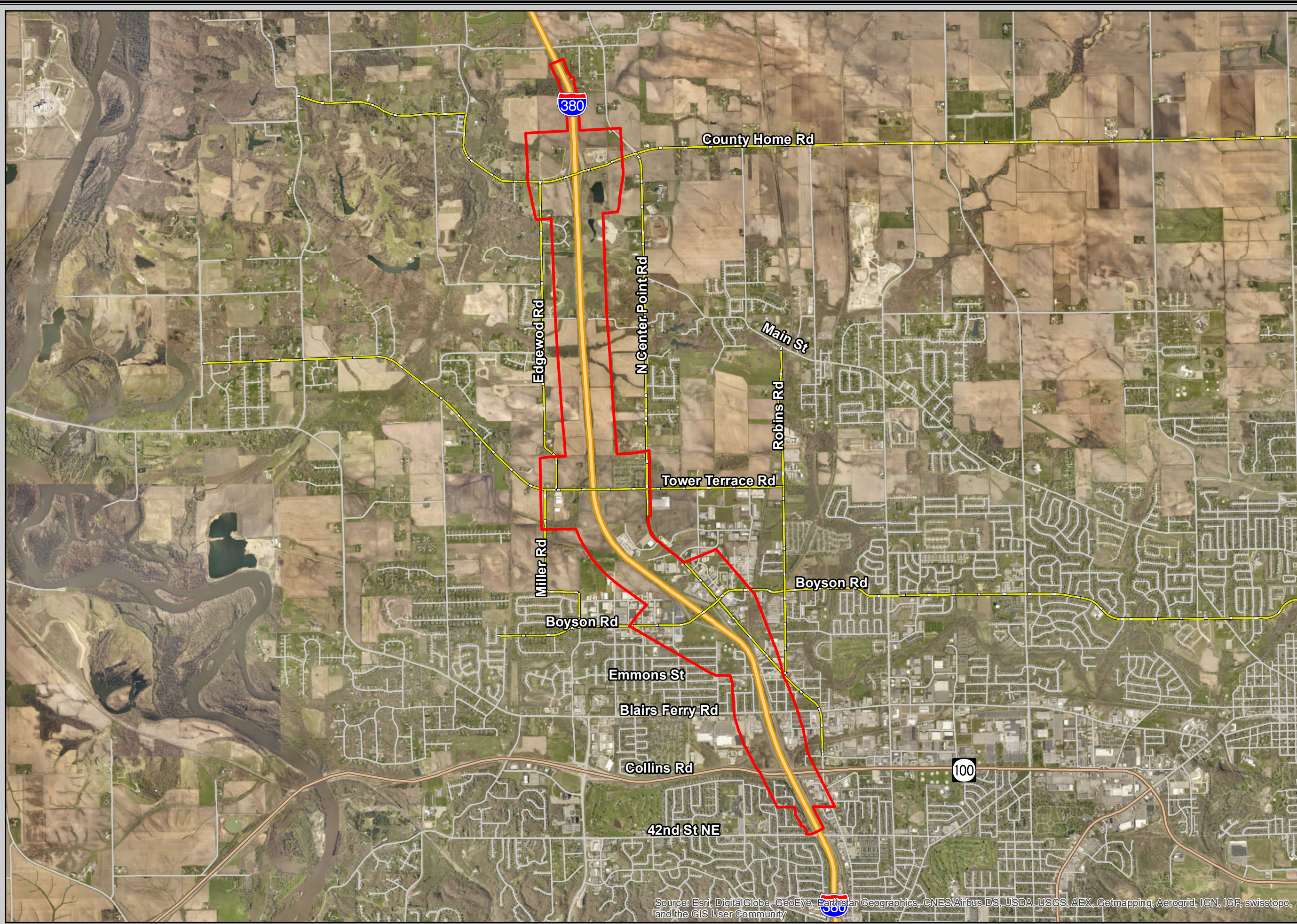
-  Study Area
-  Local Arterial
Roadway
Network



0 0.15 0.3 0.6
Miles

Exhibit 1-2 Study Area & Roadway Network

June 1, 2018



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

4.0 Alternatives

Within the project study area, several build alternatives were investigated to address the project's purpose and need. Build alternatives considered included improvements to the existing Boyson Road interchange, construction of a new interchange with I-380 at Tower Terrace Road, improvements to the County Home Road interchange, and the addition of capacity on I-380 from Blairs Ferry Road to County Home Road. The No Build Alternative, an alternative that includes existing planned projects but excludes other future improvements in the corridor, was also considered.

4.1 No Build Alternative

The No Build Alternative takes no action with regard to reconstructing the existing Boyson Road interchange, constructing a new interchange at I-380 and Tower Terrace Road, constructing improvements at the County Home Road interchange, and constructing additional lanes and capacity improvements for I-380. As a result, this alternative cannot meet the purpose and need established in **Section 3.0** of this EA. The potential impacts associated with the No Build Alternative are discussed in **Section 5.0** to provide a basis of comparison to the Proposed Alternative.

4.2 Alternatives Considered and Dismissed

As described in **Section 2.0**, previous studies identified potential improvements in the project corridor while dismissing others from consideration. Those proposed interchange improvements considered undesirable and dismissed from consideration were due to their inability to handle increased traffic forecasts, increased environmental impacts, or because Iowa DOT policies do not favor their construction. Those interchange improvements previously dismissed from consideration (see **Exhibit 4-1**) included:

- The Partial Cloverleaf (Parclo) "One-Loop" Interchange proposed for the new Tower Terrace Road Interchange. This concept was eliminated from future consideration due to its potential right of way impacts.
- The Type A Partial Cloverleaf (Parclo) Interchange proposed for the new Tower Terrace Road interchange. This concept was eliminated from consideration early in the process due to extensive right of way impacts in the northwest and southwest quadrants, a lack of need for the loop ramp in the southeast quadrant due to low forecasted traffic volumes for the east to northbound movement, and increased costs to construct in comparison to other interchange configurations.
- Single Point Urban Interchange (SPUI) proposed for the new Tower Terrace Road Interchange. This concept was eliminated from consideration due to its inability to efficiently accommodate the high volume of left turn operations during peak periods, as well as the increased cost to construct in comparison to other interchange configuration concepts that also met the future traffic operations requirements.

As traffic, environmental, and development conditions in the project study area have changed since the completion of the previous studies, existing and future forecasted

traffic analyses were updated to determine appropriate interchange and capacity improvements.

Boyson Road Interchange

Updated traffic analyses at the Boyson Road diamond interchange demonstrated that the existing northbound ramp terminal is currently experiencing LOS below minimum acceptable levels as described in **Section 3.1**. Forecasted future 2040 traffic for the same diamond interchange demonstrated that both ramp terminals exhibited LOS F in the AM and PM peak periods (**Table 3-2**), resulting in operational failure of the interchange. It was determined that utilizing a diamond interchange in the future at this location was not feasible due to heavy left turns that significantly degraded operations. As a result, Iowa DOT decided to pursue reconstruction of this interchange utilizing a configuration that could operationally accommodate heavy left turns.

Tower Terrace Road Interchange

Iowa DOT is proposing to construct a new interchange on I-380 and Tower Terrace Road to reduce long term congestion at the Boyson Road interchange, and to potentially provide a short-term detour route and congestion relief during re-construction of the Boyson Road interchange. Additionally, the Corridor MPO, City of Hiawatha, and City of Cedar Rapids have included the potential construction of the interchange as part of their long-range transportation and development plans to support planned economic development and land uses.

Two interchange configurations were explored at this location. A diamond concept and a diverging diamond interchange (DDI) concept were developed to test their ability to both operate acceptably with 2040 traffic forecasts and to provide acceptable operations and an appropriate detour route during re-construction of the Boyson Road interchange. **Table 4-1** shows the 2040 forecasted LOS comparison between the two interchange types.

Table 4-1: Diamond and DDI Interchange Type LOS Comparison at Tower Terrace Road Interchange

| Interchange Type | 2040 AM Peak LOS* | 2040 PM Peak LOS* |
|----------------------------|--------------------------|--------------------------|
| Diamond NB Terminal | C | C |
| Diamond SB Terminal | C | B |
| DDI NB Terminal | B | B |
| DDI SB Terminal | B | C |

*LOS calculated with 4-lane I-380

DDI interchange operations performed marginally better than the diamond interchange concept for 2040 forecasted traffic. It is expected that the interchange will experience heavy left turn operations during peak periods similar to those seen at the Boyson Road interchange. DDI interchange configurations allow for a significant improvement in safety, left-turning traffic efficiency, and reserve traffic capacity. This is due to all left turns in the interchange not having to wait for and clear opposing traffic, and most other movements are controlled by traffic signals. To further evaluate reserve capacity of the two interchange configurations, 20% more traffic was

added to the 2040 forecast volumes, and each interchange type was evaluated for operations. The diamond interchange operated at LOS E and the DDI at LOS B, which is a substantial positive difference in reserve capacity for the DDI.

County Home Road Interchange

The existing County Home Road diamond interchange with I-380 was evaluated with existing and future 2040 traffic to determine if upgrades to the interchange are needed. Both ramp terminals are unsignalized and were analyzed under that condition. The existing interchange northbound ramp terminal operates at LOS F during the afternoon peak period. Future 2040 traffic forecasts demonstrated that the northbound ramp terminal in the afternoon peak continued to fail with LOS F, and the southbound ramp terminal also fails in the morning peak with LOS F. It was determined that signalization upgrades at each ramp terminal would be sufficient to achieve acceptable existing and 2040 future operations at the interchange in lieu of reconstructing the interchange, and unsignalized ramp terminals were dismissed from future consideration.

I-380 Mainline

The existing I-380 four-lane freeway was evaluated during morning and afternoon peak hours between Blairs Ferry Road and County Home Road using 2016 traffic volumes to determine if there are existing operational issues with basic, merge, and diverge segments. Only one segment, the northbound merge segment between the Blairs Ferry interchange on-ramp and the Boyson Road interchange off-ramp, operated below acceptable LOS criteria at LOS D. All other freeway segments operated at LOS C or better.

Due to substantial growth in traffic volume, 2040 forecasted traffic demonstrated that multiple segments of the four lane I-380 facility operated at LOS E or F during the morning and afternoon peak periods. **Table 3-2** demonstrates those segments where I-380 fails to operate in the 2040 peak periods. Based on the future no-build operational analysis, Iowa DOT determined that additional capacity on I-380 was necessary to ensure adequate operations in the future. As a result, maintaining a four lane I-380 freeway facility was eliminated from further consideration.

4.3 Proposed Alternative

The Proposed Alternative for the Boyson Road interchange, Tower Terrace Road interchange, and I-380 mainline is displayed on **Exhibit 4-2**. The Proposed Alternative was preferred over the No Build Alternative due to its ability to meet the purpose and need for the project as described in **Section 3.0**.

Boyson Road Interchange

At the Boyson Road interchange, Iowa DOT selected a diverging diamond interchange (DDI) configuration to accommodate the forecasted heavy left turning movements during the 2040 morning and afternoon peak periods. Both northbound and southbound DDI ramp terminals, when modeled with 2040 volumes, operated at LOS

B during both peak periods. Several dual structure DDI configurations were considered at this location, including:

- Utilizing the existing Boyson Road alignment, and retrofitting the existing bridge as one DDI bridge with construction of one new bridge;
- Utilizing the existing Boyson Road alignment, and constructing two new bridges;
- Realigning the skew of Boyson Road, and constructing two new bridges; and
- Shifting the Boyson Road alignment north, and constructing two new bridges.

All four DDI configurations include two through lanes in each direction plus an auxiliary lane and a ten-foot shared use path down the center of the interchange. Additionally, a five-foot wide sidewalk on the north side and a ten-foot shared use path on the south side of Boyson Road are provided outside the interchange ramp terminals. The four DDI configurations are displayed on **Exhibit 4-3**. **Table 4-2** displays the comparison between the four DDI configurations at Boyson Road.

Table 4-2: DDI Interchange Configurations Comparison at Boyson Road

| DDI Configuration | 2040 LOS | Property impacts | Access points | Existing bridge preservation | Impacts to I-380 mainline | Estim. Cost (Millions) |
|---|----------|--|--|------------------------------|--|------------------------|
| Option 1a: Existing Boyson Road alignment, use existing bridge, construct new bridge | B | Avoids permanent impacts with trail realignment and retaining walls, requires relocation of power lines. (1.2 acres) | All existing access points maintained, 530' to Center Point intersection | Yes | Requires narrow shoulder on expanded I-380 | \$11.7 |
| Option 1b: Existing Boyson Road alignment, construct two new bridges | B | Avoids permanent impacts with trail realignment and retaining walls, requires relocation of power lines. (1.2 acres) | All existing access points maintained, 530' to Center Point intersection | No | Avoids narrow shoulders on I-380 | \$13.1 |
| Option 2: Boyson Road skew, construct two new bridges | B | Avoids permanent impacts with trail realignment and retaining walls, requires relocation of power lines. (1.3 acres) | All existing access points maintained, 510' to Center Point intersection | No | Avoids narrow shoulders on I-380 | \$13.1 |
| Option 3: Boyson Road shift north, construct two new bridges | B | Avoids permanent impacts with typical grading, requires relocation of power lines. (1.0 acre) | All existing access points maintained, 525' to Center Point intersection | No | Avoids narrow shoulders on I-380 | \$13.2 |

Iowa DOT preferred the DDI configuration that shifts the existing Boyson Road alignment north and constructs new dual bridges over I-380. This configuration is preferred due to its more ideal geometry, ability to avoid the need for narrow shoulders

on an expanded I-380, and more balanced right-of-way impacts. Future operations were considered generally the same for all four DDI configurations.

Tower Terrace Road Interchange

Iowa DOT preferred a DDI for the proposed Tower Terrace Road interchange. Two DDI configurations were considered for this interchange:

- Remove the existing bridge, and construct a new single bridge with four travel lanes plus auxiliary lanes in each direction, continuous on-street bike lanes, and a 10-foot wide shared-use bicycle and pedestrian path through the center of the interchange; and
- Remove the existing bridge, and construct two split bridges with two travel lanes plus an auxiliary lane on each, continuous on-street bike lanes on each, and a 10-foot wide shared-use bicycle and pedestrian path on the south bridge.

The two DDI configurations are displayed on **Exhibit 4-4**. **Table 4-3** displays the comparison between the two DDI configurations at Tower Terrace Road.

Table 4-3: DDI Interchange Configurations Comparison at Tower Terrace Road

| DDI Configuration | 2040 LOS | Property impacts | Access points | Existing bridge preservation | Impacts to guy wire anchor | Estim. Cost (Millions) |
|--------------------------|-----------------|---|---|-------------------------------------|-----------------------------------|-------------------------------|
| Single Bridge DDI | B | Permanent impacts to approximately sixteen mobile home pad sites. Potential acquisition of one single family residence, and one agricultural parcel. (34.0 acres) | Four existing access points removed. West access to mobile home park removed | No | None | \$18.1 |
| Split Bridges DDI | B | Permanent impacts to approximately eight mobile home pad sites. Potential acquisition of one single family residence, and one agricultural parcel. (26.6 acres) | Four existing access points removed. West access to mobile home park removed. | No | None | \$16.1 |

Iowa DOT preferred the split bridges DDI configuration for the Tower Terrace interchange due to its reduced impact footprint. The smaller impact footprint resulted in substantially less permanent impacts to the Tower Terrace Mobile Home Park (TTMHP) located on Tower Terrace Road in the northeast quadrant of the proposed interchange. All other impacts were generally the same, with three required agricultural access closures and the potential acquisition of one residence due to access

closure. Future operations and other potential impacts were considered generally the same for both DDI configurations.

County Home Road Interchange

As noted in **Section 4.2**, it was determined that signalization upgrades at the County Home Road interchange ramp terminals would be sufficient to achieve acceptable existing and 2040 future operations at the interchange. It is expected signalization upgrades will be implemented within existing Iowa DOT right-of-way and will not result in physical property impacts outside of that area.

I-380 Mainline

The 2040 no-build traffic analyses demonstrated that additional future capacity on I-380 mainline was necessary due to operational failures on multiple four-lane freeway segments between the Blairs Ferry Road and County Home Road interchanges. A six-lane I-380 freeway facility between Blairs Ferry Road and County Home Road was analyzed with 2040 forecasted traffic volumes to determine its ability to operate with a reconstructed Boyson Road interchange, a new Tower Terrace interchange, and signalized ramp terminals at the County Home Road interchange. **Table 4-4** displays the results of this analysis.

The resulting analysis demonstrated that I-380 expanded to six-lanes, a reconstructed Boyson Road DDI interchange, a new Tower Terrace DDI interchange, and signalized ramp terminals at the County Home Road interchange operates at or above the acceptable LOS threshold in 2040.

Iowa DOT also determined that reconstruction of the Boyson Road interchange, construction of a new Tower Terrace interchange, and signalized ramp terminals at the County Home Road interchange could be achieved while also accommodating widening of I-380 to the outside of the existing I-380 travel lanes. Typical sections of a six-lane I-380 are displayed on **Exhibit 4-5**. The proposed typical section for an expanded I-380 will accommodate adding an additional lane to the inside median in both directions should, traffic volumes and operations dictate the need in the future.

Table 4-4: 2040 LOS for 6-Lane I-380 Freeway Segments with Proposed Interchange Improvements

| I-380 Segment Description | Segment type | AM LOS | PM LOS |
|--|--------------|--------|--------|
| Southbound I-380 | | | |
| SB County Home Road Off-Ramp | diverge | B | B |
| SB Between County Home Road Ramps | basic | C | B |
| SB County Home Road On-Ramp | merge | C | A |
| SB County Home Road On-Ramp to Tower Terrace Road Off-Ramp | basic | C | A |
| SB Tower Terrace Road Off-Ramp | diverge | B | A |
| SB Between Tower Terrace Ramps | basic | B | A |
| SB Tower Terrace Road On-Ramp | merge | C | B |
| SB Tower Terrace Road On-Ramp to Boyson Road Off-Ramp | basic | C | B |
| SB Boyson Road Off-Ramp | diverge | C | B |
| SB Between Boyson Road Ramps | basic | C | B |
| SB Boyson Road On-Ramp to Blairs Ferry Road Off-Ramp | weave | C | B |
| Northbound I-380 | | | |
| NB Blairs Ferry Road On-Ramp | merge | B | C |
| NB Boyson Road Off-Ramp | diverge | B | B |
| NB Between Boyson Road Ramps | basic | B | C |
| NB Boyson Road On-Ramp | merge | B | C |
| NB Boyson Road On-Ramp to Tower Terrace Road Off-Ramp | basic | B | C |
| NB Tower Terrace Road Off-Ramp | diverge | B | C |
| NB Between Tower Terrace Road Ramps | basic | A | B |
| NB Tower Terrace Road On-Ramp | merge | A | B |
| NB Tower Terrace Road On-Ramp to County Home Road Off-Ramp | basic | A | B |
| NB County Home Road Off-Ramp | diverge | B | B |
| NB Between County Home Road Ramps | basic | B | B |
| NB County Home Road On-Ramp | merge | B | B |

4.4 Proposed Alternative Summary

The Proposed Alternative includes the following roadway and interchange improvement elements, as shown on **Exhibit 4-2**:

- Reconstruction of the existing diamond interchange at Boyson Road with a new, four-lane split bridges DDI on existing shifted-north Boyson Road alignment through the interchange;
- Construction of a new, four-lane split bridge DDI at Tower Terrace Road;
- Signalization of the ramp terminals at the County Home Road interchange; and
- Expansion of I-380 from four to six lanes within the study area.

These improvements collectively support the purpose and need for the project by:

- Improving traffic operations at existing interchanges on I-380;
- Accommodating future traffic growth in the study area;
- Improving roadway geometry; and
- Supporting regional travel needs for planned economic development and land use.

The preliminary construction cost estimate for the Proposed Alternative is approximately \$93 million in 2017 dollars.

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



I-380 Improvements in Linn County, IA Environmental Assessment

Legend

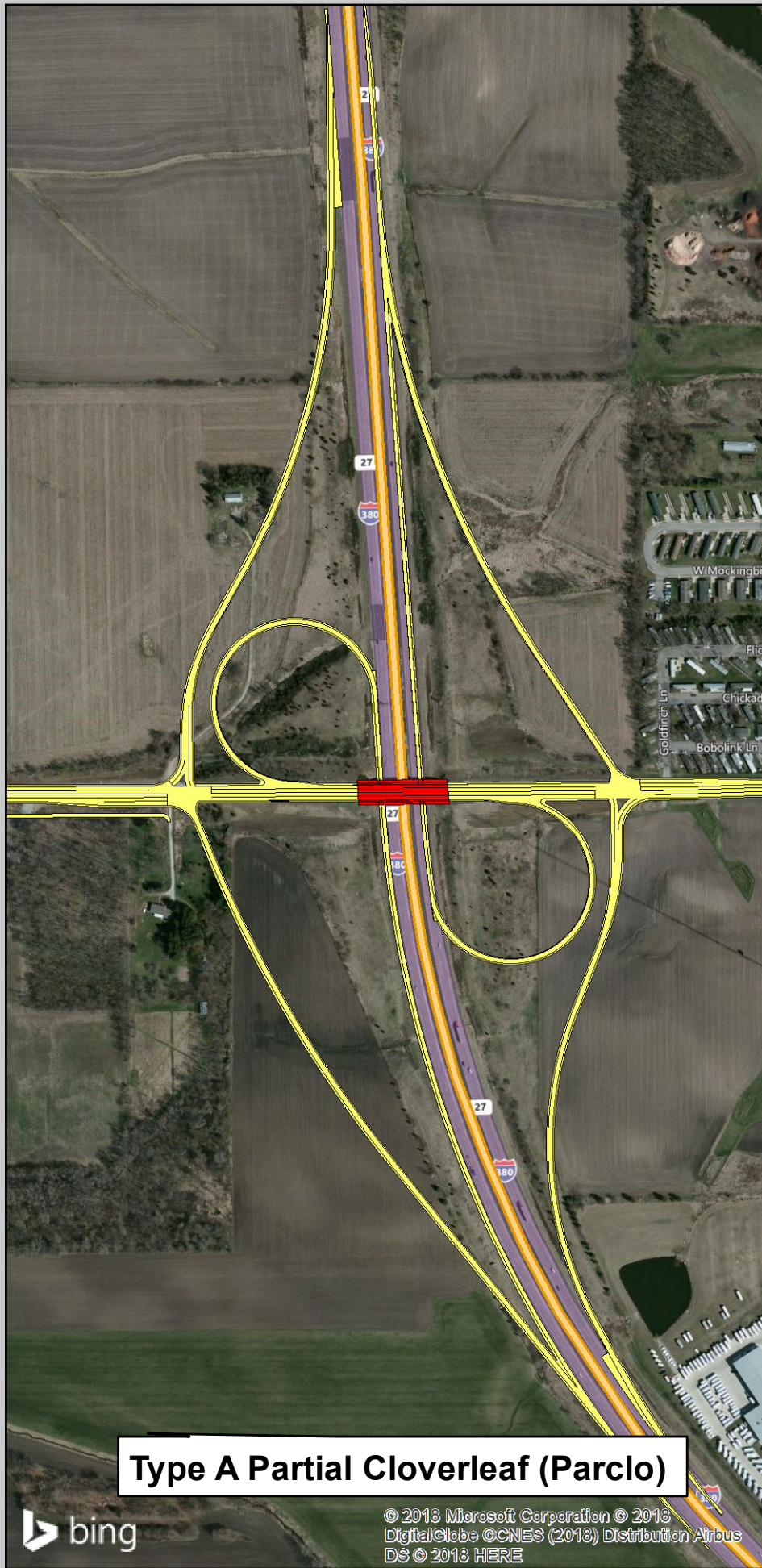
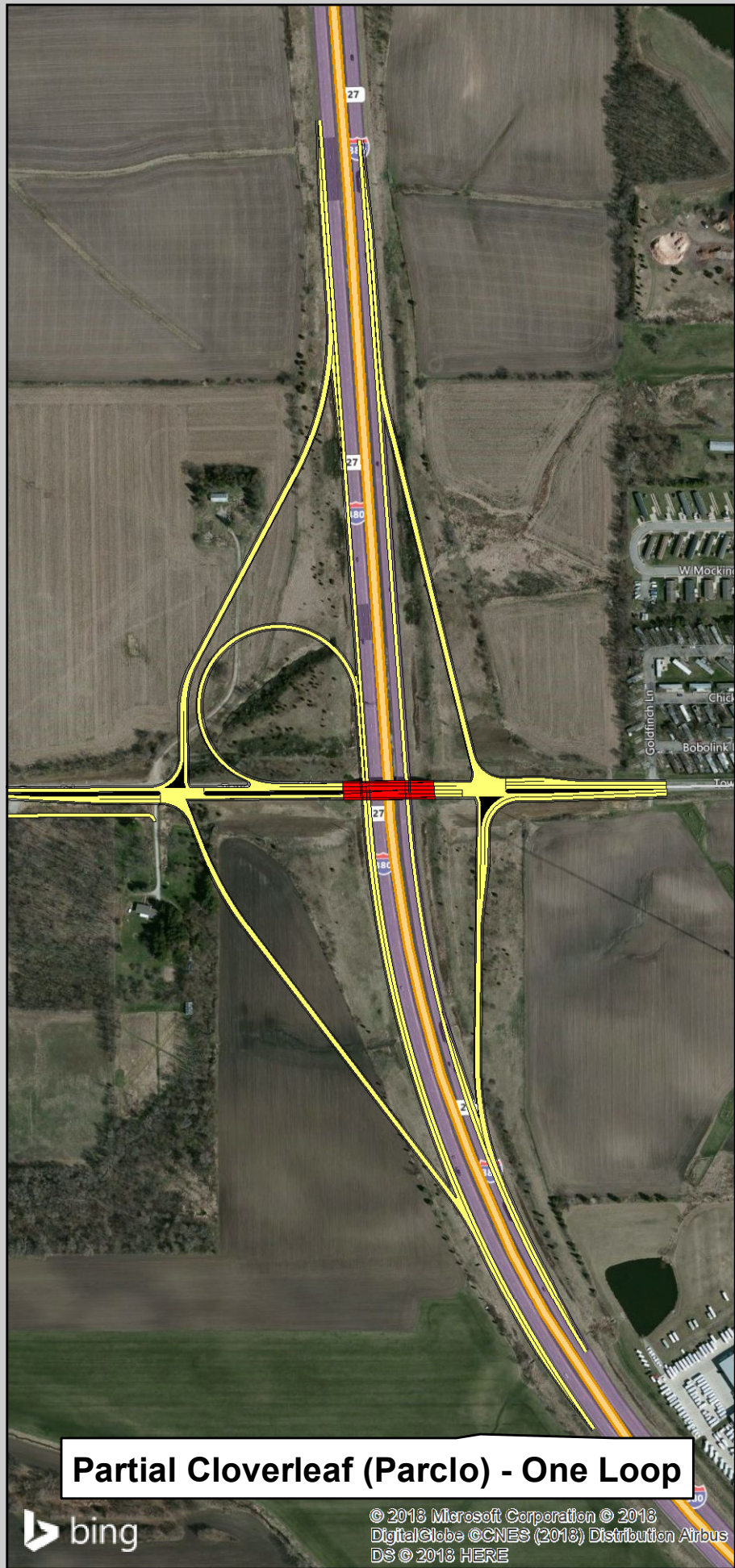
- Bridge
- Pavement
- Median

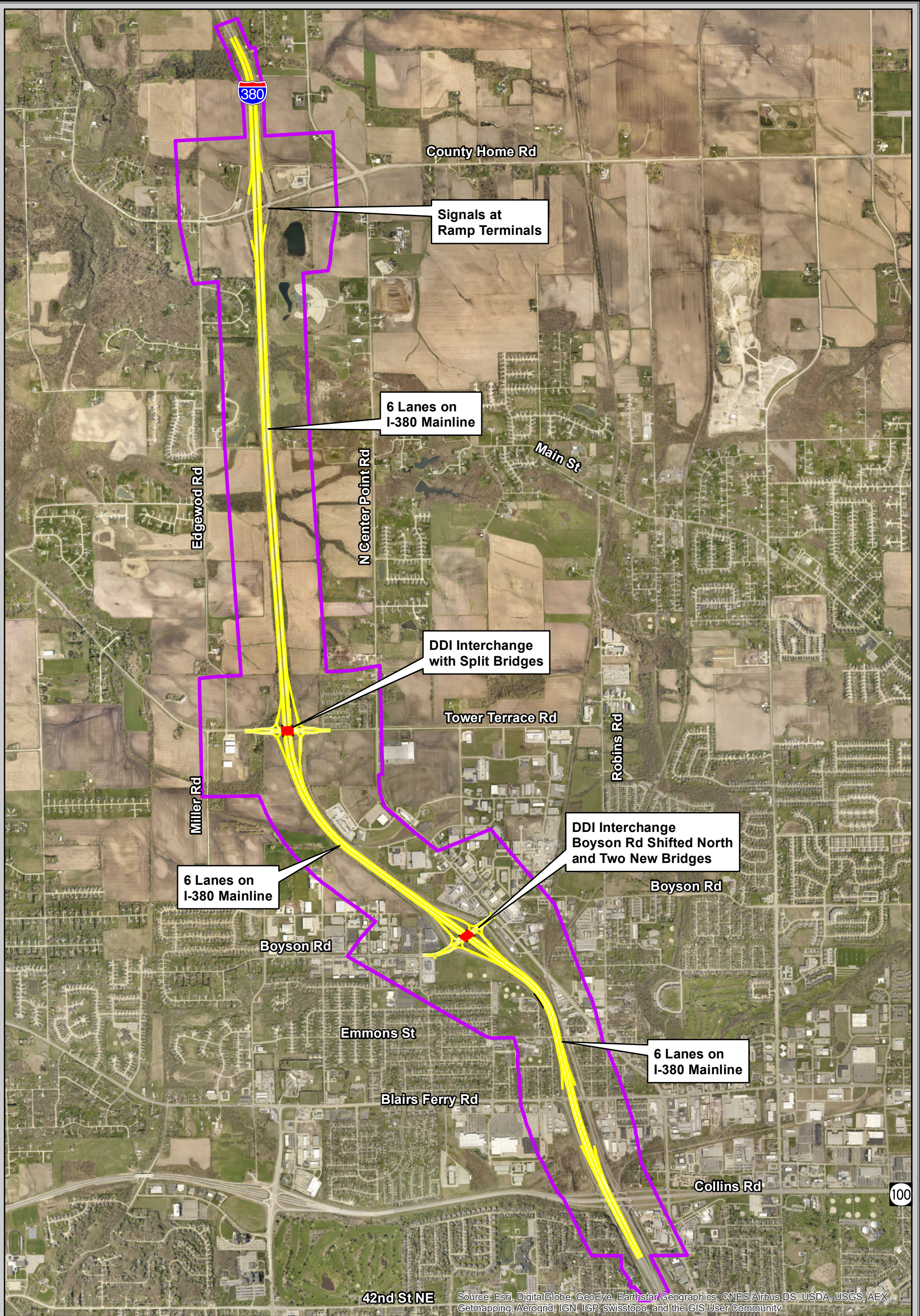


0 125 250 500 Feet

Exhibit 4-1 Alternatives Dismissed at Tower Terrace Rd.

June 21, 2018

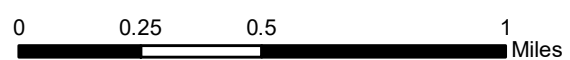




**I-380 Improvements
in Linn County, IA
Environmental
Assessment**

Legend

- Proposed Pavement
- Proposed Bridge
- Study Area



**Exhibit 4-2
Proposed
Alternative**

June 1, 2018



I-380 Improvements
in Linn County, IA
Environmental
Assessment

Legend

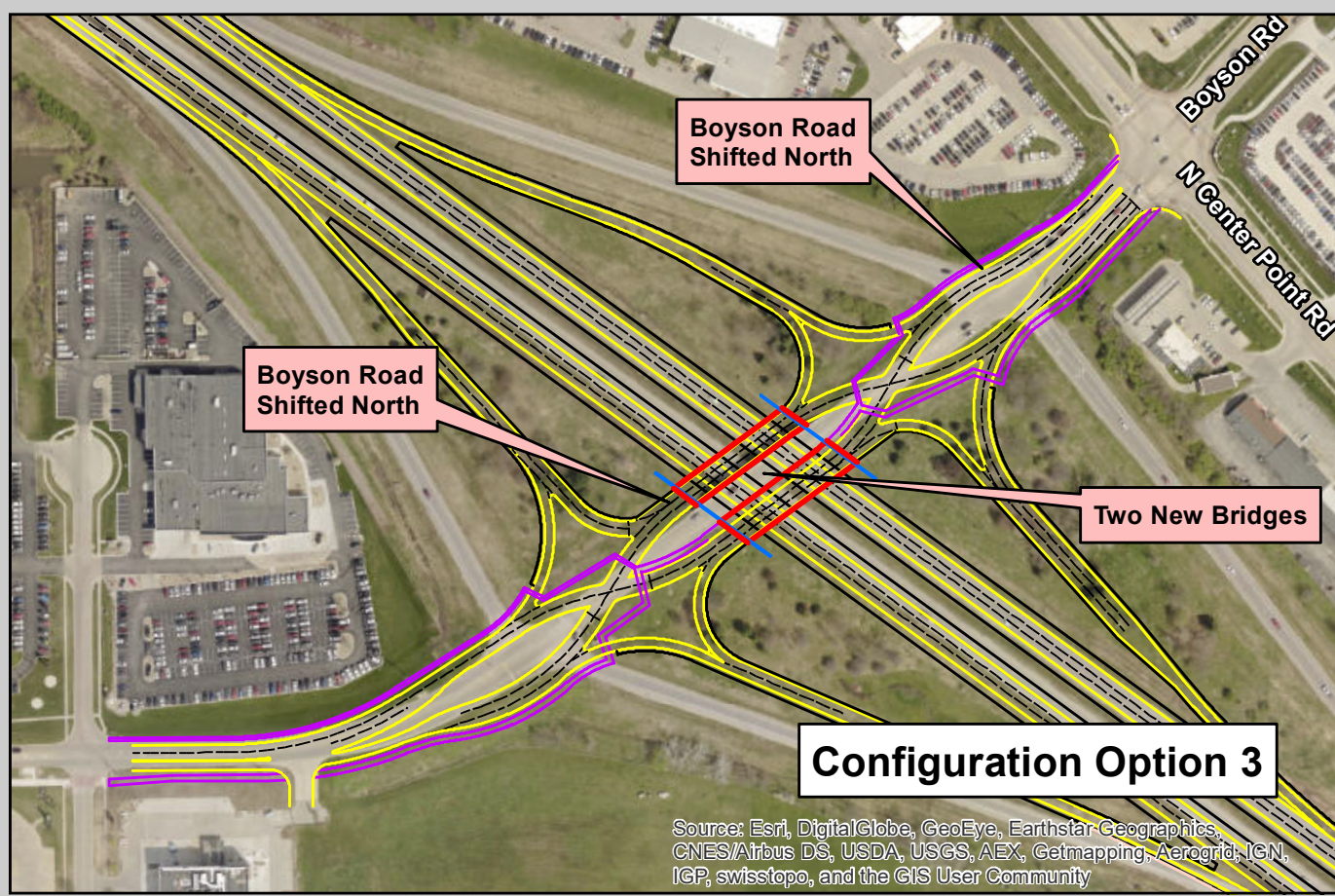
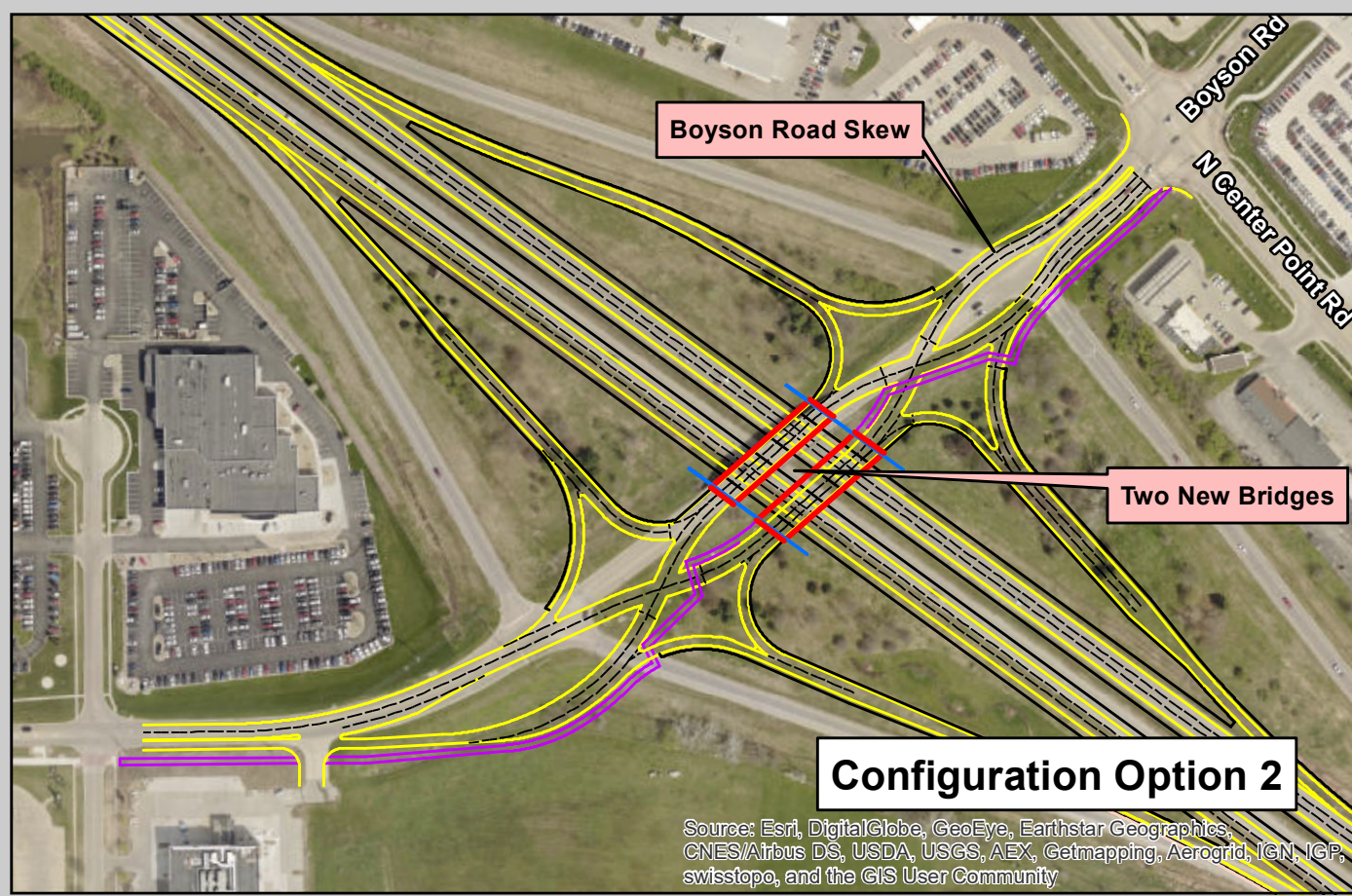
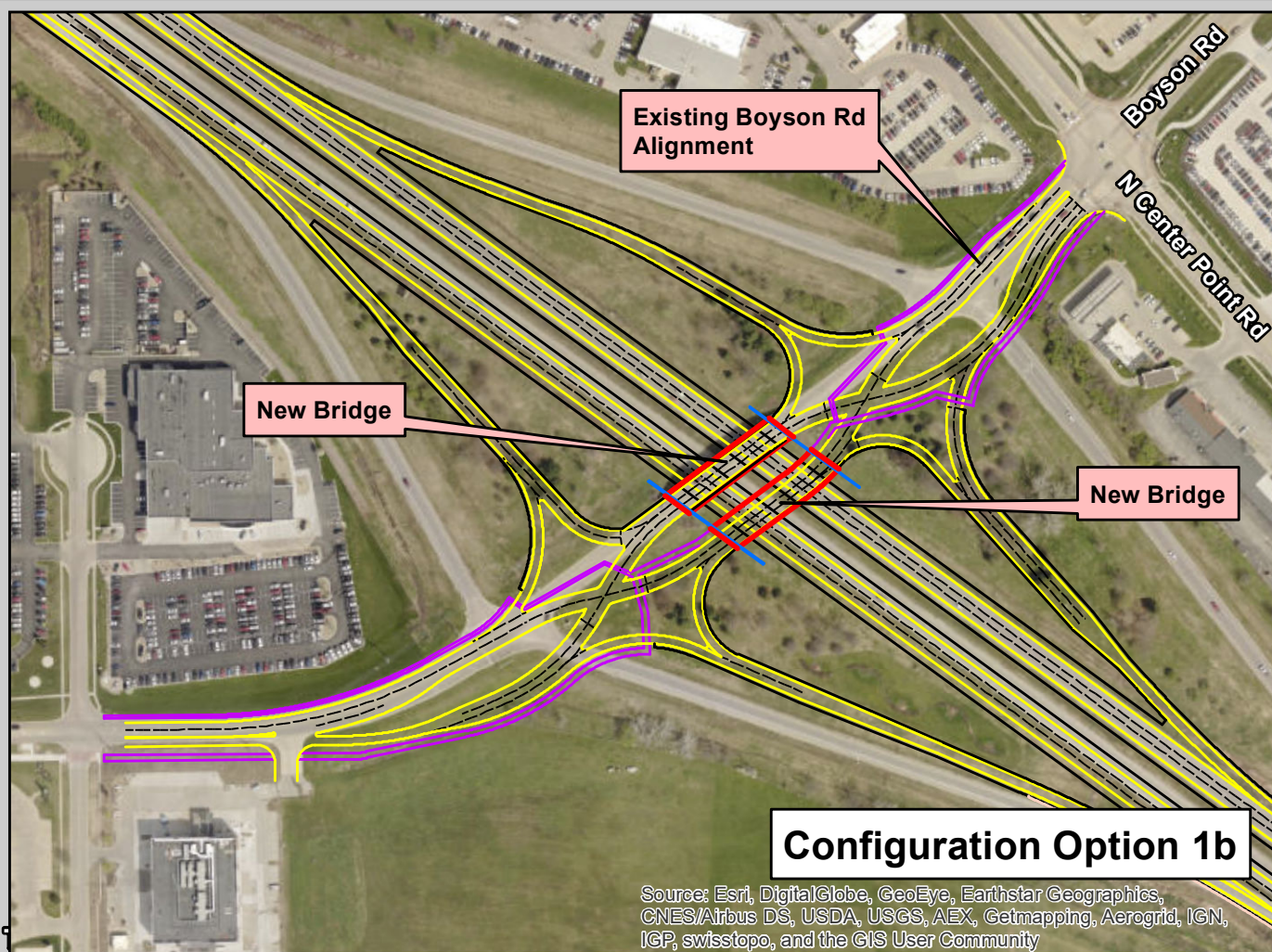
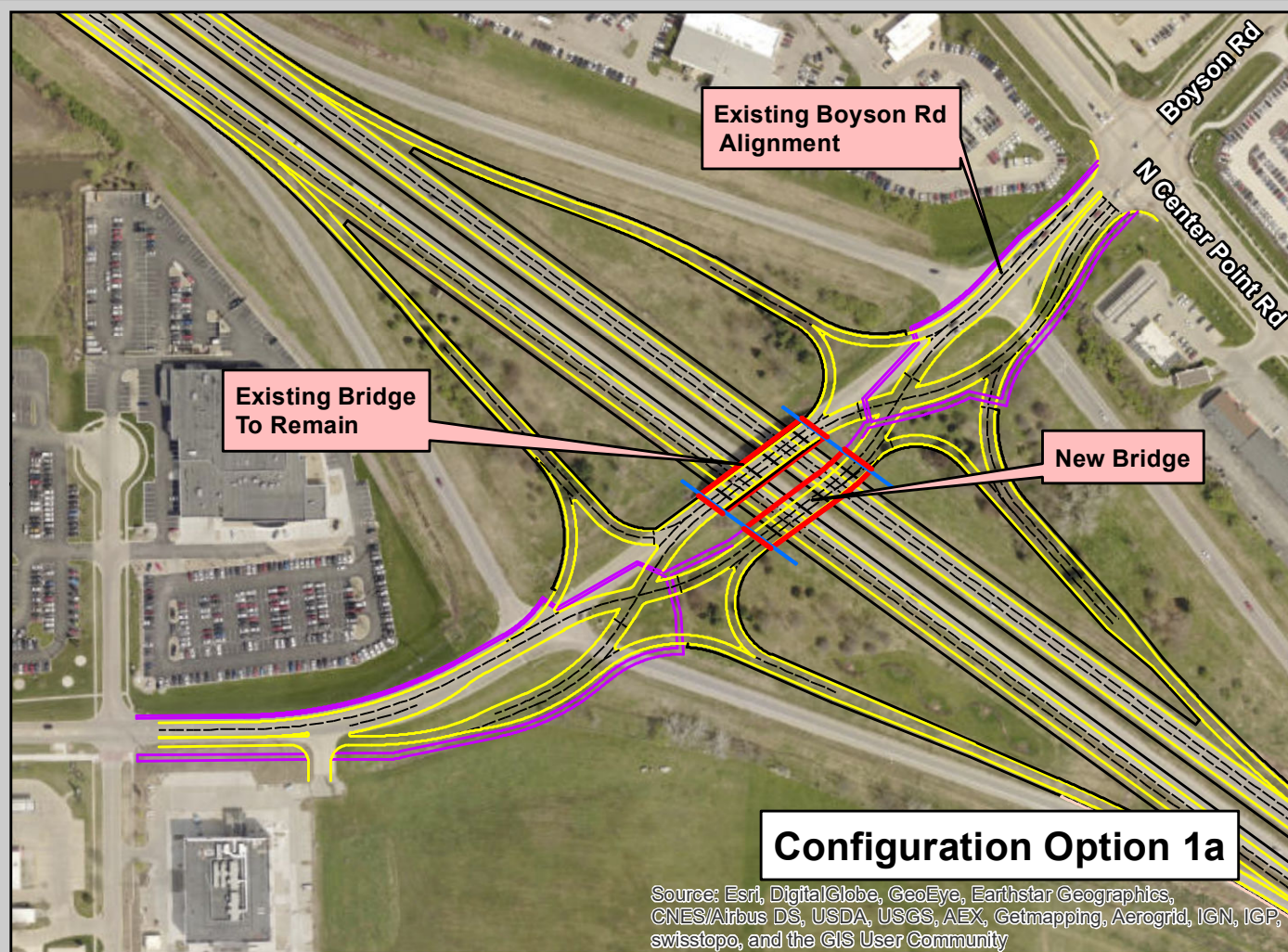
- Lane Striping
- Bridge Structure
- Curb Face
- Edge of Pavement
- Edge of Shoulder
- Path & Sidewalk
- Retaining Wall

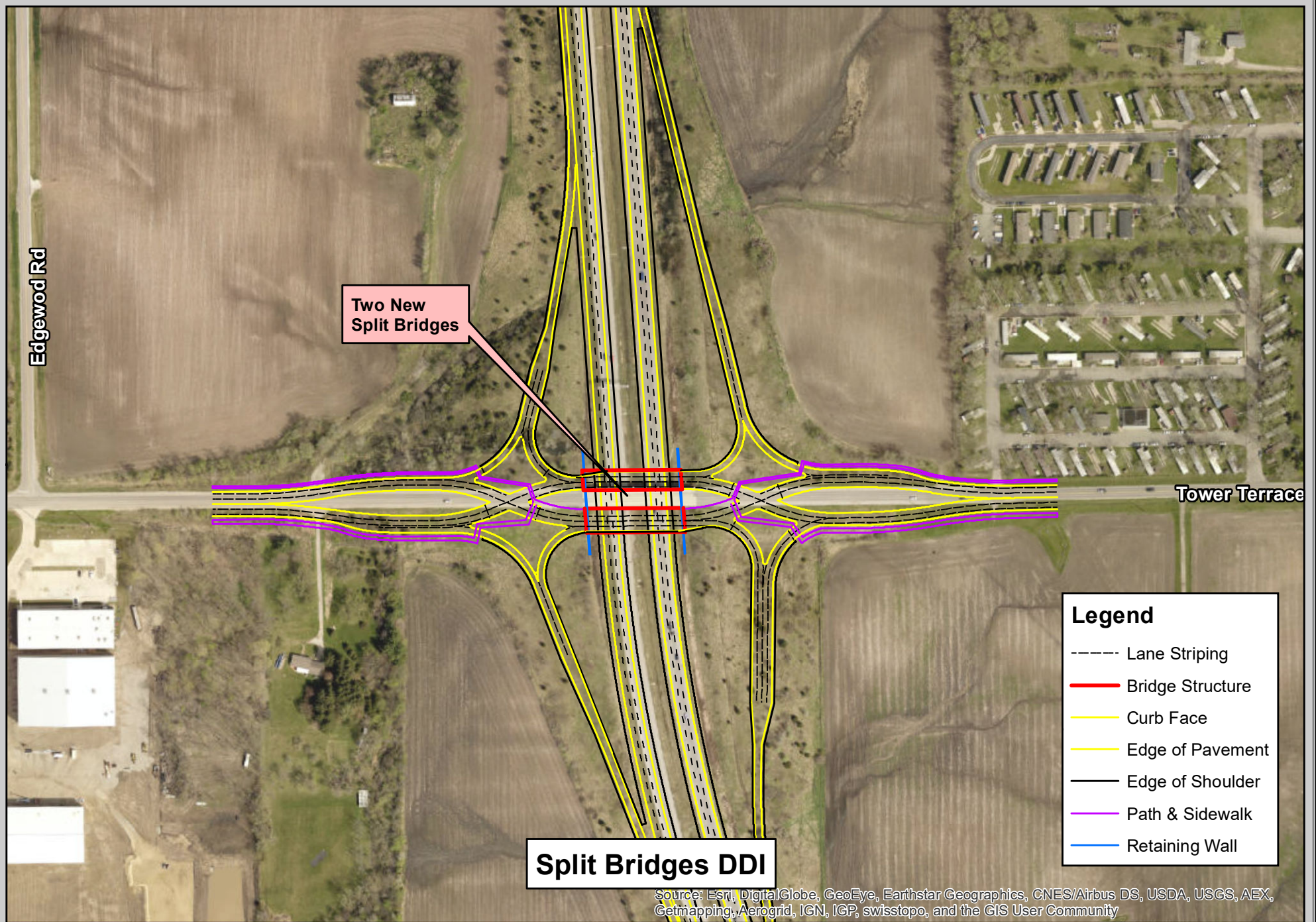
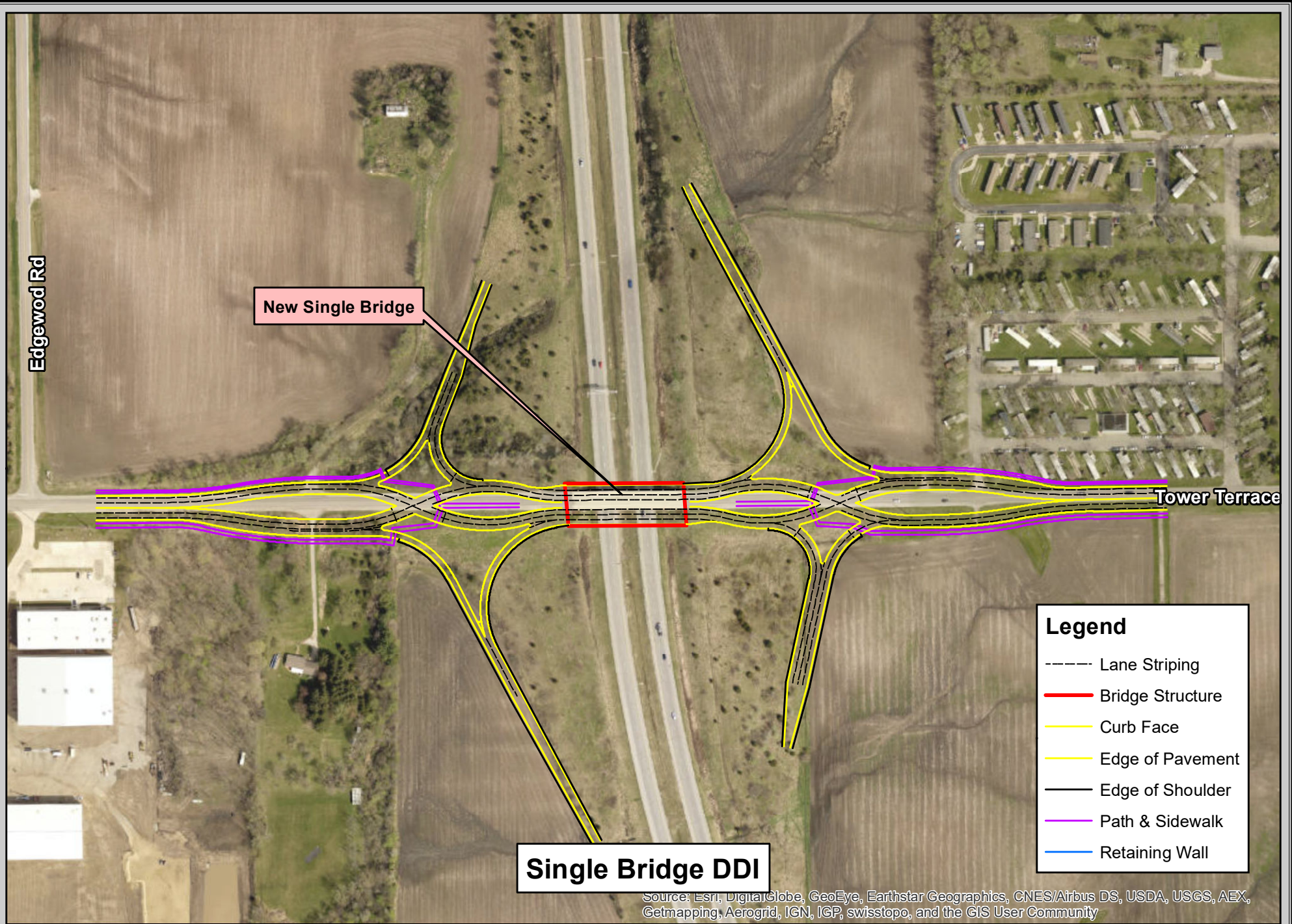


0 75 150 300
Feet

Exhibit 4-3
Boyson Rd
DDI Interchange
Configuration
Options

June 1, 2018

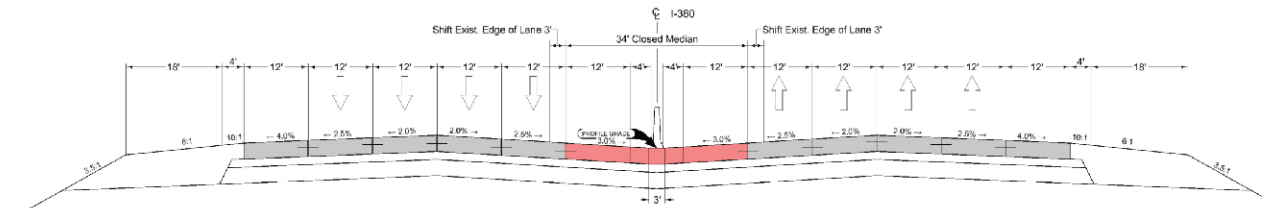




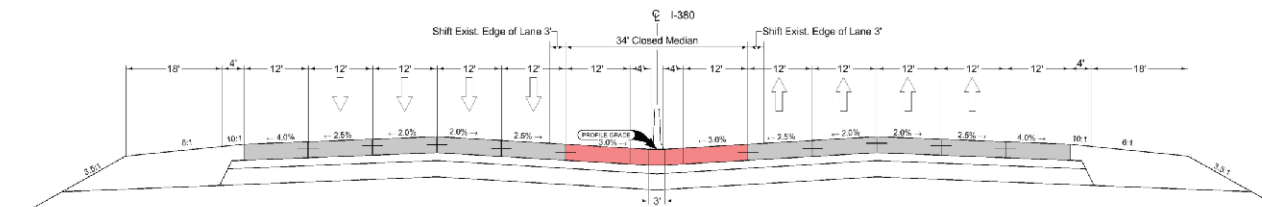


**I-380 Improvements
in Linn County, IA
Environmental
Assessment**

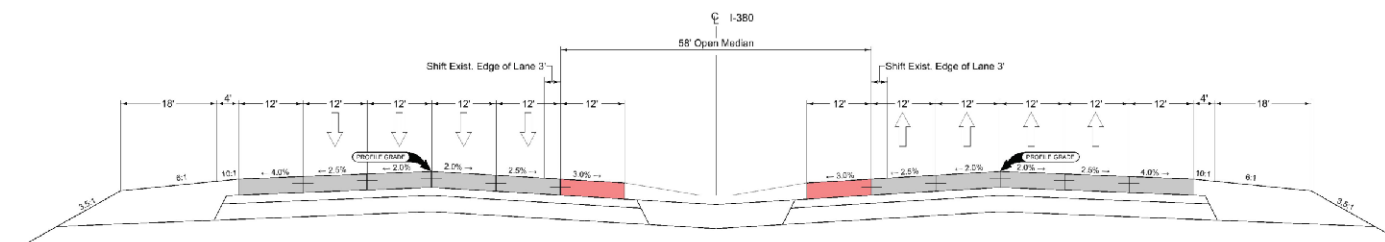
I-380 Mainline



Proposed (Collins Rd. to Blairs Ferry Rd.)



Proposed (Blairs Ferry Rd. to curve north of Boyson Rd.)



Proposed (Curve north of Boyson Rd. to County Home Rd.)

Legend

- Phase 1 Widening (6 lane section)
- Phase 2 Widening (8 lane section)

**Exhibit 4-5
I-380 Mainline
Typical Sections**

June 1, 2018

5.0 Environmental Analysis

This section describes the existing socioeconomic, cultural, natural and physical environments in the project area that will be affected by the Proposed Alternative. The resources with a check in the second column on **Table 1**, located at the beginning of the document, are discussed below.

5.1 Socioeconomic Impacts

5.1.1 Land Use

The north half of the study area and its vicinity are primarily rural in nature, with agricultural land uses dominating the landscape. However, rural residential, industrial and commercial developments can be sporadically found in and around this area. Commercial and industrial developments are located along Center Point Road with residential and agricultural uses found along Tower Terrace Road and the I-380 corridor. The south half of the study area is developed with commercial, light industrial, and residential uses. The cities of Robins, Hiawatha, and Cedar Rapids, as well as Linn County each have jurisdiction over a portion of the study area and govern the existing and future land use policies. **Exhibit 5-1** displays the jurisdictional boundaries in the vicinity of the study area.

Current aerial photography, windshield surveys, zoning and land use plans/policies were examined for each jurisdiction to determine and verify current land uses in and adjacent to the study area. Comprehensive land use plans for each jurisdiction were examined to determine proposed future land uses. Planned future land uses in the study area are displayed on **Exhibits 5-2** through **5-5**. Each comprehensive land use plan examined has identified the study area as a target for future urban expansion. Current and future land uses are discussed by jurisdiction below. In addition, the Corridor MPO has incorporated the cities' future land use plans. These plans are represented in *Connections 2040*, the Corridor MPO's long range transportation plan adopted in July 2010.

Linn County

A small portion of land on the north side of Tower Terrace Road (west of I-380) and some portions of land around the County Home Road interchange lie within the unincorporated limits of Linn County. Current land uses in the study area in Linn County are a mix of agricultural and single family residential.

The Linn County Rural Land Use Map, updated in May of 2013, identifies the Linn County sections of the study area as residing in the Metro Urban Service Area (MUSA). Land designated as MUSA includes land that is likely to be needed for future urban development within the next 30 years. Lands within the MUSA are intended to be maintained primarily for agricultural use until needed for municipal development to avoid conflicting development patterns.

City of Hiawatha

Most of the south half of the study area, and the north half of the study area on the west side of I-380 from Tower Terrace Road to the County Home Road interchange area lie within the City of Hiawatha's corporate boundaries. Current land uses found in the north half of the study area in Hiawatha are mostly agricultural, with some small pockets of residential, including the Tower Terrace Mobile Home Park situated northwest of the intersection of Tower Terrace Road and Center Point Road. The south half of the study area in the Hiawatha city limits is a mix of agricultural/undeveloped, light industrial, commercial and residential uses.

According to the City of Hiawatha's 2036 Comprehensive Plan (adopted December of 2016) and Future Land Use Map, land within the study area in Hiawatha is expected to be developed as high density residential and commercial around the proposed Tower Terrace interchange area, and as mostly commercial between the Tower Terrace interchange and the Boyson Road interchange. In addition, the area around the County Home Road interchange is expected to be developed as commercial, and the area on the west side of I-380, between the Tower Terrace Road and County Home Road interchanges is expected to be developed as low and medium density residential. The plan identifies two intersections within the study area as future gateway entrances to the city. Those gateways include the intersections of Tower Terrace Road/Edgewood Road (formerly Loggerhead Road) and County Home Road/Edgewood Road. The plan also identifies an interchange at Tower Terrace Road and I-380 as a necessary access point for the growing communities that surround this area, as it would provide opportunities for commercial and residential development that would benefit from easy interstate access.

Intersections identified as New Neighborhood Village Centers include Edgewood Road and a future street northwest of the Tower Terrace Road/I-380 area, and Edgewood Road/County Home Road. These small neighborhood commercial centers, located in proximity to residential areas, would consist of small-scale mixed-use buildings, pedestrian amenities, and gathering places. In addition, the area in the southeast corner of Hiawatha; where Emmons Street, Robins Road, and Center Point Road intersect; would be developed as a walkable village center, providing convenient access for pedestrians, bicyclists and wheelchair users to housing and shops, while also accommodating automobiles.

City of Cedar Rapids

The incorporated boundaries of the City of Cedar Rapids are located just to the north and southwest of the Tower Terrace Road/I-380 area, and at the south end of the study area. Current land use consists of a mix of agricultural/undeveloped, commercial, light industrial, and residential.

The Cedar Rapids Future Land Use Map shows the area around Tower Terrace Road/I-380 being developed as "urban medium-intensity" (areas with urban services including medium-density residential and neighborhood and community commercial, office, and service areas). The use in the south end of the study area (north of Highway 100/Collins Rd) would be open space and "urban high-intensity" (areas with

urban services including medium and high-density residential, major commercial, office, and service uses, and limited industrial in suitable locations). The area south of Highway 100/Collins Road would be “urban large lot” (areas with urban services including very low-density residential constrained by environmental elements, such as steep slopes, waterways, and woodlands) and “urban high-intensity”.

City of Robins

The corporate boundaries of the City of Robins within the study area are located on the east side of I-380, from approximately one-half mile north of Tower Terrace Road to just south of County Home Road, and on the north side of County Home Road. Existing land uses in the study area within Robins are mostly agricultural, with a small pocket of rural residential, an institutional (church) development, and commercial site.

The Future Land Use Map for the City of Robins identifies the north and south portions of the city limits within the study area as highway commercial and future commercial land uses, with the middle portion identified as low density single family residential and future single-family residential.

No Build Alternative impacts: The project study area and vicinity is likely to experience development pressures in the future in the absence of interchange and mainline improvements along I-380. However, areas targeted in the various future land use plans for future commercial, industrial and higher density residential development are less likely to attract those types of development without direct interchange access and capacity improvements to I-380.

Proposed Alternative impacts: Through their comprehensive planning processes, the local jurisdictions have recognized the project study area and its vicinity as an area positioned for future residential, commercial, and industrial development. The Corridor MPO’s long range transportation plan, *Connections 2040*, incorporates the cities’ future land use plans and desire for direct access to I-380 at Tower Terrace Road into the region’s future planning efforts. *Connections 2040* includes a planned interchange at I-380 and Tower Terrace Road, with a planned future widening and extension of Tower Terrace Road, improvements to the Boyson Road interchange, and other roadway improvements in the I-380 corridor vicinity. These future transportation improvements are planned to provide the transportation infrastructure to support the planned future land use development.

As a result, construction of the Proposed Alternative improvements would promote development consistent with proposed future land uses as described in the various jurisdictions’ comprehensive future land use plans.

5.1.2 Community Cohesion

Several residential communities are located within the study area. The Tower Terrace Mobile Home Park sits immediately east of the proposed Tower Terrace interchange and contains approximately 160 mobile home pad sites. Other residential neighborhoods are located on the east and west sides of I-380 from the south terminus

of the study area to just south of the Boyson Road interchange, on the west side of I-380 south of the County Home Road interchange, and on the east side of I-380 at the north terminus of the study area.

Community facilities in the study area are shown on **Exhibit 5-6** and include the following:

- Hiawatha Public Library – Located northeast of the Blairs Ferry Road interchange.
- Hiawatha City Hall and Community Center – Located on the east side of I-380, south of Emmons Street.
- Hiawatha Police Department – Located in the lower level of the Hiawatha City Hall building.
- Hiawatha Fire Station – Located adjacent to the edge of the study area, south of the Boyson Road interchange.
- Hiawatha Elementary School – Located northwest of the Blairs Ferry Road interchange.
- New Beginnings Church – Located east of the Boyson Road interchange in the City of Hiawatha.
- Saint Elizabeth Ann Seton Church - Located at the edge of the study area west of the Boyson Road interchange in the City of Hiawatha.
- New Covenant Bible Church – Located southeast of the County Home Road interchange in the City of Robins.
- Unity Point Clinic Health Facility – Located just north of the Boyson Road interchange, on N Center Point Road in the City of Hiawatha.
- Mercy Medical Park Facility – Located at the southwest quadrant of the Boyson Road/I-380 interchange.
- Hiawatha Care Center – A skilled nursing facility located west of the Boyson Road interchange in the City of Hiawatha.
- Guthridge Park – Located just south of the Boyson Road interchange in the City of Hiawatha.
- Fay M. Clark Memorial Park – Located northwest of the Boyson Road interchange in the City of Hiawatha.
- Cedar Valley Nature Trail and Cedar River Trail – Located on the east side of I-380 and the study area, in the cities of Hiawatha and Cedar Rapids.
- Twisters Gymnastics, Inc. (Recreation facility) – Located on the south side of Tower Terrace Road and west of I-380.

No Build Alternative impacts: The No Build alternative will not impact any of the community facilities or result in adverse community cohesion impacts.

Proposed Alternative impacts: The construction of the Proposed Alternative would result in permanent changes in access for the Tower Terrace Mobile Home Park. The west entrance to the mobile home park would be closed due to its proximity to the proposed east ramp terminal at the proposed Tower Terrace Road interchange. However, all other access points to the mobile home park would be maintained. Additionally, approximately eight mobile home pad sites may be directly impacted with construction of the proposed interchange at Tower Terrace Road. It is not

anticipated that permanent removal of any mobile home pad sites would impact community cohesion, as the removal of the mobile homes would occur at the southwest corner of the neighborhood, rather than severing it.

No other community facilities or neighborhoods in or near the project study area would experience permanent changes in access. As a result, the proposed project would not permanently isolate or create barriers for any portions of the existing communities.

Reconstruction of the Boyson Road interchange would result in minor acquisition (0.16 acres) of the Mercy Medical Park property and would impact 15 spaces of a parking area; however, the access drive would remain and would not be permanently affected.

Construction of a new bridge over I-380 at Tower Terrace Road and reconstruction of the Boyson Road interchange would require some or all lanes of these roadways at each interchange to be temporarily closed during construction and would require the rerouting of traffic for those attempting to reach either side of I-380.

All community facilities in the vicinity of the study area will have access maintained at all times and will not be severed from the remainder of the community, with the exception of temporary closures of lanes on Tower Terrace Road and Boyson Road during construction.

Proposed Alternative mitigation: The construction of the Proposed Alternative would not result in permanent changes in access for any of the remaining residential properties within the study area. Tower Terrace Road and Boyson Road would be temporarily closed at times during construction and would require traffic detours for those attempting to reach either side of I-380. Community facilities such as schools, churches, medical facilities, and public/semi-public services are located in and adjacent to the study area, but access will not be affected, except temporary rerouting during construction. All neighborhoods and community facilities within the study area will have access maintained at all times and will not be severed from the rest of the community.

5.1.3 Churches and Schools

The project study area contains three existing churches (see **Exhibit 5-6**). The New Beginnings Church is located east of the Boyson Road interchange, the Saint Elizabeth Ann Seton Church is located at the edge of the study area west of the Boyson Road interchange, and the New Covenant Bible Church is located southeast of the County Home Road interchange.

One school is located within the study area as shown on **Exhibit 5-6**. The Hiawatha Elementary School is located just northwest of the Blairs Ferry Road interchange. The Andrews Christian Academy, located just outside the study area northwest of the proposed Tower Terrace Road interchange, is accessed through the study area via Edgewood Road.

No Build Alternative impacts: The No Build Alternative will not result in adverse impacts to churches or schools in the study area.

Proposed Alternative impacts: The Proposed Alternative would result in a permanent linear impact of 0.37 acres of right of way acquisition on the west edge of the New Covenant Bible Church property adjacent to the I-380 right of way. However, there would be no impacts to property access or facilities. None of the schools or other churches would experience property impacts from the Proposed Alternative. During construction, access across I-380 on Tower Terrace Road and Boyson Road would be temporarily interrupted due to interchange construction activities. Alternative routes that provide access across I-380 include Blairs Ferry Road and County Home Road. These routes would need to be used to access the schools and churches from the opposite sides of I-380. However, it is anticipated that Tower Terrace Road and Boyson Road would not be simultaneously closed during construction, thereby providing more detour route alternatives. These detours would be temporary and limited in duration to the period of time required to construct a new Tower Terrace Road bridge and to reconstruct the Boyson Road interchange. Improvements associated with construction of the Proposed Alternative are not expected to impact existing access to the churches and schools.

Proposed Alternative mitigation: No mitigation is required for the Proposed Alternative. However, coordination with the churches and schools would be necessary during construction to facilitate alternative transportation access routes across I-380. Any detours will be clearly marked and will be temporary in nature.

5.1.4 Environmental Justice

Executive Order 12898, *Federal Action to Address Environmental Justice in Minority and Low-Income Populations*, dated February 11, 1994 states that, to the extent practicable and permitted by law, neither minority nor low-income populations may receive disproportionately high and adverse impacts because of a proposed project. The data used for this analysis is the minority population percentage, defined as “all but White, Non-Hispanic persons (White Alone)”; and the low-income population percentage, defined as “individuals below poverty level”.

Demographic statistics from the 2012-2016 American Community Survey (ACS) were compiled from the US Census American Fact Finder database for minority and low-income populations. For purposes of the Environmental Justice (EJ) assessment, the most refined level of Census data used for the initial analysis was the Census Block Group Level. **Exhibit 5-7** shows Census Block Groups and municipalities intersected by the study area. The communities of comparison (COC) that intersect the study area and used for the EJ analysis of this project are the cities of Cedar Rapids, Hiawatha, and a small portion of Robins, as well as Linn County and the State of Iowa. To make a practical comparison for Block Groups that contain more than one COC, Linn County was used as the COC to which EJ population percentages were compared, because selecting any one jurisdiction would not be a true representation of the project area.

Minority Populations

The Iowa DOT’s threshold for a potential environmental justice impact is the amount of the minority population that is equal to 125% of the COCs. **Table 5-1a** shows the racial composition and minority populations of the COCs, and **Table 5-1b** shows the racial composition and minority populations of all the Block Groups intersecting the study area. The Block Groups in the study area with a minority population percentage greater than 125% of the corresponding COC are also indicated in **Table 5-1b**. These four Block Groups (see **Exhibit 5-7**), located in the southern portion of the study area (from Blairs Ferry Road to the south terminus), contain minority populations ranging from 24.4% to 62.4%, and are considered to have a potential to be impacted by the project. One Block Group is in the City of Hiawatha and the remaining three are in the City of Cedar Rapids. All other Block Groups in the study area ranged from 2.2% to 9.9% minorities.

Table 5-1a: Minority Populations in Communities of Comparison within Study Area

| Population Category by Race | Community of Comparison (COC) | | | | |
|---|-------------------------------|-----------------------|--------------------|------------------------|-------------------------|
| | Cedar Rapids | Hiawatha | Robins | Linn County | State of Iowa |
| Total Population | 129,537 100% | 7,160 100% | 3,434 100% | 218,076 100% | 3,106,589 100% |
| White* | 109,351 84.4% | 5,873 82.0% | 3,119 90.8% | 191,321 87.7% | 2,701,600 87.0% |
| Black/African American* | 7,747 6.0% | 801 11.2% | 73 2.1% | 9,802 4.5% | 100,660 3.2% |
| American Indian & Alaska Native* | 306 0.2% | 0 0.0% | 0 0.0% | 373 0.2% | 8,310 0.3% |
| Asian* | 3,437 2.7% | 155 2.2% | 184 5.4% | 4,629 2.1% | 66,187 2.1% |
| Native Hawaiian & Other Pacific Islander* | 30 0.0% | 15 0.2% | 0 0.0% | 49 0.02% | 2,276 0.1% |
| Some Other Race* | 151 0.1% | 0 0.0% | 0 0.0% | 164 0.1% | 2,756 0.1% |
| Two or More Races | 3,704 2.9% | 161 2.2% | 22 0.6% | 5,211 2.4% | 52,093 1.7% |
| Hispanic or Latino (of any race) | 4,811 3.7% | 155 2.2% | 36 1.1% | 6,527 3.0% | 172,707 5.6% |
| Total Minority Population** | 20,186 15.6% | 1,287 18.0% | 315 9.2% | 26,755 12.3% | 404,989 13.0% |
| 125% of COC | 19.5% | 22.5% | 11.5% | 15.3% | 16.25% |

Source: 2012-2016 ACS 5-Year Estimates - Demographic and Housing

*Race alone – “Not Hispanic or Latino”

**All races except “White, Non-Hispanic/Latino”

Table 5-1b: Minority Populations in Block Groups within Study Area

| Population Category by Race | Project Location Census Tract & Block Group Numbers | | | | | | | | | |
|--|--|--------------------|---------------------|---|---|----------------------|----------------------|----------------------|---------------------|---------------------|
| | Tract 201 BG 2 | Tract 201 BG 3 | Tract 201 BG 4 | Tract 205 BG 1 | Tract 206 BG 1 | Tract 207 BG 3 | Tract 800 BG 2 | Tract 901 BG 1 | Tract 901 BG 2 | Tract 10600 BG 1 |
| Total Population | 1,776 100% | 957 100% | 2,232 100% | 4,563 100% | 3,397 100% | 1,113 100% | 1,577 100% | 1,190 100% | 1,577 100% | 1,695 100% |
| White** | 1013 57.0% | 916 95.7% | 2,010 90.1% | 4,461 97.8% | 3,127 92.1% | 418 37.6% | 828 52.5% | 900 75.6% | 1,497 94.9% | 1,582 93.3% |
| Black/African American** | 597 33.6% | 18 1.9% | 151 6.8% | 47 1.0% | 30 0.9% | 172 15.5% | 116 7.4% | 0 0.0% | 39 2.5% | 0 0.0% |
| American Indian & Alaska Native** | 0 0.0% | 0 0.0% | 0 0.0% | 0 0.0% | 0 0.0% | 0 0.0% | 0 0.0% | 26 2.2% | 0 0.0% | 0 0.0% |
| Asian** | 33 1.9% | 0 0.0% | 0 0.0% | 0 0.0% | 138 4.1% | 264 23.7% | 360 22.8% | 0 0.0% | 19 1.2% | 41 2.4% |
| Native Hawaiian & Other Pacific Islander** | 0 0.0% | 0 0.0% | 0 0.0% | 15 0.03% | 0 0.0% | 0 0.0% | 0 0.0% | 0 0.0% | 0 0.0% | 0 0.0% |
| Some Other Race** | 0 0.0% | 0 0.0% | 0 0.0% | 0 0.0% | 0 0.0% | 0 0.0% | 0 0.0% | 0 0.0% | 0 0.0% | 0 0.0% |
| Two or More Races | 54 3.0% | 11 1.1% | 51 2.3% | 40 0.9% | 57 1.7% | 26 2.3% | 70 4.4% | 35 2.9% | 22 1.4% | 0 0.0% |
| Hispanic or Latino (of any race) | 79 4.4% | 12 1.3% | 20 0.9% | 0 0.0% | 45 1.3% | 233 20.9% | 203 12.9% | 229 19.2% | 0 0.0% | 72 4.2% |
| Total Minority Population*** | 763 43.0% | 41 4.3% | 222 9.9% | 102 2.2% | 270 7.9% | 695 62.4% | 749 47.5% | 290 24.4% | 80 5.1% | 113 6.7% |
| 125% of COC | 22.5% | 22.5% | 22.5% | 15.3% | 15.3% | 19.5% | 19.5% | 19.5% | 19.5% | 15.3% |
| COC Containing the Block Group | Hia-watha | Hia-watha | Hia-watha | Robins, Hia-watha, & Cedar Rapids* | Robins, Hia-watha, & Linn Co.* | Cedar Rapids | Cedar Rapids | Cedar Rapids | Cedar Rapids | Linn Co. |
| Potential Minority EJ Impact | YES | NO | NO | NO | NO | YES | YES | YES | NO | NO |

Source: 2012-2016 ACS 5-Year Estimates - Demographic and Housing

*Linn County is used as the COC because the Block Group contains more than one COC.

**Race alone – “Not Hispanic or Latino”

***All races except “White, Non-Hispanic/Latino”

Low-income Populations

Table 5-2a presents the low-income populations (individuals below poverty level) of the COCs, and Table 5-2b shows the low-income populations of all the Census Block Groups intersecting the study area (see Exhibit 5-7). Two Census Block Groups, located in the southern portion of the study area, contain low-income percentages greater than 125% of the corresponding COCs, as indicated in Table 5-2a. One Block

Group (BG 3 of Tract 201) contains a low-income population of 17.6% and is located in Hiawatha, and the other Block Group (BG 3 of Tract 207) contains a low-income population of 32.9% and is in Cedar Rapids. This same Block Group also contains the highest percentage of minorities with 62.4%.

Table 5-2a: Low-income Populations in Communities of Comparison within Study Area

| Low-income Population | Community of Comparison (COC) | | | | |
|--|-------------------------------|--------------|-------------|--------------|---------------|
| | Cedar Rapids | Hiawatha | Robins | Linn County | State of Iowa |
| Total Population | 129,537 | 7,160 | 3,434 | 218,076 | 3,106,589 |
| Persons below Poverty Level* | 14,767 | 874 | 31 | 20,499 | 382,110 |
| Percent of Persons below Poverty Level | 11.4% | 12.2% | 0.9% | 9.4% | 12.3% |
| 125% of COC | 14.3% | 15.3% | 1.1% | 11.8% | 15.4% |

Source: 2012-2016 ACS 5-Year Estimates - Selected Economic Characteristics

*Income in the past 12 months below poverty level

Table 5-2b: Low-income Populations in Block Groups within Study Area

| Population Category by Race | Project Location | | | | | | | | | |
|--|------------------------------------|----------------|----------------|------------------------------------|--------------------------------|----------------|----------------|----------------|----------------|------------------|
| | Census Tract & Block Group Numbers | | | | | | | | | |
| | Tract 201 BG 2 | Tract 201 BG 3 | Tract 201 BG 4 | Tract 205 BG 1 | Tract 206 BG 1 | Tract 207 BG 3 | Tract 800 BG 2 | Tract 901 BG 1 | Tract 901 BG 2 | Tract 10600 BG 1 |
| Total Population | 1,776 | 941 | 2,141 | 4,563 | 3,397 | 1,113 | 1,577 | 1,063 | 1,577 | 1,695 |
| Persons below Poverty Level* | 239 | 166 | 129 | 150 | 43 | 366 | 113 | 131 | 24 | 80 |
| Percent of Persons below Poverty Level | 13.5% | 17.6% | 6.0% | 3.3% | 1.3% | 32.9% | 7.2% | 12.3% | 1.5% | 4.7% |
| 125% of COC | 15.3% | 15.3% | 15.3% | 11.8% | 11.8% | 14.3% | 14.3% | 14.3% | 14.3% | 11.8% |
| COC Containing the Block Group | Hiawatha | Hiawatha | Hiawatha | Robins, Hiawatha, & Cedar Rapids** | Robins, Hiawatha, & Linn Co.** | Cedar Rapids | Cedar Rapids | Cedar Rapids | Cedar Rapids | Linn Co. |
| Potential Low-income EJ Impact | YES | NO | NO | NO | NO | YES | NO | NO | NO | NO |

Source: 2012-2016 ACS 5-Year Estimates - Selected Economic Characteristics

*Income in the past 12 months below poverty level

**Linn County is used as the COC because the Block Group contains more than one COC.

The websites of Affordable Housing Online, Affordable Housing Resources (for Linn County), PublicHousing.com, and LowIncomeHousing.us, provided lists of housing options in the metro area that are designated as low-income or affordable housing (Housing Choice Voucher known as Section 8, public housing owned by the state, and privately owned subsidized housing). The Section 8 program is the federal government's program for assisting the elderly, disabled and low-income families or individuals in providing decent, safe, and sanitary housing. A review of the housing lists indicated that there are no such facilities located in the study area.

Limited English Proficiency

Limited English Proficiency (LEP) was also reviewed for the study area and refers to anyone above the age of five who speaks English “less than very well”, as classified by the U.S. Census Bureau. As shown in **Table 5-1b**, Block Group 3 of Tract 207, located northeast of the I-380/Highway 100 interchange, contains 62.4% minorities. This Block Group also contains the highest percentage of LEP at 41%. Block Group 2 of Tract 800, located southeast of the I-380/Highway 100 interchange, contains an LEP population of approximately 13%, with a minority population of 47.5%. These two block groups contain the most Asian population in the study area at about 23% each, and Hispanic/Latino populations, ranging from 13% to 21%. The remaining block groups in the study area contain LEP populations of less than 6%.

No Build Alternative impacts: No adverse impacts to environmental justice populations would occur under the No Build Alternative. However, as forecasted future traffic congestion at the existing I-380 interchanges is realized, optimum access for environmental justice populations to jobs and employment areas in or near the study area may be compromised. In addition, the No Build Alternative would not provide optimum support for economic development that has been planned with an improved roadway system in mind, and would not provide benefits to environmental justice populations.

Proposed Alternative impacts: The Census Block Groups that fall within the potential impact threshold of having environmental justice populations greater than 125% of the COCs are shown in **Tables 5-1b** and **5-2b** above, and can be found on **Exhibit 5-7**. The Iowa DOT threshold for a potential environmental justice impact is a Census area having a minority population greater than 25 percent of the total population, or greater than 125% of the minority population of the COC. For potential environmental justice impacts to low-income populations, a Census area must have a low-income population percentage greater than 125 percent of the COC’s low-income percentage.

Potential Minority Population Impacts

In most locations of the project area, construction of interchange and mainline improvements of the Proposed Alternative would require acquisition of only minimal right of way from adjacent parcels. However, there are two locations where displacements of residences would be required. One location would be at the Tower Terrace Mobile Home Park located on the north side of Tower Terrace Road, in the northeast quadrant of the proposed interchange (in Hiawatha). At this location, eight (8) mobile home pad sites may be displaced. The second location would be near the southwest quadrant of the proposed Tower Terrace interchange (in Cedar Rapids) where one single-family residence would be acquired.

A subsequent review of minority populations at the Census “Block” level (a smaller geographic area) was conducted for the areas containing the impacted residences, which are within the cities of Hiawatha and Cedar Rapids. As shown in **Table 5-3** and on **Exhibit 5-8**, the two Blocks in the mobile home park in which displacements

would occur have minority populations below the potential EJ impact threshold. Although the remaining Block adjacent to Tower Terrace Road contains a minority population greater than 125% of Hiawatha’s minority population, no displacements would occur in that Block. Block 1015 of Tract 205, containing the one displacement at the southwest quadrant of the proposed Tower Terrace Road interchange is shown as having no minority populations.

Table 5-3: Minority Populations by Blocks – Tower Terrace Interchange Area

| Population Category by Race | Tower Terrace Mobile Home Park | | | TT Intchg. SW Quad | Community of Comparison (COC) | | | |
|---|--------------------------------|----------------------|----------------------|----------------------|-------------------------------|------------------|------------------|--------------------|
| | Tract 205 Block 1019 | Tract 205 Block 1072 | Tract 205 Block 1071 | Tract 205 Block 1015 | Hiawatha | Cedar Rapids | Linn County | State of Iowa |
| Total Population | 80 100% | 23 100% | 41 100% | 6 100% | 7,024 100% | 126,326 100% | 211,226 100% | 3,046,355 100% |
| White* | 77 96.3% | 22 95.7% | 29 70.7% | 6 100.0% | 6,166 87.8% | 108,696 86.0% | 188,592 89.3% | 2,701,123 88.7% |
| Black/African American* | 0 0.0% | 0 0.0% | 6 14.6% | 0 0.0% | 355 5.1% | 6,880 5.4% | 8,160 3.9% | 86,906 2.9% |
| American Indian & Alaska Native* | 2 2.5% | 0 0.0% | 2 4.9% | 0 0.0% | 14 0.2% | 338 0.3% | 479 0.2% | 8,581 0.3% |
| Asian* | 0 0.0% | 1 4.3% | 1 2.4% | 0 0.0% | 157 2.2% | 2,779 2.2% | 3,783 1.8% | 52,597 1.7% |
| Native Hawaiian & Other Pacific Islander* | 0 0.0% | 0 0.0% | 0 0.0% | 0 0.0% | 13 0.2% | 132 0.1% | 162 0.1% | 1,797 0.1% |
| Some Other Race* | 0 0.0% | 0 0.0% | 0 0.0% | 0 0.0% | 7 0.1% | 107 0.1% | 157 0.1% | 2,132 0.1% |
| Two or More Races | 0 0.0% | 0 0.0% | 0 0.0% | 0 0.0% | 153 2.2% | 3,218 2.5% | 4,359 2.1% | 41,675 1.4% |
| Hispanic or Latino (of any race) | 1 1.3% | 0 0.0% | 3 7.3% | 0 0.0% | 159 2.3% | 4,176 3.3% | 5,534 2.6% | 151,544 5.0% |
| Total Minority Population** | 3 3.8% | 1 4.3% | 12 29.3% | 0 0.0% | 858 12.2% | 17,630 14.0% | 22,634 10.7% | 345,232 11.3% |
| 125% of COC | | | | | 15.3% | 17.4% | 13.4% | 14.2% |
| COC Containing the Block Group | Hiawatha | Hiawatha | Hiawatha | Cedar Rapids | | | | |
| Potential Minority EJ Impact | NO | NO | YES | NO | | | | |
| Total Displacements | 1 | 7 | 0 | 1 | | | | |

Source: U.S. Census 2010

*Race alone – “Not Hispanic or Latino”

**All races except “White, Non-Hispanic/Latino”

Potential Low-income Population Impacts

Census data on poverty is not available at the Block level; therefore, it was not possible to determine the potential existence of low-income populations at the specific locations where the residential displacements would occur. Although Block Group 1

of Tract 205, containing the mobile home park and the residence near the southwest quadrant of the proposed Tower Terrace interchange, has a low-income population of only 3.3% (see **Table 5-2b**), it is below the potential EJ impact threshold. However, this Block Group covers a large geographic area containing several other residential areas to the southwest of I-380. It is likely the mobile home park has the potential of containing low-income residents, and therefore it is important to involve the residents in the project planning process. A public information meeting was held specifically targeting mobile home park residents and is discussed below.

Environmental Justice Impacts

For an impact to be considered an *environmental justice* impact, the affected minority or low-income population must bear a disproportionate share of the Project's negative effects, as compared to the general population.

The proposed project would provide positive and beneficial impacts to minority and low-income populations through increased job availability, improved mobility, and access to jobs and community facilities. The project would result in improved access to economic development areas and commercial facilities, improved accessibility and safety, improved bicycle-pedestrian facilities, and an improved transportation system for public transportation facilities.

As mitigation for displacements, the Iowa DOT offers a relocation assistance program to property owners or tenants that are displaced by a state highway project, including relocation assistance advisory services and payment for moving expenses. Iowa Code 316, the "Relocation Assistance Law", establishes a uniform policy for the fair and equitable treatment of displaced persons that serves to minimize the hardships of relocation. 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. Special assistance in finding suitable and/or ADA accessible housing will be provided to any person with special disability needs or special low-income needs.

Three public information meetings were conducted to provide opportunities for the public to view project progress and provide input. The first public information meeting was held on October 12, 2016. The second was held November 16, 2017, and both were held at the Hiawatha City Hall. The informational meetings were publicized through advertisements in the Cedar Rapids Gazette newspaper, the Marion Times newspaper, the Cedar Rapids Penny Saver publication, and on the Iowa DOT website. Meeting invitations were mailed or emailed to public officials and stakeholders, business owners, and property owners within and adjacent to the study area. Letter invitations were also sent to tribal representatives. In addition, a third public information meeting was held on February 7, 2018, specifically for residents at the Tower Terrace Mobile Home Park to discuss the I-380 study and the proposed interchange at Tower Terrace Road.

The highest percentages of Limited English Proficiency in the study area are located in Block Groups northeast and southeast of the I-380/Highway 100 interchange. There would be no displacements in these areas, and most of the land uses adjacent to the roadways are commercial, light industrial, and warehousing. Most of the residential portions are farther removed from the roadways, with the exception of a small residential area at the northeast corner of the Highway 100/Collins Road interchange. Although there would be no direct impacts to those residential areas with high LEP populations, language interpreters can be requested to be present at public meetings.

Based on the impacts discussed above, those impacts would not be disproportionately high and adverse as compared to the impacts on the general population.

Because of the relocation assistance that would be provided, and because there is currently adequate replacement pad sites within the mobile home park (see **Section 5.1.9 Relocation Potential**), the project would not result in disproportionately high and adverse impacts to the minority and low-income populations in comparison to the general population, and therefore would comply with Executive Order 12898.

5.1.5 Economic

The study area contains commercially-owned property northeast of the County Home Road interchange, east and west of I-380 along Tower Terrace Road, north and northwest of Boyson Road along I-380, on the east side of I-380 from Boyson Road to Emmons Street, at the southwest corner of the Blairs Ferry Road interchange, and along the east side of I-380 from Blairs Ferry Road to the south terminus past Collins Road.

Although the Tower Terrace Mobile Home Park is a residential area containing approximately 160 pad site units for manufactured homes, the entire property is owned by Tower CIC Partners LLC and is considered a commercial property for tax assessment purposes. Other businesses include convenience stores, private recreation facilities; dealerships for automobiles, RVs, and trailers; sheet metal contracting; a printing/mailing facility; tool manufacturing; parts/supply stores; repair shops; retail merchandise stores; storage facilities; light duty manufacturing; restaurants; and hotels. These businesses currently access I-380 at the interchanges at Blairs Ferry Road, Boyson Road, or County Home Road. Most of the remaining properties in the developed portion of the study area are single-family residential, and most of the undeveloped properties are agricultural.

According to existing land use and future comprehensive land use plans for the cities of Cedar Rapids, Hiawatha, and Robins; most of the undeveloped land within and adjacent to the study area is anticipated to be converted to a mix of primarily commercial and residential development of low, medium, and high-density. Much of this anticipated land use change is dependent upon the construction of an interchange at Tower Terrace Road and I-380, as well as improvements to the Boyson Road interchange and capacity improvements to I-380. Ease of movement and convenient access to existing and future commercial and residential development planned in the surrounding municipalities is vital to the economic success of the area, as efficient

travel flow throughout the region will result in time savings, and subsequently, financial savings.

No Build Alternative impacts: Future land use plans for each jurisdiction within the study area anticipate commercial, industrial, and residential development (low, medium, and high density) at or near the proposed Tower Terrace Road/I-380 interchange, and in the currently undeveloped areas along I-380 in the north half of the study area. It is likely that the planned development would not occur absent of the improvements included in the Proposed Alternative, and new businesses may not be attracted to the area because of difficult and inefficient travel routes that can increase the cost of product delivery and make it difficult for customers to easily access businesses.

Proposed Alternative impacts: Under the Proposed Alternative, construction of an interchange at Tower Terrace Road and I-380 would provide direct access to I-380 and the surrounding portion of the study area. Impacts to existing commercially-owned properties within the study area are anticipated to be minor and no commercial displacements or permanent closure of access would occur. These impacts are discussed further in **Section 5.1.8 Right of Way**.

The Proposed Alternative would result in the total acquisition of one agricultural parcel of land and one residential parcel, including the displacement of the residence. In addition, eight mobile home pad sites/residences would be displaced at the Tower Terrace Mobile Home Park.

As a result of the residential and commercial acquisitions, property tax revenue would be lost if these properties are taken out of the County's tax base. Based on Linn County's Annual Budget for fiscal year 2018, the revenue from property taxes is estimated to be approximately \$63,150,000. According to the Linn County property tax database information, the one agricultural property total acquisition, the one single-family residential property displacement, and the eight mobile home displacements would reduce the tax base by approximately \$13,500, which is less than .02 percent of the County's 2018 estimated tax revenue. However, it is anticipated that the displaced residents would be relocated within the County, thereby replacing the potential lost tax revenue.

There would also be a minor tax base reduction as a result of partial property acquisition that would require minor amounts of land area of several parcels adjacent to the existing right of way, thereby slightly reducing the land value and associated taxes of the affected parcels. However, the land area reductions would be minimal, as well as the corresponding tax base reduction resulting from these partial acquisitions.

During construction of the Proposed Alternative, short-term economic impacts to businesses may occur because of increased traffic congestion from temporary lane reductions/closures or increases in travel times because of detour routes. Access to some businesses could be temporarily restricted or rerouted; however, some traffic lanes would remain open and access to businesses would be modified, through temporary detours and provision of adjacent access locations. The impact of roadway construction on local business patronage can vary, depending on individual customers'

preferences in regard to shopping at businesses near construction sites. These decisions are typically based on whether alternate locations and/or products are available. These short-term impacts may be considered minor. In the long-term, these businesses would benefit from improved access and decreased travel times to and from the businesses.

Short-term economic benefits would be derived from construction of the Proposed Alternative through an increase in construction-related employment and could lead to increased economic activity from those construction employees patronizing local businesses and service establishments in the project area.

Long-term economic benefits would include the potential for increased economic activity because of safer access, improved access to businesses, improved traffic circulation with fewer delays at intersections, and improved bicycle-pedestrian facilities. The Proposed Alternative may also encourage development in some areas, in accordance with the future land use plans; all of which in turn would provide additional employment opportunities and tax revenue. For these reasons, the proposed project is anticipated to provide benefits to economic development of the metropolitan area.

Proposed Alternative mitigation: Proposed partial impacts to existing commercial properties in the study area will not impact the ability of commercial enterprises to continue to operate. In addition, it is anticipated that the displaced residents would be relocated within the County, thereby replacing the potential lost tax revenue. Therefore, no mitigation is required.

5.1.6 Parklands and Recreational Areas

The U.S. Department of Transportation (USDOT) refers to publicly-owned land from parks, recreation areas, and wildlife and waterfowl refuges, or land from historic sites that are listed or potentially eligible for listing on the Nation Register of Historic Places, as “Section 4(f) properties” because they have special status under the provisions of Section 4(f) of the USDOT Act of 1966 (49 USC Part 303 and 23 CFR Part 774). Section 4(f) states that the Administration may not approve the use of a Section 4(f) property unless a determination is made that 1) there is no prudent and feasible avoidance alternative to the use of the property and 2) the action includes all possible planning to minimize harm to the property; or if the use of the property, including any measures to minimize harm (avoidance, minimization, mitigation, or enhancement measures) will have a *de minimis* impact on the Section 4(f) property. In addition, any public park or recreation land that has used funds from the National Park Service’s (NPS) Land and Water Conservation Fund (LWCF) for acquisition or development is protected under Section 6(f) of the LWCF Act.

Potentially eligible Section 4(f) and 6(f) properties were identified based on a review of data collected from the parks and recreation websites for the City of Cedar Rapids, the City of Hiawatha, the City of Robins, and Linn County, as well as coordination with the Iowa Department of Natural Resources (DNR). In addition, the land and

building uses on aerial photos were reviewed to determine locations of privately-owned recreation areas.

The study area contains no parks or recreation areas in the City of Robins, nor in the unincorporated areas of Linn County. However, the study area in the City of Hiawatha contains two public parks and three privately-owned recreation facilities. The study area in the City of Cedar Rapids contains one privately-owned recreation facility, but no public parks. The parks and recreation areas are shown on **Exhibit 5-6** and are described in further detail below, as well as their applicability to Section 4(f) or 6(f). Recreational trails and trailheads can also be eligible Section 4(f) or 6(f) resources and are discussed separately in **Section 5.1.7 Bicycle and Pedestrian Facilities**.

The public parks in the study area that are applicable to Section 4(f) or 6(f) are as follows:

Guthridge Park, formerly known as Hiawatha City Park, is located at 704 Emmons St, Hiawatha, between 7th Ave and 10th Ave, across from the Hiawatha Elementary School. Park amenities include three picnic pavilions (for rent) with restrooms, a splashpad, three lighted softball diamonds, two youth ball diamonds, two lighted basketball courts, two sand volleyball courts, two lighted tennis courts, several playground areas, a concession stand at the ball diamonds, an outdoor learning classroom, a paved walking trail around the park perimeter, two horseshoe pits, and a parking lot. The park is owned and operated by the City of Hiawatha and is a Section 4(f) property. The Iowa DNR also indicated that, in 1973, this park was acquired and developed, in part, with 6(f) Land and Water Conservation Funds (see letter dated February 27, 2017 in **Appendix B**).

Fay M. Clark Memorial Park is located at 1200 N 18th Avenue. Park amenities include one picnic pavilion (for rent) with attached restrooms, playground equipment, an 18-hole disc golf course, a paved walking trail around the park perimeter, and a parking lot. The park is owned and operated by the City of Hiawatha and is a Section 4(f) property.

The recreation areas within the study area, not applicable to Section 4(f) or 6(f), are as follows:

Eastern Iowa Sports Complex and ***AirFX Trampoline Park***, located adjacent to the southeast portion of Fay M. Clark Park in Hiawatha, is a sports and entertainment complex with a full size indoor soccer field, full size basketball gym, indoor batting cages, wall-to-wall trampolines, Kid's Zone for small children, dodgeball court, trampoline basketball, tumble tracks, jumping pits, slackline/tightrope, Lazer Frenzy, party rooms, an 18-hole miniature golf course, and three outdoor athletic fields. This complex is privately-owned and is not applicable to Section 4(f).

Hiawatha Kids League (Waterhouse-Miller) Ball Diamonds are located on a parcel of land adjacent to the southwest quadrant of the I-380/Boyson Rd

interchange. The Hiawatha Kids League, a non-profit organization, rents the fields from a private owner. The property is not applicable to Section 4(f).

Midwest Shooting, Inc., located just south of Tower Terrace Road on the east side of I-380 in Hiawatha, is an indoor shooting range. The facility is privately-owned and is not applicable to Section 4(f).

Twisters Gymnastics, Inc., located on the south side of Tower Terrace Road and west of I-380, is a recreation facility teaching programs in gymnastics, dance/gymnastics, and tumbling. The owner is currently expanding the facility to include outdoor volleyball courts and a new building for basketball. The facility is privately-owned and is not applicable to Section 4(f).

No-Build Alternative impacts: The No-Build Alternative would not involve construction or right of way acquisition, and would not impact the existing parks and recreational areas, or the City's ability to implement future planned improvements or new facilities.

Proposed Alternative impacts: The implementation of the Proposed Alternative would avoid temporary and permanent impacts to the two Section 4(f) parks: Guthridge Park and Fay M. Clark Memorial Park. Therefore, there would also be no impacts regarding Section 6(f).

The Proposed Alternative would avoid direct impacts to the non-Section 4(f) properties of the Eastern Iowa Sports Complex and AirFX Trampoline Park, the Midwest Shooting facility, and Twisters Gymnastics. However, the Proposed Alternative would result in the permanent acquisition of 0.08 acre of a grassed area of the property on which the Hiawatha Kids League (Waterhouse-Miller) Ball Diamonds are located, although no temporary or permanent impacts would occur to the ball diamonds.

Although access to the parks and recreation facilities would not be impacted by the Proposed Alternative during construction, alternative routes would need to be used to travel to and from the facilities from the opposite sides of I-380. Access across I-380 on Tower Terrace Road and Boyson Road would be temporarily interrupted due to interchange construction activities. Alternative routes that provide access across I-380 include Blairs Ferry Road and County Home Road. However, it is anticipated that Tower Terrace Road and Boyson Road would not be simultaneously closed during construction in order to provide more detour route alternatives. These detours would be temporary and limited in duration to the period of time required to construct a new Tower Terrace Road bridge and to reconstruct the Boyson Road interchange.

Proposed Alternative mitigation: No mitigation would be required for the Proposed Alternative. However, coordination with the parks and recreation departments and the private recreation facilities would be necessary during construction to facilitate alternative transportation access routes across I-380. Any detours will be clearly marked and will be temporary in nature.

5.1.7 Bicycle and Pedestrian Facilities

Publicly-owned recreation trails can be considered Section 4(f) resources, and may also be applicable to Section 6(f), if LWCF dollars were used for acquisition or development of a trail. The shared-use recreational trails within the study area are located in Hiawatha and Cedar Rapids. The trails and their Section 4(f) and 6(f) applicability are described below and are shown on **Exhibit 5-6**.

Cedar Valley Nature Trail and ***Cedar River Trail*** – The Cedar Valley Nature Trail is a 51-mile, 10-foot wide, shared-use commuter trail that extends from Hiawatha north to the Cedar Falls/Waterloo metro area. The portion of the trail within the study area is owned and operated by the Linn County Conservation Department. The trail travels south from the ***Boyson Road Trailhead***, located at Boyson Road and Kainz Drive in Hiawatha, to the intersection of the railroad tracks and N Center Point Road, just southeast of the I-380/Boyson Road interchange. At this point the 10-foot wide shared-use path is called the ***Cedar River Trail*** and continues south into Cedar Rapids within public road right of way. A small portion of the Cedar River Trail intersects the study area on the east side of I-380 at the Highway 100/Collins Road area. The Boyson Road Trailhead and the Cedar Valley Nature Trail are owned and operated by the Linn County Conservation Board, and are considered Section 4(f) properties. The Cedar Valley Nature Trail is also a Section 6(f) resource. The Iowa DNR indicated that the Linn County Conservation Board received 6(f) Land and Water Conservation Funds for development of the trail (see letter dated February 27, 2017 in **Appendix B**). The Cedar River Trail segment is under the jurisdiction of the City of Cedar Rapids and is considered a Section 4(f) resource.

Boyson and N Center Point Path – This potential Section 4(f) path is a ten-foot wide paved path located in Hiawatha in the right of way of Boyson Road, from the Boyson Road trailhead parking area (Boyson Road and Kainz Drive), to N Center Point Road, then in the right of way of N Center Point Road, north to Tower Terrace Road where it currently terminates.

Planned and Future Trails

Planned trails are thought to be within a 5-year planning window, and future trails are thought to be beyond that time frame. According to *Connections 2040* (the Corridor MPO's Long Range Transportation Plan, Amended June 28, 2017), the only planned trail within the study area that has committed funding is an off-street trail along Boyson Road, from Edgewood Road and through the interchange with I-380. Other future off-street and on-street bikeways/trails and trailheads in the study area that are shown on the *Bikeways Map (2015 Cedar Rapids Comprehensive Trails Plan Update)* and in *Connections 2040*, but currently with no committed funding, are as follows:

- Off-street trail along Hwy 100/Collins Road through the interchange with I-380
- On-street bike lanes along Tower Terrace Road east of I-380
- Off-street trail along Tower Terrace Road on each side of, and across I-380
- Trailhead at the intersection of Tower Terrace Road and Edgewood Road

- Off-street trail along a future alignment of Edgewood Road
- On-street bike lanes along Miller Road

Bicycle and pedestrian facilities along Tower Terrace Road are also described in the *Tower Terrace Corridor Management Plan*, including six and one-half foot wide bike lanes on each side of the road, a ten-foot wide shared-use trail on one side of the road, and a six-foot wide sidewalk on the other.

Other pedestrian facilities in the study area include non-contiguous sidewalks in residential and commercial areas. Pedestrian sidewalk connections across I-380 occur at Blairs Ferry Road and Emmons Street, but do not exist along Collins Road, Boyson Road, Tower Terrace Road, and County Home Road. Other streets parallel to I-380 that have sidewalks include 4th Avenue, N Center Point Road, Center Point Road, and Center Point Road NE.

No Build Alternative impacts: The No Build Alternative would have no impacts to existing bicycle and pedestrian facilities. The bicycle and pedestrian improvements planned for Boyson Road would still be implemented without the Proposed Alternative improvements to the Boyson Road/I-380 interchange, and portions of the future bicycle and pedestrian improvements along Tower Terrace Road may still be completed in accordance with the updated *Tower Terrace Corridor Management Plan* without construction of a new interchange. In addition, future bicycle and pedestrian facilities along Collins Road may still be completed in the future as funding becomes available. However, any bicycle and pedestrian improvements made in absence of related Proposed Alternative improvements would be completed by the local or regional jurisdictions.

Proposed Alternative impacts: The Proposed Alternative would have no impacts on any of the existing shared-use bicycle/pedestrian facilities in the study area; therefore, there would be no Section 4(f) or 6(f) impacts regarding recreational trails. In addition, there would be no permanent impacts to existing sidewalks in the study area. Bicycle and pedestrian facilities would be integrated into the Proposed Alternative project design. The proposed interchange improvements at Tower Terrace Road and Boyson Road would be designed to accommodate paved shared-use paths and sidewalks over I-380 that will connect with existing, as well as planned or future bicycle and pedestrian improvements, as outlined in the updated *Tower Terrace Corridor Management Plan* and the other planning documents described above.

5.1.8 Right of Way

Much of the proposed interchange at Tower Terrace Road and reconstruction of the Boyson Road interchange, as well as capacity improvements to I-380, would be constructed within existing Iowa DOT right of way that was acquired when I-380 was originally constructed. However, minor amounts of property acquisition would be necessary to accommodate the proposed improvements.

No Build Alternative impacts: The No Build Alternative will not require acquisition of property for right of way.

Proposed Alternative impacts: Acquiring right of way for the Proposed Alternative would result in minor partial property acquisitions of 56 properties totaling approximately 13.54 acres, as well as total acquisitions of two properties totaling 24.98 acres. The Proposed Alternative would require a total of approximately 38.5 acres of right of way acquisition to accommodate the proposed interchange designs and widening of the I-380 mainline. **Exhibit 5-9** displays the areas where anticipated property acquisitions would be required, and **Table 5-4** lists the individual property impacts.

Of the 58 property acquisitions, 27 properties are agricultural, 16 are residential, 10 are commercial, one is church property, one is industrial, one is recreational, one is a utility property, and one is a public well site. Most of the agricultural land is currently used for crop production or is currently undeveloped. The two total property acquisitions include one that is agricultural land and one that is a single-family residence.

Table 5-4: Property Acquisitions for Right of Way

| Property Address* | City / County | Impact (Ac.) | Partial or Full Acquisition | Current Use |
|------------------------|---------------|--------------|-----------------------------|-----------------------|
| | Hiawatha | 0.21 | Partial | Agricultural |
| | Hiawatha | 0.99 | Partial | Agricultural |
| | Robins | 0.32 | Partial | Agricultural |
| 3445 County Home Rd | Cedar Rapids | < 0.01** | Partial | Commercial |
| | Linn County | 0.05 | Partial | Agricultural |
| | Hiawatha | 0.37 | Partial | Agricultural |
| | Linn County | 0.05 | Partial | Agricultural |
| 3090 N Center Point Rd | Cedar Rapids | 0.37 | Partial | Church |
| 3467 Collie Ct | Cedar Rapids | 0.01 | Partial | SF Residential |
| 3464 Collie Ct | Cedar Rapids | 0.29 | Partial | SF Residential |
| 3472 Collie Ct | Cedar Rapids | < 0.01** | Partial | SF Residential |
| 3075 Brittany Cir | Cedar Rapids | 0.21 | Partial | SF Residential |
| 3071 Brittany Cir | Cedar Rapids | 0.17 | Partial | SF Residential |
| 3069 Brittany Cir | Cedar Rapids | 0.02 | Partial | SF Residential |
| 3461 Springer Ct | Cedar Rapids | 0.37 | Partial | SF Residential |
| 3466 Springer Ct | Cedar Rapids | 0.01 | Partial | SF Residential |
| | Linn County | 0.09 | Partial | Utility Corridor |
| 3025 Edgewood Rd | Cedar Rapids | 0.67 | Partial | Agricultural |
| | Robins | 0.17 | Partial | Agricultural |
| | Robins | < 0.01** | Partial | Agricultural |
| 3415 Singer Hill Ln | Cedar Rapids | 0.04 | Partial | SF Residential |
| 3423 Singer Hill Ln | Cedar Rapids | 0.09 | Partial | SF Residential |
| 2910 Fitzroy Rd | Hiawatha | 0.20 | Partial | Public/City Well Site |
| 3023 Forrest Meadow Ln | Hiawatha | < 0.01** | Partial | SF Residential |
| 3017 Forrest Meadow Ln | Hiawatha | 0.03 | Partial | SF Residential |
| | Hiawatha | 0.07 | Partial | Agricultural |

| Property Address* | City / County | Impact (Ac.) | Partial or Full Acquisition | Current Use |
|--------------------------------|---------------|--------------|-----------------------------|----------------------------------|
| | Robins | 0.20 | Partial | Agricultural |
| | Robins | 0.07 | Partial | Agricultural |
| 2865 Edgewood Rd | Cedar Rapids | 0.49 | Partial | Agricultural |
| | Robins | 1.30 | Partial | Agricultural |
| 4022 Bobolink Ln | Hiawatha | 0.26 | Partial | MF Residential |
| 1900 N Center Point Rd | Hiawatha | 0.45 | Partial | Agricultural (w/Broadcast Tower) |
| 1500 Ketelsen Dr | Hiawatha | 0.35 | Partial | Commercial |
| 1490 Ketelsen Dr | Hiawatha | 0.06 | Partial | Commercial |
| Progress Dr | Hiawatha | 0.09 | Partial | Agricultural |
| | Hiawatha | 1.59 | Partial | Agricultural |
| 4200 Tower Terrace Rd | Cedar Rapids | 0.10 | Partial | Agricultural |
| | Cedar Rapids | 14.65 | Full | Agricultural |
| | Cedar Rapids | 0.16 | Partial | Agricultural |
| | Hiawatha | 0.43 | Partial | Agricultural |
| | Hiawatha | 0.25 | Partial | Agricultural |
| 4301 Tower Terrace Rd | Cedar Rapids | 10.33 | Full | SF Residential |
| 4497 Tower Terrace Rd | Cedar Rapids | 0.15 | Partial | Agricultural |
| | Hiawatha | 0.73 | Partial | Agricultural |
| 1040 N Center Point Rd | Hiawatha | 0.01 | Partial | Commercial |
| 1000 N Center Point Rd | Hiawatha | 0.01 | Partial | Commercial |
| 780 N Center Point Rd | Hiawatha | 0.03 | Partial | Commercial |
| 1405 Mitchell Dr | Hiawatha | 0.07 | Partial | Industrial |
| 1100 N Center Point Rd | Hiawatha | 0.07 | Partial | Commercial |
| | Hiawatha | 0.23 | Partial | Agricultural |
| | Hiawatha | 0.63 | Partial | Agricultural |
| | Hiawatha | <0.01** | Partial | Agricultural |
| 1190 Boyson Rd | Hiawatha | 0.24 | Partial | Commercial |
| 1195 Boyson Rd | Hiawatha | 0.01 | Partial | Commercial |
| 1195 Boyson Rd | Hiawatha | 0.15 | Partial | Commercial |
| 707 Jerrys Ln | Hiawatha | < 0.01** | Partial | SF Residential |
| | Hiawatha | 0.08 | Partial | Recreation (Private) |
| | Hiawatha | 0.52 | Partial | Residential (Undev.) |
| APPROXIMATE TOTAL ACRES | | 38.52 | | |

*Some agricultural parcels did not have addresses in the parcel database

**Acquisition amount is minimal and could not be rounded to 0.01 acre.

Impacts at Tower Terrace Road Interchange

Property acquisition for right of way, as well as access impacts resulting from construction of the Tower Terrace Road interchange are described as follows:

- The Tower Terrace Mobile Home Park located north of Tower Terrace Road sits near the proposed northbound I-380 on-ramp. Tying the new lanes of the proposed interchange design into the existing two-lane Tower Terrace Road is expected to require the acquisition of approximately 0.26 acres from the mobile home park property. Approximately eight (8) mobile home pad sites are located within the proposed acquisition footprint and would be expected to be displaced. In addition, the far southwest access drive into the mobile home park would require closure to accommodate the proposed interchange design. However, an existing access drive approximately 600 feet to the east would remain open and would provide the necessary access to the remaining mobile home pad sites.
- Existing access drives to agricultural fields on the north and south sides of Tower Terrace Road, on the east side of the interchange, would also require closure. Access to the north property cannot be relocated and would require acquisition of the entire 14.65 acres of the agricultural parcel, although no structures are located on the property. However, the south property could be accessed from an existing driveway to the east. Although this property is currently being used for crop production, it is owned by Gray Television Group Inc. and contains a broadcast tower. Approximately 0.88 acres of the property would be acquired to construct the interchange. A support guy wire and anchor for the broadcast tower are located adjacent to the road, but would be avoided.
- On the west side of the proposed Tower Terrace interchange (north side), approximately 0.10 acres of partial acquisition would be required from an agricultural field and an access drive to that field would require closure. However, the property also has an access drive off Edgewood Road that would remain unaffected. A driveway into a residential property on the south side of Tower Terrace Road would also require closure but cannot be relocated, thereby requiring acquisition of the entire 10.33 acres of the parcel and displacement of the residence.
- On the west side of the proposed interchange, the property to the east of the Twisters Gymnastics facility on the south side of the road is being developed by the Twisters owner to include additional recreational facilities. Approximately 0.15 acres of the parcel would require partial acquisition and the existing access drive to the property would require closure. However, since the parcel is part of the Twisters complex, access to those facilities can be obtained through the adjacent Twisters property to the west.
- Approximately 0.25 acres of an agricultural field would also require partial acquisition along the southbound on-ramp. However, there is no existing access to this property from Tower Terrace Road.

Impacts at Boyson Road Interchange

Reconstruction of the Boyson Road interchange would require partial property acquisition of commercial properties, although no displacements or permanent changes to existing access would occur. However, some minor impacts to parking lots and paved areas would be necessary as follows:

- McGrath Used Car Campus (NE Quadrant) – Partial acquisition of 0.01 acres of property would be required and the edge of a paved parking area would be impacted. However, these impacts would be minimal and the pavement would be rebuilt without the loss of any parking spaces.
- Casey’s General Store (SE Quadrant) – Partial acquisition of 0.03 acres of property would potentially be required, impacting the outer circulation drive adjacent to the gas pumps on the property, which would adversely affect the necessary operation of the commercial facility. However, the potential acquisition is minimal and it is expected that regrading or building a retaining wall around the northwest corner of the circulation drive would avoid the impact and maintain the function of the drive.
- Cedar Rapids Toyota (NW Quadrant) – Partial acquisition of approximately 0.24 acres of property would be required and would result in the removal of 14 spaces of a paved parking lot, as well as three parking lot lights that may require relocation.
- Mercy Medical Park (SW Quadrant) – Partial acquisition of 0.16 acres of property would be required and would result in the removal of 15 spaces of a paved parking lot, as well as one parking lot light that may require relocation. The existing access drive at the northeast corner of the parking area would be reconstructed.
- Undeveloped Land (SW Quadrant) – Partial property acquisition would be required on two privately-owned open parcels, one of which is a recreation area containing two ball fields (0.08 acres acquired), and the other an undeveloped open piece of land (0.52 acres acquired).

I-380 Mainline Impacts

The improvements along the I-380 mainline would result in partial acquisitions of several adjacent commercial, industrial, and residential properties. Most of these acquisitions would be minimal and would not affect access to any properties. In the area located at the northeast curve of the Independence Street and N 7th Avenue confluence, on the west side of I-380, just southeast of the Boyson Road interchange, potential impacts to the city street and two residential properties would be avoided by installation of a retaining wall in that location, thereby avoiding property acquisition and displacements. Other minimal right of way acquisition impacts along I-380 are as follows:

- The Ketelsen RV dealership property, located on the east side of I-380 between Tower Terrace Road and Boyson Road, would be impacted by minor partial acquisition of approximately 0.35 acres of property. No business structures would be impacted, and only a small piece (180 s.f.) of a paved parking lot in

the south corner would be impacted, which would not result in removal of any parking spaces.

- Between Tower Terrace Road and Boyson Road, partial property acquisition would also be required from the Midwest Shooting Inc. property (0.06 acres), the Newell Machinery Company Inc. industrial site (0.07 acres), Wright-Way Trailers (0.07 acres), and McGrath Buick GMC Cadillac (0.01 acres). No business structures or parking areas would be impacted on any of these properties.
- Approximately 0.37 acres of partial acquisition would be impacted on the New Covenant Bible Church property, located southeast of the County Home Road interchange.

The remainder of partial property acquisitions along the I-380 mainline would be minimal linear impacts to agricultural and residential properties, and there would be no structures or access drives impacted.

Property owners will be compensated for property acquisitions as determined by Iowa DOT and FHWA guidelines and processes for right of way acquisitions. All right of way acquisitions and 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 will be made available to all persons to be relocated without discrimination.

5.1.9 Relocation Potential

Several residential and commercial properties are located within the project study area, as discussed in previous sections. Residential neighborhoods are located on the east and west sides of I-380 from the south terminus of the study area to just south of the Boyson Road interchange, on the west side of I-380 just south of the County Home Road interchange, and at the northeast corner of the north terminus of the study area. In addition, the Tower Terrace Mobile Home Park sits immediately east of the proposed Tower Terrace interchange area and contains approximately 160 mobile home pad sites. Several businesses are also located adjacent to the I-380 corridor, between Tower Terrace Road and the south terminus of the study area, in addition to one northeast of the County Home Road interchange.

No Build Alternative impacts: The No Build Alternative would not require property acquisition for right of way or structures, and therefore would have no potential for requiring the relocation of residences or businesses.

Proposed Alternative impacts: The Proposed Alternative would require the acquisition of approximately 0.26 acres of property from the Tower Terrace Mobile Home Park for project right of way. This acquisition would potentially require the displacement of up to eight (8) mobile homes from existing pad sites. In addition, the Proposed Alternative would result in the total acquisition of one single-family

residential property, thereby requiring relocation of the residence. No other residential or commercial displacements are expected under the Proposed Alternative.

Proposed Alternative mitigation: It is unknown at this time if the eight (8) mobile homes would be relocated to other pad sites within the Tower Terrace Mobile Home Park, or if they would be relocated to another mobile home park in the metro area. Although the Tower Terrace Mobile Home Park website indicated that there were no properties currently listed in that community, a review of 2017 aerial photography on the Linn County GIS Land Records website showed there were approximately 25 vacant pad sites on the remaining unaffected portion of the property.

A review of the Zillow real estate website (as of May 15, 2018) for the neighborhoods in the vicinity, indicated there were three manufactured / mobile homes for rent (ranging from \$800 to \$1,000 per month) and 10 others for sale (3 bedrooms, 2 bathrooms) (ranging from \$45,000 to \$58,900, with a rent-to-own option (ranging from \$422 to \$546 per month). In addition, the MHVillage website listed two manufactured / mobile home communities with vacant sites near Hiawatha. These were the Bali Hai Estates Mobile Home Park (1405 Robins Rd, Hiawatha) with five (5) vacant sites, and Sunset Village (530 Robins Rd, Hiawatha) with three (3) vacant sites. The Five Seasons manufactured home community (3421 Blairs Ferry Road NE, Cedar Rapids) near the study area listed five (5) homes for sale and five (5) for rent.

According to the Linn County Land Records Appraisals, the 2017 assessed value of the one single-family residential displacement (southwest of the proposed Tower Terrace interchange) was approximately \$200,000 and is in the city limits of Cedar Rapids. The Zillow real estate website was reviewed for available single-family residential properties in the vicinity. As of May 15, 2018, four single-family properties were available in Hiawatha, ranging from \$105,000 to \$243,000. In Cedar Rapids, about one mile south of the southern terminus and two miles east and west of I-380, there were approximately 20 single-family properties for sale, ranging from \$120,000 to \$200,000, and an additional 10 properties ranging from \$205,000 to \$245,000.

Based on these results, it appears that the displaced residents would be able to relocate within the general vicinity of their current location. All right of way impacts requiring property acquisition and relocations will 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 will be made available to all affected persons without discrimination.

5.1.10 Construction and Emergency Routes

It is essential for the health, safety, and general welfare of a community that emergency response vehicles and services have adequate roadway access to all residential, commercial and industrial structures. The study area encompasses four separate jurisdictions and includes emergency service providers from six separate providers. The study area is served by two ambulance services (Hiawatha and Area Ambulance), four fire departments (Cedar Rapids, Hiawatha, Robins and Monroe),

and four police departments (Cedar Rapids, Hiawatha, Robins and the Linn County Sherriff). The nearest hospital emergency room is in the Mercy Medical Center located approximately three miles south of the study area, via I-380, in downtown Cedar Rapids.

No Build Alternative impacts: Under the No Build Alternative, there would be no new construction and therefore, no impacts to existing emergency routes. However, emergency response times may increase due to increased congestion on the roadways.

Proposed Alternative impacts: Construction of the Proposed Alternative would not result in the permanent severing of access to any existing streets or properties. Construction activities would affect the east and west flow of traffic, requiring temporary closures of Tower Terrace Road and Boyson Road at I-380, and requiring traffic detours for those attempting to reach either side of I-380. However, Tower Terrace Road and Boyson Road would not be simultaneously closed during construction. It is anticipated that the Tower Terrace Road interchange would be constructed first to then provide a temporary detour route alternative during the re-construction of the Boyson Road interchange. In addition, there is still the potential to keep Boyson Road or the ramps at Boyson Road open during re-construction of this interchange, if further analysis shows it can be done without having significant negative impacts to operations. This option will be evaluated further in subsequent phases of the project.

The nearest routes that could be used as detours crossing I-380 are County Home Road located 2.2 miles to the north of Tower Terrace Road; and Emmons Street, Blairs Ferry Road, and Collins Road less than two miles to the south of Boyson Road. In addition, temporary partial I-380 lane closures to accommodate construction of additional lanes would occur, but would be minimized by leaving some lanes open to the extent possible.

The construction of the Proposed Alternative would not result in permanent changes in access for any remaining residential properties, commercial properties, community facilities, medical facilities, or public/semi-public services located in and adjacent to the study area. Although possible temporary rerouting during construction could occur, these neighborhoods and facilities would have access maintained at all times.

Detours would be temporary and limited in duration to the period of time required to construct the Proposed Alternative improvements. The exact location, timing and duration of road closures have not been finalized. However, it is anticipated that a traffic management plan would be developed and implemented during the construction phase of the project. Access to properties and to I-380 would be maintained by staged construction, temporary access roads, or other appropriate means.

Coordination with emergency responders would be required prior to and during construction. This coordination will include notification of when closures will occur, as well as identification of detours during that time.

Depending on future development and the location of future community emergency response facilities, emergency response times to this portion of the Cedar Rapids

metro area could effectively be reduced with the construction of the Proposed Alternative. A new interchange at Tower Terrace Road and re-construction of the Boyson Road interchange would allow emergency vehicles improved I-380 access, allowing them to utilize an improved high-speed facility instead of slower moving arterial roadways. Under the Proposed Alternative, benefits to the emergency response facilities would be realized.

5.1.11 Transportation

I-380 is a four-lane divided interstate facility with a speed limit of 60 mph south of Tower Terrace Road and 70 mph north of Tower Terrace Road. Based on 2016 traffic volumes, it serves approximately 34,500 vehicles per day (vpd) between Boyson Road and County Home Road, 44,600 vpd between Boyson Road and Blairs Ferry Road, 51,500 vpd between Blairs Ferry Road and Collins Road, and 70,500 vpd south of Collins Road. A review of the Corridor Metropolitan Planning Organization's (MPO) 2040 Long Range Transportation Plan, *Connections 2040* (approved July 2010), and a review of Google Maps and aerial photography, indicate that the area's primary access points to I-380 for the cities of Hiawatha, Robins, Marion and northern portions of Cedar Rapids, include the following: Blairs Ferry Road (four-lane arterial), and Boyson Road (two-lane minor arterial) in the south half of the study area; and County Home Road (two-lane minor arterial west of I-380 and four-lane principal arterial east of I-380) at the north end of the study area. Cross streets without direct access to I-380 include Collins Road/Highway 100 (four-lane expressway), Emmons Street (two-lane collector), and Tower Terrace Road (two-lane minor arterial). Center Point Road (four-lane principal arterial south of Boyson Road and two-lane principal arterial north of Boyson Road) runs parallel to I-380 and serves as a connection between Collins Road at the south end of the study area and County Home Road at the north end.

Bus transit service in the vicinity of the study area is provided by Cedar Rapids Transit, with Route 30 (NE Circulator), Route 4, and Route 6 servicing the vicinity of the study area. Route 30 provides service along Tower Terrace Road and Center Point Road, then along Boyson Road over I-380 and Emmons Street over I-380. Route 4 provides service along Blairs Ferry Road over I-380 and along Center Point Road NE through the south terminus of the study area. Route 6 provides service along Blairs Ferry Road west of I-380 and along the slip ramp on the west side of I-380 from Blairs Ferry Road through the south terminus of the study area.

The only railroad line in the study area is operated by the Chicago, Central and Pacific Railroad (CC) railroad, which is part of the Illinois Central Railroad (IC) owned by Canadian National Railway (CN). Although this freight rail service does not cross I-380, it runs adjacent to the east side of the I-380 right of way from N Center Point Rd (just north of Emmons Street) through the south terminus of the study area.

The nearest airport is the commercial Eastern Iowa Airport, located at the south end of the City of Cedar Rapids, approximately 10 miles south of the study area.

Direct vehicle access to I-380 is currently provided by the interchanges at Blairs Ferry Road, Boyson Road, and County Home Road. Current traffic patterns include south bound movements at County Home Road with vehicles entering I-380 traveling south

towards Cedar Rapids and Hiawatha during the AM peak, and vehicles exiting traveling northbound I-380 during the PM peak period. At Boyson Road the heaviest traffic movements during both the AM and PM Peaks are vehicles traveling between the Boyson Road interchange and Center Point Road in both directions.

No Build Alternative impacts: The No Build Alternative would not include interchange improvements or I-380 mainline improvements. Traffic volumes are expected to increase significantly by 2040 along I-380, at the existing County Home Road, and Boyson Road interchanges, as well as along Center Point Road. The No Build Alternative would not alleviate the resulting future congestion. Traffic operations are expected to deteriorate throughout the vicinity of the study area without increased capacity on the roadway system. Thus, the existing travel patterns would remain and adverse impacts to transportation would be likely to occur, as a result of increased congestion and travel times, decreased safety, and decreased level of service.

Proposed Alternative impacts: The construction of the Proposed Alternative would affect transportation and traffic patterns within the project area and beyond. The construction of a new interchange at Tower Terrace Road, and reconstruction of the Boyson Road interchange would alleviate anticipated future traffic congestion at both the Boyson Road and County Home Road interchanges by providing additional access to I-380. The additional access point to I-380 at Tower Terrace Road would redistribute traffic within the project area, effectively reducing the volume of vehicles using the other interchanges in the study area. Similarly, traffic volumes on the local roadway system surrounding the project study area would see a redistribution of traffic volumes that reflects an increase in use of Tower Terrace Road to access I-380.

In the long term, the completion of the Proposed Alternative would result in better overall access, less congestion, and decreased travel times. With construction of the proposed project, benefits to the transportation system would be realized. During construction, a traffic circulation and temporary detour plan will be prepared to mitigate effects of the redistribution of traffic.

Impacts to aviation at the Eastern Iowa Airport are not expected, as it lies outside of the study area. However, it is expected that travel times to the airport, from north metro area, would improve. In addition, the proposed project would have no effect on the operations of the CC Railroad line running adjacent to I-380.

5.2 Cultural Impacts

5.2.1 Historical Sites or Districts

Previous surveys for cultural resources were conducted for the project area in 1978 and 1997. In addition, a Phase I Cultural Resources Evaluation was conducted in July of 2001 by the Iowa DOT as part of a previous Tower Terrace interchange study. The initial investigation identified three potential historic sites; however, none were determined to be eligible for the National Register of Historic Places (NRHP). The Iowa State Historic Preservation Office (SHPO) concurred with the determination of No Historic Properties Affected on August 19, 2001. A Supplemental Phase I architectural investigation was conducted in May 2012 to review additional parcels.

No additional historic architectural sites were identified and Iowa SHPO concurred with a determination of *No Historic Properties Affected* on September 12, 2012.

No Build Alternative impacts: No impacts to historic properties are expected from the No Build Alternative.

Proposed Alternative impacts: No impacts to historic properties will occur. The Iowa DOT determined that no historic properties would be affected by the Proposed Alternative. The Iowa State Historic Preservation Office (SHPO) concurred with the initial determination on August 19, 2001 and concurred with the supplemental determination on September 12, 2012. A review by Iowa DOT of the project's right of way needs, along with the use of GIS Layers, including the Iowa I-Sites database, revealed that the project area had been previously surveyed, and that no eligible cultural resources were identified within the proposed project area. The proposed project has been given a determination of *No Historic Properties Affected*, dated July 18, 2017 (see email dated June 18, 2018 in **Appendix B**).

5.2.2 Archaeological Sites

Previous surveys for cultural resources were conducted for the project area in 1978 and 1997. In addition, a Phase I archeological investigation was conducted for the project area in July of 2001 by the Iowa DOT. The initial investigation identified one previously unrecorded archeological site; however, it was determined to not be eligible for the NRHP. The Iowa SHPO concurred with this determination on August 19, 2001. A Supplemental Phase I Archeological Investigation was conducted by the Iowa DOT of Iowa in May of 2012. The supplemental investigations included an extensive archival search along with a pedestrian survey. Subsurface testing was conducted using bucket auger tests and shovel tests. One previously unrecorded archeological site was recorded by this survey. That site represents a historic farmstead scatter previously impacted by demolition activities. This site was recommended as not eligible for listing on the NRHP. Iowa SHPO concurred with this determination on September 12, 2012.

No Build Alternative impacts: No impacts to archeological sites are expected from the No Build Alternative.

Proposed Alternative impacts: The Iowa DOT, on behalf of FHWA, determined that no archeological sites would be affected by the Proposed Alternative. The Iowa SHPO concurred with the initial determination on July 18, 2001 and concurred with the supplemental determination on May 31, 2012. A review by Iowa DOT of the project's right-of-way needs, along with the use of GIS Layers, including the Iowa I-Sites database, revealed that the project area had been previously surveyed, and that no eligible cultural resources were identified within the proposed project area (see email dated June 18, 2017 in **Appendix B**).

In the event that a previously unevaluated historic property is discovered during construction, all construction and excavation activities should cease immediately within the area. The area should be secured, the material left in place with no further

disturbance, and the Iowa DOT, the Iowa SHPO, or the Iowa Office of the State Archaeologist (OSA), as appropriate should be contacted immediately.

5.3 Natural Environment Impacts

5.3.1 Wetlands

Section 404 of the Clean Water Act (33 USC 1251 *et seq.*) establishes a program to regulate the discharge of dredged or fill material into a Waters of the U.S., a term which includes rivers, streams, wetlands, mudflats, lakes, oxbows, natural ponds, and impoundments. Activities in Waters of the U. S. are regulated under this program by the U.S. Army Corps of Engineers (USACE). Early coordination took place with the USACE and a response letter was received, dated December 7, 2016 (see **Appendix B**).

A field investigation of the study area was performed by the Iowa DOT in the summer/fall of 2017 to identify any Waters of the U.S., including wetlands, that exist within the project study area. All potential wetland areas, as well as those wetlands shown on National Wetland Inventory (NWI) maps were investigated.

Approximately 56.2 acres of wetlands, within 65 separate wetland areas, were identified within the study area, including 17 Palustrine Emergent (PEM) wetlands (covering approximately 12.3 acres), 37 Palustrine Forested (PFO) wetlands (covering approximately 31.0 acres), and 11 Agricultural Food Security Act (FSA) wetlands (covering approximately 12.9 acres). The wetland areas are listed in **Table 5-5**, and are located on **Exhibit 5-10**.

Table 5-5: Project Study Area Wetlands

| Wetland ID Number | Wetland Type & Size within Study Area (acres) | | | Wetland Type Description |
|-------------------|---|------|-----|-----------------------------|
| | PEM | PFO | FSA | |
| W-1 | | 7.01 | | Palustrine Forested Wetland |
| W-2 | | 1.39 | | Palustrine Forested Wetland |
| W-3 | 0.11 | | | Palustrine Emergent Wetland |
| W-4 | | 0.63 | | Palustrine Forested Wetland |
| W-5 | | 0.09 | | Palustrine Forested Wetland |
| W-6 | | 0.05 | | Palustrine Forested Wetland |
| W-7 | | 0.52 | | Palustrine Forested Wetland |
| W-8 | 0.33 | | | Palustrine Emergent Wetland |
| W-9 | | 0.50 | | Palustrine Forested Wetland |
| W-10 | | 0.57 | | Palustrine Forested Wetland |
| W-11 | | 0.07 | | Palustrine Forested Wetland |
| W-12 | 0.08 | | | Palustrine Emergent Wetland |
| W-13 | | 0.18 | | Palustrine Forested Wetland |
| W-14 | | 0.66 | | Palustrine Forested Wetland |
| W-15 | | 0.96 | | Palustrine Forested Wetland |

| Wetland ID Number | Wetland Type & Size within Study Area (acres) | | | Wetland Type Description |
|-------------------|---|------|------|-----------------------------|
| | PEM | PFO | FSA | |
| W-16 | | 0.22 | | Palustrine Forested Wetland |
| W-17 | | 0.22 | | Palustrine Forested Wetland |
| W-18 | | 0.51 | | Palustrine Forested Wetland |
| W-19 | | 0.26 | | Palustrine Forested Wetland |
| W-20 | 2.36 | | | Palustrine Emergent Wetland |
| W-21 | | 1.10 | | Palustrine Forested Wetland |
| W-22 | | 0.62 | | Palustrine Forested Wetland |
| W-23 | 0.20 | | | Palustrine Emergent Wetland |
| W-24 | 0.10 | | | Palustrine Emergent Wetland |
| W-25 | 0.60 | | | Palustrine Emergent Wetland |
| W-26 | | 0.03 | | Palustrine Forested Wetland |
| W-27 | 0.01 | | | Palustrine Emergent Wetland |
| W-28 | 0.23 | | | Palustrine Emergent Wetland |
| W-29 | 3.76 | | | Palustrine Emergent Wetland |
| W-30 | | 0.53 | | Palustrine Forested Wetland |
| W-31 | 0.55 | | | Palustrine Emergent Wetland |
| W-32 | | 0.60 | | Palustrine Forested Wetland |
| W-33 | | 0.63 | | Palustrine Forested Wetland |
| W-34 | | 2.10 | | Palustrine Forested Wetland |
| W-35 | 0.76 | | | Palustrine Emergent Wetland |
| W-36 | | 0.47 | | Palustrine Forested Wetland |
| W-37 | | 0.28 | | Palustrine Forested Wetland |
| W-38 | | 0.50 | | Palustrine Forested Wetland |
| W-39 | | 0.32 | | Palustrine Forested Wetland |
| W-40 | | 0.45 | | Palustrine Forested Wetland |
| W-41 | | 0.44 | | Palustrine Forested Wetland |
| W-42 | 0.78 | | | Palustrine Emergent Wetland |
| W-43 | 1.36 | | | Palustrine Emergent Wetland |
| W-44 | 0.42 | | | Palustrine Emergent Wetland |
| W-45 | | 0.51 | | Palustrine Forested Wetland |
| W-46 | 0.11 | | | Palustrine Emergent Wetland |
| W-47 | | 5.52 | | Palustrine Forested Wetland |
| W-48 | | 0.40 | | Palustrine Forested Wetland |
| W-49 | 0.50 | | | Palustrine Emergent Wetland |
| W-50 | | 1.08 | | Palustrine Forested Wetland |
| W-51 | | 0.28 | | Palustrine Forested Wetland |
| W-52 | | 0.92 | | Palustrine Forested Wetland |
| W-53 | | 0.37 | | Palustrine Forested Wetland |
| W-54 | | 0.03 | | Palustrine Forested Wetland |
| FSA-1 | | | 2.26 | FSA Agricultural Wetland |

| Wetland ID Number | Wetland Type & Size within Study Area (acres) | | | Wetland Type Description |
|-------------------|---|--------------|--------------|--------------------------|
| | PEM | PFO | FSA | |
| FSA-2 | | | 0.58 | FSA Agricultural Wetland |
| FSA-3 | | | 0.91 | FSA Agricultural Wetland |
| FSA-4 | | | 1.03 | FSA Agricultural Wetland |
| FSA-5 | | | 0.48 | FSA Agricultural Wetland |
| FSA-6 | | | 0.17 | FSA Agricultural Wetland |
| FSA-7 | | | 0.09 | FSA Agricultural Wetland |
| FSA-8 | | | 0.40 | FSA Agricultural Wetland |
| FSA-9 | | | 6.15 | FSA Agricultural Wetland |
| FSA-10 | | | 0.69 | FSA Agricultural Wetland |
| FSA-11 | | | 0.18 | FSA Agricultural Wetland |
| Subtotals | 12.26 | 31.02 | 12.94 | |
| TOTAL | 56.22 | | | |

No Build Alternative impacts: No impacts to wetlands will occur with the No Build Alternative if the proposed improvements are not constructed.

Proposed Alternative impacts: As shown in **Table 5-6**, The Proposed Alternative would result in impacts to approximately 2.51 acres of PEM wetlands, 1.45 acres of PFO wetlands, and 0.53 acres of FSA wetlands, for a total of 4.49 acres of wetland impacts. Impacts will include the filling and channeling of wetlands.

Section 404 of the Clean Water Act requires that before any dredged or fill material can be discharged into a Water of the U. S., a Section 404 Permit must be obtained from the USACE that authorizes such a discharge. For unavoidable wetland impacts, a wetlands mitigation plan will be required to complete the Section 404 permit portion of the Protecting Iowa Waters permit application. The Iowa DOT will consult and coordinate with the USACE and Iowa DNR to determine the preferred option or options for wetland mitigation.

Table 5-6: Potential Wetland Impacts

| Wetland ID Number | Wetland Size within Study Area (acres) | Wetland Type & Impact Area (acres) | | |
|-------------------|--|------------------------------------|-------------|-------------|
| | | PEM | PFO | FSA |
| W-14 | 0.66 | | < 0.01* | |
| W-21 | 1.10 | | 0.05 | |
| W-25 | 0.60 | 0.11 | | |
| W-26 | 0.03 | | < 0.01* | |
| W-32 | 0.60 | | 0.51 | |
| W-33 | 0.63 | | 0.24 | |
| W-34 | 2.10 | 2.09 | | |
| W-35 | 0.76 | 0.31 | | |
| W-37 | 0.28 | | 0.13 | |
| W-39 | 0.32 | | 0.01 | |
| W-40 | 0.45 | | 0.41 | |
| W-41 | 0.44 | | 0.10 | |
| FSA-2 | 0.58 | | | 0.01 |
| FSA-3 | 0.91 | | | 0.13 |
| FSA-4 | 1.03 | | | 0.35 |
| FSA-9 | 6.15 | | | 0.04 |
| Subtotals | | 2.51 | 1.45 | 0.53 |
| TOTAL | | 4.49 | | |

*Impacts would be minimal and calculated to be less than 0.01 acre

5.3.2 Surface Waters and Water Quality

The field review of the study area that was performed by the Iowa DOT in the summer and fall of 2017, also investigated all potential streams within the study area shown as blue lines on USGS Quadrangle maps, as well as drainages possessing an Ordinary High Water Mark (OHWM). The water resources that were identified included 11 streams (Waters of the U.S.) and six (6) open water resources. Subsequent to that field review, the study area was extended at each end resulting in one stream at the north terminus (Stream S-12) being added to the inventory, as well as one open water body (OW-7) recently developed at the County Home Rd interchange. The streams include McClouds Run (a tributary of the Cedar River, and also known as Cold Stream) at the south end of the study area, one unnamed tributary of Dry Creek east of the Boyson Road interchange, and 10 unnamed tributaries of Otter Creek located between Boyson Road and the north terminus of the study area. As shown on **Exhibit 5-10** and as listed in **Table 5-7**, there are 23 total segments representing 12 streams and totaling 21,672 linear feet. None of these streams are listed as Outstanding Iowa Waters. The open water bodies, totaling 15.25 acres, are also shown on **Exhibit 5-10** and listed in **Table 5-8**, and are either impoundments on streams or retention ponds.

Table 5-7: Streams (Waters of the U.S.) within Study Area

| Stream ID Number | Stream Name or Unnamed Tributary | Flow Regime | Stream Length within Study Area (Lin. Ft.) |
|-------------------------|---|--------------------|---|
| S-1a | McClouds Run (a.k.a. Cold Stream) | Perennial | 949 |
| S-1b | McClouds Run (a.k.a. Cold Stream) | Perennial | 876 |
| S-2 | Tributary of Dry Creek | Intermittent | 449 |
| S-3a | Tributary of Otter Creek | Perennial | 1,286 |
| S-3b | Tributary of Otter Creek | Perennial | 875 |
| S-3c | Tributary of Otter Creek | Intermittent | 86 |
| S-4 | Tributary of Otter Creek | Intermittent | 1,485 |
| S-5a | Tributary of Otter Creek | Perennial | 2,699 |
| S-5b | Tributary of Otter Creek | Intermittent | 534 |
| S-5c | Tributary of Otter Creek | Intermittent | 671 |
| S-5d | Tributary of Otter Creek | Intermittent | 434 |
| S-6a | Tributary of Otter Creek | Perennial | 1,625 |
| S-6b | Tributary of Otter Creek | Perennial | 1,006 |
| S-7 | Tributary of Otter Creek | Intermittent | 1,481 |
| S-8 | Tributary of Otter Creek | Intermittent | 406 |
| S-9a | Tributary of Otter Creek | Intermittent | 573 |
| S-9b | Tributary of Otter Creek | Intermittent | 2,375 |
| S-10 | Tributary of Otter Creek | Intermittent | 746 |
| S-11a | Tributary of Otter Creek | Intermittent | 1,964 |
| S-11b | Tributary of Otter Creek | Intermittent | 167 |
| S-11c | Tributary of Otter Creek | Intermittent | 606 |
| S-12a | Tributary of Otter Creek | Perennial | 203 |
| S-12b | Tributary of Otter Creek | Perennial | 176 |
| TOTAL | | | 21,672 |

Table 5-8: Open Water Bodies within Study Area

| Open Water ID | Type of Water Body | Size within Study Area (acres) |
|----------------------|-------------------------------|---------------------------------------|
| OW-1 | Impoundment on Stream S-3b | 1.79 |
| OW-2 | Retention Pond | 1.23 |
| OW-3 | Impoundment on Stream S-9a/9b | 1.66 |
| OW-4 | Retention Pond | 2.77 |
| OW-5 | Retention Pond | 0.68 |
| OW-6 | Impoundment on Stream S-11c | 6.64 |
| OW-7 | Retention Pond | 0.48 |
| TOTAL | | 15.25 |

The study area is located within the Middle Cedar Creek Watershed (USGS Hydrological Unit Code: 07080205), with only a small portion (east of the Boyson

Road interchange and the Emmons Street overpass) falling within the Lower Cedar Watershed (USGS Hydrological Unit Code: 07080206) which includes Dry Creek. The Iowa Department of Natural Resources (Iowa DNR) 2016 303(d) List of Impaired Waters includes those classified as Category 5, meaning a Total Maximum Daily Load (TMDL) is needed for the impaired water. The waters classified as Category 4 are impaired, but a TMDL is not needed or has been completed. The only impaired stream within the project study area is McClouds Run, which is located at the south terminus (see Iowa DNR letter dated November 30, 2016 in **Appendix B**). This stream flows directly into the Cedar River. The other streams within the study area flow to Otter Creek, which eventually flows into the Cedar River. The Category 5 and Category 4 impaired waters in or near the study area that have the potential of being affected by the project are as follows:

- **McClouds Run** – South Terminus of the Study Area – Category 5; causes of impairment are Escherichia Coli (E. Coli) bacteria, Fish Kill due to unknown toxicity, and Fish Kill caused by chlorine.
- **Dry Creek** – East of the Boyson Rd interchange, but outside the study area – Category 5; cause of impairment is E. Coli. (A minor amount of drainage from the study area flows to this creek and eventually to the Cedar River.)
- **Cedar River** – South and West of the Study Area (from confluence with McClouds Run, upstream to Bear Creek) – Category 5; cause of impairment is phosphorous (pH).
- **Cedar River** – South of the Study Area (downstream from confluence with McClouds Run) – Category 4; cause of impairment is E. Coli bacteria.
- **Otter Creek** – West of the Study Area – Category 5; cause of impairment is Escherichia Coli (E. Coli) bacteria.

The drilled well databases of Iowa DNR and the Iowa Geological Survey recorded 28 wells scattered throughout the study area. Only two wells are less than 100 feet in depth. Most of the wells are between 100 and 300 feet deep. Only seven (7) wells are listed as active, while the remainder are listed as plugged, not used, or status unknown. Of the active wells, three are owned by the City of Hiawatha for public water supply purposes and are located east and west of the Boyson Road interchange, and one mile south of the County Home Road interchange. Three other active wells are located on the Hiawatha Elementary School property, just west of the Emmons Street overpass. The seventh active well is located in the Brittany Estates residential area, located just south of the County Home Road interchange.

No Build Alternative impacts: Under the No-Build Alternative, the improvements would not be constructed and no impacts to surface waters or water quality would occur.

Proposed Alternative impacts: Embankment constructed for the Proposed Alternative would result in impacts to 13 stream segments representing nine (9) streams. Individual impacts of fill material are shown in **Table 5-9** and total 2,088 linear feet. Impacts to water quality are anticipated to be minor, as standard sediment and erosion control measures will be followed.

Table 5-9: Stream Impacts (Waters of the U.S.)

| Stream ID Number | Stream Name or Unnamed Tributary | Flow Regime | Impact Length (Lin. Ft.) |
|-------------------------|---|--------------------|---------------------------------|
| S-1b | McClouds Run (a.k.a. Cold Stream) | Perennial | 42 |
| S-3a | Tributary of Otter Creek | Perennial | 135 |
| S-3b | Tributary of Otter Creek | Perennial | 119 |
| S-5a | Tributary of Otter Creek | Perennial | 111 |
| S-5b | Tributary of Otter Creek | Intermittent | 534 |
| S-6a | Tributary of Otter Creek | Perennial | 103 |
| S-6b | Tributary of Otter Creek | Perennial | 191 |
| S-7 | Tributary of Otter Creek | Intermittent | 378 |
| S-9b | Tributary of Otter Creek | Intermittent | 198 |
| S-10 | Tributary of Otter Creek | Intermittent | 92 |
| S-11b | Tributary of Otter Creek | Intermittent | 29 |
| S-12a | Tributary of Otter Creek | Perennial | 82 |
| S-12b | Tributary of Otter Creek | Perennial | 74 |
| TOTAL | | | 2,088 |

Only one retention Pond (OW-2) would be impacted, resulting in 0.01 acre of the water body being filled.

As discussed in **Section 5.3.1**, Section 404 requires that before any dredged or fill material can be discharged into a Water of the U. S., a permit must be obtained from the USACE which authorizes such a discharge. During the design process, a Section 404 permit will be obtained from the USACE for stream impacts. As a condition of that permit, it is expected that stream impact mitigation measures will be required, based on the recent *State of Iowa Stream Mitigation Method* guidance. Coordination with the USACE will take place to determine the total stream credits required for purchase from an approved mitigation bank, paying a fee to an approved in-lieu fee provider, generating mitigation credits as part of a permittee-responsible mitigation plan, or combination thereof.

Construction and reconstruction of the paved interchanges and addition of paved lanes on I-380 would create additional impervious surfaces and increased potential for runoff into the adjacent waterways during and after construction. The proposed improvements will be designed to Interstate system standards with paved shoulders and slopes that funnel runoff to a predetermined drainage system. Runoff generated by the additional pavement at the interchanges could have future linkages with storm sewer systems as the adjacent areas are further developed.

Wells could receive roadway runoff contaminants if not properly cased or if hydraulically connected to the highway drainage system. However, any impacted wells will be filled, closed, and capped in compliance with Iowa DNR regulations and requirements to prevent roadway runoff contaminants from reaching groundwater.

Obtaining the required National Pollutant Discharge Elimination System permit and following the Iowa DOT's and the cities' adopted guidelines known as Best

Management Practices (BMPs), which address construction site storm water runoff and post-construction storm water management, would minimize impacts and prevent significant impacts to water quality. BMPs attempt to reduce and control pollutants discharged into the storm sewer systems and surface waters. In addition, a storm water pollution prevention plan would be included and followed during construction of the proposed project. The following mitigation measures may be followed to further minimize impacts to water resources during construction or operation of the proposed project:

- Use construction controls to minimize erosion and sedimentation.
- Use pervious surfaces where practicable.
- Control runoff and spoil disposal in order to avoid contamination of ground and surface water.
- Control use of pesticides, herbicides, and fertilizer.
- Maintain vegetative buffers to reduce sedimentation and delivery of chemical pollutants to the water body.

5.3.3 Floodplains

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs), showing the 100-year and 500-year floodplains and the regulatory floodway were reviewed for the project study area. The effective date of the FIRM maps was April 5, 2010 and included the following map numbers: 19113C0280D, 19113C0279D, 19113C0287D, 19113C0291D, and 19113C0295D. According to 23 CFR 650, the 100-year (base) flood is identified 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. As displayed on **Exhibit 5-10**, the study area contains five areas of 100-year floodplain (1.0% annual chance of flooding) along four streams, and one isolated area of 500-year floodplain (0.2% annual chance of flooding). These are described in more detail below. No designated floodways were shown on the FEMA mapping within the study area.

McClouds Run (a.k.a. Cold Stream) – The 100-year floodplain (Zone A) of McClouds Run (a tributary of the Cedar River) exists parallel to the east side of I-380, south of Collins Road, within the city limits Cedar Rapids. At this location, the width of the 100-year floodplain varies from approximately 175 feet to approximately 450 feet, and the length of floodplain within the right of way is approximately 1,250 feet. There is no 500-year floodplain shown in this area.

Upstream of McClouds Run – An isolated 500-year floodplain (Zone X) appears to be in a drainage path upstream (to the north) of McClouds Run, and is located along the middle of the I-380 right of way, north of Blairs Ferry Road, within the city limits of Hiawatha. At this location, the width of the 500-year floodplain varies from approximately 110 feet to approximately 200

feet, and the length of floodplain within the right of way is approximately 2,620 feet.

Tributary of Otter Creek (south of Tower Terrace Rd) – The 100-year floodplain (Zone A) of an unnamed tributary of Otter Creek clips a corner of the study area west of I-380, south of Tower Terrace Road, within the city limits of Cedar Rapids. At this location, the width of the 100-year floodplain varies from approximately 550 feet to approximately 950 feet. There is no 500-year floodplain shown in this area.

Tributary of Otter Creek (north of Tower Terrace Rd) – The 100-year floodplain (Zone A) of an unnamed tributary of Otter Creek exists perpendicular to the west side of I-380, near Hunt Road, within the city limits of Hiawatha. At this location, the width of the 100-year floodplain varies from approximately 110 feet to approximately 290 feet. There is no 500-year floodplain shown in this area.

Tributary of Otter Creek (north of County Home Rd) – The 100-year floodplain (Zone A) of an unnamed tributary of Otter Creek exists perpendicular to the east and west sides of I-380. At this location, the width of the 100-year floodplain varies from approximately 190 feet on the west side of I-380 to approximately 230 feet on the east side. There is no 500-year floodplain shown in this area.

Table 5-10: Floodplains and Impacts within Study Area

| Stream ID & Location | Floodplain Type & Zone | Size within Study Area (acres) | Encroachment Impact Area (acres) |
|--------------------------------------|--|---------------------------------------|---|
| Stream S-1a McClouds Run | 100-Year Floodplain – 1% Annual Chance Flood Zone A – No Base Flood Elevations Determined | 11.3 | 0.3 |
| Stream S-5a Trib of Otter Creek | 100-Year Floodplain – 1% Annual Chance Flood Zone A – No Base Flood Elevations Determined | 7.0 | - |
| Stream S-6a Trib of Otter Creek | 100-Year Floodplain – 1% Annual Chance Flood Zone A – No Base Flood Elevations Determined | 2.3 | - |
| Stream S-12a Trib of Otter Creek | 100-Year Floodplain – 1% Annual Chance Flood Zone A – No Base Flood Elevations Determined | 0.8 | 0.3 |
| Stream S-12b Trib of Otter Creek | 100-Year Floodplain – 1% Annual Chance Flood Zone A – No Base Flood Elevations Determined | 0.8 | 0.2 |
| TOTAL | 100-Year Floodplain | 22.2 | 0.8 |
| Stream S-1a Upstream McClouds Run | 500-Year Floodplain – 0.2% Annual Chance Flood Zone X | 12.7 | 2.7 |
| TOTAL | 500-Year Floodplain | 12.7 | 2.7 |

No Build Alternative impacts: Under the No Build Alternative, no impacts to floodplains would occur if the proposed improvements not constructed.

Proposed Alternative impacts: The Proposed Alternative would impact floodplains in four separate areas along the project corridor, as shown in **Table 5-10**. Impacts to

the 100-year floodplain would total approximately 0.8 acres of encroachment from fill material, and impacts to the 500-year floodplain would total approximately 2.7 acres of encroachment from fill material.

During the subsequent design phase, hydraulic modeling and more detailed calculations and roadway design details would be prepared to better understand potential fill impacts within the floodplain areas. An Iowa DNR floodplain development permit would be required, in addition to a floodplain development permit from Linn County Planning and Development, and the municipalities containing the impacted floodplains.

5.3.4 Wildlife and Habitat

The various forms of habitat capable of supporting wildlife in the study area include streams, wetlands, open water ponds, unmaintained herbaceous vegetated areas, and upland and riparian wooded area, as well as scattered trees in developed areas. Typical wildlife that can inhabit these areas include fish and other aquatic species, amphibians, reptiles, small mammals, and various bird species. The study area is located within the Mississippi Flyway path of migratory birds. The majority of bird species in the U.S. fall under the regulatory protection of the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act, which prohibits the taking, killing, possession, and transportation, (among other actions) of migratory birds or eagles, their eggs, parts, and nests, unless specifically authorized by the U.S. Fish and Wildlife Service.

No Build Alternative impacts: The No Build Alternative would not impact wildlife and habitat, because no construction, land disturbance, or vegetative clearing would take place.

Proposed Alternative impacts: The Proposed Alternative is expected to result in only minimal alteration of the existing wildlife habitat, as project improvements would occur mostly in existing right of way. Specific habitat impacts area discussed further in **Section 5.3.1 Wetlands**, **Section 5.3.2 Surface Waters and Water Quality**, **Section 5.3.5 Threatened and Endangered Species**, and **Section 5.3.6 Woodlands**.

Iowa DOT will implement conservation measures that minimize potential impacts to migratory birds, including clearing of trees outside of the nesting season (generally March 1 to August 31) or conducting nest surveys prior to clearing to avoid injury to eggs or nestlings. Prior to construction, bridges would also be checked for potential nests. Based on the considerations stated above, it is expected that impacts to wildlife habitats would be minimal and not significant.

5.3.5 Threatened and Endangered Species

Early coordination with the Iowa DNR and the U.S. Fish and Wildlife Service (USFWS) was initiated to determine if rare, threatened, or endangered plants and/or animals exist in the project study area (see **Appendix B**). An online review of the resource list from the USFWS Information for Planning and Consultation (IPaC) website indicated that Designated Critical Habitat is not present in or near the study area for any federally listed species. Although the USFWS listed four species that

could occur in the vicinity of the study area), the only habitats existing in the study area that are suitable for any federally-listed species are woodland areas. Woodlands can provide potential habitat for the threatened Northern Long-eared Bat (*Myotis septentrionalis*) which can use trees with cracks, crevices, or loose/peeling bark for roosting in the active summer months. During the winter months, the bat hibernates in caves and mines, although none exist in or near the study area.

The Iowa DNR indicated that it has records of two state threatened turtles in the vicinity of the project area (see email dated November 18, 2016; and letter dated November 30, 2016 in **Appendix B**). One is the Ornate Box Turtle (*Terrapene ornate*) and the other is the Blanding's Turtle (*Emydoidea blandingii*). The Ornate Box Turtle uses undeveloped sites with sandy soil habitat for nesting and over-wintering. The rest of the year they use tall grass prairie or shrubs for cover. Blanding's Turtle uses undeveloped upland areas with well drained, sandy loam or sandy soils for nesting. They inhabit areas with shallow, slow-moving water and abundant, primarily emergent sedge aquatic vegetation.

No Build Alternative impacts: The No-Build Alternative would not impact any threatened or endangered species within the project area, because no construction activities would take place.

Proposed Alternative impacts: The Proposed Alternative would impact approximately 3.0 acres of woodland, which is suitable habitat for the NLEB. In compliance with Section 7 of the Endangered Species Act of 1973, a species review was conducted for the project study area by Iowa DOT to determine the likelihood of impacting threatened and/or endangered species and/or their habitat. The Iowa DOT prepared a *Determination of Effect for Threatened & Endangered Species*, which listed the Ornate Box Turtle and the Northern Long-eared Bat (NLEB), indicating that suitable habitat is present in the project limits for only the NLEB and that woodlands (per Iowa Code 314.23) would be impacted. The Iowa DOT made a determination that the proposed project *may affect, but is not likely to adversely affect* (NLAA) the NLEB, and would not result in the destruction or adverse modification of federally designated critical habitat. A project submittal form for the *Range-wide Programmatic Informal Consultation for Indiana Bat and Northern Long-eared Bat* was submitted by Iowa DOT to the U.S. Fish and Wildlife Service (USFWS) on December 15, 2017. In a letter dated December 15, 2017 the USFWS acknowledged receipt of the DOT submittal. After the 14-day review period, the USFWS did not provide a response, thereby indicating that the agency concurred that the project adheres to the range-wide programmatic agreement (provided tree clearing takes place between September 30th and April 1st) (see **Appendix B**).

5.3.6 Woodlands

The Iowa DOT defines woodlands to include the following:

- An area of forested land at least two acres in size;
- An area containing a density of at least 200 trees per acre (approximate tree spacing of 15 feet on center); and

- Trees within the area possess a 3-inch diameter at breast height (dbh), or larger.

Based on a desktop review of aerial photography, it was determined that deciduous wooded areas meeting the criteria of a woodland are present in the study area north of the County Home Road interchange, on each side of I-380 approximately 0.5 to 1.3 miles south of the County Home Road interchange, southwest of the I-380/Tower Terrace Road area, and just east of the Boyson Road/I-380 interchange, as shown on **Exhibit 5-11**.

No Build Alternative impacts: The No-Build Alternative would not impact the woodlands within the study area. No construction or tree clearing would take place.

Proposed Alternative impacts: The Proposed Alternative would impact approximately 3.03 acres of woodlands within the study area, including 2.89 acres along I-380 south of the County Home Road interchange and 0.14 acres on the west side of the proposed Tower Terrace Road interchange. To provide for the protection and preservation of woodlands, woodland area tree clearing needed to construct the Proposed Alternative would require mitigation in accordance with Iowa Code 314.23. Iowa Code 314.23, Environmental Protection, states that “*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.*”

5.3.7 Farmlands

Most of the land within the study area of the proposed project is within existing right of way; within the city limits of Robins, Hiawatha, and Cedar Rapids; or already developed with a density of at least 30 structures per 40-acre area. As such, those areas meet the definition of urban and built-up land, or land that is “already in or committed to urban development or water storage”, as contained in the Farmland Protection Policy Act (FPPA) (7 CFR, Part 658). Therefore, those areas are not considered prime farmland or farmland of statewide importance, and are not subject to the FPPA. However, three locations in the study area contain portions of undeveloped land outside the city limits of those incorporated areas. These include unincorporated land at the north terminus of the study area, unincorporated land at the I-380/County Home Road interchange, and a small portion of land on the north side of Tower Terrace Road just west of I-380.

Coordination with the U.S. Department of Agriculture’s Natural Resources Conservation Service (NRCS) took place and a response email (dated November 30, 2016) and letter (dated December 1, 2016) were received (see **Appendix B**). According to the NRCS soil survey database, most of the soils in the study area outside the city limits are designated farmland soils, including “All areas are Prime Farmland”, “Prime Farmland if Drained”, and “Farmland of Statewide Importance”

(see **Exhibit 5-12.**). The majority of these soils range from loam, to silt loam, to sandy loam.

A desktop review of the NRCS Easements database was performed and it was determined that no NRCS easements exist in the study area.

No-Build Alternative Impacts – Under the No Build Alternative, no conversion of farmland would take place and there would be no impacts to designated farmland.

Proposed Alternative Impacts – The Proposed Alternative would require only 0.14 acres of Prime Farmland and 0.05 acres of Farmland of Statewide Importance, totaling 0.19 acres of conversion of farmland subject to the FPPA, as described above. Therefore, because farmland acquisition would be minimal and less than 5 acres per mile, Form AD-1006 *Farmland Conversion Impact Rating* is not required and the Farmland Protection Policy process is complete.

5.4 Physical Impacts

5.4.1 Noise

A traffic noise analysis was conducted to examine the existing and future (2040) noise levels and to evaluate the potential noise impacts associated with the Proposed Alternative. The traffic noise analysis is documented in the *Noise Study Report for Interstate 380 from Collins Road to County Home Road*, dated June 2018. The *Noise Study Report* was prepared consistent with Title 23 of the Code of Federal Regulations (CFR) Part 772, “Procedures for Abatement of Highway Traffic Noise and Construction Noise,” effective July 2011, and Iowa Policy No. 500.07, *Highway Traffic Noise Analysis and Abatement*, dated July 29, 2011.

Iowa DOT defines a “receptor” as a discrete or representative location of a noise sensitive area. In determining traffic noise impacts, primary consideration is given to exterior areas where frequent human use occurs, unless no exterior activities are likely, based on field observation. The FHWA Noise Abatement Criteria (NAC), summarized in **Table 5-11**, establish criteria for traffic noise impact assessment with respect to noise sensitive receptors in various activity category land uses. The study area consists primarily of residential properties (Category B) with a few scattered Category C, D, and E properties.

Table 5-11: FHWA Noise Abatement Criteria

| [Hourly A-Weighted Sound Level – decibels (dB(A))] | | | | |
|--|-------------------|----------|---------------------|--|
| Activity Category | Activity Leq(h) 1 | | Evaluation Location | Description of Activity Category |
| | FHWA | Iowa DOT | | |
| A | 57 | 56 | Exterior | Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose. |
| B2 | 67 | 66 | Exterior | Residential |
| C2 | 67 | 66 | Exterior | Active sports areas, amphitheatres, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreational areas, Section 4(f) sites, schools, television studios, trails, and trail crossings. |
| D | 52 | 51 | Interior | Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios. |
| E2 | 72 | 71 | Exterior | Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in A-D or F. |
| F | -- | -- | -- | Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing. |
| G | -- | -- | -- | Undeveloped lands that are not permitted. |

(Based on Table 1 of 23 CFR Part 772)

1 The Leq(h) Activity Criteria values are for impact determination only, and are not design standards for noise abatement measures.

2 Includes undeveloped lands permitted for this activity category.

Noise Monitoring and Modeling

On October 11, 2017, existing noise levels were measured at five locations along the project corridor. Traffic noise measurements were conducted using a Larson Davis 824 Sound Level Meter (SLM), and were done in accordance with the FHWA-PD-96-046 Measurement of Highway Related Noise. Existing noise levels were monitored at five (5) locations within the project area. Monitored noise levels ranged from 61.7 dB(A) to 74.7 dB(A). Monitored noise levels were compared against computer predictions, which were verified to be within the acceptable plus or minus 3 dB(A) tolerance.

Predicted Noise Levels

The noise analysis included two distinct scenarios consisting of the current year (2016) Existing Baseline and the design year (2040) Proposed Build Alternative. The No-

Build Alternative scenario was not developed because Iowa Policy Number 500.07 only requires comparison of existing and future build conditions.

The FHWA Traffic Noise Model (TNM), version 2.5, was used to predict existing and future (2040) noise levels at 199 noise sensitive receptor locations along the project corridor. All the noise sensitive receptor locations modeled are within 500 feet from the nearest existing centerline, a sufficient distance to identify all potential impacts. The locations of the noise sensitive receptors are shown on **Exhibit 5-13**.

When comparing the TNM modeled noise levels of the Build scenario to the Existing scenario, the change in noise levels at noise sensitive receptors would range from a decrease of 1.3 dB(A) to an increase of 8.7 dB(A). The reason for these changes include moving the roadway, and thus traffic, either away from or towards existing receivers. The predicted noise levels reflect the existing field conditions, elevation differences, and the proposed roadway alignment in relation to the noise receptor locations.

Traffic Noise Analysis

When predicted traffic noise levels approach, meet, or exceed the NAC, or when the predicted traffic noise levels substantially exceed (increase by 10 dB(A) or more) the existing noise levels at a noise sensitive receptor, that receptor is considered impacted. By Iowa DOT policy, as approved by FHWA, approaching the criteria means within 1 dB(A) of the appropriate FHWA abatement criteria. A substantial noise increase is defined as an increase in noise levels of 10 dB(A) or more in the design year above the existing noise level as a direct result of the transportation improvement project in question. For this analysis, noise impacts were evaluated for locations where predicted noise levels were at least 1 dB(A) less than the FHWA criteria for Activity Categories “B,” “C,” “D,” or “E.”

No Build Alternative impacts: Impacts from the No-Build Alternative scenario were not developed because Iowa Policy Number 500.07 only requires comparison of existing and future build conditions. However, the results of the noise analysis indicated that 22 impacts were predicted to occur under the Existing scenario.

Proposed Alternative impacts: The modeled noise levels of the (2040) Proposed Alternative is predicted to approach, meet, or exceed the NAC of 67 dB(A) at 28 Category B receptors and 2 Category C receptors, which are therefore considered impacted. Noise levels at these receptors are predicted to decrease by as much as 1.3 dB(A) and increase by as much as 8.7 dB(A). The impacted receptors are listed in **Table 5-12** and are shown on **Exhibit 5-13**.

Table 5-12: Noise Impact Summary

| Receiver ID# | Activity Category | Noise Abatement Criteria Leq(h) (dB(A)) | Distance from Existing Centerline | Leq (dB(A)) | | | | |
|--------------|-------------------|---|-----------------------------------|---------------------------|-----------------------------------|-------------------------------------|--|-------------|
| | | | | 2016 Existing Noise Level | 2040 Proposed Project Noise Level | Increase over Existing Noise Level? | ≥ 10 dB(A) Increase over Existing Noise Level? | ≥ IDOT NAC? |
| 2 | C | 66 | 46 | 65.3 | 68.1 | 2.8 | No | Yes |
| 15 | B | 66 | 262 | 66.8 | 66.0 | -0.8 | No | Yes |
| 22 | B | 66 | 232 | 67.8 | 67.0 | -0.8 | No | Yes |
| 23 | B | 66 | 270 | 66.5 | 66.0 | -0.5 | No | Yes |
| 26 | B | 66 | 263 | 67.0 | 66.3 | -0.7 | No | Yes |
| 27 | B | 66 | 253 | 68.0 | 67.0 | -1.0 | No | Yes |
| 30 | B | 66 | 271 | 67.2 | 66.3 | -0.9 | No | Yes |
| 31 | B | 66 | 208 | 70.0 | 68.7 | -1.3 | No | Yes |
| 43 | B | 66 | 78 | 65.9 | 67.2 | 1.3 | No | Yes |
| 48 | B | 66 | 54 | 66.4 | 67.4 | 1.0 | No | Yes |
| 75 | B | 66 | 121 | 64.0 | 66.5 | 2.5 | No | Yes |
| 76 | B | 66 | 108 | 65.0 | 67.7 | 2.7 | No | Yes |
| 77 | B | 66 | 104 | 66.1 | 69.0 | 2.9 | No | Yes |
| 78 | B | 66 | 109 | 66.3 | 69.2 | 2.9 | No | Yes |
| 79 | B | 66 | 99 | 67.0 | 69.9 | 2.9 | No | Yes |
| 80 | B | 66 | 104 | 67.1 | 70.1 | 3.0 | No | Yes |
| 81 | B | 66 | 105 | 67.3 | 70.3 | 3.0 | No | Yes |
| 82 | B | 66 | 101 | 67.5 | 70.6 | 3.1 | No | Yes |
| 93 | B | 66 | 55 | 67.6 | 68.1 | 0.5 | No | Yes |
| 126 | B | 66 | 130 | 62.7 | 66.0 | 3.3 | No | Yes |
| 137 | B | 66 | 175 | 65.7 | 67.7 | 2.0 | No | Yes |
| 142 | B | 66 | 202 | 63.4 | 66.2 | 2.8 | No | Yes |
| 145 | C | 66 | 181 | 66.6 | 68.5 | 1.9 | No | Yes |
| 148 | B | 66 | 114 | 67.7 | 69.8 | 2.1 | No | Yes |
| 153 | B | 66 | 75 | 60.7 | 69.4 | 8.7 | No | Yes |
| 154 | B | 66 | 109 | 59.2 | 66.7 | 7.5 | No | Yes |
| 186 | B | 66 | 123 | 70.0 | 71.1 | 1.1 | No | Yes |
| 190 | B | 66 | 192 | 66.2 | 67.5 | 1.3 | No | Yes |
| 191 | B | 66 | 202 | 65.4 | 67.1 | 1.7 | No | Yes |
| 195 | B | 66 | 135 | 68.1 | 70.2 | 2.1 | No | Yes |

Proposed Alternative mitigation: In accordance with 23 CFR, Part 772, noise abatement measures must be evaluated for noise sensitive sites where noise levels are predicted to approach, meet, or exceed the NAC, as a result of the Proposed Build Alternative, or which are predicted to experience a substantial (10 dB(A)) noise level increase over existing noise levels. Traffic noise impacts were identified as a result of the proposed project; therefore, noise abatement measures are considered and evaluated for feasibility and reasonableness in accordance with FHWA and Iowa DOT guidance. Construction of noise barriers is the most commonly used noise abatement measure.

Feasibility and Reasonableness

According to Iowa DOT Noise Policy 500.07, **feasibility** refers to the ability to provide abatement in a given location considering the acoustic (predicted noise reduction) and engineering (constructability) limitations of the site. A noise abatement

measure is not feasible unless the measure is predicted to achieve a noise reduction of at least 5 dB(A) for a majority (more than half) of impacted receptors, and it can feasibly be constructed.

In addition, each of the following **reasonableness** factors must be evaluated for noise abatement to be considered reasonable:

- *Benefited Receptor Viewpoints* – Solicit viewpoints at benefited receptor locations regarding noise wall desirability.
- *Noise Abatement Costs* - A reasonable cost per benefited receptor is \$40,000 or less, based on 2012 costs.
- *Noise Reduction Design Goal* – A 10 dB(A) noise reduction design goal must be predicted to be achieved by at least one benefited receptor.

Optional Reasonableness Factors

The reasonableness factors listed above must collectively be achieved for a noise abatement measure to be considered reasonable. Optional reasonableness factors include date of development, length of time receivers have been exposed to highway traffic noise impacts, exposure to higher absolute highway traffic noise levels, changes between existing and future build conditions, percentage of mixed zoning development, and the use of compatible planning concepts by the local government. No single optional reasonableness factor shall be used to determine reasonableness or unreasonableness.

Two optional reasonableness factors: date of development and change between existing and future build condition, may be evaluated using "level of consideration scales." To assist in a determination of reasonableness, noise level change between existing and future build condition may be evaluated using the following "level of consideration scale":

>10 dB(A) = HIGH YES; 5-10 dB(A) = LOW YES; 3-5 dB(A) = LOW NO;
<3 dB(A) = HIGH NO

Evaluation of these "level of consideration scales" for date of development and changes between existing and future build conditions may lead to a determination of it being "unreasonable" to provide noise abatement without consideration of the three primary reasonableness factors described above. For example, a "HIGH NO" for date of development coupled with a "HIGH NO" for changes between existing and future build conditions could lead to such an "unreasonable" determination.

Iowa DOT reserves the right to consider all FHWA guidance, Iowa DOT's own experience in traffic noise abatement, and professional judgment of both Iowa DOT staff and consultants in making responsible traffic noise abatement decisions when individual project circumstances not specifically addressed in this policy arise.

Noise Barrier Analysis

Noise abatement measures, in the form of noise barriers, were considered at all impacted locations. Seven noise barriers were modeled in TNM, attempting to shield

the impacted receptors. Based on the noise analysis performed to date, the noise abatement measures were found to be not feasible and reasonable at all seven noise barrier locations, per Iowa DOT criteria, as follows:

Barrier A: Did not meet “optional” reasonableness criteria of date of development and relative noise increase.

Barrier B: Did not meet feasibility criterion of 5 dBA reduction for 50% of impacted receptors.

Barrier C: Did not meet “optional” reasonableness criterion of relative noise increase.

Barrier D: Did not meet cost per benefit criterion.

Barrier E: Did not meet Noise Abatement Design goal of 10 dBA reduction for at least one benefit and cost per benefit criteria.

Barrier F: Did not meet cost per benefit and noise reduction design goal criteria.

Based on the noise analysis performed to date, there appears to be no viable solutions available to mitigate the noise impacts at the locations identified. During final design, noise impacts and noise abatement measures will be reassessed for feasibility and reasonableness.

Construction Noise and Vibration

The following are some basic categories of mitigation measures for construction noise.

- *Design Considerations:* This includes measures in the plans and specifications to minimize or eliminate adverse impacts. Where possible, the roadway was designed to minimize or eliminate construction noise at nearby residential properties.
- *Community Awareness:* It is the policy of the Iowa DOT that information concerning the upcoming project construction be submitted to all local news media to provide public awareness of the possible inconvenience and to know its approximate duration.
- *Source Control:* This involves reducing noise impacts from construction by controlling the noise emissions at their source, such as specifying proper muffler systems.
- *Site Control:* Site control involves the specification of sensitive receptor areas where extra precautions should be taken to minimize construction noise.
- *Time and Activity Constraints:* Limiting work hours on a construction site during the hours of sleep or on Sundays and holidays.

Local Planning Authorities Coordination

A copy of the *Noise Study Report* will be provided to the appropriate local planning authorities to assist in the development of compatible land use criteria. The report contains information concerning FHWA NAC noise contour distances (in feet) from the roadway at which the noise levels become acceptable for various types of land uses, to ensure that noise impacts are minimized in the event of land use changes.

5.4.2 Contaminated and Regulated Materials Sites

The Iowa DOT conducted a preliminary review for the potential or known presence of regulated materials for the project study area, which was completed on June 14, 2016. This review was intended to identify those properties with potential or known Recognized Environmental Conditions (RECs); and was based on a review of online databases of Iowa Department of Natural Resources (DNR), US Environmental Protection Agency (EPA), and Linn County Assessor, as well as historic aerial photos and Google Earth photography.

The Iowa DOT compiled a Preliminary Regulated Materials Review summary containing a list of 42 sites identified within or near the study area as having potential Recognized Environmental Conditions (RECs), and a list of 10 sites identified as having known RECs. A brief description of the RECs for each site, as well as the level of risk assigned to each site, based on a site's potential for contamination or environmental releases, is also included in the summary.

In January 2018, Iowa DOT updated the list of potential REC sites within or near the study area, adding five (5) additional sites. **Table 5-13** provides a summary of the potential and known REC sites and includes the five additional potential REC sites as well. The potential and additional REC sites have an identification number with a “P” designation, and the known REC sites have an identification number with a “K” designation. Thirty-three (33) of the 47 potential/additional REC sites are indicated as having a low risk for contamination and 14 are indicated as having a moderate risk. One (1) of the known REC sites is indicated as having a low risk for contamination and the remaining nine (9) are indicated as having a moderate risk. None of the REC sites are indicated as high risk. **Exhibit 5-14** shows the location of each potential, additional, and known REC within the study area.

Table 5-13: Contaminated and Regulated Materials Sites

| Site ID # | Facility Name | Site Address | Environmental Interest Type* & Additional Notes | RISK |
|-----------------------|--|-------------------------------------|---|----------|
| Potential RECs | | | | |
| P-1 | Linn County Toddville Shop | 3474 Cora Mae Lane | 1 UST – Removed 2011 | Low |
| P-2 | Otter Creek Country Stores | 3445 County Home Road | 3 Active USTs – Installed 2016 | Moderate |
| P-3 | Ketelsen RV | 1500 Ketelsen Drive | Rec. Vehicle Sales & Service | Low |
| P-4 | Former Windstream Paetec McLeod USA | 929 Marthas Way | Tier II Chemical Storage | Low |
| P-5 | Taylor Industries | 1355 Sherman Road | EPA – Haz. Waste Generator; Appliance De-manufacturing | Moderate |
| P-6 | Brown Inc | 1125 Industrial Road | ASTs - No registration records | Moderate |
| P-7 | Sierra Corp | 1220 Industrial Road | EPA – Haz. Waste Generator | Low |
| P-8 | D.A.D. Manufacturing | 1400 Industrial Road | EPA – Haz. Waste Generator | Low |
| P-9 | Abra Auto Body & Glass | 770 Boyson Road | EPA – Haz. Waste Generator; Vehicle Service/Repair | Moderate |
| P-10 | Newell Machinery Co | 1405 Mitchell Drive | EPA – Haz. Waste Generator | Low |
| P-11 | McGrath Buick GMC Cadillac | 1000 - 1090 N. Center Point Road | EPA – Haz. Waste Generator; Vehicle Service/Repair/Sales | Low |

| Site ID # | Facility Name | Site Address | Environmental Interest Type* & Additional Notes | RISK |
|-----------|--|----------------------------|---|----------|
| P-12 | Casey's General Store #2764 | 780 N. Center Point Road | 3 Active USTs – Installed 1993 | Moderate |
| P-13 | Midway Outdoor Equipment | 1215 N. Center Point Road | EPA – Haz. Waste Generator | Low |
| P-14 | The Fisher Group | 1250 N. Center Point Road | EPA – Haz. Waste Generator | Low |
| P-15 | The Gas Shack | 1195 Boyson Road | 2 USTs – Removed 2011 | Moderate |
| P-16 | Big Ten Mart #19/Molo Oil | 1225 Boyson Road | 3 Active USTs – Installed 1997 | Moderate |
| P-17 | Cedar Rapids Toyota | 1190 - 1200 Boyson Road | Vehicle Sales/Service/Repair | Low |
| P-18 | Parker Hannifin | 850 N. 18th Avenue | Tier II Chemical Storage | Low |
| P-19 | City of Hiawatha Water Treatment Plant | 2030 Boyson Road | Tier II Chemical Storage | Low |
| P-20 | United Parcel Service | 1605 Hawkeye Drive | EPA – Haz. Waste Generator | Low |
| P-21 | Interstate Battery | 1400 Hawkeye Drive | 1 UST – Removed 1989; Battery Storage & Handling | Low |
| P-22 | Former Metal Fabricators Co | 1265 Hawkeye Drive | EPA – Haz. Waste Generator | Low |
| P-23 | H&H Construction | 1195 Hawkeye Drive | 1 UST – Removed 1986 | Low |
| P-24 | Professional Chemists | 1005 Hawkeye Drive | Pesticides; Registered Pesticide Producer | Low |
| P-25 | Fleetcare Services | 755 N. Center Point Road | Vehicle Service/Repair | Low |
| P-26 | Bob Ahearn Plumbing & Heating | 255 Robins Road | 1 Active UST; 1 UST – Removed 1991; DNR Enforcement Action 2008 | Moderate |
| P-27 | Kwik Shop #568 | 300 E. Blairs Ferry Road | 4 Active USTs – Installed 1985 | Moderate |
| P-28 | Former Hiawatha DX/Farmers State Bank | 175 Center Point Road | 3 USTs – Removed 1988 | Moderate |
| P-29 | Sam's Club #8162 | 2605 Blairs Ferry Road NE | 3 Active USTs – Installed 2002; Tier II Chemical Storage; EPA – Haz. Waste Generator | Moderate |
| P-30 | Lowe's #2231 | 5300 Blairs Forest Blvd NE | 1 Registered UST – Installed 2002; Tier II Chemical Storage; EPA – Haz. Waste Generator | Low |
| P-31 | Walmart Supercenter 1528 | 2645 Blairs Ferry Road NE | EPA – Haz. Waste Generator | Low |
| P-32 | Former Midway Outdoor Equipment | 2345 Blairs Ferry Road NE | EPA – Haz. Waste Generator | Low |
| P-33 | Former Crystal Clear Cleaners | 5472 Blairs Forest Way NE | Dry Cleaning Chemicals; Previous Dry Cleaner | Moderate |
| P-34 | Grissel Co | 5501 North Towne Place NE | 1 UST – Removed 2015 | Low |
| P-35 | Iowa Falls Roofing Co | 2115 North Towne Lane NE | 1 UST – Removed 1990 | Low |
| P-36 | True Green | 2123 North Towne Lane NE | Tier II Chemical Storage | Low |
| P-37 | Iowa Periodicals | 2037 North Towne Lane NE | 1 UST – Removed 1989 | Low |
| P-38 | Rexco Equipment | 1925 Blairs Ferry Road NE | 3 USTs – Removed 1989; EPA – Haz. Waste Generator | Moderate |
| P-39 | RIM Enterprises | 2121 North Towne Lane NE | EPA – Haz. Waste Generator | Low |
| P-40 | National Coatings & Supplies | 2025 North Towne Lane NE | EPA – Haz. Waste Generator | Low |
| P-41 | Former Best Plumbing | 5412 Center Point Road NE | EPA – Haz. Waste Generator | Low |
| P-42 | Cedar Graphics | 311 Parsons Drive | EPA – Haz. Waste Generator | Low |

| Site ID # | Facility Name | Site Address | Environmental Interest Type* & Additional Notes | RISK |
|----------------------------------|---|---------------------------|---|----------|
| Additional Potential RECs | | | | |
| P-43 | Electrical Substation | Willman St & 6th Ave | Electrical Substation | Moderate |
| P-44 | Eddie's Rod & Custom | 2015 Werner Court NE | Vehicle Service/Repair | Low |
| P-45 | McGrath Pontiac | 4610 Center Point Road NE | Vehicle Service/Repair | Low |
| P-46 | Bob Mickey's Collision Repair | 4813 Center Point Road NE | Vehicle Service/Repair | Low |
| P-47 | Randy Kuehl Honda/Terry Smith Honda | 4425 Center Point Road NE | Vehicle Service/Repair | Low |
| Known RECs | | | | |
| K-1 | J&A Printing | 1155 Sherman Road | EPA – Haz. Waste Generator; Documented Spills | Low |
| K-2 | Hawkeye Ready-Mix | 1340 Hawkeye Drive | 4 USTs – Removed 1990 & 1993; LUST Site; DNR – “No Action Required” – 1991 & 1994 | Moderate |
| K-3 | Croell/Burd Concrete Products | 1395 Hawkeye Drive | 1 UST – Removed 1990; Tier II Chemical Storage; Documented Transformer Spill 1990 | Moderate |
| K-4 | Quick Mart | 655 Robins Road | 2 Active USTs & LUST Site DNR – “No Action Required” – 1993 | Moderate |
| K-5 | Former Hiawatha Handi Mart/City of Hiawatha | 96 N. Center Point Road | 4 USTs – Removed 1994; LUST Site; DNR – “No Action Required” – 2014 | Moderate |
| K-6 | Former Gas Station/City of Hiawatha | 85 N. Center Point Road | 4 USTs – Removed 2015; LUST Site | Moderate |
| K-7 | Former Coastal Mart #1052 | 95 Center Point Road | 4 USTs – Removed 1998; LUST Site; DNR – “No Action Required” – 2008 | Moderate |
| K-8 | Road Ranger 149/Former Quik Trip #549 | 2349 Blairs Ferry Road NE | 3 Active USTs – Installed 1981; LUST Site; EPA Haz. Waste Generator; DNR – “No Action Required” – 1998 & 2010 | Moderate |
| K-9 | King's Material/Bjornsen Investment Corp | 2127 North Towne Lane NE | 14 USTs – Removed 1987 & 1989; LUST Site; DNR – “No Action Required” – 1988 | Moderate |
| K-10 | Sawyer Property/Former Car Dealership | 5429 Center Point Road NE | UST Site (No Records) & LUST Site; DNR – “No Action Required” – 1998 | Moderate |

***Environmental Interest Type Acronyms:**

REC - Recognized Environmental Condition

UST – Underground Storage Tank

LUST – Leaking Underground Storage Tank

AST - Aboveground Storage Tank

EPA - Environmental Protection Agency

DNR - Department of Natural Resources

No Build Alternative Impacts: The No Build Alternative would not impact any of the contaminated or regulated materials sites, or result in a potential for encountering contamination, as there would be no construction involved.

Proposed Alternative Impacts: The Proposed Alternative would result in partial impacts to four low risk properties and three moderate risk properties, as listed in **Table 5-14**. Sites P-3, P-10, P-11, and P-17 are designated as low risk, and sites P-2, P-12, and P-15 are designated as moderate risk. No leaking underground storage tanks (LUSTs) were recorded at any of these sites. Partial property acquisition and land disturbance for construction activities on these sites would be at the edges of the properties and would not affect the facilities containing regulated materials. Based on those conditions, there would be a relatively low risk of contamination from these properties during construction.

Table 5-14: Potentially Impacted Contaminated and Regulated Materials Sites

| Site ID # | Facility Name | Environmental Interest Type* & Additional Notes | Risk | Impact / Acquisition |
|-----------------------|-----------------------------|--|----------|----------------------|
| Potential RECs | | | | |
| P-2 | Otter Creek Country Stores | 3 Active USTs – Installed 2016 | Moderate | Partial (< 0.01 ac.) |
| P-3 | Ketelsen RV | Rec. Vehicle Sales & Service | Low | Partial (0.35 ac.) |
| P-10 | Newell Machinery Co | EPA – Haz. Waste Generator | Low | Partial (0.07 ac.) |
| P-11 | McGrath Buick GMC Cadillac | EPA – Haz. Waste Generator; Vehicle Service/Repair/Sales | Low | Partial (0.02 ac.) |
| P-12 | Casey's General Store #2764 | 3 Active USTs – Installed 1993 | Moderate | Partial (0.03 ac.) |
| P-15 | The Gas Shack | 2 USTs – Removed 2011 | Moderate | Partial (0.01 ac.) |
| P-17 | Cedar Rapids Toyota | Vehicle Sales/Service/Repair | Low | Partial (0.24 ac.) |

The Iowa DOT will coordinate with Iowa DNR to determine the most recent status of these sites and will coordinate with construction contractors before construction to ensure all appropriate precautions are taken to protect construction workers and the public from potential contamination. Construction activities near these sites would involve minimal property disturbance at the edges of the property and would involve fill or shallow excavation. Based on the conditions and precautions stated above, any potential encounter with these sites would have minor impacts.

All known and unknown hazardous materials encountered during roadway improvements would be handled per federal, state, and local laws and regulations. Where hazardous material or solid waste is identified in the required right of way, resolution with the property owner would be conducted prior to purchase. If an unknown site is encountered during construction, the Iowa DOT and the Iowa DNR will be contacted and appropriate laws and EPA regulations would be followed to eliminate or minimize any adverse environmental consequences. Standard best management practices would be used for demolition, clearing and grubbing. Buildings that are identified for demolition would be thoroughly inspected for both stored hazardous materials and hazardous materials used in the construction of the building (i.e. asbestos, etc.). For these reasons, it is anticipated that any potential encounter with a contaminated site would have minor impacts.

5.4.3 Visual

The study area is comprised of a four-lane interstate highway, with three interchanges in the southern third of the study area, and one interchange at the north end of the study area. Most of the roadway is lower in elevation than its surroundings, resulting in overpasses at all crossroads. The southern third of the surrounding study area adjacent to the roadway, from the southern terminus to just north of the Boyson Road interchange, is characterized by urban development consisting of residential, commercial, light industrial, institutional, and open space. The remaining two-thirds of the study area is mainly agricultural land and open space, with a few small pockets of residential development and scattered pockets of trees. There are no notable visual resources that stand out as being scenically significant, although the rural portions can provide a relatively aesthetic transition from the developed areas.

Views from the roadway – Most of the mainline of I-380 is at a lower elevation than the right of way edge, resulting in views from the roadway that mainly consist of the adjacent trees and shrubs that line the edge of the right of way. However, the section just north of Boyson Road is at a similar elevation to the surrounding area, and the trees are more scattered and sporadic, making the adjacent commercial development visible from the roadway. Approaching Tower Terrace Road from the south, and to the northern terminus of the study area, the views from the roadway are a mix of trees, cropland, and grassed open space, with only a few small areas of development, consisting of rural residential and a church. At the vicinity of the northern terminus interchange, the mainline elevation is similar to the surrounding area, and trees are minimal, resulting in open views of the adjacent agricultural areas.

Views of the roadway – As previously described, much of the mainline of I-380 is at a lower elevation than the right of way edge. Therefore, the views of the roadway, from the vantage point of sensitive visual receptors in the residential areas, are mostly screened by the adjacent trees and shrubs growing along the edge of the right of way. Most of the residential areas are concentrated between Boyson Road and the southern terminus of the study area. Although there is one area of residential visual receptors that are subject to views of Tower Terrace Road, the I-380 mainline is not visible from that location. However, a rural residential area near the northern terminus of the study area has partial views of the I-380 mainline.

No Build Alternative impacts: No impacts to the visual character of the study area will occur under the No Build alternative.

Proposed Alternative impacts: The construction of the Proposed Alternative will include a new interchange at Tower Terrace Road/I-380, a reconfigured interchange at Boyson Road/I-380, and additional lanes along the I-380 mainline. The addition of a wider bridge in place of the existing Tower Terrace Road overpass, four new exit/entrance ramps, and signalization and signage is not expected to compromise existing views to and from the current landscape. Right of way for the Tower Terrace Road interchange was set aside when I-380 was originally constructed, and the overpass was constructed at that time. Interchange improvements, which include the addition of bicycle and pedestrian facilities, are expected to enhance the visual character of the roadway facilities in the study area.

The proposed roadway improvements would not be a substantial change in the visual environment and views of the road, as most of the residents adjacent to the roadway corridor have been accustomed to living close to the interstate roadway and experiencing views of the existing road. Therefore, the visual impacts would be considered minor and would not negatively impact the visual character of the study area.

Proposed Alternative mitigation: No negative visual impacts are expected from the Proposed Alternative; therefore, no mitigation is required.

5.4.4 Utilities

The study area contains multiple energy and communication utilities. Overhead electric transmission lines in the study area are provided by Alliant Energy and are located along most of the major roadways, including Blairs Ferry Road, Boyson Road, Tower Terrace Road, Edgewood Road, N Center Point Road, and County Home Road east of the I-380 interchange. A power substation is located on the west side of I-380 between Blairs Ferry Road and Emmons Street.

Each city provides water and sewer lines that are located within utility easements in many of the street rights-of-way in each community. In addition, a television broadcast tower is located at the southeast corner of the proposed Tower Terrace Road interchange, and a radio communications tower is located on the east side of I-380 between Collins Road and Blairs Ferry Road. Other utilities with infrastructure located within the study area include the following providers:

- *Gas:* MidAmerican Energy
- *Internet/TV/Telephone Services* (most are fiber optic): Mediacom; CenturyLink; Windstream; ImOn Communications; USA Communications; Skybeam; South Slope; Palo Cooperative Telephone Association; Van Horne Cooperative Telephone Company; Shellsburg Cablevision; Springville Cooperative Telephone Association; Martelle Cooperative Telephone Association

No Build Alternative impacts: No impacts to utilities would occur under the No Build alternative.

Proposed Alternative impacts: Construction of the Proposed Alternative would have impacts on underground and aboveground utilities within the study area. Relocation of some utilities within the corridor would be necessary to accommodate the design of the Proposed Alternative. The extent and exact nature of those impacts would be determined during the design phase of the project. Impacted utilities would most likely be relocated in the same vicinity of their current location, to offset impacts and to accommodate the construction of the Proposed Alternative. The television broadcast tower at Tower Terrace Road, its guy wires and guy wire anchors, would not be impacted by the proposed project. Coordination with the public and private utility companies would be needed to ensure utility service is uninterrupted or only

minimally disrupted during utility relocation and construction of the proposed improvements.

5.5 Cumulative Impacts

Cumulative impacts are those that result from past, present, and reasonably foreseeable future actions, combined with the potential impacts of the proposed I-380 improvements project. A cumulative impact assessment looks at the collective impacts imposed by individual land use plans and projects. Cumulative impacts can result from individually minor, but collectively substantial impacts taking place over a period of time.

Previous Actions

Extensions of development infrastructure – In order to accommodate and facilitate growth and development, local jurisdictions have extended some of the necessary infrastructure to allow development in areas near the study area. Storm water, wastewater, and drinking water systems as well as electric, natural gas, internet and cable TV utility lines all are found in the vicinity of the study area. The existence of these pieces of infrastructure allow for easy extension and service provision to adjoining properties resulting in overall ease of development at lower costs. Some of the recent developments that have taken place in or near the study area include the following:

- In the city limits of Hiawatha, infrastructure was built for a residential housing development on the west side of Edgewood Road about ¾-mile south of County Home Road. About 70 of the 100 residential lots have been developed.
- In the city limits of Hiawatha, infrastructure was built for a residential housing development on the east side of Edgewood Road. Only about 20 percent of the 50 platted residential lots has been developed. There is also room for an additional 20 to 25 residential lots on the north side of this development.
- In the city limits of Robins, infrastructure is under construction for a 34-lot residential housing development on the east side of N Center Point Road, ½-mile south of County Home Road.
- In the city limits of Robins, a convenience/gas store (Otter Creek Country Store) was recently built adjacent to the northeast quadrant of the County Home Road/I-380 interchange.
- In the city limits of Cedar Rapids, an indoor sports training facility (Twisters) was built just southwest of the proposed Tower Terrace Road/I-380 interchange area.

Provision of transportation infrastructure – Improvements to the transportation infrastructure in the vicinity of the study area has made the Hiawatha, Cedar Rapids and Robins communities more accessible and attractive for residential and commercial development. Specifically, the construction of I-380 and the provision of interchange access to I-380 at County Home Road and Boyson Road have enabled development in the communities to continue while accommodating roadway capacity demands on the

regional road system generated by past and current development. In addition, the City of Hiawatha recently conducted grading and culvert work on Edgewood Road from one-half mile north of Tower Terrace Road to County Home Road.

Potential Future Actions

Planned future growth – Hiawatha, Cedar Rapids, and Robins, through each cities' comprehensive future land use planning processes, have identified the project study area and its vicinity as areas ripe for future commercial, light industrial, and residential growth.

In anticipation of future growth, various utility providers have extended the appropriate infrastructure to current developments in close proximity to those areas identified for future growth. In addition, the City of Hiawatha recently extended over 5,000 feet of lines for sewer and water mains to its newly annexed area along Edgewood Road between Fitzroy Road/Hay Lane and County Home Road, thereby opening approximately 300 acres to future development in that area.

Tower Terrace Road improvements and extension – The cities of Hiawatha, Cedar Rapids, Robins, and Marion are planning to improve, widen, and extend Tower Terrace Road from I-380 eastward to Iowa Highway 13. Efforts by the jurisdictions to preserve right of way for the future construction of Tower Terrace Road began in 2010 with the adoption of the *Tower Terrace Road Corridor Management Plan*. The management plan is currently being updated and the Tower Terrace Road improvements are being planned primarily to reduce system-wide congestion and travel times, and to act as a catalyst for in-fill development.

Proposed Alternative impacts: Cumulative impacts to resources in the project study area may result from residential, commercial, light industrial, and roadway development, as well as conversion of agricultural land to higher intensity uses. However, it is uncertain how much actual future development would be indirectly attributed to the construction of the proposed interchange at Tower Terrace Road and proposed improvements of the other interchanges in the study area, as some of these areas are currently experiencing development pressures absent of construction of the proposed improvements.

Where possible, the Proposed Alternative and other reasonably foreseeable future projects have been planned to avoid resource impacts, or to minimize impacts by reducing project footprints. Coordination will continue to take place with local, state, and federal agencies to ensure that the proposed project and reasonably foreseeable area developments strive to minimize impacts. Although mitigation measures would be proposed for individual projects, no mitigation is proposed specifically for cumulative impacts.

Land Use - The cities of Hiawatha, Cedar Rapids, and Robins through their comprehensive land use plans, have identified the vicinity of the project area as positioned for future residential, commercial, and light industrial development. In order for planned development to occur, changes in land use must occur, as much of the existing developable land in the study area is currently in agricultural uses. The

end result is the conversion of agricultural land uses to higher-intensity urban and suburban uses, consistent with the cities' future land use plans. In addition, the future land use policies of each municipality that control changes in land use are well established through their comprehensive land use plans. Reasonably foreseeable projects that are outside the transportation rights of way are also subject to these future land use plans and policies which guide future development. Therefore, it is anticipated that the Proposed Alternative and the reasonably foreseeable projects would generally conform to future land use adjacent to the roadways and would not result in significant cumulative impacts.

Parks and Recreation Areas – The Proposed Alternative would avoid impacts to Section 4(f) parklands and would have only minor impacts to the privately-owned property on which the Hiawatha Kids League (Waterhouse-Miller) Ball Diamonds are located. Other reasonably foreseeable development and transportation projects are subject to each municipality's future land use plans and policies which guide future development, and would avoid existing parks and recreation areas. Therefore, it is anticipated that the Proposed Alternative and the reasonably foreseeable projects would not result in significant cumulative impacts to parks and recreation areas.

Bicycle and Pedestrian Facilities – The Proposed Alternative would have no impacts on any of the existing shared-use bicycle/pedestrian facilities in the study area. However, bicycle and pedestrian facilities would be integrated into the proposed interchange improvements at Tower Terrace Road and Boyson Road, which would be designed to accommodate paved shared-use paths and sidewalks over I-380 that will connect with existing, as well as planned or future bicycle and pedestrian improvements. Other reasonably foreseeable projects would also accommodate existing, as well as planned or future bicycle/pedestrian facilities, in accordance with *Connections 2040* (the Corridor MPO's Long Range Transportation Plan), the *2015 Cedar Rapids Comprehensive Trails Plan Update*, and the *Tower Terrace Corridor Management Plan*, including those along Tower Terrace Road, Boyson Road, Edgewood Road, and Hwy 100/Collins Road. Any construction impacts to existing bicycle/pedestrian facilities would be short-term and temporary, and would include replacement or relocation, if necessary. Therefore, it is anticipated that the Proposed Alternative and the reasonably foreseeable projects would not result in significant cumulative impacts to bicycle and pedestrian facilities.

Right of Way Acquisition and Relocations – The Proposed Alternative would require a total of approximately 38.5 acres of right of way acquisition, of which 13.54 acres would be partial property acquisitions of 56 properties, and 24.98 acres would be total acquisition of two properties. This acquisition would potentially require the displacement of up to eight (8) mobile homes and one single-family residence, thereby requiring relocation of the impacted residences. The future Tower Terrace Road improvements and extension would minimize right of way acquisition and relocations by following the existing roadway alignment. In addition, planning efforts to preserve right of way for the future construction of Tower Terrace Road, particularly in those areas where no road currently exists, began in 2010 with the adoption of the *Tower Terrace Road Corridor Management Plan*. Other reasonably foreseeable roadway projects would also utilize existing alignments to minimize right of way acquisition and relocations. Mitigation for acquisition of property would be compensation in

conformance with the Uniform Relocation Assistance and Real Property Acquisition Act of 1970, as amended. Therefore, it is anticipated that the Proposed Alternative and the reasonably foreseeable projects would not result in significant cumulative impacts regarding property acquisition and relocations.

Construction and Emergency Routes – Construction activities of the Proposed Alternative would require temporary closures of Tower Terrace Road and Boyson Road at I-380, and require traffic detours for emergency vehicles and those attempting to reach either side of I-380. However, Tower Terrace Road and Boyson Road would not be simultaneously closed during construction. It is also anticipated that there is a potential for Boyson Road or the ramps at Boyson Road to remain open during reconstruction of this interchange. Other reasonably foreseeable transportation projects, such as improvements to Miller Road, N Center Point Road, and improvements and extension of Tower Terrace Road, would also require temporary closures and/or detours during construction. Prior to construction, traffic management plans would be prepared, and coordination would take place with the public and with emergency responders to provide notification of when closures will occur, as well as identification of detours during that time. Although possible temporary rerouting during construction could occur, adjacent neighborhoods, commercial properties, and community facilities would have access maintained at all times. Therefore, cumulative impacts to emergency routes during construction would be short-term and minor, but not significant. In the long term, the Proposed Alternative and reasonably foreseeable roadway projects would result in better overall access, improved safety, less congestion, and decreased travel times, and cumulative impacts would be beneficial.

Transportation – The Proposed Alternative construction of a new interchange at Tower Terrace Road, and reconstruction of the Boyson Road interchange would redistribute traffic within the project area, effectively reducing the volume of vehicles using the other interchanges in the study area, and alleviate anticipated future traffic congestion. Other reasonably foreseeable transportation projects, such as improvements to Miller Road and N Center Point Road, would not create significant impacts to existing transportation routes, as the changes would be to the existing highway and transportation systems with well-established adjacent land uses. The future Tower Terrace Road improvements and extension would also follow the existing route, except for some new alignment locations that travel through mainly agricultural or undeveloped areas, thereby avoiding disruptions to long established neighborhoods and existing transportation routes. In the long term, the Proposed Alternative and reasonably foreseeable roadway projects would result in better overall access, improved safety, less congestion, and decreased travel times, although some temporary detours would be necessary during construction. Therefore, cumulative impacts to transportation would be minor and not significant in the short term, and would be beneficial in the long term.

Wetlands, Streams, and Ponds – The Proposed Alternative would impact approximately 4.5 acres of wetlands, 2,087 linear feet of streams, and 0.01 acre of ponds. Other reasonably foreseeable roadway projects would consist mostly of improvements to existing roadways, thereby minimizing additional right of way requirements and impacts to water resources. Other reasonably foreseeable

development projects, would be in accordance with the municipalities' future land use plans, which strive to preserve natural areas with water resources, wherever possible. For unavoidable wetland impacts, the USACE and Iowa DNR require development of a wetlands mitigation plan to complete the Section 404 and state (Protecting Iowa Waters) permits. Stream impacts would also require permits, and stream mitigation measures would be determined, based on the recent *State of Iowa Stream Mitigation Method* guidance. Therefore, it is anticipated that cumulative impacts to water resources from the Proposed Alternative and the reasonably foreseeable projects would be considered minor and not significant.

Floodplains – The Proposed Alternative would result in minor impacts to the 100-year floodplain totaling approximately 0.7 acres of encroachment, and impacts to the 500-year floodplain totaling approximately 2.7 acres of encroachment. Other reasonably foreseeable projects in the vicinity would be located on existing roadways and are not located in major floodplain areas. Therefore, those projects would result in only minor impacts to floodplains. One exception would be the Tower Terrace Road extension, which would cross three separate floodplain areas. The crossings are perpendicular and improvements may require bridges to span the floodway at two of the crossings to minimize floodplain impacts. An Iowa DNR floodplain development permit would be required, in addition to a floodplain development permit from Linn County Planning and Development, and the municipalities containing the impacted floodplains. Therefore, it is anticipated that the Proposed Alternative and the reasonably foreseeable projects would not result in significant cumulative impacts to floodplains.

Threatened and Endangered Species and Woodlands – The Proposed Alternative would impact approximately 3.0 acres of woodland, which is suitable summer roosting habitat for the federally-threatened Northern Long-eared Bat (NLEB). Most of the vicinity contains only minimal areas of woodland, and is either developed, or used as cropland or pasture; therefore, other reasonably foreseeable projects would have only minimal impacts to wooded areas. It is anticipated that tree clearing for the Proposed Alternative and other reasonably foreseeable projects would be conducted outside the active summer roosting season, to avoid adverse impacts to the NLEB. Impacts to woodlands would require mitigation in accordance with Iowa Code 314.23, Environmental Protection, with replacement plantings; by acquisition of woodlands; or by the improvement, development, or preservation of woodland under public ownership. Therefore, it is anticipated that cumulative impacts to threatened and endangered species and woodlands from the Proposed Alternative and the reasonably foreseeable projects would be considered minor and not significant.

Farmlands – The Proposed Alternative would require the conversion of only 0.14 acres of Prime Farmland and 0.05 acres of Farmland of Statewide Importance. Other reasonably foreseeable projects would be located mainly on existing roadways and within city limit boundaries. Therefore, it is anticipated that the Proposed Alternative and the reasonably foreseeable projects would not result in significant cumulative impacts to farmlands.

Noise - The study area has experienced rising noise levels as traffic and development have gradually increased over the past decades. The Proposed Alternative is predicted to result in noise impacts at 29 noise sensitive receptors. However, noise abatement

measures were found to be not feasible and reasonable for all potential noise barrier locations assessed; therefore, noise impacts would not be considered significant. Other reasonably foreseeable (arterial) roadway projects and future residential, commercial and light industrial development will likely generate increased noise levels associated with general land use activities and higher traffic volumes. Although noise impacts may occur to some receptors immediately adjacent to these projects, the noise levels generated by these projects would likely be less than those generated by highway traffic. Therefore, the cumulative noise impacts from the Proposed Alternative and the reasonably foreseeable projects and future development would not be considered significant.

Contaminated and Regulated Materials Sites – The Proposed Alternative would result in partial impacts to four low risk properties and three moderate risk properties. Construction activities on these sites would be at the edges of the properties and would not affect the facilities containing regulated materials. Therefore, there would be a relatively low risk of contamination. The general vicinity where other reasonably foreseeable roadway projects are located does not contain Superfund sites or other sites that could be considered high risk. These projects would be mainly on existing roadway alignments and would likely have minimal impacts on properties containing contaminated and regulated materials. Standard best management practices would be used for demolition, clearing and grubbing. All known and unknown hazardous materials encountered during roadway improvements would be handled per federal, state, and local laws and regulations. Therefore, the Proposed Alternative and the reasonably foreseeable projects would have a low to moderate risk of contamination, and cumulative impacts to or from contaminated and regulated materials sites would not be considered significant.

Water Quality - The project study area is currently drained via roadside drainage swales that eventually flow to the Cedar River. The Proposed Alternative and reasonably foreseeable future development in the project area have the potential to impact water quality on a temporary basis during construction activities, and on a permanent basis after construction is complete. The addition of impervious surfaces, which will likely occur from proposed developments, will increase the amount and speed of storm water runoff as well as introduce new sources of pollutants that, if transported via streams to the Cedar River, could degrade water quality. Sedimentation resulting from exposed soil, pollutant-laden runoff resulting from parking lots and the use of pesticides and fertilizers, and an increase in runoff from additional impervious paved surfaces could result. The cities of Hiawatha, Cedar Rapids, Robins, and Linn County have adopted guidelines and ordinances that address storm water management. Obtaining the required National Pollutant Discharge Elimination System permit and following the Iowa DOT's and the cities' adopted guidelines known as Best Management Practices (BMPs), which address construction site storm water runoff and post-construction storm water management, would minimize impacts and prevent significant impacts to water quality. BMPs attempt to reduce pollutants discharged into the storm sewer systems. The water quality impacts of new construction or conversions of agricultural land to other uses could be mitigated by including vegetated buffer zones to filter pollutants around creeks and drainage ways. Therefore, it is anticipated that the Proposed Alternative and the

reasonably foreseeable projects would not result in significant cumulative impacts to water quality.

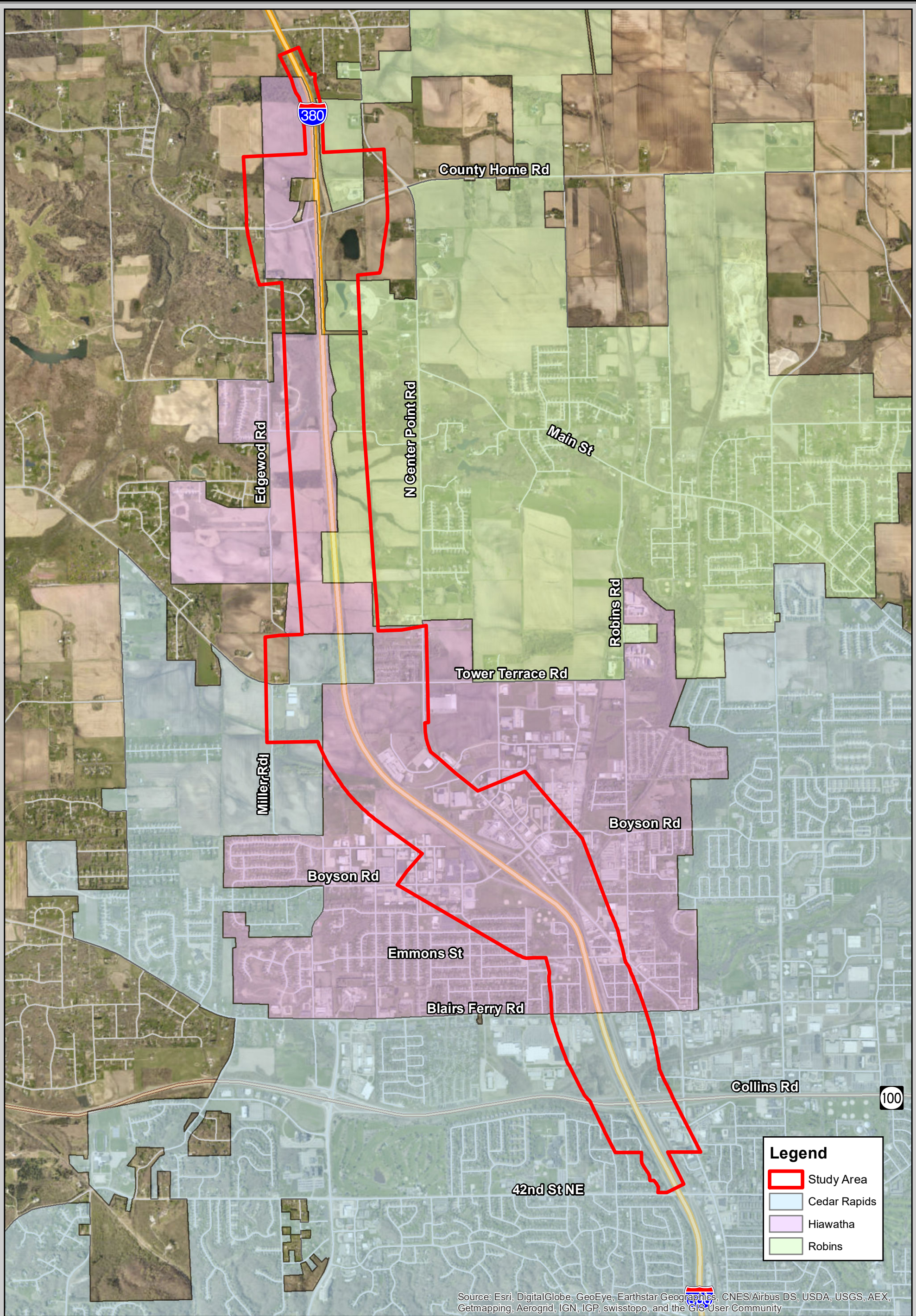
5.6 Streamlined Resource Summary

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 5-15** displays a summary of impacts for the No Build and Proposed Alternatives.

Table 5-15: Summary of Impacts

| Issue/Resource | No Build Alternative | Proposed Alternative |
|--|--|--|
| Approximate Length (mi) | 5.0 | 5.0 |
| Land Use | No impacts | Anticipated land use conversions due to development pressures |
| Community Cohesion | No impacts | No impacts |
| Churches and Schools | No impacts | One church - Partial property acquisition of 0.37 acre. |
| Environmental Justice | No impacts | No impacts |
| Economic | No impacts | No impacts |
| Parklands and Recreation Areas (Section 4(f) Properties as noted) (ac) | 0.0 | 0.0 |
| Bicycle and Pedestrian Facilities | No impacts | Addition of bicycle and pedestrian facilities along Tower Terrace Road & Boyson Rd interchange, shared-use paths and sidewalks |
| Right of Way Acquisition (ac) | 0 | Partial Acq. = 13.5 Total Acq. = 25.0 |
| Relocations / Displacements | 0 | Up to 8 mobile home pad sites and 1 residence |
| Construction and Emergency Routes | No impacts | Temporary detours will be marked during construction |
| Transportation | Congestion will worsen during future years, impacting travel times | Proposed Alternative will accommodate projected future traffic. Temporary detours may be necessary during construction. |
| Historical Sites or Districts | No impacts | No impacts |
| Archeological Sites | No impacts | No impacts |
| Wetland Impacts (ac) | 0.0 | 4.5 |
| Surface Water Impacts (Streams) (ft) | 0.0 | 2,087 |
| Surface Water Impacts (Ponds) (ac) | 0.0 | 0.01 |
| 100-year Floodplain (ac) | 0.0 | 0.7 |

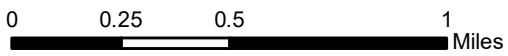
| Issue/Resource | No Build Alternative | Proposed Alternative |
|--|-----------------------------|---|
| 500-year Floodplain (ac) | 0.0 | 2.7 |
| Wildlife and Habitat | No impacts | Minimal alteration of existing wildlife habitat |
| Threatened and Endangered Species | No impacts | Proposed project is not likely to adversely affect the northern long eared bat or result in the destruction or adverse modification of federally designated critical habitat. |
| Woodlands (ac) | 0.0 | 3.03 |
| Farmlands (ac.) | 0.0 | 0.19 |
| Noise Impacts (Number of Receptors) | 22 (Existing Condition) | 30 |
| Contaminated and Regulated Materials Sites | No impacts | Partial impacts to four low risk properties and three moderate risk properties |
| Visual | No impacts | No impacts |
| Utilities | No impacts | No impacts |



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS-User Community



**I-380 Improvements
in Linn County, IA
Environmental
Assessment**

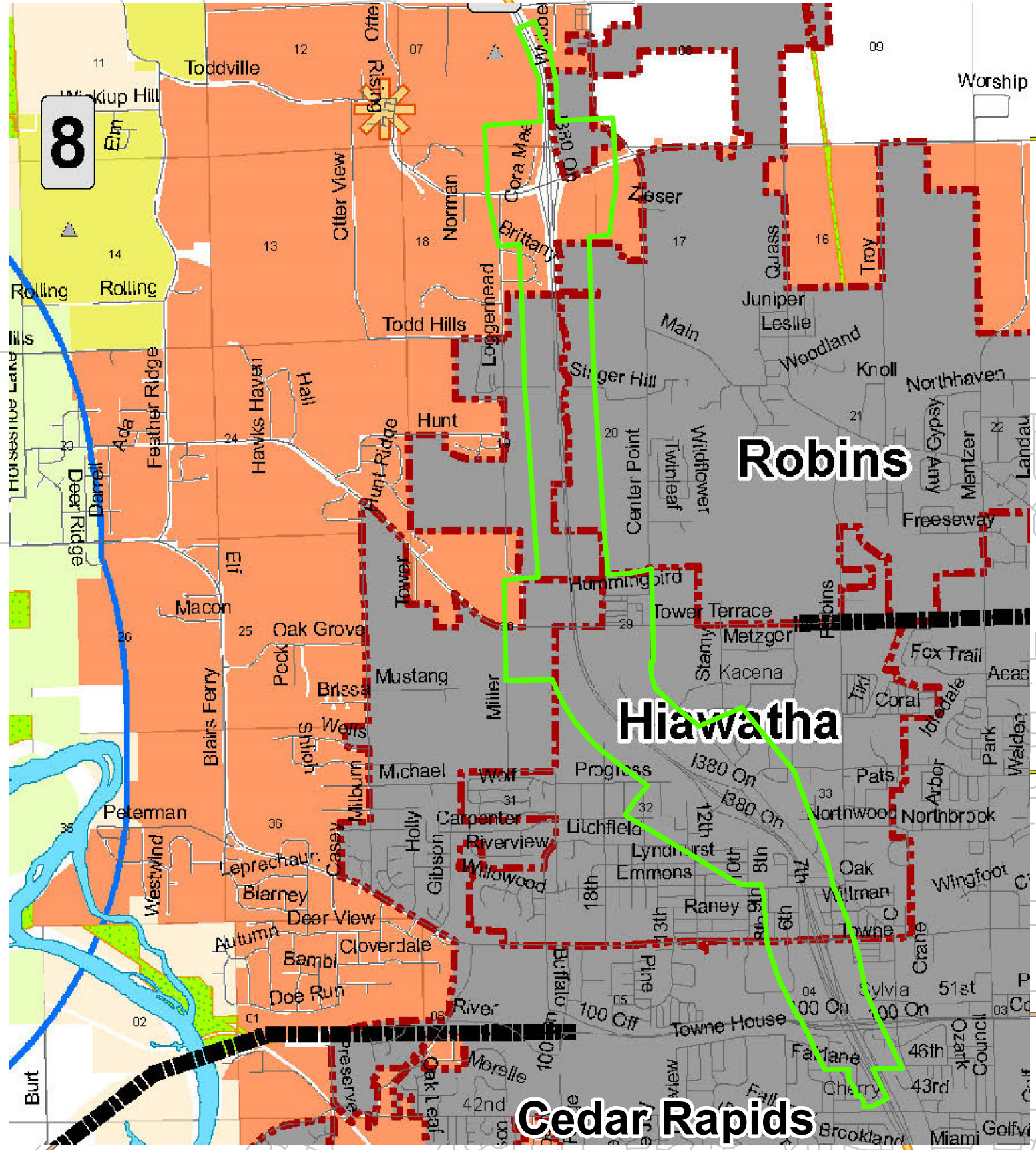


**Exhibit 5-1
Jurisdictions/
City Boundaries**

June 1, 2018



I-380 Improvements
in Linn County, IA
Environmental
Assessment



Legend

- AA Agricultural Area
- CNRA Critical Natural Resource Area
- MUSA Metro Urban Service Area
- NMUSA Non Metro Urban Service Area
- RRD2 Rural Residential 2 Acre Density
- RRD3 Rural Residential 3 Acre Density
- County or City Lands
- CCSG Plan Adopted

Legend

- Study Area



0 0.15 0.3 0.6 Miles

Exhibit 5-2
Future Land Use
Linn County

June 1, 2018



I-380 Improvements in Linn County, IA Environmental Assessment

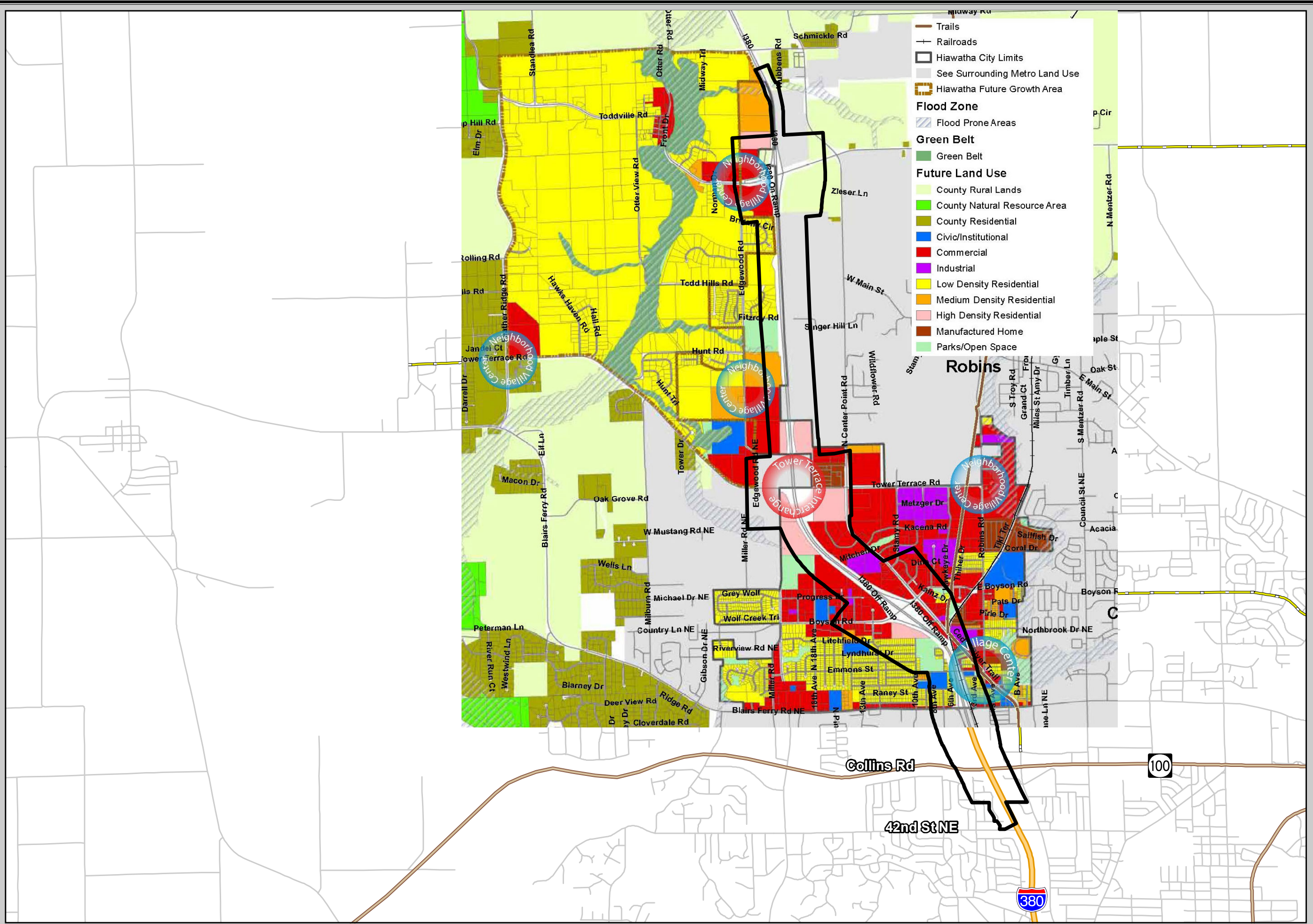
Legend

Study Area



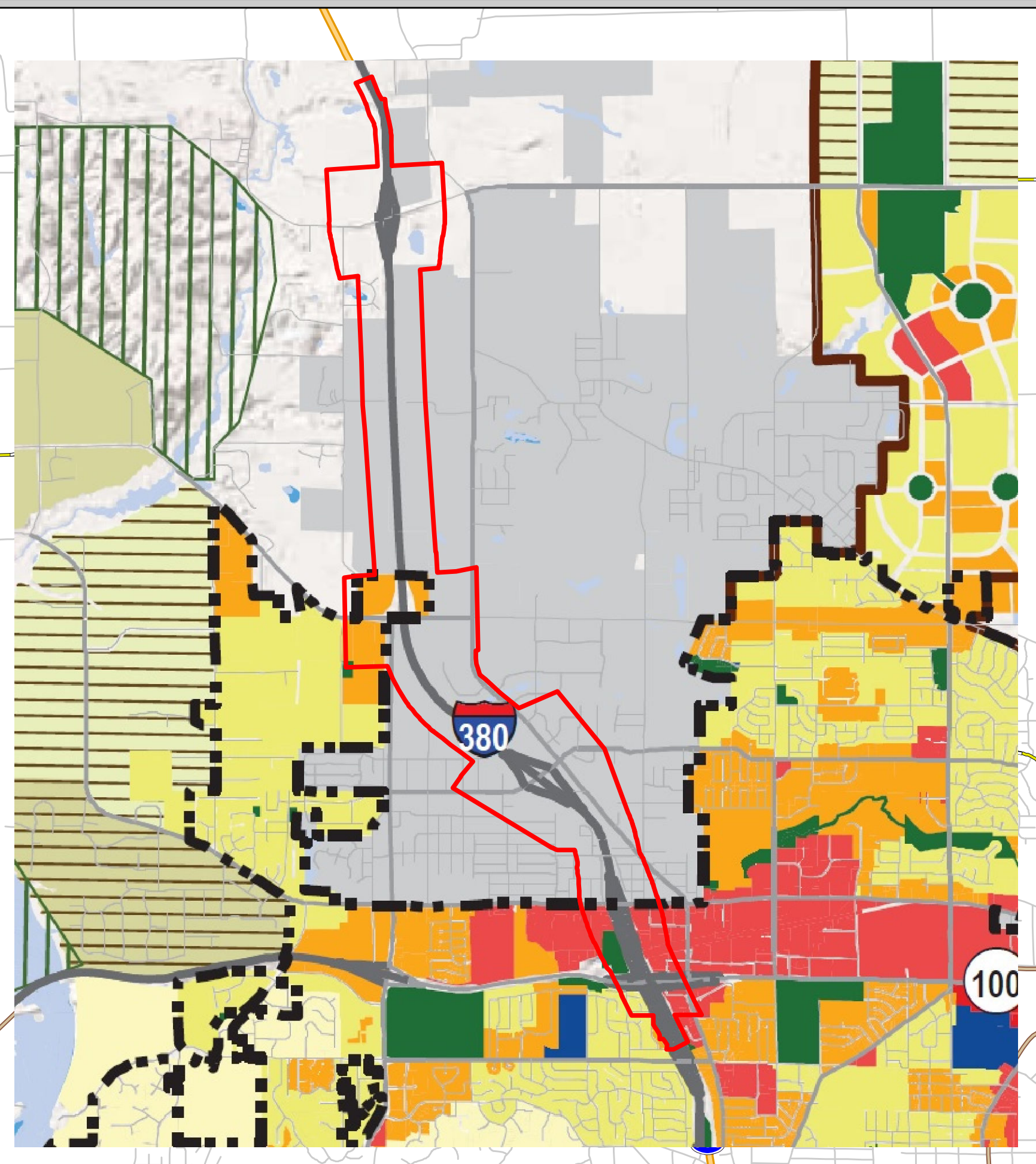
Exhibit 5-3 Future Land Use City of Hiawatha







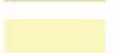







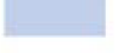
June 1, 2018



Due to the dynamic nature of the Future Land Use Map, all instances of this map shown in this document are intended to be representative. The official Future Land Use Map shall be maintained by the City and made available online or upon request.


Map available online. Visit: www.cedar-rapids.org/government/departments/community-development

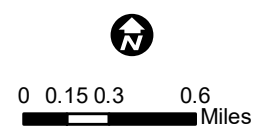


- | | |
|--|--|
|  Agriculture |  Urban Reserve |
|  Open Space |  Environmental Conservation |
|  Rural |  Flood Control Study Area |
|  Urban Large Lot | |
|  Urban Low-Intensity | |
|  Urban Medium-Intensity | |
|  Urban High-Intensity | |
|  Commercial | |
|  Downtown | |
|  Industrial | |
|  Employment Reserve | |
|  Public/Semi-Public | |



**I-380 Improvements
in Linn County, IA
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Assessment**

Legend
 Study Area



**Exhibit 5-4
Future Land Use
City of
Cedar Rapids**

June 1, 2018



I-380 Improvements
in Linn County, IA
Environmental
Assessment

Legend

Study Area

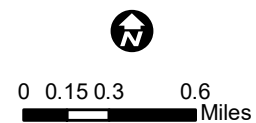
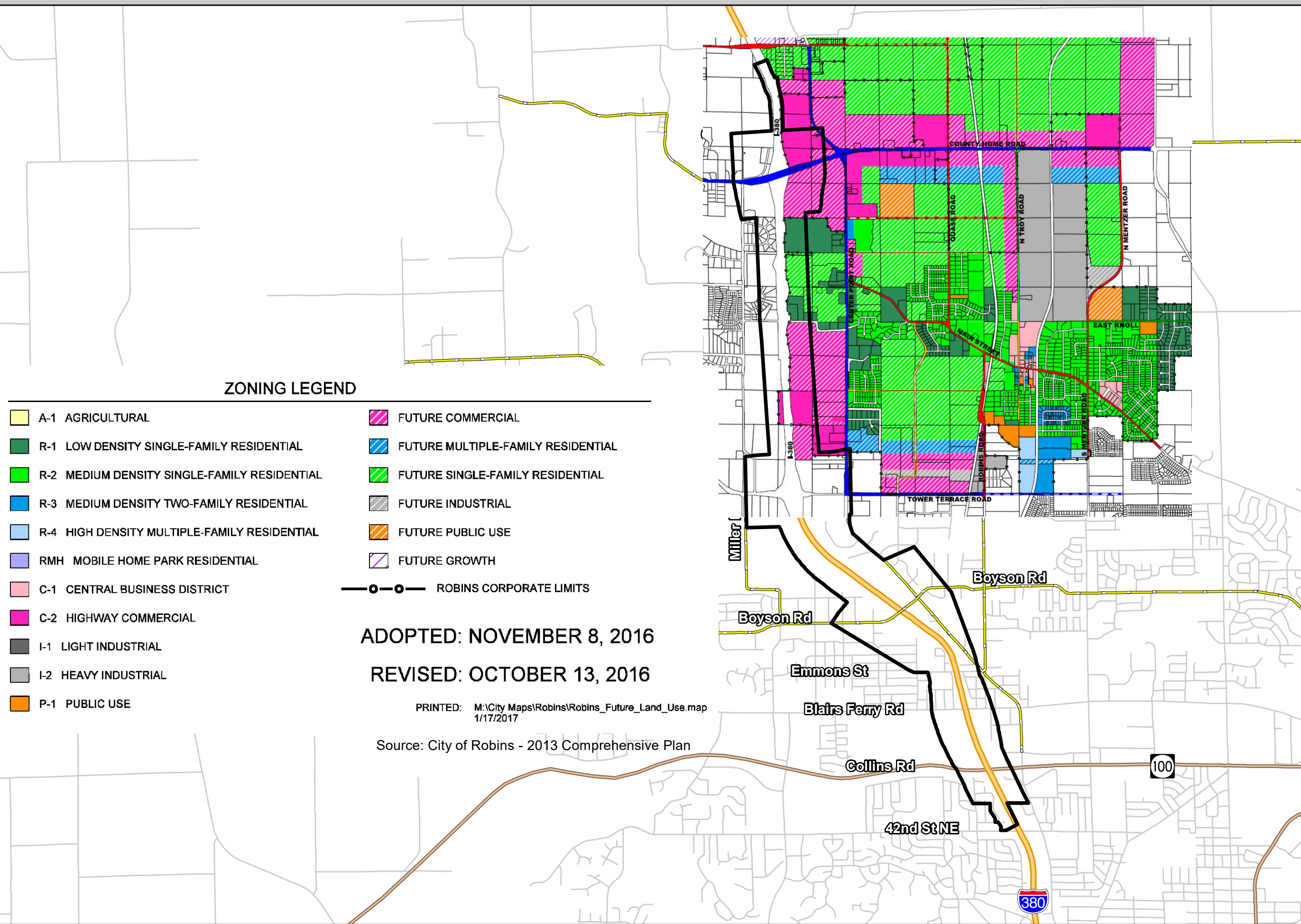


Exhibit 5-5
Future Land Use
City of Robins

June 1, 2018



ZONING LEGEND

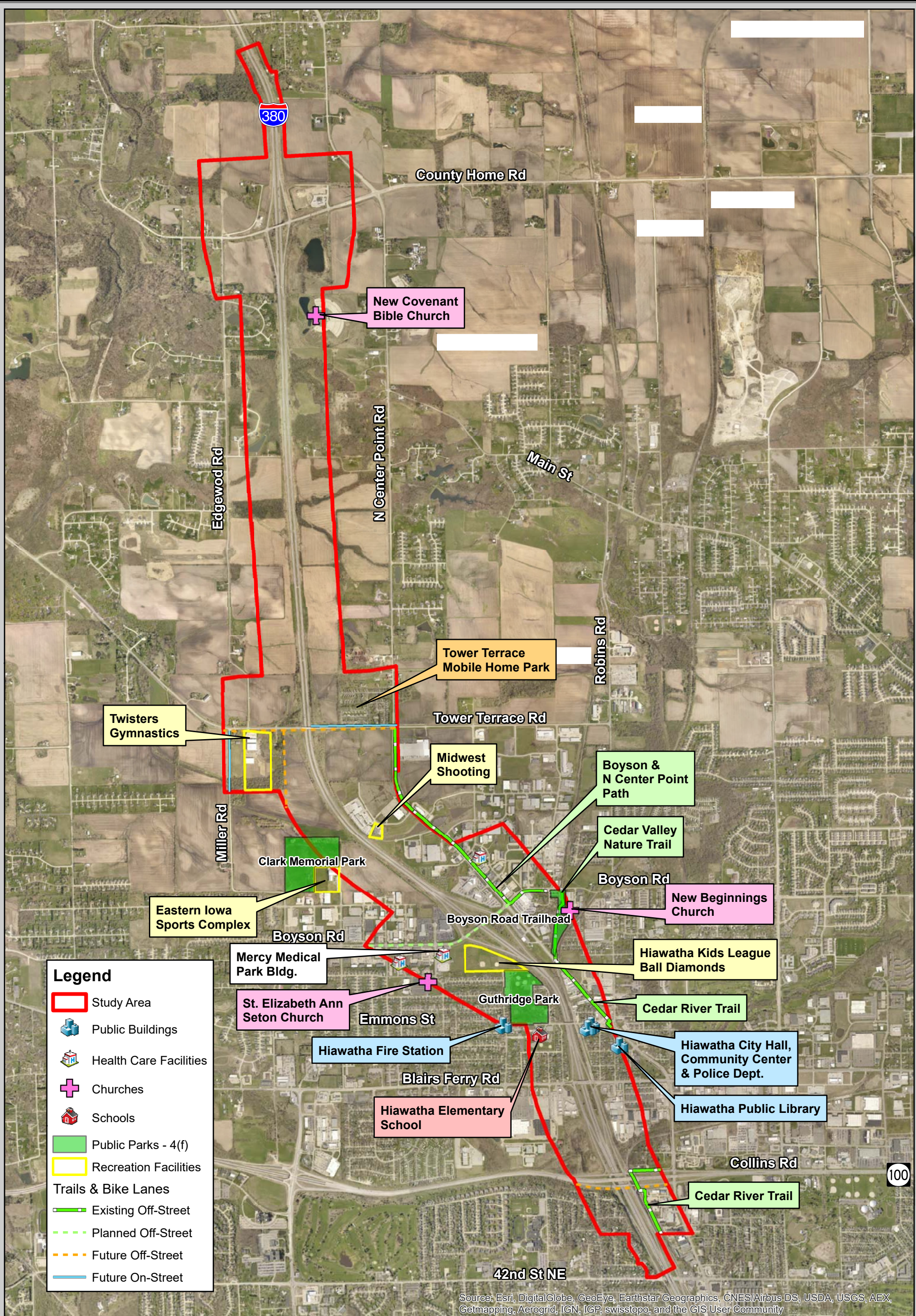
- A-1 AGRICULTURAL
- R-1 LOW DENSITY SINGLE-FAMILY RESIDENTIAL
- R-2 MEDIUM DENSITY SINGLE-FAMILY RESIDENTIAL
- R-3 MEDIUM DENSITY TWO-FAMILY RESIDENTIAL
- R-4 HIGH DENSITY MULTIPLE-FAMILY RESIDENTIAL
- RMH MOBILE HOME PARK RESIDENTIAL
- C-1 CENTRAL BUSINESS DISTRICT
- C-2 HIGHWAY COMMERCIAL
- I-1 LIGHT INDUSTRIAL
- I-2 HEAVY INDUSTRIAL
- P-1 PUBLIC USE
- FUTURE COMMERCIAL
- FUTURE MULTIPLE-FAMILY RESIDENTIAL
- FUTURE SINGLE-FAMILY RESIDENTIAL
- FUTURE INDUSTRIAL
- FUTURE PUBLIC USE
- FUTURE GROWTH
- ROBINS CORPORATE LIMITS

ADOPTED: NOVEMBER 8, 2016

REVISED: OCTOBER 13, 2016

PRINTED: M:\City Maps\Robins\Robins_Future_Land_Use.map
1/17/2017

Source: City of Robins - 2013 Comprehensive Plan



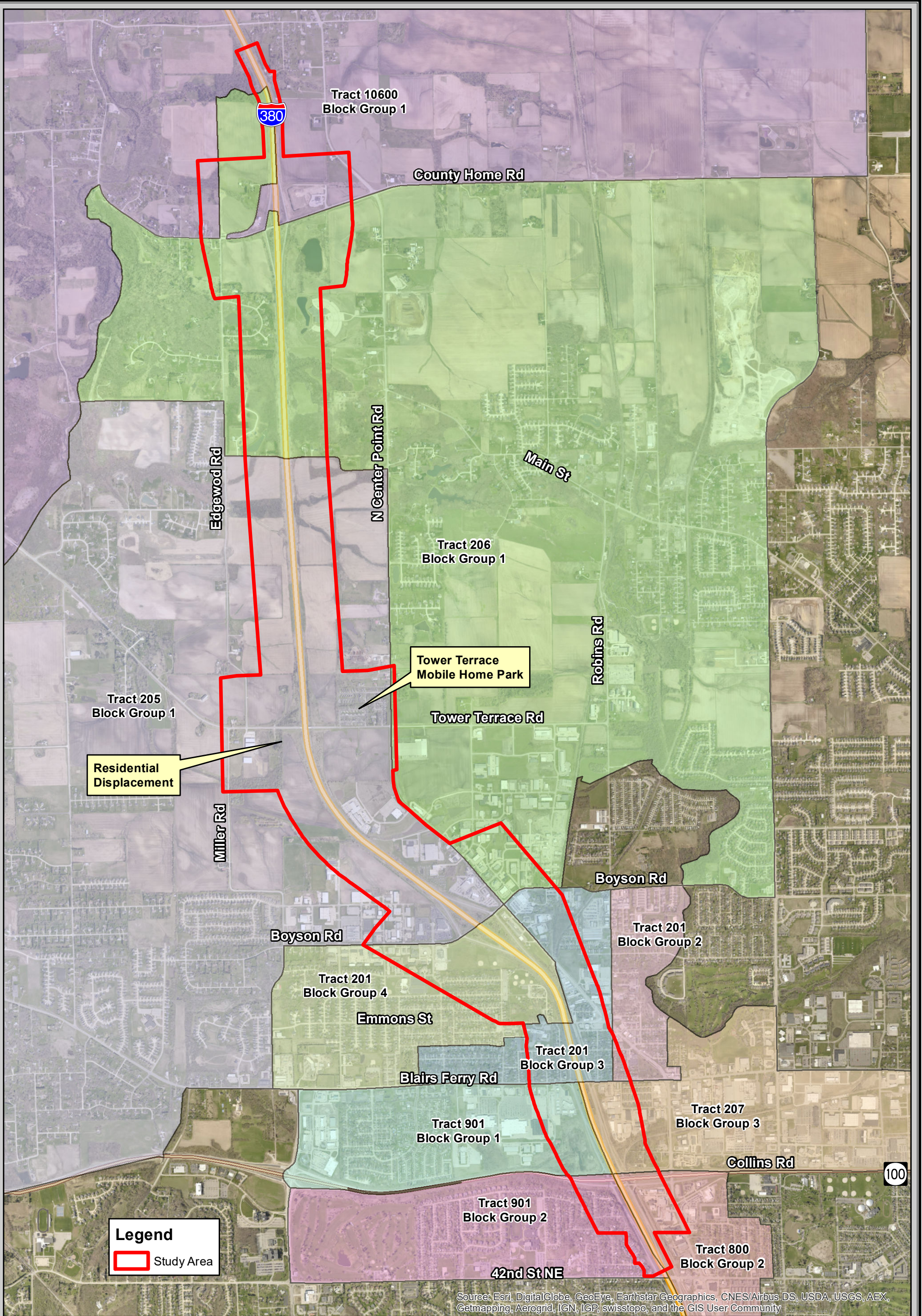
**I-380 Improvements
in Linn County, IA
Environmental
Assessment**



0 0.25 0.5 1 Miles

**Exhibit 5-6
Community & Public
Facilities**

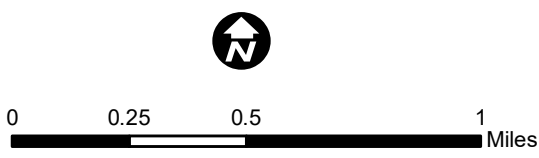
July 16, 2018



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

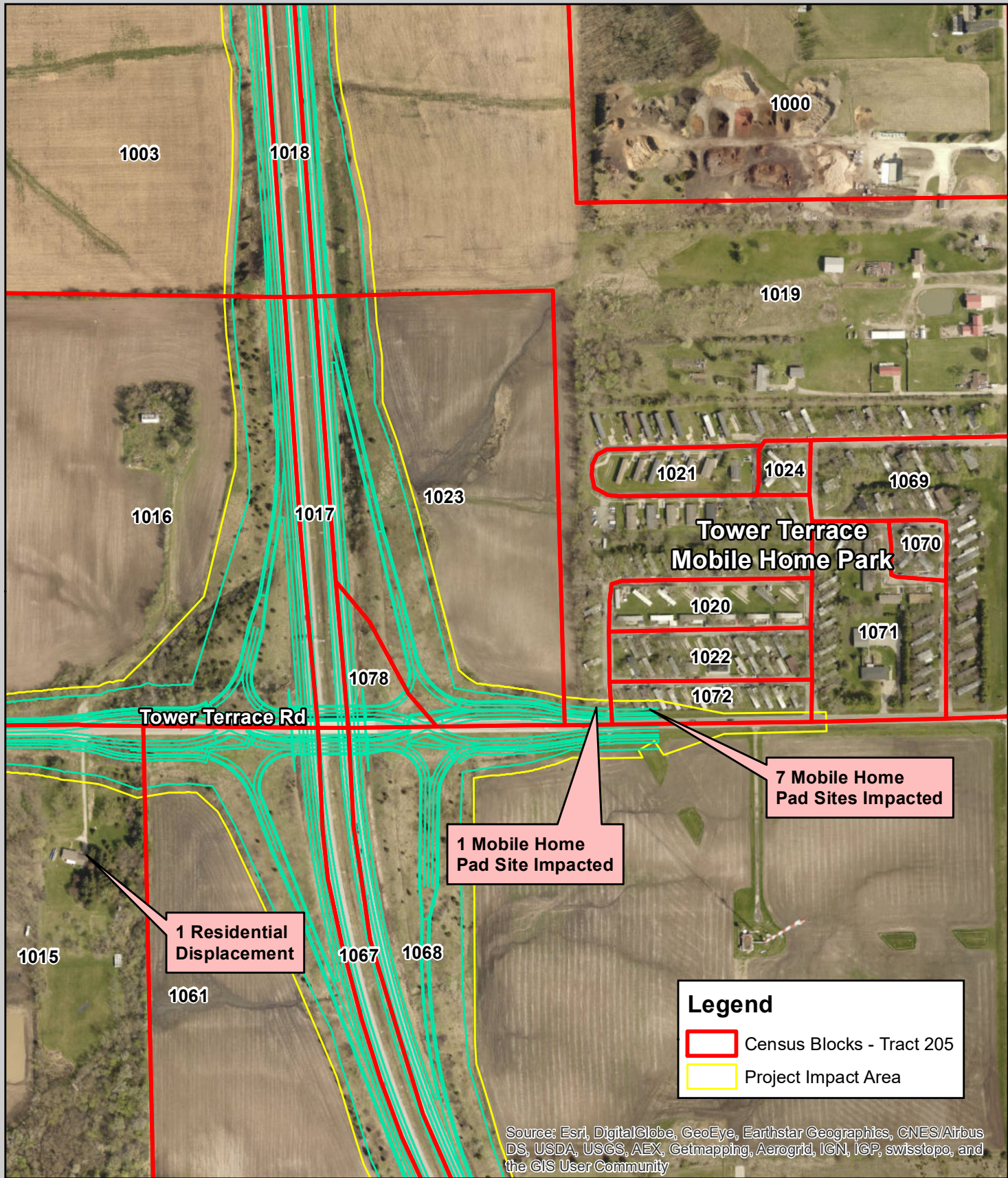


**I-380 Improvements
in Linn County, IA
Environmental
Assessment**



**Exhibit 5-7
EJ - Census
Block Groups**

June 1, 2018



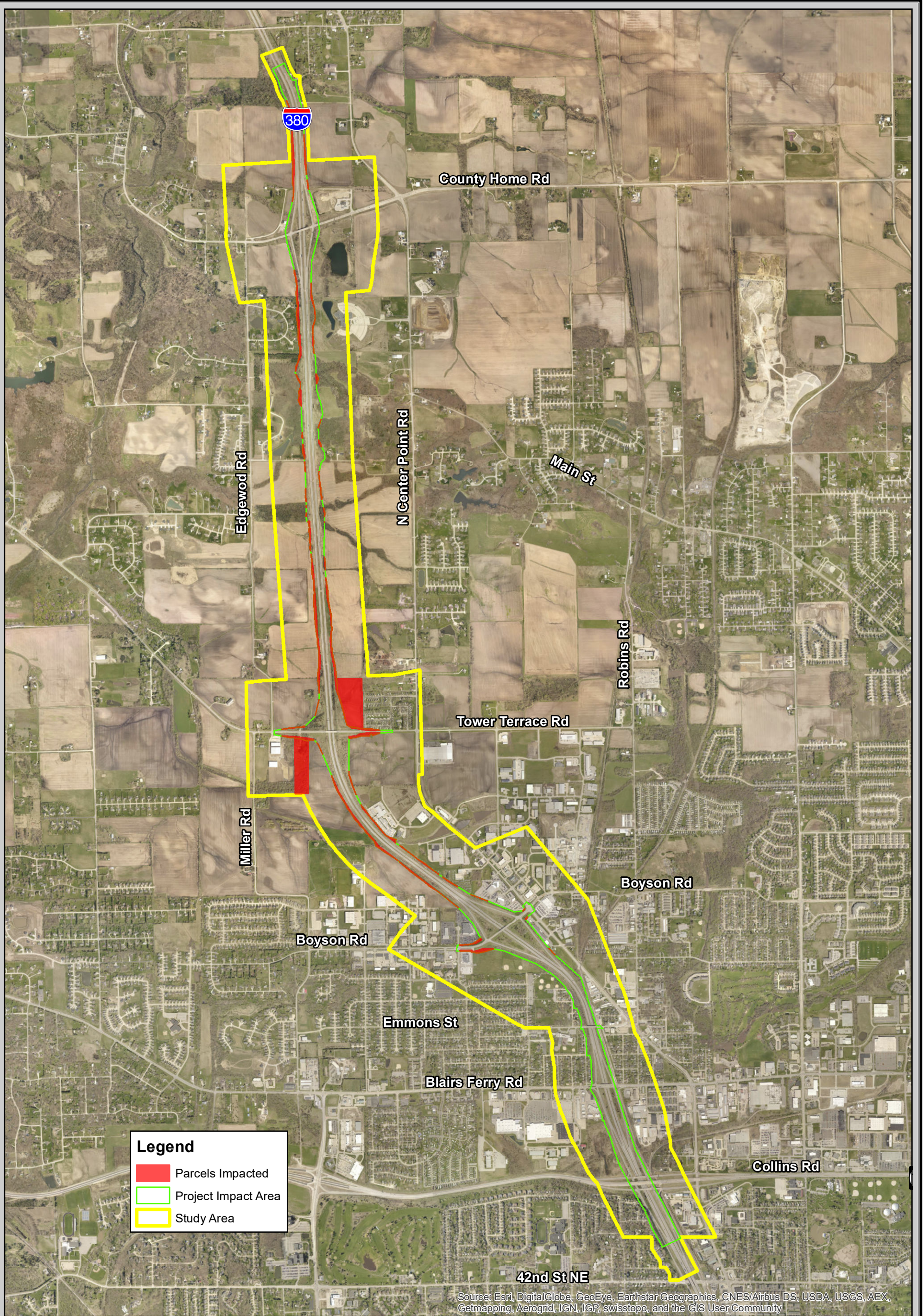
**I-380 Improvements
 in Linn County, IA
 Environmental
 Assessment**



0 100 200 400
 Feet

**Exhibit 5-8
 Census Blocks
 at Residential
 Displacements**

June 1, 2018



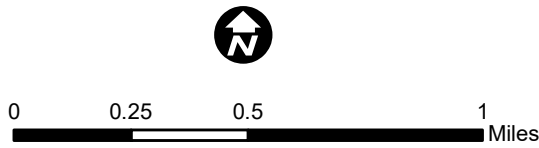
Legend

- Parcels Impacted
- Project Impact Area
- Study Area

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

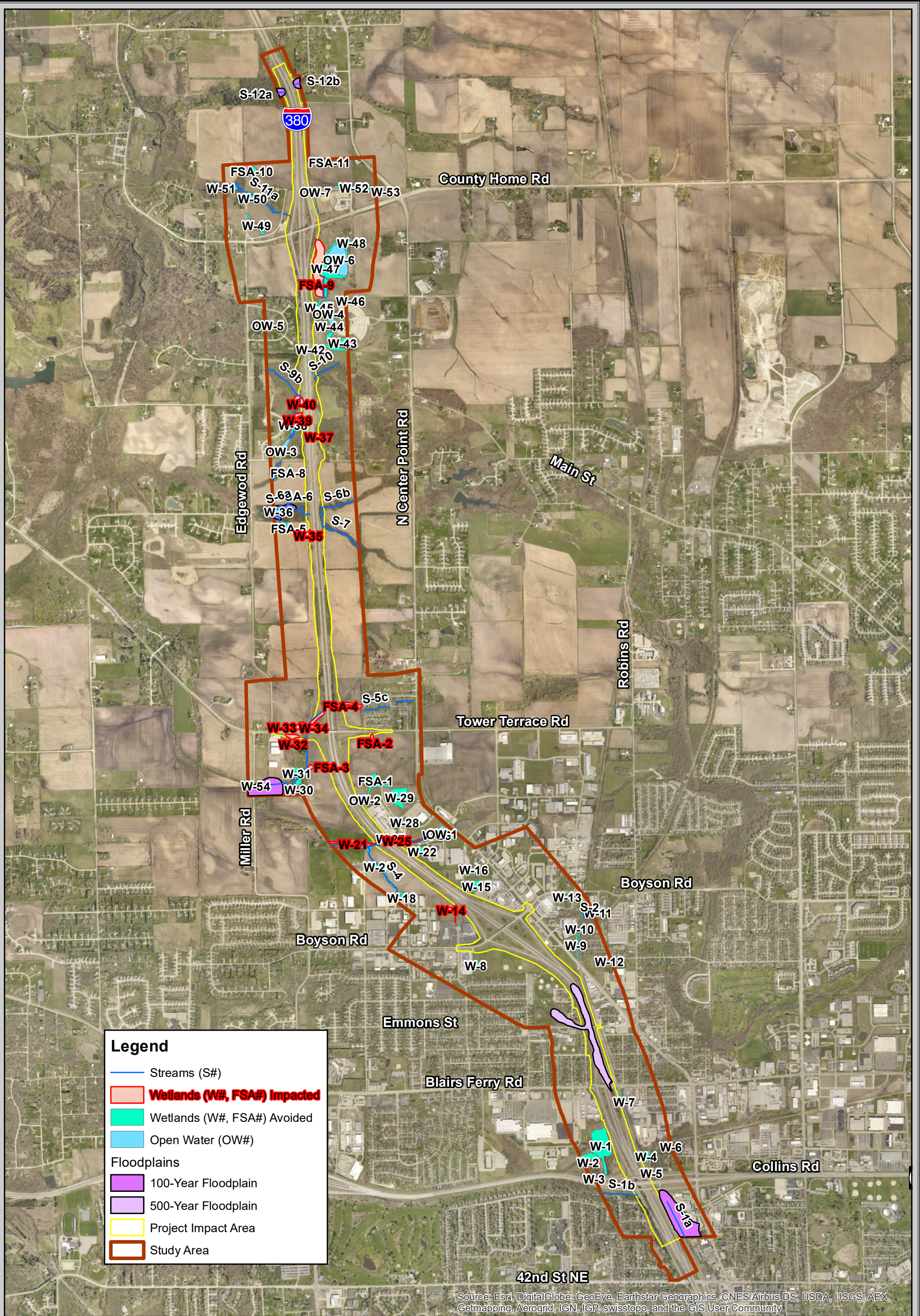


**I-380 Improvements
in Linn County, IA
Environmental
Assessment**



**Exhibit 5-9
Anticipated
Right of Way
Acquisition**

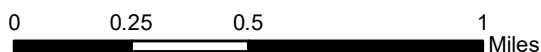
June 1, 2018



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

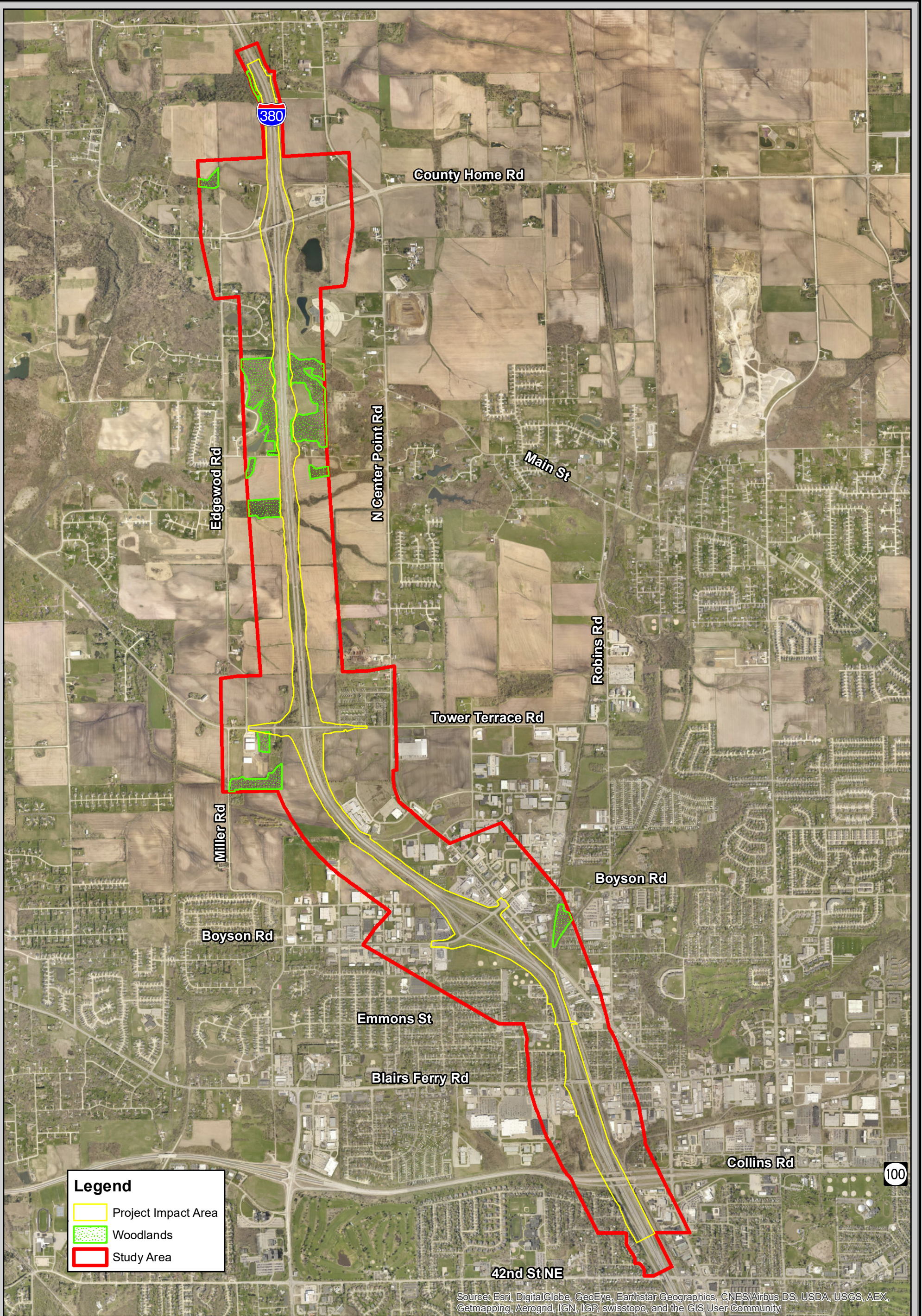


**I-380 Improvements
in Linn County, IA
Environmental
Assessment**



**Exhibit 5-10
Water Resources
& Floodplains**

July 16, 2018



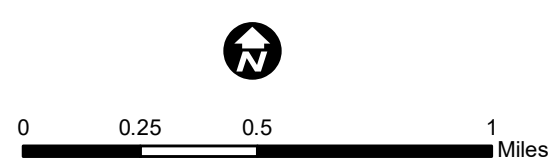
Legend

- Project Impact Area
- Woodlands
- Study Area

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

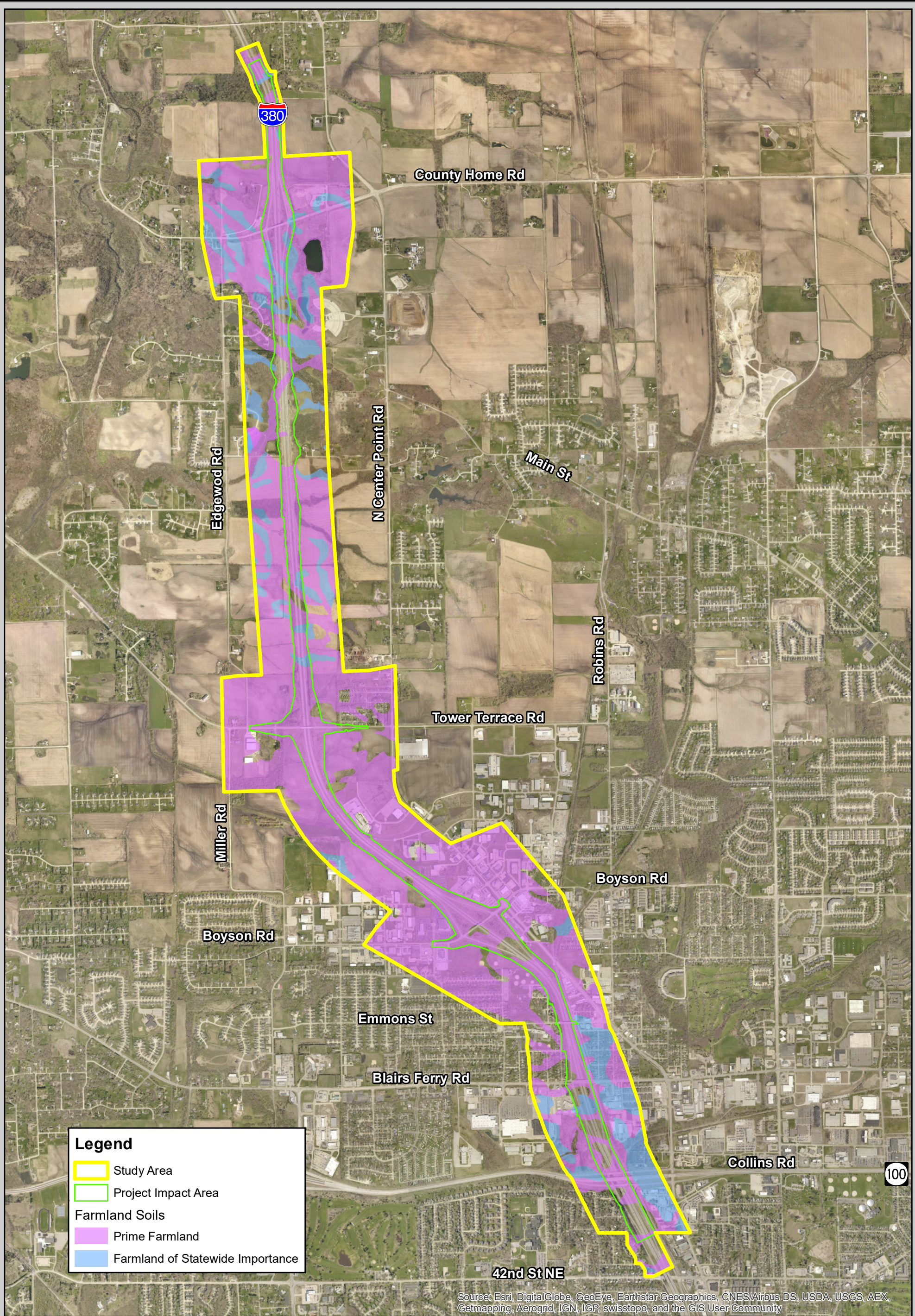


**I-380 Improvements
in Linn County, IA
Environmental
Assessment**



**Exhibit 5-11
Woodlands**

June 1, 2018



Legend

- Study Area
- Project Impact Area

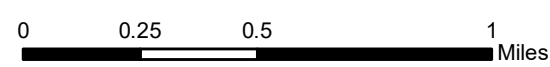
Farmland Soils

- Prime Farmland
- Farmland of Statewide Importance

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

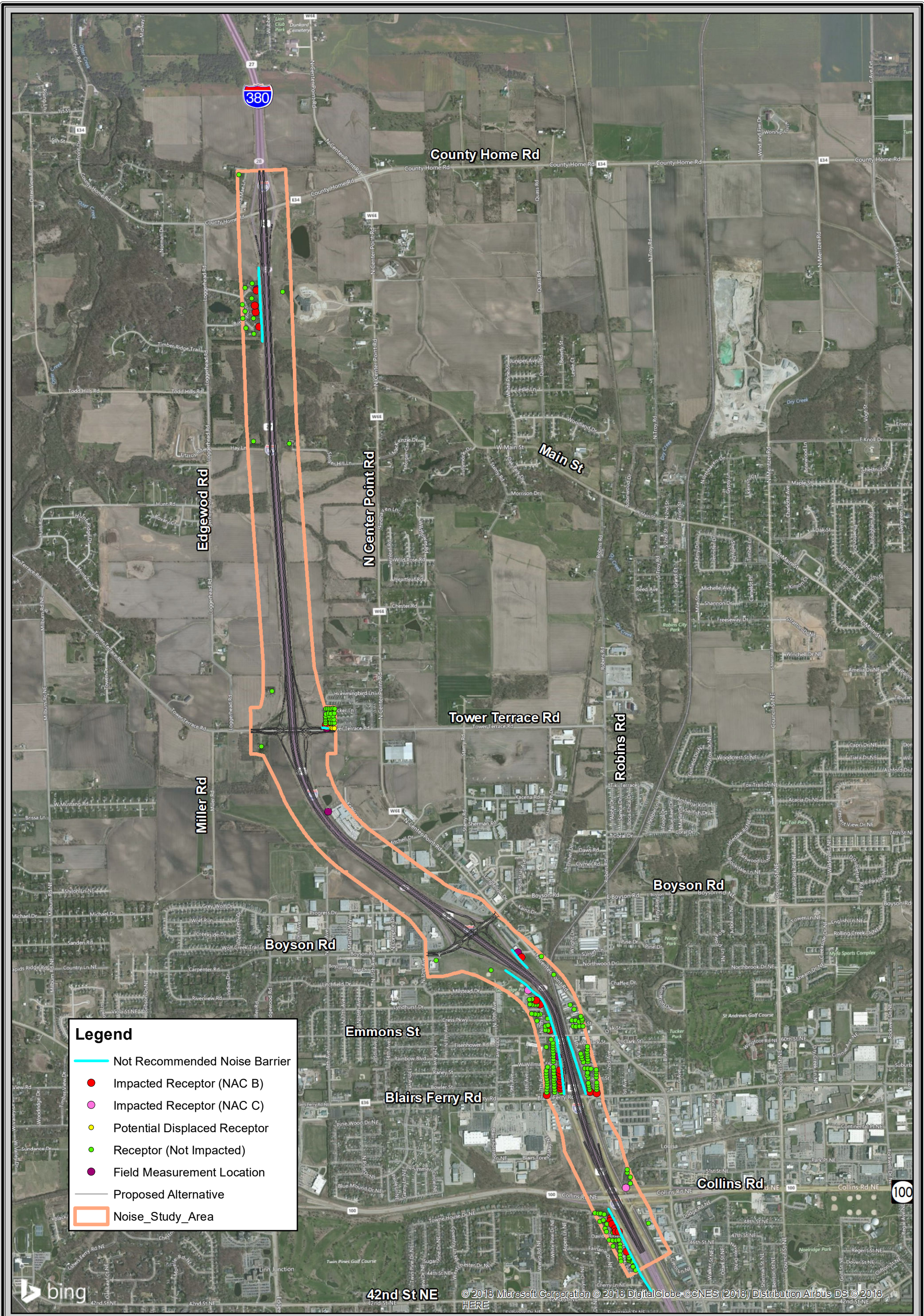


**I-380 Improvements
in Linn County, IA
Environmental
Assessment**



**Exhibit 5-12
Farmland Soils**

June 1, 2018

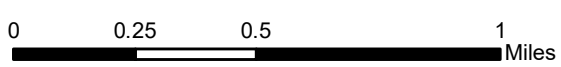


Legend

- Not Recommended Noise Barrier
- Impacted Receptor (NAC B)
- Impacted Receptor (NAC C)
- Potential Displaced Receptor
- Receptor (Not Impacted)
- Field Measurement Location
- Proposed Alternative
- Noise_Study_Area

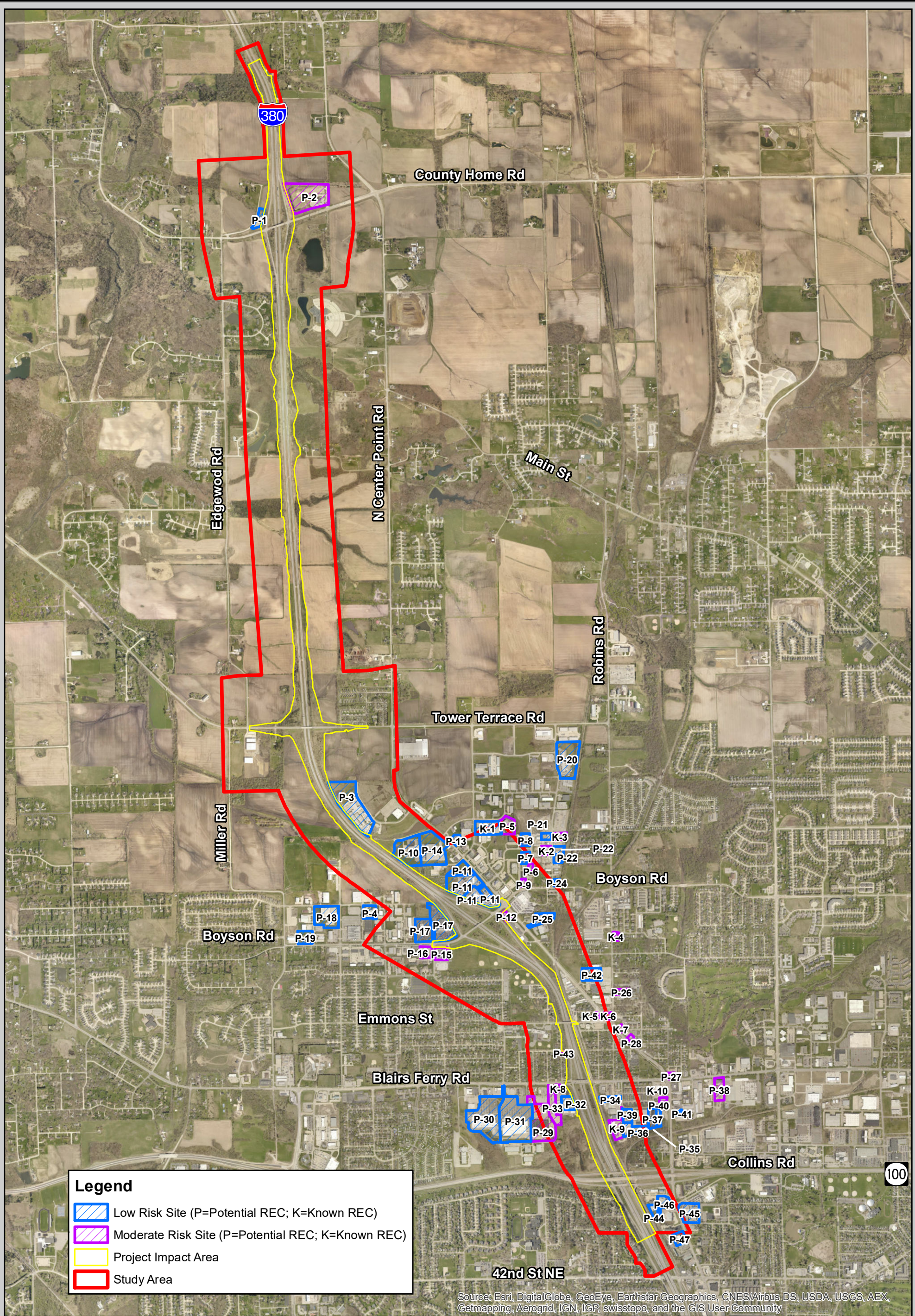


**I-380 Improvements
in Linn County, IA
Environmental
Assessment**



**Exhibit 5-13
Noise
Impacts**

July 9, 2018



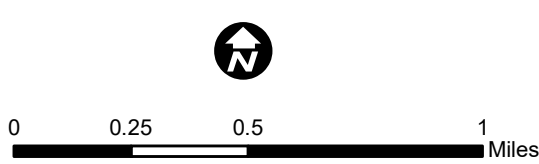
Legend

- Low Risk Site (P=Potential REC; K=Known REC)
- Moderate Risk Site (P=Potential REC; K=Known REC)
- Project Impact Area
- Study Area

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



**I-380 Improvements
in Linn County, IA
Environmental
Assessment**



**Exhibit 5-14
Contaminated &
Regulated
Materials Sites**

July 16, 2018

6.0 Disposition

This 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 will 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.

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. Portions of this project are currently programmed in the fiscally constrained portion of The Corridor MPO's Long Range Transportation Plan (LRTP) for a construction timeframe of 2016-2020. Similarly, construction of portions of this project are currently programmed in the State of Iowa's Transportation Improvement Program (STIP).

7.0 Comments and Coordination

7.1 Agency and Tribal Coordination

Agency Coordination

Federal, state, and local agencies were contacted by letter and email in October and November 2016 as part of the early coordination process. The letter and email asked each agency to respond with any comments regarding the I-380 improvements project in Linn County. The list of agencies contacted and their response date are displayed below in **Table 7-1**. Agency early coordination response letters and emails can be found in **Appendix B**.

Table 7-1: Agency Early Coordination

| Agency Type | Agency | Date of Response |
|--------------------|---|--------------------------|
| Federal | U.S. Department of Transportation - Federal Aviation Administration | -- |
| Federal | U.S. Department of Transportation - Federal Railroad Administration | -- |
| Federal | U.S. Department of Transportation - Federal Transit Administration | -- |
| Federal | U.S. Department of the Interior – National Park Service | -- |
| Federal | U.S. Environmental Protection Agency | 12/7/2016 |
| Federal | U.S. Department of Agriculture – Natural Resources Conservation Service | 11/30/2016, 12/5/2016 |
| Federal | U.S. Coast Guard | 11/17/2016 |
| Federal | U.S. Army Corps of Engineers, Rock Island District | 12/7/2016 |
| Federal | U.S. Department of the Interior – U.S. Fish & Wildlife Service | 11/30/2016 |
| Federal | U.S. Department of the Interior – Environmental Policy & Compliance | -- |
| Federal | Federal Emergency Management Agency | -- |
| Federal | U.S. Department of Housing and Urban Development | -- |
| State | Iowa DNR – Environmental Services | 11/30/2016 |
| State | Iowa DNR – Conservation and Recreation Division | 11/18/2016 |
| State | Iowa DNR – Flood Plain Management | -- |
| State | Iowa DNR – Budget & Finance Bureau | 02/27/2017 |
| State | Iowa Department of Agriculture and Land Stewardship | -- |
| State | State Historical Society of Iowa (SHPO) | -- |
| Local | Linn County | 11/29/2016 |
| Local | Corridor MPO - Cedar Rapids Community Development & Planning | -- |
| Local | City of Hiawatha | 11/29/2016 |
| Local | City of Cedar Rapids | -- |
| Local | Cedar Rapids Metro Economic Alliance | -- |
| Local | City of Marion | -- |
| Local | City of Robins | -- |

Tribal Coordination

Coordination with the following tribes was conducted via the Iowa DOT Tribal Notification Form on November 22, 2016:

- Flandreau Santee Sioux
- Iowa Tribe of Kansas and Nebraska
- Iowa Tribe of Oklahoma
- Miami Tribe 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
- Prairie Island Indian Community
- Sac and Fox Nation of Oklahoma
- Sac and Fox Tribe of the Mississippi in Iowa
- Santee Sioux Nation
- Sisseton - Wahpeton Oyate
- Spirit Lake Tribe
- Three Affiliated Tribes - Mandan, Hidatsa & Arikara
- Upper Sioux Community
- Yankton Sioux Tribe

The Miami Tribe of Oklahoma was the only tribe providing a response regarding the proposed project. The email response, along with an example of the tribal notification form sent to the tribes is available in **Appendix C**.

7.2 Public Involvement

As part of the ongoing NEPA process, two public information meetings were conducted to provide opportunities for the public to view project progress and provide input. The first public information meeting was held on October 12, 2016 at the Hiawatha City Hall. One hundred twenty-two (122) people attended and had the opportunity to learn about the project process, provide input and ask questions directly to Iowa DOT representatives, and to provide written comments. Project information available at the meeting included study process and background materials, information on past studies conducted in the corridor, the purpose and need for the project, and exhibit boards depicting alternative interchange concepts for Tower Terrace Road and Boyson Road.

Public information meeting attendees were provided with a project fact sheet that summarized the information available at the meeting, as well as a comment form. The public information meeting was publicized through advertisements in the Cedar Rapids Gazette newspaper, the Marion Times newspaper, and on the Iowa DOT website where online comments could be submitted. In addition, meeting invitations

were mailed or emailed to stakeholders, business owners, and property owners within and adjacent to the study area. Letter invitations were also sent to tribal representatives.

The second public meeting was held on November 16, 2017 at the Hiawatha City Hall. Seventy-eight (78) people attended and were again presented information regarding the project process and schedule. Additional information presented included the alternative interchange concepts under consideration for Tower Terrace Road and Boyson Road, as well as proposed capacity improvements on the I-380 mainline. Attendees were given the opportunity to engage directly with Iowa DOT representatives to ask questions and provide comments. Attendees could also provide written comments via a comment form. Project fact sheets were again provided to attendees to summarize the available information. The informational meeting was publicized through advertisements in the Cedar Rapids Gazette newspaper, the Marion Times newspaper, the Cedar Rapids Penny Saver publication, and on the Iowa DOT website where online comments could be submitted. In addition, meeting invitations were mailed or emailed to public officials and stakeholders, business owners, and property owners within and adjacent to the study area. Letter invitations were also sent to tribal representatives.

Comments and Concerns – People attending the first and second public information meetings, or those sending comments through letters or emails were overall supportive of the project and wanted to see an interchange built at Tower Terrace Road as soon as possible. Additional comments and concerns were as follows:

- Traffic noise – Can noise walls be built along I-380?
- Impacts to Mobile Home Park on Tower Terrace Rd
- Existing interchange congestion – Fix access problems and improve ramps
- Boyson interchange improvements are needed
- Add lanes to I-380 between Boyson Rd & Blairs Ferry Rd
- Blairs Ferry Rd interchange needs improvements
- Alleviate congestion at Center Point Rd
- Add lighting at Boyson Rd and Tower Terrace Rd
- Add bike trails across bridges/interchanges (caged for safety)
- Provide bicycle access - Add bicycle lanes on side roads
- Some opposed to Diverging Diamond Interchanges (DDI)
- Questions about how to drive through a DDI
- Prefer diamond interchange at Tower Terrace Rd – less property impacts
- Provide access to private property adjacent to Tower Terrace interchange
- Tower Terrace Rd gets very congested for Twisters Gymnastic events
- Tower Terrace interchange will put too much traffic on Tower Terrace Rd
- Concerned about large study area and apparent displacements

- Improve two other north/south arterials to alleviate I-380 traffic
- What improvements are planned at County Home Rd interchange

A third public information meeting was held on February 7, 2018 specifically for residents at the Tower Terrace Mobile Home Park to discuss the Interstate 380 study and the new proposed interchange at Tower Terrace Road, which is adjacent to the mobile home park. Twenty-nine (29) people attended and had the opportunity to learn about the alternative interchange concepts being considered at Tower Terrace Road, provide input and ask questions directly to Iowa DOT representatives, and to provide written comments. Project information available at the meeting included a project fact sheet that summarized the study process and background information, the purpose and need for the project, the proposed schedule, and exhibit boards depicting alternative interchange concepts for Tower Terrace Road, as well as those for Boyson Road. Public information meeting attendees were also provided with a comment form. The public information meeting was also publicized on the Iowa DOT website where online comments could be submitted.

A final public comment period and NEPA public hearing are anticipated to occur in the third quarter of 2018. Opportunities to comment on the proposed project and its environmental effects will be available at that time.

APPENDIX A

STREAMLINED RESOURCE SUMMARY

SOCIOECONOMIC IMPACTS SECTION:

| | |
|--|---|
| Land Use | |
| Evaluation: | Resource is discussed in Section 5 of the Resource Analysis |
| Method of Evaluation: | Field Review/Field Study |
| Completed by and Date: | Consultant, 12/11/2017 |
| Community Cohesion | |
| Evaluation: | Resource is discussed in Section 5 of the Resource Analysis |
| Method of Evaluation: | Other |
| Completed by and Date: | Consultant, 1/15/2018 |
| Churches and Schools | |
| Evaluation: | Resource is discussed in Section 5 of the Resource Analysis |
| Method of Evaluation: | Database |
| Completed by and Date: | Consultant, 12/11/2017 |
| Environmental Justice | |
| Evaluation: | Resource is discussed in Section 5 of the Resource Analysis |
| Method of Evaluation: | Database |
| Completed by and Date: | Consultant, 2/10/2018 |
| Economic | |
| Evaluation: | Resource is discussed in Section 5 of the Resource Analysis |
| Method of Evaluation: | Database |
| Completed by and Date: | Consultant, 5/25/2018 |
| Joint Development | |
| Evaluation: | Resource is not in the study area |
| Method of Evaluation: | Other |
| Completed by and Date: | Consultant, 12/11/2017 |
| Parklands and Recreational Areas | |
| Evaluation: | Resource is discussed in Section 5 of the Resource Analysis |
| Method of Evaluation: | Database |
| Completed by and Date: | Consultant, 2/16/2018 |
| Bicycle and Pedestrian Facilities | |
| Evaluation: | Resource is discussed in Section 5 of the Resource Analysis |
| Method of Evaluation: | Database |
| Completed by and Date: | Consultant, 4/26/2018 |
| Right-of-Way | |
| Evaluation: | Resource is discussed in Section 5 of the Resource Analysis |
| Method of Evaluation: | Database |
| Completed by and Date: | IA DOT NEPA Manager, 4/18/2018 |
| Relocation Potential | |
| Evaluation: | Resource is discussed in Section 5 of the Resource Analysis |
| Method of Evaluation: | Database |
| Completed by and Date: | Consultant, 5/25/2018 |

SOCIOECONOMIC IMPACTS SECTION Continued:

| Construction and Emergency Routes | |
|--|---|
| Evaluation: | Resource is discussed in Section 5 of the Resource Analysis |
| Method of Evaluation: | Database |
| Completed by and Date: | Consultant, 7/24/2017 |
| Transportation | |
| Evaluation: | Resource is discussed in Section 5 of the Resource Analysis |
| Method of Evaluation: | Database |
| Completed by and Date: | Consultant, 1/23/2018 |

CULTURAL IMPACTS SECTION:

| Historic Sites or Districts | |
|------------------------------------|---|
| Evaluation: | Resource is discussed in Section 5 of the Resource Analysis |
| Method of Evaluation: | Report |
| Completed by and Date: | IA DOT NEPA Manager, 6/18/2018 |
| Archaeological Sites | |
| Evaluation: | Resource is discussed in Section 5 of the Resource Analysis |
| Method of Evaluation: | Field Review/Field Study |
| Completed by and Date: | IA DOT NEPA Manager, 6/18/2018 |
| Cemeteries | |
| Evaluation: | Resource is not in the study area |
| Method of Evaluation: | Database |
| Completed by and Date: | Consultant, 12/11/2017 |

NATURAL ENVIRONMENT IMPACTS SECTION:

| | |
|--|---|
| Wetlands | |
| Evaluation: | Resource is discussed in Section 5 of the Resource Analysis |
| Method of Evaluation: | Field Review/Field Study |
| Completed by and Date: | IA DOT NEPA Manager, 5/14/2018 |
| Surface Waters and Water Quality | |
| Evaluation: | Resource is discussed in Section 5 of the Resource Analysis |
| Method of Evaluation: | Field Review/Field Study |
| Completed by and Date: | IA DOT NEPA Manager, 5/14/2018 |
| Wild and Scenic Rivers | |
| Evaluation: | Resource is not in the study area |
| Method of Evaluation: | Field Review/Field Study |
| Completed by and Date: | IA DOT NEPA Manager, 5/14/2018 |
| Floodplains | |
| Evaluation: | Resource is discussed in Section 5 of the Resource Analysis |
| Method of Evaluation: | Database |
| Completed by and Date: | IA DOT NEPA Manager, 5/17/2018 |
| Wildlife and Habitat | |
| Evaluation: | Resource is discussed in Section 5 of the Resource Analysis |
| Method of Evaluation: | Field Review/Field Study |
| Completed by and Date: | IA DOT NEPA Manager, 1/18/2018 |
| Threatened and Endangered Species | |
| Evaluation: | Resource is discussed in Section 5 of the Resource Analysis |
| Method of Evaluation: | Field Review/Field Study |
| Completed by and Date: | IA DOT NEPA Manager, 1/18/2018 |
| Woodlands | |
| Evaluation: | Resource is in the study area but will not be impacted |
| Method of Evaluation: | Field Review/Field Study |
| Completed by and Date: | IA DOT NEPA Manager, 1/18/2018 |
| Farmlands | |
| Evaluation: | Resource is in the study area but will not be impacted |
| Method of Evaluation: | Database |
| Completed by and Date: | Consultant, 2/19/2018 |

PHYSICAL IMPACTS SECTION:

| | |
|---|---|
| Noise | |
| Evaluation: | Resource is discussed in Section 5 of the Resource Analysis |
| Method of Evaluation: | Report |
| Completed by and Date: | Subconsultant, 6/1/2018 |
| Air Quality | |
| Evaluation: | Resource is not in the study area |
| Method of Evaluation: | Other |
| Completed by and Date: | Consultant, 7/24/2017 |
| MSATs | |
| Evaluation: | <p>This project will not result in any meaningful changes in traffic volumes, vehicle mix, location of the existing facility, or any other factor that would cause an increase in emissions impacts relative to the no-build alternative. As such, FHWA has determined that this project will generate minimal air quality impacts for Clean Air Act criteria pollutants and has not been linked with any special MSAT concerns. Consequently, this effort is exempt from analysis for MSATs.</p> <p>Moreover, EPA regulations for vehicle engines and fuels will cause overall MSATs to decline significantly over the next 20 years. Even after accounting for a 64 percent increase in VMT, FHWA predicts MSATs will decline in the range of 57 percent to 87 percent, from 2000 to 2020, based on regulations now in effect. This will both reduce the background level of MSATs as well as the possibility of even minor MSAT emissions from this project.</p> |
| Method of Evaluation: | FHWA Interim Guidance on Air Toxic Analysis in NEPA Documents, February 3, 2006 |
| Completed by and Date: | IA DOT NEPA Manager, Click here to enter a date. |
| Energy | |
| Evaluation: | Resource is not in the study area |
| Method of Evaluation: | Other |
| Completed by and Date: | Consultant, 7/24/2017 |
| Contaminated and Regulated Materials Sites | |
| Evaluation: | Resource is discussed in Section 5 of the Resource Analysis |
| Method of Evaluation: | Field Review/Field Study |
| Completed by and Date: | IA DOT NEPA Manager, 6/14/2016 |
| Visual | |
| Evaluation: | Resource is discussed in Section 5 of the Resource Analysis |
| Method of Evaluation: | Field Review/Field Study |
| Completed by and Date: | Consultant, 7/7/2017 |
| Utilities | |
| Evaluation: | Resource is discussed in Section 5 of the Resource Analysis |
| Method of Evaluation: | Database |
| Completed by and Date: | Consultant, 2/11/2018 |

APPENDIX B

AGENCY COORDINATION

U.S. Department of
Homeland Security

United States
Coast Guard



Commander
Eighth Coast Guard District

1222 Spruce Street, Room 2.102D
St. Louis, MO 63103-2832
Staff Symbol: dwb
Phone: (314) 269-2434
Fax: (314) 269-2379
Email: allan.o.monterroza@uscg.mil
www.uscg.mil/d8/westernriversbridges

16591.6
November 17, 2016

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

Subj: I-380, TOWER TERRACE AND BOYSON ROAD INTERCHANGE IMPROVEMENTS
ENVIRONMENTAL ASSESSMENT, LINN COUNTY, IOWA, (IM-380-6(224)25—13-57)

Dear Mrs. Newell:

We have reviewed the information in your letter dated October 31, 2016 and determined that this project does not include a bridge crossing over water. Therefore the Coast Guard has no interest in the project.

If there are any questions, please contact Mr. Rodney Wurgler at the above listed number. We appreciate the opportunity to comment on the project.

Sincerely,

A handwritten signature in blue ink, appearing to read "Eric A. Washburn".

ERIC A. WASHBURN
Bridge Administrator, Western Rivers
By direction of the District Commander

Newell, Deeann

From: Moore, Seth [DNR] <Seth.Moore@dnr.iowa.gov>
Sent: Friday, November 18, 2016 10:14 AM
To: Newell, Deeann
Cc: Sipe, Stacey [DNR]
Subject: Environmental Review for Natural Resources 13633

Dear Ms. Newell

Interstate 380, Tower Terrace and Boyson Road Interchange Improvements Environmental Assessment,
Cities of Hiawatha, Robins and Cedar Rapids
Linn County, Iowa
(IM-380-6(224)25--13-57)

Thank you for inviting Department comment on the impact of this project. The Department has records of two state-Threatened turtles, Ornate Box Turtle (*Terrapene ornate*) and the Blanding's Turtle (*Emydoidea blandingii*) in the vicinity of the project area. There are also numerous patches of sandy soil located in project area.

The Department recommends checking for potential habitat of the above listed turtle species and any undeveloped sites with sandy soil for occurrences of natural or semi-natural vegetation and associated rare species.

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.

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.

Please reference the following DNR Environmental Review/Sovereign Land Program tracking number assigned to this project in all future correspondence related to this project: 13633.

If you have questions about this letter or require further information, please contact me at (515) 725-8464.

SETH MOORE Sovereign Lands & Environmental Review Coordinator



Iowa Department of Natural Resources
515.725.8464 | seth.moore@dnr.iowa.gov
502 E. 9th Street | Des Moines, IA 50319-0034

WWW.IOWADNR.GOV



Leading Iowans in Caring for Our Natural Resources.



STATE OF IOWA

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

DEPARTMENT OF NATURAL RESOURCES
CHUCK GIPP, DIRECTOR

November 30, 2016

MS DEEANN NEWELL
IOWA DEPARTMENT OF TRANSPORTATION
800 LINCOLN WAY
AMES IA 50010

RE: Interstate I-380, Tower Terrace and Boyson Road Interchange Improvements, Linn County
NEPA Coordination for Preparation of Environmental Assessment
Project: IM-380-6(224)25—13-57

Dear Ms. Newell:

This letter is in response to the November 1, 2016 email concerning the Interstate I-380, Tower Terrace and Boyson Road Interchange Improvements project in Linn County. Thank you for inviting our comments.

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 mitigated through restoration, enhancement, creation and/or preservation activities. Information regarding the requirements for mitigation is described in the Federal Register (Volume 73, No. 70) dated April 10, 2008, under "Compensatory Mitigation for Losses of Aquatic Resources; Final Rule".

Any proposed placement of dredged or fill material into waters of the United States (including jurisdictional wetlands) requires Department of the Army authorization under Section 404 of the Clean Water Act. Based on the information you provided, a Section 404 permit may be required for this project. A completed application packet should be submitted to the Rock Island District Corps of Engineers as well as 2 copies to the Iowa Department of Natural Resources for processing as soon as possible. The application form can be obtained at:
<http://www.iowadnr.gov/InsideDNR/RegulatoryLand/FloodPlainManagement/FloodPlainDevPermits.aspx> or at <http://www.mvr.usace.army.mil/Missions/Regulatory/Permits.aspx>

We would ask that Best Management Practices be used to control erosion and protect water quality near the projects. You are encouraged to conduct your construction activities during a period of low flow. You are required to seed all disturbed areas with native grasses and to implement appropriate erosion control measures to insure that sediments are not introduced into waters of the United States during construction of the projects. Clearing of vegetation, including trees located in or immediately adjacent to waters of the state, should be limited to that which is absolutely necessary for construction of the projects. Please work with U.S. Fish and Wildlife Service if trees will be cleared.

McCloud Run within the study area is on the Iowa DNR's impaired waters list (see attached information obtained from the IDNR's webpage <http://www.iowadnr.gov/Environmental-Protection/Water-Quality/Water-Monitoring/Impaired-Waters>).

The study area is intensively urbanized, so most if not all of it will be unsuitable for listed plant species. However, there are numerous patches of sandy soil indicated on the county soil survey; undeveloped sites with sandy soil should be checked for occurrences of natural or semi-natural vegetation and associated rare species. Although predominantly urban, the corridor should be checked for potential habitat of two state-Threatened turtles, Ornate Box Turtle (*Terrapene ornate*) and the Blanding's Turtle (*Emydoidea blandingii*).

If you have any questions, please call me at (515) 725-8399.

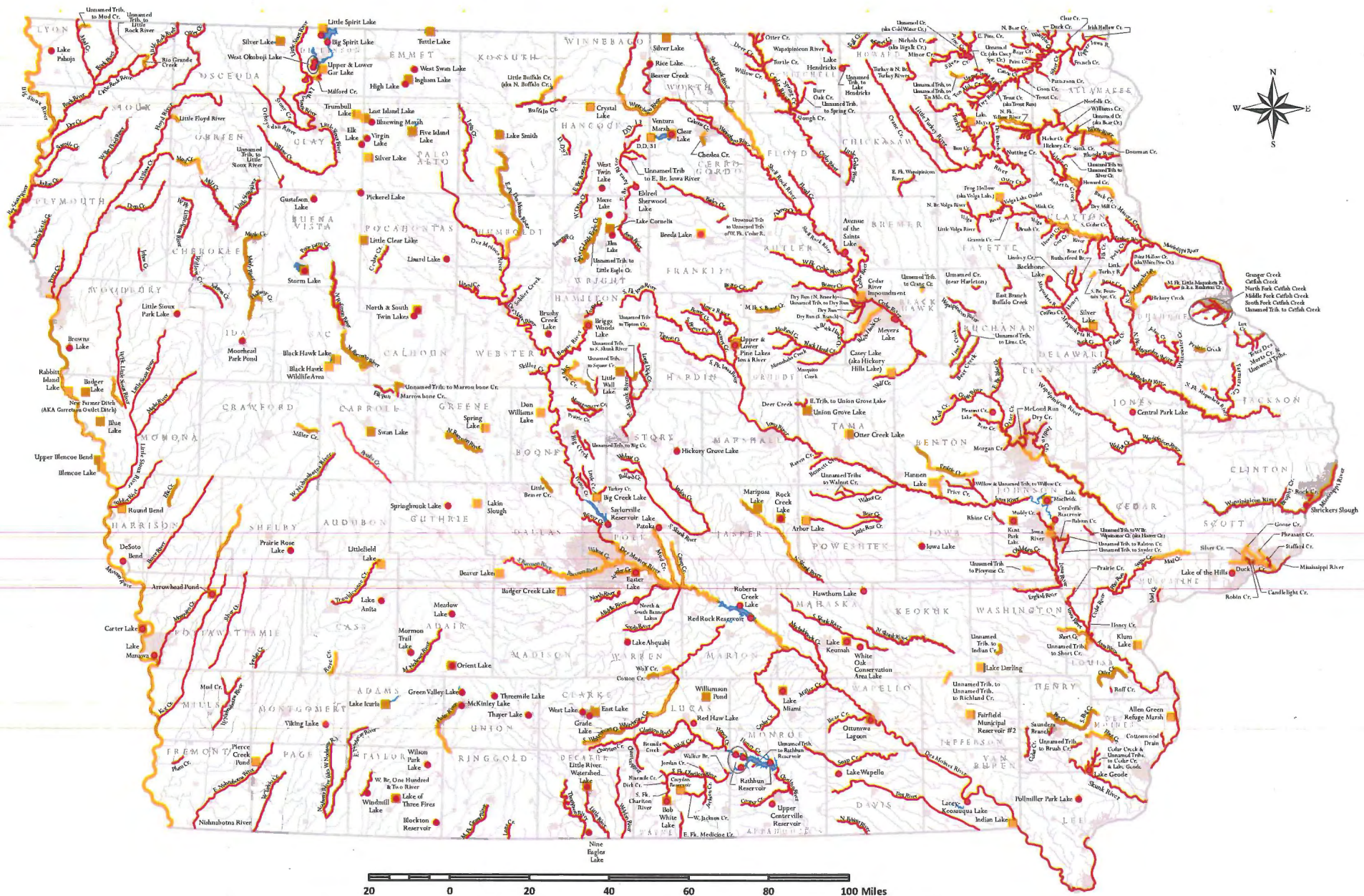
Sincerely,



Christine Schwake
Environmental Specialist

Attachment

List of Iowa's Impaired Waterbodies (2014)



Impaired Lakes

- Category 5 Impairment - TMDL Required
- Category 4 Impairment - TMDL Not Needed

Impaired Stream Segments

- Category 5 Impairment - TMDL Required
- Category 4 Impairment - TMDL Not Needed

Category 4a: at least one use impaired with TMDL prepared and approved

September 11, 2015**Category 4 of Iowa's Final 2014 Integrated Report (IR).****Category 4 impairments:** water is threatened or impaired but a TMDL is not needed.**Explanations of Subcategories for Integrated Report Category 4:****Category 4a:** at least one use is impaired, but a TMDL has been completed and approved*Note: some waters have ongoing Category 5 impairments that will require a TMDL.*The approved TMDL's for the impairment causes are available at the Iowa DNR Watershed Improvement Section web site:

Waterbodies are listed hydrologically by major basin and by subbasin (i.e., by ADB Code).

| IR Category | ADB Code | Waterbody Name | Location Description | Waterbody Type | Size (miles; acres) | Impairment Causes |
|-------------|----------------------------|-------------------|--|----------------|---------------------|--|
| | IA 01 | | Northeastern Iowa River Basins | | | |
| 4a | <u>IA 01-MAQ-0010 1</u> | Rock Creek | mouth (S31 T81N R6E Clinton Co.) to unnamed tributary in SW 1/4 NE 1/4 S30 T81N R6E Clinton Co. (upstream from PCS Nitrogen). | River | 3.4 | <u>ammonia; nitrogen</u> |
| 4a | <u>IA 01-MAQ-0060 1</u> | Maquoketa River | from N. Fk. Maquoketa R. to confluence with Farm Cr. in S10 T85N R1W Jones Co. | River | 26.9 | <u>Indicator Bacteria</u> |
| 4a | <u>IA 01-MAQ-00680-L 0</u> | Silver Lake | Delaware County S16T88NR4W SE edge of Delhi. | Lake | 34 | <u>algae; turbidity; pH; ammonia; nutrients; siltation</u> |
| 4a | <u>IA 01-NEM-0010 4</u> | Mississippi River | from Wapsipinicon R. (Scott / Clinton Co. line) to Lock & Dam 13 at Clinton (Clinton Co.) | River | 16.1 | <u>bacterial slime</u> |
| 4a | <u>IA 01-NEM-0060 1</u> | Duck Creek | mouth (S27 T78N R4E Scott Co.) to County Road (Sec 17-18 line T78N R3E Scott Co.). (Note: Segment boundary and use designations changed in 2010 to match 2009 WQ Standards.) | River | 11.5 | <u>Indicator Bacteria</u> |
| 4a | <u>IA 01-NEM-0060 2</u> | Duck Creek | from Sec 17-18 line T78N R3E Scott Co. to unnamed trib (SE Sec14 T78N R2E Scott Co.). (Note: Lower segment boundary changed in 2010 to match 2009 WQ Standards.) | River | 2.5 | <u>Indicator Bacteria</u> |

Category 4a: at least one use impaired with TMDL prepared and approved

| IR Category | ADB Code | Waterbody Name | Location Description | Waterbody Type | Size (miles; acres) | Impairment Causes |
|-------------|----------------------------|-------------------------------------|--|----------------|---------------------|--|
| 4a | <u>IA 02-CED-0020_3</u> | Cedar River | from Hwy 30 bridge at Cedar Rapids (S9 T82N R6W Linn Co) to confluence with Prairie Cr. in the SE 1/4 S34 T83N R7W Linn Co. | River | 6.8 | <u>Indicator Bacteria</u> |
| 4a | <u>IA 02-CED-0030_1</u> | Cedar River | from Prairie Cr. (SE 1/4 S34 T83N R7W Linn Co.) to confluence with McCloud Run in SW 1/4 S16 T83N R7W Linn Co. | River | 4.5 | <u>Indicator Bacteria</u> |
| 4a | <u>IA 02-CED-0030_2</u> | Cedar River | from confluence with McCloud Run (SW 1/4 S16 T83N R7W Linn Co.) to confluence with Bear Cr. in NE 1/4 S21 T84N R8W Linn Co. (includes East West Seminole and Northwest well fields for city of Cedar Rapids water supply). | River | 11.6 | <u>Indicator Bacteria;</u> <u>Nitrate</u> |
| 4a | <u>IA 02-CED-0040_1</u> | Cedar River | from Wolf Cr. (NE 1/4 S29 T87N R11W Black Hawk Co.) to bridge crossing in LaPorte City in S19 T87N R11W Black Hawk Co.) | River | 1.4 | <u>Indicator Bacteria</u> |
| 4a | <u>IA 02-CED-0050-L_0</u> | Cedar River | from dam of Cedar Falls Impoundment (NW 1/4 S12 T89N R14W Black Hawk Co.) to upper end of impoundment (W line S2 T89N R14W Black Hawk Co.) | River | 1.5 | <u>Indicator Bacteria</u> |
| 4a | <u>IA 02-CED-0110_3</u> | Cedar River | from Rock Cr. nr Orchard (S24 T97N R17W Floyd Co.) to Iowa / Minnesota state line (S8 T100N R18W Mitchell Co.) | River | 30.2 | <u>Indicator Bacteria</u> |
| 4a | <u>IA 02-CED-0160_0</u> | Mud Creek | mouth (S10 T78N R2W Muscatine Co.) to confluence with unnamed tributary in S5 T78N R1E Muscatine Co. | River | 14 | <u>organic enrichment</u> |
| 4a | <u>IA 02-CED-0218_0</u> | McCloud Run | mouth (SW 1/4 S16 T83N R7W Linn Co.) to headwaters in SW 1/4 S5 T83N R7W Linn Co. | River | 4.1 | <u>thermal impact-fish kill</u> |
| 4a | <u>IA 02-CED-03060-L_0</u> | Casey Lake (aka Hickory Hills Lake) | Tama County S13T86NR13W 6 mi N of Dysart. | Lake | 54 | <u>algae; turbidity</u> |
| 4a | <u>IA 02-CED-0370_1</u> | Black Hawk Creek | mouth (S22 T89N R13W Black Hawk Co.) to Hwy 58 in E 1/2 S27 T88N R14W Black Hawk Co.) | River | 11.4 | <u>Indicator Bacteria</u> |

September 11, 2015

U.S. EPA-approved Category 5 [Section 303(d) list] of Iowa's 2014 Integrated Report (IR).

Category 5 waters: impaired by a pollutant and in need of a TMDL (i.e., the state's Section 303(d) list)

Iowa's 2014 Section 303(d) list contains 574 waterbodies with a total of 754 impairments.

Explanations of Subcategories for Integrated Report Category 5:

Category 5a: cause of impairment due to known pollutant

Category 5b: biological impairment with cause unknown, or fish-kill impairment

Category 5b-t: biologically impaired but impairment tentative; need additional monitoring to confirm impairment

Category 5b-v: biologically impaired; impairment confirmed with multiple samplings

Category 5p: impairment of presumptive use; EPA-approved use attainability analysis (UAA) is needed to determine appropriate use.

Waterbodies are listed hydrologically by major basin and by subbasin (i.e., by waterbody ID number) beginning with the northeast Iowa river basins.

Additional information for all impaired waters can be found in Iowa DNR's assessment database, ADBNet.

<https://programs.iowadnr.gov/adbnet/search.aspx>

TMDL Priorities.* Note: The TMDL priority does not necessarily indicate the severity or significance of the impairment.

Tier I: impairments with relatively *high* social impact and relatively *low* complexity &/or cost for TMDL development

Tier II: impairments with relatively *high* social impact and relatively *high* complexity &/or cost for TMDL development

Tier III: impairments with relatively *low* social impact and relatively *low* complexity &/or cost for TMDL development

Tier IV: impairments with relatively *low* social impact and relatively *high* complexity &/or cost for TMDL development

*See Attachment 7 of the 2014 methodology for more information (<http://www.iowadnr.gov/Environment/WaterQuality/WaterMonitoring/ImpairedWaters.aspx>).

| IR Cycle Added | 2014 IR Cat. | ADB Code | Waterbody Name | Location Description | Waterbody type | Impaired Use | Use Support | Cause/Stressor | Listing Rationale | Data Source | TMDL Priority |
|----------------|--------------|--------------------|------------------|--|----------------|--------------|----------------|----------------|--|--------------------------|---------------|
| | | IA 01 | | Northeast Iowa River Basins | | | | | | | |
| 2004 | 5a | IA 01-MAQ-0005-L_0 | Shrickers Slough | approximately 2 miles SW of Camanche in Sections 5 6 and 7 of T80N R6E Clinton Co. | Wetland | Aquatic Life | Not supporting | Algae | Algae levels (chlorophyll TSI > 65) adversely impact fish and plant communities. | LTRMP ambient monitoring | Tier IV |
| 2004 | 5a | IA 01-MAQ-0005-L_0 | Shrickers Slough | approximately 2 miles SW of Camanche in Sections 5 6 and 7 of T80N R6E Clinton Co. | Wetland | Aquatic Life | Not supporting | Turbidity | Turbidity levels (Secchi TSI > 65) adversely impact fish and plant communities. | LTRMP ambient monitoring | Tier IV |

Iowa's 2014 Integrated Report:
Category 5: impaired and TMDL needed

| IR Cycle Added | 2014 IR Cat. | ADB Code | Waterbody Name | Location Description | Water-body type | Impaired Use | Use Support | Cause/Stressor | Listing Rationale | Data Source | TMDL Priority |
|----------------|--------------|------------------|----------------|---|-----------------|-----------------|----------------|---|--|--|---------------|
| 2014 | 5a | IA 02-CED-0218_0 | McCloud Run | mouth (SW 1/4 S16 T83N R7W Linn Co.) to headwaters in SW 1/4 S5 T83N R7W Linn Co. | River | Aquatic Life | Partial | Biological: fish kill, chlorine | Occurrence of two fish kills (Sept. 2013 and Oct. 2012) due to discharge of chlorinated water (i.e., (drinking water) to stream. | IDNR fish kill investigations. | Tier IV |
| 2006 | 5b | IA 02-CED-0218_0 | McCloud Run | mouth (SW 1/4 S16 T83N R7W Linn Co.) to headwaters in SW 1/4 S5 T83N R7W Linn Co. | River | Aquatic Life | Partial | Biological: fish kill, unknown toxicity | fish kills in 2001 2004 and 2005 | IDNR fish kill investigations | Tier III |
| 2014 | 5a | IA 02-CED-0218_0 | McCloud Run | mouth (SW 1/4 S16 T83N R7W Linn Co.) to headwaters in SW 1/4 S5 T83N R7W Linn Co. | River | Primary Contact | Not supporting | Indicator Bacteria | Geometric means of E. coli in 2010 & 2011 sampling were >> Class A1 criterion. | IDNR sponsored ambient monitoring from May 2010 to July 2011 at STORET station 15570003. | Tier IV |
| 2014 | 5p | IA 02-CED-0227_0 | Morgan Creek | mouth (S14 T83N R8W Linn Co.) to confluence with unnamed tributary in SW 1/4 S22 T83N R8W Linn Co. | River | Primary Contact | Not supporting | Indicator Bacteria | Geometric means of E. coli for recreation seasons of 2010 & 2011 exceeded the Class A1 criterion. | IDNR-sponsored ambient monitoring at STORET station 15570009 from May 2010 to July 2011. | Tier III |
| 2014 | 5p | IA 02-CED-0230_0 | Otter Creek | mouth (S35 T84N R8W Linn Co.) to confluence with East Otter and West Otter creeks in S7 T84N R7W Linn Co. | River | Primary Contact | Not supporting | Indicator Bacteria | Geometric means of E. coli in recreation seasons of 2010 & 2011 > Class A1 criterion. | IDNR sponsored ambient monitoring at Tower Terrace Road (STORET station 15570010). | Tier III |

Iowa DNR 305(b) Water Quality Assessment Database

McCloud Run

2010 Water Quality Assessment: Assessment results from 2006 through 2008

Release Status: Final

Segment Summary

Waterbody ID Code: IA 02-CED-0218_0

Location: mouth (SW 1/4, S16, T83N, R7W, Linn Co.) to headwaters in SW 1/4, S5, T83N, R7W, Linn Co.

Waterbody Type: River

Segment Size: 4.1 Miles

Segment Classes: Class A1 Class B(WW-1) Class HH

Assessment Comments

Assessment based on (1) results of investigation of a fish kills in 1997, 2001, 2004, and 2005, (2) data from the Cedar Rapids intensive urban monitoring project in summer 2002, (3) EPA/IDNR fish contaminant monitoring in 2004 and (4) 2007 IDNR/UHL benthic macroinvertebrate sampling.

Assessment Summary and Beneficial Use Support

Overall Use Support - Partial

Aquatic Life Support - Partial

Fish Consumption - Fully

Primary Contact Recreation - Not assessed

Assessment Type: Monitored

Integrated Report Category: 5a

Basis for Assessment and Comments

[Note: Prior to the 2008 Section 305(b) cycle, this stream segment was classified only for general uses. Due to changes in Iowa's surface water classification that were approved by U.S. EPA in February 2008 (see http://www.iowadnr.com/water/standards/files/06mar_swc.pdf), this segment is now presumptively designated for Class A1 (primary contact recreation) uses and for Class B(WW1) aquatic life uses. According to the Iowa Water Quality Standards, all perennial rivers and streams and all intermittent streams with perennial pools that are not specifically listed in the Iowa surface water classification are designated as Class A1 and Class B(WW1) waters. Thus, for the current (2010) assessment, perennial flow is presumed, and the available water quality monitoring data will be compared to the applicable Class A1 and Class B(WW1) water quality criteria.]

SUMMARY: The presumptive Class A1 (primary contact recreation) uses remain "not assessed" due to the lack of information upon which to base an assessment. The aquatic life uses of this stream remain assessed (monitored) as "partially supported" due to (1) the continued occurrence of fish kills during the 2002-2005 period and (2) the potential for additional kills to occur in the future. Results of ambient water quality monitoring conducted in summer 2002 for the Cedar Rapids intensive urban monitoring project indicate generally good chemical water quality in this stream as does the 2007 IDNR/UHL benthic macroinvertebrate sampling. Results of EPA/IDNR fish contaminant (RAFT) monitoring in 2004 suggest that levels of

contaminants are below trigger levels of Iowa's revised (2006) fish consumption advisory protocol, thus suggesting "full support" of fish consumption uses.

Note: The previous impairment of this stream was due to fish kills related to high-temperature stormwater from summer precipitation events in the primarily urban watershed of McCloud Run. A TMDL for these thermal impacts was prepared by IDNR and approved by U.S. EPA in 2007. Because, however, this TMDL does not address the potential causes of more recent fish kills (e.g., discharge of chlorinated water to the stream), this stream remains in Category 5a of Iowa's Integrated Report.

EXPLANATION: Previous assessments of support for the general beneficial uses of this stream ("partially supporting") have been based on the occurrence of fish kills. For the 1998 and 2000 reporting cycles, the assessment was based on the occurrence of two spill-related fish kills during the 1996-1997 biennial assessment period. An additional kill occurred on August 2, 2001 and was due to storm water runoff from urban watershed of this stream. The rainfall event occurred during very warm summer weather, and the relatively warm runoff water raised the temperature of McCloud Run by 19 degrees F in an hour. Temperature-sensitive species such as the (stocked) rainbow, brown, and brook trout were killed. According to DNR's assessment methodology for Section 305(b) reporting, occurrence of a single pollution-caused fish kill within the most recent three-year period (1997-1999) indicates that the aquatic life uses of a waterbody are only "partially supported." Thus, for the 2002 and 2004 assessment/listing cycles, the general uses of this stream were assessed as "partially supported" due thermal impacts from urban runoff.

Fish kills continued to occur in this stream, with two kills occurring during the 2002-2005 period. The first of these two kills occurred on or before November 16, 2004. The kill was attributed to unknown/natural causes. IDNR received a report of discolored water on the evening of November 16th; IDNR field staff observed four dead fish on the morning of the 17th. The discolored water appeared to originate from one of the large storm water culverts that enter the stream. The discoloration of the water was believed due to the decomposition of accumulated leaf litter in the storm water collection system. An estimated 20 fish were killed including brown trout (15) and rainbow trout (3) that were stocked into the stream by the IDNR Fisheries Bureau as part of the urban trout fishery program on McCloud Run. The value of the fish killed was \$270. Many live fish were observed in the stream during the investigation of the kill. The IDNR investigation showed that the kill started at the culvert located across from the railroad bridge between 42nd Street and McCloud Place Road in Cedar Rapids and extended down to 29th Street. This culvert drains a large residential area and golf course west of I-380. Although a definitive cause of the kill was not identified, IDNR staff suggest that decaying leaves may have led to a build-up of ammonia build up in storm sewers. A light train event prior to the kill may have flushed the high-ammonia material from the storm sewers into McCloud Run, thus causing the kill.

The second of the more recent kills occurred on or before May 16, 2005 and was also attributed to "unknown" causes. On May 16th, IDNR field staff responded to a report from an angler that trout were dying in McCloud Run. An investigation of the stream showed that approximately 380 fish were killed over a 2.25 mile reach of this stream. Species killed included brown trout (75), rainbow trout (30), brook trout (27), one green sunfish, and one minnow. The value of the fish killed was estimated at \$1,845. Although definitive causes and sources of the kill were not identified, IDNR staff offered the following potential causes/sources of this kill: (1) a railroad crew had recently sprayed herbicides on the track along side of McCloud Run; (2) a local business is known to occasionally back-flush its pools and spas into storm sewers that drain to McCloud Run (the owner of this business stated chlorine level of back-flushed water is very low); (3) a local car dealer is reported to have a leaky hydraulic lift.

According to IDNR's assessment/listing methodology, the occurrence of a single pollutant-caused fish kill, or a fish kill of unknown origin, on a waterbody or waterbody reach during the most recent assessment period indicates a severe stress to the aquatic community and suggests that the aquatic life uses should be assessed as "impaired". If a cause of the kill is identified, and the cause is either known, or suspected, to be a "pollutant", the assessment type is considered "monitored" and the affected waterbody is a candidate for Section 303(d) listing. Fish kills attributed to a pollutant, but where a source of the pollutant was not

identified and/or where enforcement actions were not taken against the responsible party, will be placed into Integrated Report subcategory 5b. The intent of placing these waterbodies into Category 5 is not to necessarily require a TMDL but to keep the impairment highlighted due to the potential for similar future kills from the unaddressed causes and/or sources. Both the November 2004 and the May 2005 kills on McCloud Run were pollutant-related and thus justified addition to Category 5 of Iowa's Integrated Report (=Section 303(d) listing).

No additional fish kills have been reported for McCloud run since May 2005. Despite the approximately four-year period without a know fish kill, this stream segment will remain assessed as "not supporting" its presumptive aquatic life use due to previous fish kills. According to IDNR's assessment/listing methodology, a fish kill-related impairment will remain in Category 5 of Iowa's Integrated Report until follow-up monitoring confirms recovery of the aquatic populations affected by the kill.

Results of ambient water quality monitoring conducted in summer 2002 for the Cedar Rapids intensive urban monitoring project indicate good chemical water quality in this stream. The purpose of this project is to measure the daily variability of water quality through time in two urban streams in the Cedar Rapids area - McCloud Run and Indian Creek. Both streams are monitored by the City of Cedar Rapids Water Pollution Control as part of their storm water monitoring program. The daily monitoring is designed to supplement the storm water monitoring being conducted on these two streams by the City of Cedar Rapids. In 2002, sampling was conducted daily on McCloud Run from about mid-May to mid August. Parameters monitored include pesticides, toxic organics, conventional parameters (including nutrients), and bacterial indicators (e.g., fecal coliforms and *E. coli*). In general, results of this monitoring show good water quality. Although classified only for general uses, Iowa water quality criteria for either Class B(WW1) or Class B(CW1) aquatic life uses were compared to results of monitoring as an indicator of the status of water quality in this stream. This comparison showed no violations of criteria for pH or ammonia in the 70+ samples collected during summer 2002. One of 83 samples contained a level of dissolved oxygen below the 7.0 mg/l water quality criterion for Class B(CW1) coldwater streams: the sample collected on June 10, 2002 contained 6.4 mg/l of dissolved oxygen. Levels of metals, pesticides, and other toxic organic compounds did not exceed chronic aquatic life criteria. The only such parameter to approach a state criterion was pentachlorophenol (PCP). Fifteen of the 79 samples analyzed contained detectable levels of PCP; five of these samples were within 1 ug/l of the respective pH-dependent Class B(WW1) criterion. None of the 81 sample analyzed contained detectable levels of either chlordane (detection level = 0.05 ug/l) or any of the seven PCB Aroclors analyzed (including Aroclors 1248, 1254, and 1260) (detection level = 0.5 ug/l). Both chlordane and PCBs have been found at elevated levels in fish from either McCloud Run or the adjacent Cedar Lake.

This evaluated biological assessment was based on data collected in 2007 as part of the IDNR/UHL biological sampling project. A series of biological metrics that reflect stream water quality and habitat integrity were calculated from the biological sampling data. The biological metrics are based on the numbers and types of benthic macroinvertebrate taxa and fish species collected in the stream sampling reach. The biological metrics were combined to make a fish community index of biotic integrity (FIBI) and a benthic macroinvertebrate index (BMIBI). The indexes rank the biological integrity of a stream sampling reach on a rising scale from 0 (minimum) to 100 (maximum). The 2007 BMIBI score was 63 (good) and fish were not collected. The aquatic life use support was assessed (evaluated) as fully supporting (=FS), based on a comparison of the BMIBI scores with biological impairment criteria (BIC) established from a statistical analysis of biological data collected at stream ecoregion reference sites from 1994-2004. The natural substrate sampler BMIBI BIC for this ecoregion is 70. This site passed the BMIBI BIC using the uncertainty adjustment value (UAV) of 8 points applied to single sample assessments. Even though this site passed the BMIBI BIC, it is uncertain as to whether or not this segment is meeting the aquatic life criteria because it is a small presumed B-WW1 (formally general use) stream and doesn't fall in the calibrated watershed size.

Fish contaminant monitoring conducted in 2004 suggests a lowering of contaminant levels in fish from McCloud Run. Fish tissue monitoring conducted in June 2001 following a mid-May fish kill showed that fillet samples of stocked rainbow trout (ages 1 and 2) contained levels of chlordane above the 0.300 ppm

U.S. FDA action level. A second fish tissue sampling in July 2001 showed that levels were just below the FDA action level. In response, the IDNR Fisheries Bureau issued a no-kill restriction on trout taken from McCloud Run. Additional fish tissue monitoring was conducted as part of the U.S. EPA/IDNR RAFT program in 2004, and results of this monitoring suggest much lower contaminant levels than in samples from 2001. The levels of the primary contaminants in the composite samples of fillets white sucker (*Catostomus commersoni*) and rainbow trout (*Oncorhynchus mykiss*) were as follows: white sucker: mercury: 0.085 ppm; total PCBs: 0.091 ppm; and technical chlordane: 0.032 ppm; rainbow trout: mercury: < 0.018 ppm; total PCBs: 0.09 ppm; and technical chlordane: < 0.03 ppm.

The existence of, or potential for, a fish consumption advisory is the basis for Section 305(b) assessments of support of fish consumption uses in Iowa's rivers and lakes. Prior to 2006, IDNR used action levels published by the U.S Food and Drug Administration to determine whether consumption advisories should be issued for fish caught as part of recreational fishing in Iowa. In an effort to make Iowa's consumption more compatible with the various protocols used by adjacent states, the Iowa Department of Public Health, in cooperation with Iowa DNR, developed a risk-based advisory protocol. This protocol went into effect in January 2006 (see <http://www.iowadnr.gov/fish/news/consump.html> for more information on Iowa's revised fish consumption advisory protocol). Because the revised (2006) protocol is more restrictive than the previous protocol based on FDA action levels; fish contaminant data that previously suggested "full support" may now suggest either a threat to, or impairment of, fish consumption uses. This scenario, however, does not apply to the fish contaminant data generated from the 2004 RAFT sampling conducted in McCloud Run: levels of all contaminants from this monitoring were below the updated advisory trigger levels, thus suggesting the "full support" of fish consumption uses. Despite the very low levels of contaminants in the McCloud Run fish tissue samples, the IDNR's "no-kill restriction" on trout taken from McCloud Run remains in effect.

Monitoring and Methods

Assessment Key Dates

| | |
|------------|-----------------------------|
| 6/25/1997 | Fishkill |
| 7/23/1997 | Fishkill |
| 6/1/2001 | Fish Tissue Monitoring |
| 7/1/2001 | Fish Tissue Monitoring |
| 8/2/2001 | Fishkill |
| 5/20/2002 | Fixed Monitoring Start Date |
| 8/16/2002 | Fixed Monitoring End Date |
| 6/28/2004 | Fish Tissue Monitoring |
| 11/16/2004 | Fishkill |
| 5/16/2005 | Fishkill |
| 9/6/2007 | Biological Monitoring |

Methods

- Incidence of spills and/or fish kills
- Fish tissue analysis
- Fixed station physical/chemical (conventional plus toxic pollutants)
- Regional reference site approach
- Benthic macroinvertebrate surveys

Causes and Sources of Impairment

| Causes | Use Support | Cause Magnitude | Sources | Source Magnitude |
|-----------------------|----------------------|------------------------|---------------------------|-------------------------|
| Thermal modifications | Overall Use Support | Moderate | Urban Runoff/Storm Sewers | Moderate |
| Unknown toxicity | Aquatic Life Support | Moderate | Source Unknown | Moderate |
| Thermal modifications | Aquatic Life Support | Moderate | Urban Runoff/Storm Sewers | Moderate |

Newell, Deeann

From: Bednarek, Richard - NRCS, Des Moines, IA <Rick.Bednarek@ia.usda.gov>
Sent: Wednesday, November 30, 2016 2:23 PM
To: Newell, Deeann
Subject: Interstate 380 Improvements Projects - Environmental Assessment Early Coordination

DeeAnn,

I reviewed your project proposal and my only comments are:

- you will need the Natural Resources Conservation Service (NRCS) complete the Farmland Protection Policy Act AD-1006 Form for the project area.
- check to see that there are no NRCS Easements in the project area.

Contact me if you have any questions.

Rick

Richard J. Bednarek, Jr.
State Soil Scientist
USDA-NRCS
210 Walnut Street, Room 693
Des Moines, IA 50309-2180

515-323-2238

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United States Department of the Interior



FISH AND WILDLIFE SERVICE
Rock Island Field Office
1511 47th Avenue
Moline, Illinois 61265
Phone: (309) 757-5800 Fax: (309) 757-5807

IN REPLY REFER
TO:

FWS/RIFO

November 30, 2016

Ms. DeeAnn L. Newell
Office of Location and Environment
Iowa Department of Transportation
800 Lincoln Way
Ames, Iowa 50010

Re: Interstate 380, Tower Terrace and Boyson Road
Interchange Improvements Environmental Assessment,
cities of Hiawatha, Robins and Cedar Rapids, Linn County,
Iowa, **(IM-380-6(224)25--13-57)**

Dear Ms. Newell:

Thank you for contacting us regarding your project. This responds to your November 1, 2016, request for comments regarding the initiation of an environmental assessment (EA) for the proposed Interstate 380 (I-380) interchange in Linn County, Iowa. We have the following comments.

With respect to any species, listed or proposed to be listed, which may be present in the area of the proposed action, we refer you to the Service's Region 3 Technical Assistance website at <http://www.fws.gov/midwest/angered/section7/sppranges/index.html>. Habitat descriptions for these species can also be found on our website. You may use these descriptions to help you determine if there is suitable habitat within your project area. By following the instructions, you can determine what your action area is, whether listed species may be found within the action area, and if the project may affect listed species. We recommend you contact the Iowa Department of Natural Resources Iowa Department of Natural Resources, 502 E. 9th Street, Des Moines, IA 50319-0034, for information on state listed species.

The Service removed bald eagles from protection under the Endangered Species Act on August 8, 2007. However, they remain protected under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act of 1940 (Eagle Act). The Eagle Act prohibits take which is defined as, "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, destroy, molest, or disturb" (50 CFR 22.3). Disturb is defined in regulations as, "to agitate or bother a bald or

golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle, 2) decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior.” The National Bald Eagle Management Guidelines (Guidelines) offer guidance on how to minimize disturbance to bald eagles and increase the likelihood that actions near bald eagle nests are consistent with the Eagle Act and the Migratory Bird Treaty Act. We encourage adherence to these Guidelines.

It is unlawful to take or disturb eagles without first obtaining a permit for non-purposeful take of eagles. However, no permit would be available unless an applicant has first taken all practicable steps to avoid take of eagles. Information about eagle permits can be found online at the following link: <http://www.fws.gov/midwest/MidwestBird/eaglepermits/>

There may be wetlands within and adjacent to the project area. The Corps of Engineers is the Federal agency responsible for wetland determinations, and we recommend that you contact them for assistance in delineating the wetland types and acreage within the project boundary. Priority consideration should be given to avoid impacts to these wetland areas. Any future activities in the study area that would alter these wetlands may require a Section 404 permit. Unavoidable impacts will require a mitigation plan to compensate for any losses of wetland functions and values. The U.S. Army Corps of Engineers, Clock Tower Building, P.O. Box 2004, Rock Island, Illinois, 61201, should be contacted for information about the permit process.

These comments provide technical assistance only and do not constitute the report of the Secretary of the Interior on the project within the meaning of Section 2(b) of the Fish and Wildlife Coordination Act, do not fulfill the requirements under Section 7 of the Endangered Species Act, nor do they represent the review comments of the U.S. Department of the Interior on any forthcoming environmental statement. Please contact me if you have questions.

Heidi Woeber
U.S. Fish and Wildlife Service
1511 47th Avenue
Moline, Illinois 61265
309/757-5800 Ext. 209

cc: IADNR (Moore, Schwake)
FHWA (LaPietra)
IADOT (Ebel)
DOI-OEPC (Stewart)



December 1, 2016

RECEIVED

DEC 05 2016

Office of Location & Environment

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

SUBJECT: Interstate 380 (IM-380-6(224)25—13-57)

Dear Ms. Newell:

In response to your inquiry dated November 1, 2016, the following resources of concern to the Iowa Natural Resources Conservation Service (NRCS) include:

- Conservation Practices and Non-Waters of the United States on Private Land.
Should this undertaking involve work or structures placed outside of property solely under your control, you would need to consult with all applicable landowners for the purpose of coordinating the proposed work outside of areas that may compromise the respective landowner's USDA program eligibility (e.g., conservation practices on highly erodible lands, and any wetlands, especially wetlands considered non-waters of the US).
- Existing NRCS Conservation Easements.
Please refer to <http://gdwwweb1.ftw.nrcs.usda.gov/> to see if your undertaking will affect an NRCS easement. Should an easement be affected, you may contact Sindra Jensen (515/323-2480) at the Iowa NRCS State Office for further information.
- Prime Farmland.
Should this undertaking involve the conversion of prime farmland or farmland of State-wide importance to non-agricultural uses, you would need to have your project evaluated by an NRCS-authorized soil scientist. Please fill out your portion of the attached Form AD-1006 and send it along with maps showing the legal location and detail of all proposed work to Jason Steele, Area Resource Soil Scientist, Fairfield Area Office, 1805 West Jefferson Avenue, Suite 2, Fairfield, IA 552556. Should areas of your undertaking be in land already in urban development or have an existing right-of-way purchased on or before August 4, 1984, then your activities on those areas are not subject to the Farmland Protection Policy Act (FPPA).

** Please be advised, the Iowa NRCS discourages actions that would cause a reduction in stream length or adversely affect wetlands.*

Please note that federally-protected species, state-protected species, historic properties and/or waters of the United States may be affected by this proposed

Please note that federally-protected species, state-protected species, historic properties and/or waters of the United States may be affected by this proposed project. These are important resources of concern and this office strongly advises you to consult with the following offices for more information:

Federally - Protected Species

U.S. Fish and Wildlife Service
Rock Island Illinois Field Office
1511 – 47th Avenue
Moline, Illinois 61265
Phone: 309/757-5800
Fax: 309/757-5807

State - Protected Species

Iowa Department of Natural Resources
Environmental Review for Natural Resources
Conservation and Recreation Division
502 East 9th Street
Des Moines, Iowa 50319-0034
Phone: 515/281-8967

Cultural Resources and Historic Properties

State Historical Society of Iowa
State Historic Preservation Office
600 East Locust Street
Des Moines, Iowa 50319-0290
Phone: 515/281-8743

Waters of the United States

U.S. Army Corps of Engineers
Regulatory Branch
Clock Tower Building
Post Office Box 2004
Rock Island, Illinois 61204-2004
Phone: 309/794-5057

Thank you for your inquiry with the Iowa NRCS regarding your project proposal. It is our sincere expectation that the information provided is helpful to you. Should you require any further assistance please contact James Cronin, State Biologist, at 515/323-2221.

Sincerely,


Grover DePriest
State Resource Conservationist

Attachment

Newell, Deeann

From: Summerlin, Joe <summerlin.joe@epa.gov>
Sent: Wednesday, December 7, 2016 6:48 AM
To: Newell, Deeann
Subject: RE: Interstate 380 Improvements Project - Environmental Assessment Early Coordination

I don't have any initial comments on this project.

From: Newell, Deeann [mailto:DeeAnn.Newell@dot.iowa.gov]
Sent: Tuesday, November 01, 2016 9:17 AM
To: scott.tener@faa.gov; steven.fender@dot.gov; mark.bechtel@dot.gov; christine.schwake@dnr.iowa.gov; seth.moore@dnr.iowa.gov; Nicholas_Chevance@nps.gov; steve.king@iowa.gov; shelly.grimmius@ia.usda.gov; IA_Webmanager@hud.gov; Carrie.E.Dobbins@hud.gov; robert_f_stewart@ios.doi.gov; Summerlin, Joe <summerlin.joe@epa.gov>; Heidi_Woeber@fws.gov; Lourdes_Mena@fws.gov; ben.rogers@linncounty.org; les.beck@linncounty.org; Linn County [County Engineer] <steve.gannon@linncounty.org>; conservation@linncountyparks.com; joi.alexander@linncounty.org; j.pratt@cedar-rapids.org; ron.corbett@cedar-rapids.org; City Cedar Rapids <j.winter@cedar-rapids.org>; bldgofficial@hiawatha-iowa.com; mayor@hiawatha-iowa.com; streets@hiawatha-iowa.com; jon.gallagher@ia.nacdn.net; info@cityofrobins.org; info@cityofrobins.org; info@cityofrobins.org; info@cityofrobins.org; kurt.simon@ia.usda.gov; christian.osborn@ia.usda.gov; mark.garrison@ia.usda.gov; jim.gertsma@ia.usda.gov; dneumann@cedarrapids.org; parkdirect@hiawatha-iowa.com; parksdirector@cedar-rapids.org; Jill@marioncc.org; john.bruene@ia.usda.gov; mary.hepker@ia.nacdn.net; tim.thompson@dnr.iowa.gov
Subject: Interstate 380 Improvements Project - Environmental Assessment Early Coordination

RE: Interstate 380, Tower Terrace and Boyson Road Interchange Improvements Environmental Assessment, cities of Hiawatha, Robins and Cedar Rapids, Linn County, Iowa, (IM-380-6(224)25--13-57)

To comply with National Environmental Policy Act (NEPA) requirements and Council on Environmental Quality regulations (40 CFR 1500 et seq.), the Iowa Department of Transportation has initiated an Environmental Assessment (EA) for the Interstate 380 Improvements Project in Linn County, Iowa.

The project team will develop and evaluate improvement alternatives that alleviate increased travel demands in the I-380 corridor between Iowa 100/Collins Road and County Home Road/Linn County E-34. The proposed action is expected to improve traffic operations at ramp terminals and on I-380, address geometric deficiencies and support planned economic development and land uses. It is anticipated that the proposed improvements will require the acquisition of minor amounts of new right-of-way at locations throughout the corridor. Precise amounts of right-of-way and possible acquisition locations are unknown at this time.

As part of the early coordination process, we are soliciting comments from your agency regarding the proposed project as it relates to your agency's area of expertise. Comments and materials you supply will be used to determine if the proposed improvements may have impacts that warrant further consideration as well as being consistent with long-term development plans within the study corridor. Your comments will be incorporated into the environmental planning process and ultimately the Environmental Assessment document as appropriate. The enclosed project study limits map and project description should help you understand the nature of the project and help you determine the location of the proposed improvements. To remain on schedule,

it is requested that your response be sent to our office within 30 days of receipt of this letter. If you have any questions about the proposed project, please contact me at (515) 239-1364 or by email at DeeAnn.Newell@dot.iowa.gov.

Enclosure: Project Study Area Map
 Project Description



DeeAnn L. Newell

Iowa Department of Transportation | Office of Location and Environment
800 Lincoln Way | Ames, Iowa 50010
Phone: 515-239-1364 | Email: DeeAnn.Newell@dot.iowa.gov



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

REPLY TO
ATTENTION OF

December 7, 2016

Regional Planning and
Environmental Division North (RPEDN)

DeeAnn Newell
Iowa Department of Transportation
Office of Location and Environment
800 Lincoln Way
Ames, Iowa 50010

RECEIVED

DEC 12 2016

Office of Location & Environment

Dear Ms. Newell:

Project #: IM-380-6(224)25--13-57

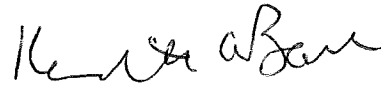
I received your letter dated October 31, 2016 concerning initial comments on the Interstate 380, Tower Terrace and Boyson Road Interchange Improvement project. The U.S. Army Corps of Engineers, Rock Island District (District) staff reviewed the information you provided and have the following comments:

- a. Your proposal does not involve District administered land; therefore, no further District real estate coordination is necessary.
- b. Any proposed placement of dredged or fill material into waters of the United States (including jurisdictional wetlands) requires Department of the Army authorization under Section 404 of the Clean Water Act. We require additional details of your project before we can make a final determination of permit requirements. When detailed plans are available, please complete and submit an application packet to the Rock Island District for processing. The application should include determinations of wetlands and other waters of the United States, size estimations of impacts to those areas, and wetland types and relative functions. If you have any questions regarding permit requirements under Section 404 of the Clean Water Act, please contact Mr. Albert Frohlich of our Regulatory Branch. You may reach Mr. Frohlich by writing to our address above, ATTN: Regulatory Branch (OD-PP), or by telephoning 309/794-5859.
- c. The Responsible Federal Agency should coordinate with Ms. Kathy Gourley, Iowa Historic Preservation Agency, ATTN: Review and Compliance Program, State Historical Society of Iowa, 600 East Locust, State Historic Building, Des Moines, IA, 50319 to determine impacts to historic properties.
- d. The Rock Island Field Office of the U.S. Fish and Wildlife Service should be contacted to determine if any federally-listed endangered species are being impacted and, if so, how to avoid or minimize impacts. The Rock Island (County) Field Office address is: 1511 - 47th Avenue, Moline, IL, 61265. Mr. Kraig McPeck is the Field Supervisor. You can reach him by calling 309/757-5800.

e. The Iowa Emergency Management Division should be contacted to determine if the proposed project may impact areas designated as floodway. Ms. Aimee Bartlett is the Iowa State Hazard Mitigation Team Leader. Her address is: 7900 Hickman Rd., Suite 500, Windsor Heights, IA 50324. You can reach her by calling 515/725-3231.

No other concerns surfaced during our review. Thank you for the opportunity to comment on your proposal. If you need more information, please call Ms. Wendy Frohlich of our Environmental Compliance Branch, telephone 309/794-5573.

Sincerely,

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

Kenneth A. Barr
Chief, Environmental Planning Branch, (RPEDN)



STATE OF IOWA

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

DEPARTMENT OF NATURAL RESOURCES
CHUCK GIPP, DIRECTOR

February 27, 2017

DeeAnn Newell, NEPA Document Manager
Iowa Dept. of Transportation
800 Lincoln Way
Ames, IA 50010

Dear Ms. Newell:

This letter is in response to your request for information on potential impacts to city/county/state facilities potentially impacted by the results of an Environmental Assessment on the I-380 corridor between Iowa 100/Collins Road and County Home Road/Linn County E-34, in Linn County, Iowa.

After review of the project corridor and respective city's within the study area, two sites have the potential to be impacted, both funded in part with the Federal Land & Water Conservation Fund (LWCF).

Hiawatha City Park, located along Emmons Street and N 7th Avenue, on the West side of I-380 was acquired and developed in part with LWCF funds. Project #19-00427 was awarded to purchase 22 acres of land for the purpose of developing an active outdoor recreation park.

The second project provided funding to the Linn County Conservation Board for the development of the Cedar Valley Nature Trail, LWCF Project #19-01061, which lies within the corridor starting at Boyson and Hawkeye Drive, and then heading south, on the East side of I-380. Funds for this project were provided for the development of a multi-use trail.

Both these projects are covered by the Federal Land and Water Conservation Fund program and requirements. If any of the park area in the two identified projects will be affected by the results of your feasibility study, or future road improvements, a Federal 6(f)3 Conversion of Use may occur. In which case, the DOT will need to coordinate with the city and county, and our department to potentially mitigate with new park land. The early coordination of this process is very helpful to our office and the National Park Service, as we both are responsible for ensuring LWCF projects remain in outdoor recreation, and conversions are kept to a minimum.

I have also checked for projects that were awarded a Resource Enhancement & Protection Fund (REAP), Recreation Infrastructure Fund grants and Fish & Wildlife Habitat grants. I do not find any potential conflicts with these programs.

Please keep our office informed as to any potential changes as a result of the feasibility study. If you have any questions, please contact me at 515-725-8213.

Sincerely,

Kathleen Moench

Kathleen Moench
Budget & Finance Bureau



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Illinois-Iowa Ecological Services Field Office
Illinois & Iowa Ecological Services Field Office
1511 47th Ave
Moline, IL 61265-7022
Phone: (309) 757-5800 Fax: (309) 757-5807

In Reply Refer To:

December 15, 2017

Consultation Code: 03E18000-2018-I-0308

Event Code: 03E18000-2018-E-00714

Project Name: I-380 Capacity Improvements

Subject: Concurrence verification letter for the 'I-380 Capacity Improvements' project under the December 15, 2016 FHWA, FRA, FTA Programmatic Biological Opinion for Transportation Projects within the Range of the Indiana Bat and Northern Long-eared Bat.

To whom it may concern:

The U.S. Fish and Wildlife Service (Service) has received your request dated to verify that the **I-380 Capacity Improvements** (Proposed Action) may rely on the concurrence provided in the December 15, 2016, FHWA, FRA, FTA Programmatic Biological Opinion for Transportation Projects within the Range of the Indiana Bat and Northern Long-eared Bat (PBO) to satisfy requirements under Section 7(a)(2) of the Endangered Species Act of 1973 (ESA) (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*). Based on the information you provided (Project Description repeated below), you have determined that the Proposed Action is within the scope and adheres to the criteria of the PBO, including the adoption of applicable avoidance and minimization measures, and is not likely to adversely affect (NLAA) the endangered Indiana bat (*Myotis sodalis*) and/or the threatened Northern long-eared bat (*Myotis septentrionalis*).

The Service has 14 calendar days to notify the lead Federal action agency or designated non-federal representative if we determine that the Proposed Action does not meet the criteria for a NLAA determination under the PBO. If we do not notify the lead Federal action agency or designated non-federal representative within that timeframe, you may proceed with the Proposed Action under the terms of the NLAA concurrence provided in the PBO. This verification period allows Service Field Offices to apply local knowledge to implementation of the PBO, as we may identify a small subset of actions having impacts that were unanticipated. In such instances, Service Field Offices may request additional information that is necessary to verify inclusion of the proposed action under the PBO.

If the Proposed Action is modified, or new information reveals that it may affect the Indiana bat and/or northern long-eared bat in a manner or to an extent not considered in the PBO, further review to conclude the requirements of ESA Section 7(a)(2) may be required. If the Proposed

Action may affect any other federally-listed or proposed species, or any designated critical habitat, additional consultation is required. In either of these circumstances, please contact this Office.

The following species may occur in your project area and **are not** covered by this determination:

- Higgins Eye (pearlymussel), *Lampsilis higginsii* (Endangered)
 - Prairie Bush-clover, *Lespedeza leptostachya* (Threatened)
 - Western Prairie Fringed Orchid, *Platanthera praeclara* (Threatened)
-

Project Description

The following project name and description was collected in IPaC as part of the endangered species review process.

Name

I-380 Capacity Improvements

Description

Adding one lane in each direction, for a total of six lanes through the project area, to improve the capacity of I-380 in the Cedar Rapids area. The project also includes two interchange re-configurations/improvements at Tower Terrace and County Home Road.

Determination Key Result

Based on your answers provided, this project(s) may affect, but is not likely to adversely affect, the endangered Indiana bat and/or the threatened Northern long-eared bat; therefore, consultation with the U.S. Fish and Wildlife Service pursuant to Section 7(a)(2) of the Endangered Species Act of 1973 (ESA) (87 Stat. 884, as amended 16 U.S.C. 1531 *et seq.*) is required. However, also based on your answers provided, this project may rely on the December 15, 2016 FHWA, FRA, FTA Programmatic Biological Opinion for Transportation Projects within the Range of the Indiana Bat and Northern Long-eared Bat.

Qualification Interview

1. Is the project within the range of the Indiana bat^[1]?

[1] See [Indiana bat species profile](#)

Automatically answered

No

2. Is the project within the range of the Northern long-eared bat^[1] (NLEB)?

[1] See [Northern long-eared bat species profile](#)

Automatically answered

Yes

3. Which Federal Agency is the lead for the action?

A) Federal Highway Administration (FHWA)

4. Are *all* project activities limited to non-construction activities only? (examples of non-construction activities include: bridge/abandoned structure assessments, property inspections, planning and technical studies, property sales, property easements, and equipment purchases)

No

5. Are *all* project activities completely within the existing road/rail surface^[1] (e.g., road line painting)?

[1] Road surface is defined as the driving surface and shoulders (may be pavement, gravel, etc.) and rail surface is defined as the edge of the rail ballast.

No

6. Are *all* project activities limited to the maintenance of the surrounding landscape at existing facilities (e.g., rest areas, stormwater detention basins)?

No

7. Are *all* project activities limited to wetland or stream protection activities associated with compensatory wetland mitigation?

No

8. Will the project raise the road profile **above the tree canopy** within 1,000 feet of known summer habitat (based on documented roosts and/or captures)?

No

9. Does the project include percussives or other activities (not including the removal of trees) that will increase noise levels above existing traffic/background levels?

No

10. Is there any suitable summer habitat^[1] for Indiana Bat or NLEB within the project area? (includes any trees suitable for maternity, roosting, foraging, or travelling habitat)

[1] See the Service's [summer survey guidance](#) for our current definitions of suitable habitat.

Yes

11. Will the project clear any suitable summer habitat^[1]?

[1] See the Service's [summer survey guidance](#) for our current definitions of suitable habitat.

Yes

12. Will the project clear more than 20 acres of suitable habitat per 5-mile section of road/rail?

No

13. Have presence/probable absence (P/A) summer surveys^{[1][2]} been conducted^{[3][4]}?

[1] See the Service's [summer survey guidance](#) for our current definitions of suitable habitat.

[2] Presence/probable absence summer surveys conducted within the fall swarming/spring emergence home range of a documented Indiana bat hibernaculum (contact local Service Field Office for appropriate distance from hibernaculum) that result in a negative finding requires additional consultation with the local Service Field Office to determine if clearing of forested habitat is appropriate and/or if seasonal clearing restrictions are needed to avoid and minimize potential adverse effects on fall swarming and spring emerging Indiana bats.

[3] Negative presence/probable absence survey results obtained using the [summer survey guidance](#) are valid for a minimum of two years from the completion of the survey unless new information (e.g., other nearby surveys) suggest otherwise.

[4] negative presence/probable absence survey results obtained using the [summer survey guidance](#) are valid for a minimum of two years from the completion of the survey unless new information (e.g., other nearby surveys) suggest otherwise.

No, P/A surveys have not been conducted and therefore it is assumed that bats are present for this analysis

14. Does the project include activities within **documented NLEB** habitat^{[1][2]}?

[1] Documented roosting or foraging habitat – for the purposes of this consultation, we are considering documented habitat as that where Indiana bats and/or NLEB have actually been captured and tracked using (1) radio telemetry to roosts; (2) radio telemetry biangulation/triangulation to estimate foraging areas; or (3) foraging areas with repeated use documented using acoustics. Documented roosting habitat is also considered as suitable summer habitat within 0.25 miles of documented roosts.)

[2] For the purposes of this key, we are considering documented corridors as that where Indiana bats and/or NLEB have actually been captured and tracked to using (1) radio telemetry; or (2) treed corridors located directly between documented roosting and foraging habitat.

No

15. Will the project remove any suitable **NLEB** roosting/foraging habitat or travel corridors that have **not** been documented as being used by NLEB?

Yes

16. When will the suitable (but **not** documented) **NLEB** roosting/foraging habitat or travel corridors be removed?

B) During the inactive season

17. Does the project include any ground disturbing activities?

Yes

18. Is the project located within a karst area?

No

19. Will the project include any type of activity that could impact a **known** hibernaculum^[1], or impact a karst feature (e.g., sinkhole, losing stream, or spring) that could result in effects to a **known** hibernaculum?

[1] For the purpose of this consultation, a hibernaculum is a site, most often a cave or mine, where bats hibernate during the winter (see suitable habitat), but could also include bridges and structures if bats are found to be hibernating there during the winter.

No

20. Does the project include any activities **within** 0.5 miles of an Indiana bat and/or NLEB hibernaculum^[1]?

[1] For the purpose of this consultation, a hibernaculum is a site, most often a cave or mine, where bats hibernate during the winter (see suitable habitat), but could also include bridges and structures if bats are found to be hibernating there during the winter.

No

21. Does the project include any activities **greater than** 300 feet from existing road/rail surfaces?

No

22. Does the project include slash pile burning?

No

23. Does the project include any bridge removal and/or replacement activities?

No

24. Does the project include any bridge maintenance activities (e.g., any bridge repair, retrofit, maintenance, and/or rehabilitation work)?

No

25. Does the project include the removal and/or replacement of any structures other than a bridge? (e.g., rest areas, offices, sheds, outbuildings, barns, parking garages, etc.)

No

26. Does the project include maintenance activities of any structures other than a bridge? (e.g., rest areas, offices, sheds, outbuildings, barns, parking garages, etc.)

No

27. Does the project include tree removal?

Yes

28. Will the tree removal alter any documented Indiana bat or NLEB roosts and/or alter any surrounding summer habitat *within* 0.25 mile of a documented roost?

No

29. Will *any* tree removal occur within 100 feet of existing road/rail surfaces^[1]?

[1] Road surface is defined as the driving surface and shoulders (may be pavement, gravel, etc.) and rail surface is defined as the edge of the rail ballast.

Yes

30. Will *all* tree removal occur within 100 feet of existing road/rail surfaces?

Yes

31. Are *all* trees that are being removed clearly demarcated?

Yes

32. Will the project involve the use of **temporary** lighting during the construction/maintenance activities?

No

33. Will the project install new (or replace existing) **permanent** lighting?

No

34. **General AMM 1**

Will the project ensure all operators, employees, and contractors working in areas of known or presumed bat habitat are aware of all FHWA/FRA/FTA (Transportation Agencies) environmental commitments, including all applicable Avoidance and Minimization Measures?

Yes

35. **Tree Removal AMM 1**

Can all phases/aspects of the project (e.g., temporary work areas, alignments) be modified, to the extent practicable, to avoid tree removal in excess of what is required to implement the project safely?

Note: Tree Removal AMM 1 is an avoidance measure, the full implementation of which may not always be practicable. In such cases, projects may still be NLAA as long as Tree Removal AMMs 2, 3, and 4 are implemented

Yes

36. **Tree Removal AMM 2**

Can all tree removal activities be restricted to when bats are not likely to be present^[1]?

[1] Coordinate with the local Service Field Office for appropriate dates.

Yes

37. Tree Removal AMM 3

Can tree removal be limited to that area specified in project plans, and assured through: (1) installation of bright colored flagging/fencing prior to any tree clearing to ensure contractors stay within clearing limits, and (2) confirmation that contractors understand clearing limits and how they are marked in the field?

Yes

38. Tree Removal AMM 4

Can the project avoid cutting down/removal of all 1) documented Indiana bat or NLEB roosts^[1] (that are still suitable for roosting), and 2) trees within 0.25 miles of roosts?

[1] Documented roosting or foraging habitat – for the purposes of this consultation, we are considering documented habitat as that where Indiana bats and/or NLEB have actually been captured and tracked using (1) radio telemetry to roosts; (2) radio telemetry biangulation/triangulation to estimate foraging areas; or (3) foraging areas with repeated use documented using acoustics. Documented roosting habitat is also considered as suitable summer habitat within 0.25 miles of documented roosts.)

Automatically answered

Yes - you indicated that tree removal for this project would not alter documented Indiana bat or NLEB roosts and/or summer habitat within 0.25 mile of a documented roost

Project Questionnaire

1. Have you made a No Effect determination for all other species indicated on the FWS IPaC generated species list?

Yes

2. Have you made a May Affect determination for any other species on the FWS IPaC generated species list?

No

3. How many acres of trees are proposed for removal?

8

4. **Please verify:**

All tree removal will occur greater than 0.5 mile from any hibernaculum.

Yes, I verify that all tree removal will occur greater than 0.5 miles from any hibernaculum.

5. The project location is 0-100 feet from the edge of existing road/rail surface.

Yes

6. The project location is 100-300 feet from the edge of existing road/rail surface.

No

Avoidance And Minimization Measures (AMMs)

These measures **were accepted** as part of this determination key result:

GENERAL AMM 1

Ensure all operators, employees, and contractors working in areas of known or presumed bat habitat are aware of all FHWA/FRA/FTA (Transportation Agencies) environmental commitments, including all applicable AMMs.

TREE REMOVAL AMM 1

Modify all phases/aspects of the project (e.g., temporary work areas, alignments) to the extent practicable to avoid tree removal in excess of what is required to implement the project safely.

Note: Tree Removal AMM 1 is an avoidance measure, the full implementation of which may not always be practicable. In such cases, projects may still be NLAA as long as Tree Removal AMMs 2, 3, and 4 are implemented.

TREE REMOVAL AMM 2

Apply time of year (TOY) restrictions for tree removal^[1] when bats are not likely to be present.

[1] Coordinate with the local Service Field Office for appropriate dates.

TREE REMOVAL AMM 3

Ensure tree removal is limited to that specified in project plans. Install bright colored flagging/fencing prior to any tree clearing to ensure contractors stay within clearing limits. Ensure that contractors understand clearing limits and how they are marked in the field.

TREE REMOVAL AMM 4

Do not cut down documented Indiana bat or NLEB roosts (that are still suitable for roosting) or trees within 0.25 miles of roosts, or documented foraging habitat at any time of year.

Additional Avoidance And Minimization Measures (AMMs)

These measures **are not required** for this project as described:

TREE REMOVAL AMM 5

Avoid conducting tree removal within documented Indiana bat roosting/foraging habitat^[1] or travel corridors^[2] from May 1-July 31.

[1] Documented roosting or foraging habitat – for the purposes of this BA, we are considering documented habitat as that where Indiana bats and/or NLEB have actually been captured and tracked using (1) radio telemetry to roosts; (2) radio telemetry biangulation/triangulation to estimate foraging areas; or (3) foraging areas with repeated use documented using acoustics. Documented roosting habitat is also considered as suitable summer habitat within 0.25 miles of documented roosts.

[2] Documented travel corridor - for the purposes of this BA, we are considering documented corridors as that where Indiana bats and/or NLEB have actually been captured and tracked to using (1) radio telemetry; or (2) tree corridors located directly between documented roosting and foraging habitat.

TREE REMOVAL AMM 6

Minimize tree removal within suitable Indiana bat habitat (no documented habitat) from May 1-July 31 in the following manner:

- 1) Limit clearing such that all trees can be visually assessed.
- 2a) Conduct visual emergence surveys if trees are greater than or equal to 9 inches diameter at breast height (dbh).
 - If no bats are observed, proceed with clearing the following day.
 - If bats observed, modify project to conduct tree removal after August 1.

OR

2b) If trees are <9 inches dbh, no emergence survey required.

TREE REMOVAL AMM 7

Avoid removing documented NLEB maternity roosts and trees within 150 feet of those roosts from June 1-July 31.

BRIDGE AMM 1

To completely avoid direct effects to roosting bats, perform any bridge repair, retrofit, maintenance, and/or rehabilitation work during the winter hibernation period^[1].

[1] Coordinate with the local Service Field Office for appropriate dates.

BRIDGE AMM 2

If construction activity is planned during the active season, perform a bridge assessment^[1] for presence of bats.

[1] See User Guide Appendix D for [bridge assessment guidance](#)

BRIDGE AMM 3

If bridge assessment for bats suggests presence of bats, ensure activity will not disturb bats.

BRIDGE AMM 4

If bridge assessment for bats suggests presence of a small number of bats (5)6, conduct bridge repair, retrofit, maintenance, and/or rehabilitation work (including activity with percussives) outside of pup season (June 1- July 31) AND keep the light localized in the evening while the bats are feeding, starting one hour after sunset and ending one hour before daylight, excluding the hours between 10 p.m. and midnight^[1].

[1] Keeley and Tuttle (1999) indicated peak night roost usage is between 10:00 p.m. to midnight.

BRIDGE AMM 5

Ensure suitable roosting sites remain after any bridge work. Suitable roosting sites may be incorporated into the design of a new bridge.

STRUCTURE AMM 1

If the goal of the project is to exclude bats from the structure, coordinate with your local Service Field Office and follow the Acceptable Management Practices for Bat Control Activities in Structures guidance document ([White-nose Syndrome Conservation and Recovery Working Group 2015](#)).

STRUCTURE AMM 2

Perform *all* maintenance and/or repair work during the winter hibernation period^[1] unless a hibernating colony of bats is present.

[1] Coordinate with the local Service Field Office for appropriate dates.

STRUCTURE AMM 3

If maintenance and/or repair work will be performed outside of the winter hibernation period, determine if work will occur in an area with roosting bats. If there is observed bat activity (or signs of frequent bat activity), Transportation Agencies/State Departments of Transportation (DOTs) will conduct maintenance activity or similar structure alteration when bats are not present (i.e., foraging) or in a manner that will not disturb them.

STRUCTURE AMM 4

If roosting bats or signs of roosting bats are observed, Transportation Agencies/State DOTs will avoid removing the structure.

Note: If there are concerns about human health/safety/property coordinate with a nuisance wildlife control officer and the local USFWS Field Office.

LIGHTING AMM 1

Direct temporary lighting away from suitable habitat during the active season.

LIGHTING AMM 2

Use downward-facing, full cut-off^[1] lens lights, and direct lighting away from suitable habitat when installing new or replacing existing permanent lights; or for those transportation agencies using the BUG system developed by the Illuminating Engineering Society^{[2][3]}, the goal is to be as close to 0 for all three ratings with a priority of "uplight" of 0 and "backlight" as low as practicable.

[1] Refer to [Luminaire classification for controlling stray light](#)

[2] Refer to [Fundamentals of Lighting - BUG Ratings](#)

[3] Refer to [The BUG System—A New Way To Control Stray Light](#)

HIBERNACULA AMM 1

For projects located within karst areas, on-site personnel will use best management practices^[1], secondary containment measures, or other standard spill prevention and countermeasures to avoid impacts to possible hibernacula. Where practicable, a 300 foot buffer will be employed to separate fueling areas and other major containment risk activities from caves, sinkholes, losing streams, and springs in karst topography.

[1] Coordinate with the appropriate Service Field Office on recommended best management practices for karst in your state.

Determination Key Description: FHWA, FRA, FTA Programmatic Consultation For Transportation Projects Affecting NLEB Or Indiana Bat

This key was last updated in IPaC on April 03, 2017. Keys are subject to periodic revision.

This decision key is intended for projects/activities funded or authorized by the Federal Highway Administration (FHWA), Federal Railroad Administration (FRA), and/or Federal Transit Administration (FTA), which require consultation with the U.S. Fish and Wildlife Service (Service) under Section 7 of the Endangered Species Act (ESA) for the endangered **Indiana bat** (*Myotis sodalis*) and the threatened **Northern long-eared bat** (NLEB) (*Myotis septentrionalis*).

This decision key should only be used to verify project applicability with the Service's [revised programmatic biological opinion for transportation projects dated December 15, 2016](#). The programmatic biological opinion covers limited transportation activities that may affect either bat species, and addresses situations that are both likely and not likely to adversely affect either bat species. This decision key will assist in identifying the effect of a specific project/activity and applicability of the programmatic consultation. The programmatic biological opinion is not intended to cover all types of transportation actions. Activities outside the scope of the programmatic biological opinion, or that may affect ESA-listed species other than the Indiana bat or NLEB, or any designated critical habitat, may require additional ESA Section 7 consultation.

U.S. Fish & Wildlife Service Contact List

Determination key office contact information

Assistant Director-Ecological Services

5275 Leesburg Pike, Ms: Es
Falls Church, VA 22041-3803
(703) 358-2171

Offices with jurisdiction over project area

Illinois-Iowa Ecological Services Field Office

Illinois & Iowa Ecological Services Field Office
1511 47th Ave
Moline, IL 61265-7022
(309) 757-5800

From: Solberg, Marykay
To: [Zeimen, Danny](#)
Cc: [Schnoebelen, Jim](#); [Brink, Kenneth](#); [Claman, David](#); [Dunn, Mark](#); [Kennerly, Michael](#); [McDonald, Douglas](#); "Mike LaPietra"; [Musgrove, Wes](#); [Newell, Deeann](#); [Nicholson, Tamara](#); [Novey, Gary](#); [Patel, Kevin](#); [Sloppy, Mark](#); [Swenson, Mark A](#); [Tjaden, Jeffrey](#); [Tsai, Chin-Ta](#); [Yanna, Kenneth](#)
Subject: TE1 Threatened & Endangered Species Review IM-380-6(224)25--13-57
Date: Thursday, January 18, 2018 2:38:00 PM
Attachments: [image003.png](#)

County: Linn
PIN: 96-57-380-050
Project Number: IM-380-6(224)25--13-57
Location: S of Blairs Ferry Rd in Cedar Rapids to County Home Rd / Co Rd E34
Type of Work: Preliminary Engineering
Project Directory: 5738005096

In compliance with Section 7 of the Endangered Species Act of 1973 the above referenced project has been evaluated to determine the likelihood of impacting threatened and/or endangered species.

The Iowa Department of Transportation (DOT) determined, under the delegation authority provided by the Federal Highway Administration (FHWA), that the proposed corridor project may but is not likely to adversely affect the Northern long-eared bat (*Myotis septentrionalis*) or result in the destruction or adverse modification of federally designated critical habitat. A project submittal form for the Range-wide Programmatic Informal Consultation for Indiana Bat and Northern Long-eared Bat was submitted to the U.S. Fish and Wildlife Service (USFWS) on December 15, 2017. On December 29th, 2017 the USFWS concurred the project adheres to the range-wide programmatic agreement and **may proceed provided tree clearing takes place between September 30th and April 1st** per Specification 1107.18.B.2.

The project is clear for threatened and endangered species provided the tree clearing dates are followed. The Determination of Effect for Threatened & Endangered Species forms are attached.

The attached review memo signifies the completion of the TE1 event for this project.

If the project concept changes, additional ROW becomes necessary, or extra work is identified, please notify this office for further review.



MARY KAY SOLBERG

OFFICE OF LOCATION AND ENVIRONMENT
IOWA DEPARTMENT OF TRANSPORTATION
PHONE: 515-239-1741 CELL: 515-509-0945
Please note e-mail change: marykay.solberg@iowadot.us

Newell, Deeann

From: Donovan, Matt
Sent: Monday, June 18, 2018 1:11 PM
To: Newell, Deeann
Cc: Becker, Janee [DOT]
Subject: Cultural Resources Clearance / IM-380-6(224)25--13-57 / No Historic Properties Affected- Previous Surveyed

Cultural Resources Clearance / IM-380-6(224)25--13-57 / No Historic Properties Affected- Previous Surveyed

District: 6
County: Linn
PIN: 96-57-380-050
Project Number: IM-380-6(224)25--13-57
Route: 380
Type of Work: Preliminary Engineering
Location: S of Blairs Ferry Rd in Cedar Rapids to County Home Rd /
Co Rd E34
Project Directory: 5738005096

In compliance with Section 106 of the National Historic Preservation Act (as amended) and the Statewide Programmatic Agreement (2012), the above referenced project has been evaluated for effects to cultural resources (SHPO). This project has been given a determination of **No Historic Properties Affected**, dated **07/18/2017**.

This evaluation and clearance is for cultural resources (SHPO) impacts only, and is based on information provided in the final project concept statement; design plans; project area photos and descriptions; along with the available GIS data and layers.

This project area has been previously surveyed for cultural resources. These surveys were conducted in 1978, 1997, 2001, and 2012. A review of the project's right-of-way needs, along with the use of GIS Layers, including the Iowa I-Sites database, revealed that the project area had been previously surveyed, no eligible cultural resources were identified with the proposed project area.

HOTOPP, JOHN A. AND MICHAEL FOKKEN

1978 F-100-1 LINN COUNTY PRIMARY ROADS. IOWA DEPARTMENT OF TRANSPORTATION PROJECT COMPLETION REPORT 1(67). OFFICE OF THE STATE ARCHAEOLOGIST, UNIVERSITY OF IOWA, IOWA CITY, IA.

LIPSMAN, MICHAEL

1978 F-100-1 NORTHWEST CIRCUMFERENTIAL HIGHWAY LINN COUNTY. IOWA DEPARTMENT OF TRANSPORTATION PROJECT COMPLETION REPORT . OFFICE OF THE STATE ARCHAEOLOGIST, UNIVERSITY OF IOWA, IOWA CITY, IA.

NANSEL, BLANE H.

1997 LETTER REPORT: STP-U-3432(1)--70-57, LINN COUNTY LOCAL SYSTEMS. OFFICE OF THE STATE ARCHAEOLOGIST, IOWA CITY, IA. SUBMITTED TO OFFICE PROJECT PLANNING.

ROGERS, LEAH D.

2001 PHASE I CULTURAL RESOURCES INVESTIGATION OF THE TOWER TERRACE I-380 INTERCHANGE STUDY (PROJECT NO. IM-380-6(200)259-13-57), LINN COUNTY, IOWA. LEAH D. ROGERS, MOUNT VERNON, IA. SUBMITTED TO SNYDER AND ASSOCIATES, INC., ANKENY, IA.

Price, Jennifer A. and Leah D. Rogers

2012 I-380/Tower Terrace Road Interchange Project, Linn County, Iowa: Supplemental Intensive Historical/Architectural Survey and Evaluation. LEAH D. ROGERS, MOUNT VERNON, IA. SUBMITTED TO SNYDER AND ASSOCIATES, INC., ANKENY, IA.

Meseke, Adam J. and Leah Rogers

2012 I-380/Tower Terrace Road Interchange Project, Linn County, Iowa: Supplemental Phase I Archaeological Investigation. LEAH D. ROGERS, MOUNT VERNON, IA. SUBMITTED TO SNYDER AND ASSOCIATES, INC., ANKENY, IA.

This clearance memo signifies the completion of the HO, HO1, HO3 event(s) for this project.

Any changes to the project that may result in impacts not covered by the submitted information, including changes to the project scope, additional right of way, easements, or borrow needs, could require additional archaeological or historical surveys. If project changes are needed, please contact this office.

APPENDIX C

TRIBAL COORDINATION

Rees, Jon [DOT]

From: Cutler, Catherine [DOT]
Sent: Thursday, October 13, 2016 2:56 PM
To: Rees, Jon [DOT]
Subject: FW: Project IM-380-6(224)25--13-57

From: Diane Hunter [mailto:dhunter@miamination.com]
Sent: Tuesday, October 11, 2016 11:53 AM
To: Cutler, Catherine [DOT] <Catherine.Cutler@dot.iowa.gov>
Subject: Project IM-380-6(224)25--13-57

Dear Ms. Cutler:

Aya, kikwehsitoole. My name is Diane Hunter, and I am the Tribal Historic Preservation Officer for the Federally Recognized Miami Tribe of Oklahoma. In this capacity, I am the Miami Tribe's point of contact for all Section 106 issues.

Thank you for the invitation to the Public Information Meeting on October 12, 2016 regarding the above-mentioned project. I am not able to attend this meeting, but the Miami Tribe would like to serve as a consulting party as the project goes forward. In my capacity as Tribal Historic Preservation Officer I am the point of contact for consultation.

In any case, if human remains and/or cultural objects are discovered, regardless of initial determination as to site dating or cultural affiliation, please contact me at 918-541-8966, by email at dhunter@miamination.com, or by mail at the address listed below to initiate consultation.

Sincerely,

Diane Hunter
Tribal Historic Preservation Officer
Miami Tribe of Oklahoma
P.O. Box 1326
Miami, OK 74355



Form 536002 04/15

Tribal Notification Form
To: Flandreau Santee Sioux

Date 11/22/2016 IA DOT contact Matt Donovan
IADOT project # IM-380-6(224)25-13-57 Phone # 515-239-1097
Location Interstate 380, Tower Terrace and Boyson Road Interchange Improvements; cities of Hiawatha, Robins and Cedar Rapids, Linn County, Iowa E-mail matt.donovan@dot.iowa.gov
Description Interchange Improvements

Type of Project (see map)
VERY SMALL - Disturb less than 12-inch depth (plow zone)
SMALL - Grading on existing road, shouldering, ditching, etc.
SMALL - Bridge or culvert replacement
LARGE - Improve existing road from 2 lanes to 4 lanes
LARGE - New alignment
OTHER - Interchange Improvements

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 archaeology site(s) found
--Section 106 Consultation Process ends*
American Indian archaeology sites found but not eligible for National Register listing -- Section 106 Consultation Process ends*
Avoided American Indian archaeology 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 archaeology sites found (see map and list of sites)
American Indian archaeology sites eligible for National Register listing cannot be avoided (see map)
Burial site found
of non-significant prehistoric archaeology sites
of potentially significant prehistoric archaeology sites
of National Register-eligible prehistoric archaeology sites

Affected National Register Properties
Investigating avoidance or minimizing harm options
Protected
Avoided
National Register Evaluation

Please Respond

Who should we contact for site/project-related discussions?
Name Street Address City, Zip Code
Phone E-mail

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

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

Comments

Name Tribe or Nation Date

(Comments continued on back)

Office of Location & Environment

800 Lincoln Way, Ames, IA 50010

Phone: 515-239-1097 | Email: matt.donovan@dot.iowa.gov

Ref. IM-380-6(224)25--13-57

Primary System

Linn County

November 22, 2016

Mr. Garrie KILLSAHUNDRED, THPO
Flandreau Santee Sioux
P.O. Box 283
Flandreau, SD 57028

RE: Early Coordination for Interstate 380, Tower Terrace and Boyson Road Interchange Improvements

Dear Mr. KILLSAHUNDRED:


For the purpose of complying with the National Environmental Policy Act (NEPA), the Federal Highway Administration, in cooperation with the Iowa Department of Transportation, is initiating the preparation of an Environmental Assessment (EA) for the Interstate 380 Improvements Project in Linn County, Iowa (see enclosed figure).

The project team will develop and evaluate improvement alternatives that alleviate increased travel demands in the I-380 corridor between Iowa 100/Collins Road and County Home Road/Linn County E-34. The proposed action is expected to improve traffic operations at ramp terminals and on I-380, address geometric deficiencies and support planned economic development and land uses. It is anticipated that the proposed improvements will require the acquisition of minor amounts of new right-of-way at locations throughout the corridor. Precise amounts of right-of-way and possible acquisition locations are unknown at this time.

As a part of early coordination, we are soliciting comments from your tribe regarding the proposed project. The comments and materials you supply will be used to determine if the proposed improvements may have impacts that warrant further consideration as well as being consistent with long-term development plans within the study corridor. Your comments will be incorporated into the environmental planning process and ultimately the Environmental Assessment document as appropriate. The enclosed project study limits map and project description should help you understand the nature of the project and help you determine the location of the proposed improvements.

Enclosed with the package is a postage-paid notification form that you may use, if you wish, to return comments about the project. Please feel free to call me at (515) 239-1035. If you wish to contact a representative of the U.S. government, call Mr. Michael LaPietra, Federal Highway Administration, Iowa Division, at (515) 233-7302.

Sincerely,



Matthew J.F. Donovan, RPA
Office of Location and Environment

MJFD

Enclosure

cc: Mike LaPietra – Federal Highway Administration
DeeAnn Newell – Office of Location and Environment - NEPA