

# Chapter 8

# Environmental Review

# Chapter 8 – Environmental Review

## Environmental Review Background

Transportation projects have the potential to impact natural and man-made environments. The FAST Act requires long-range transportation plans to consider these impacts at the policy and program level. Projects included in a long-range transportation plan are often years away from final design and implementation, and a detailed environmental review is not feasible at this stage of the planning process. However, the MPO can consult with resource agencies to discuss potential impacts to natural and historic resources, and develop policies or strategies to ensure transportation projects have minimal impacts on the environment.



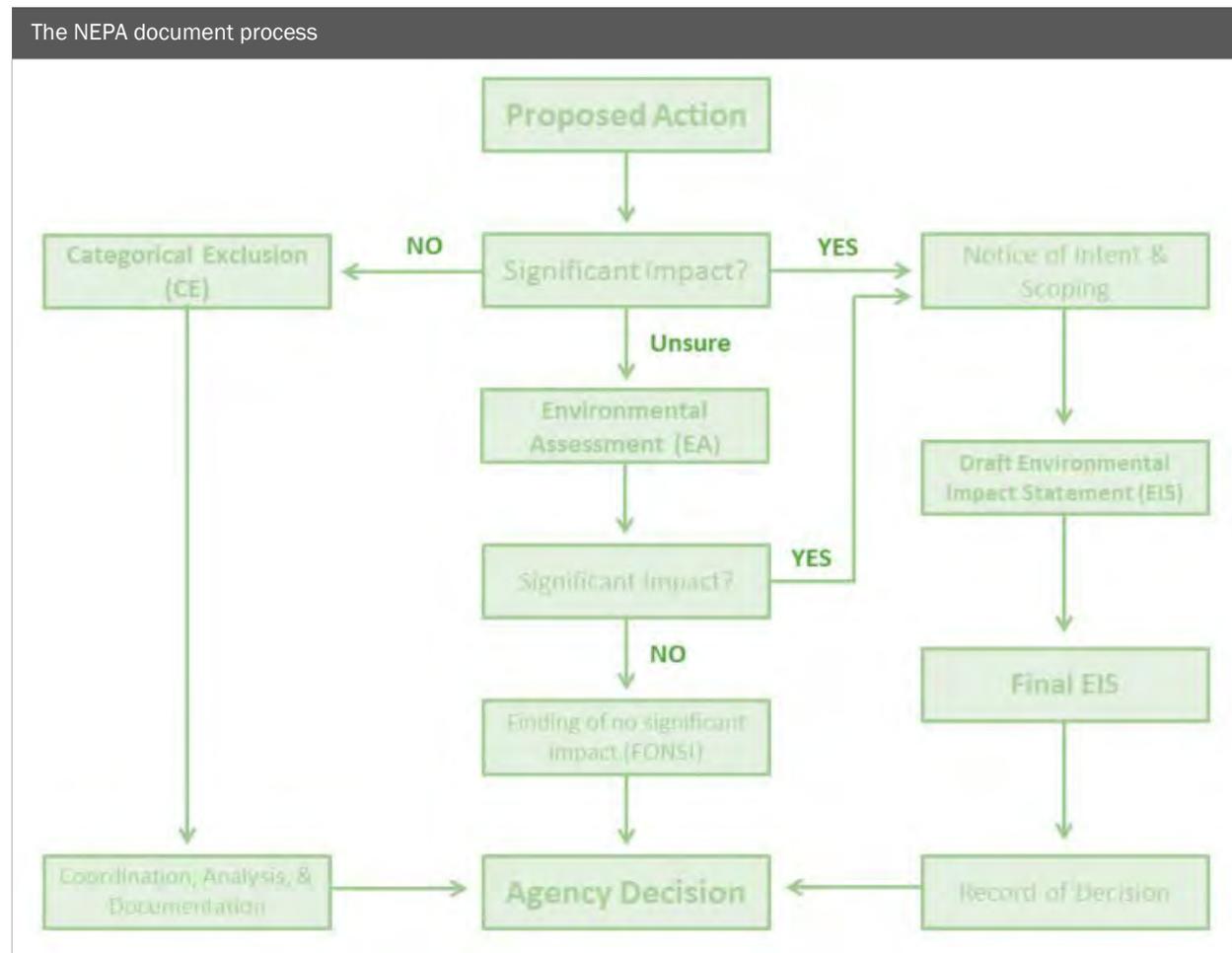
## Federal Requirements

Federal code outlines the requirements for MPOs regarding environmental consultation. Per 23 CFR 450.324 (f) (10), *“The metropolitan transportation plan shall, at a minimum, include a discussion of types of potential environmental mitigation activities and potential areas to carry out these activities, including activities that may have the greatest potential to restore and maintain the environmental functions affected by the metropolitan transportation plan. The discussion may focus on policies, programs, or strategies, rather than at the project level. The MPO shall develop the discussion in consultation with applicable Federal, State, and Tribal land management, wildlife, and regulatory agencies...The MPO shall consult, as appropriate, with State and local agencies responsible for land use management, natural resources, environmental protection, conservation, and historic preservation concerning the development of the transportation plan. The consultation shall involve comparison of transportation plans with State conservation plans or maps, or inventories of natural or historic resources.”* The overall purpose of this consultation process is to integrate environmental values into the decision-making process from the broad planning level to the specific project level.

When a federally funded transportation project reaches the engineering stage, compliance with several laws is required including the National Environmental Policy Act (NEPA) of 1969. NEPA is a national policy to protect and enhance the environment. The policy contains a process for developing major federal actions (such as federal funding for a transportation project) that requires environmental review documents as part of the project development. Complying with NEPA is typically the responsibility of the project sponsor. The NEPA process includes the consideration of alternatives for the project and their environmental effects, as well as public involvement and interagency collaboration.

The type and scope of environmental document required by NEPA depends on the nature of a project and the significance of its impacts. The three document types are a Categorical Exclusion (CE), Environmental Assessment (EA), and Environmental Impact Statement (EIS). A Categorical Exclusion is the simplest process and is applicable if the project meets certain criteria that have been previously determined to have no significant environmental impact. An Environmental Assessment is performed if a project’s environmental impact is unclear, and the assessment determines whether or not the project would significantly affect the environment. If the project will not, a finding of no significant impact (FONSI) is issued. Conversely, if the EA determines that there may be significant environmental consequences from the project, an Environmental

Impact Statement must be prepared. This document is a detailed evaluation of the proposed project and its alternatives, and it includes additional opportunities for other agencies and the public to comment.



Other actions concerning federal aid transportation projects that are mandated via either federal or state legislation include the following:

- The Federal Water Pollution Control Act was enacted in 1972, amended 1977, and became commonly known as the Clean Water Act. This Act focuses on restoring and maintaining the chemical, physical, and biological integrity of the nation’s waters so that they can support the protection and propagation of fish, shellfish, and wildlife and recreation in and on the water.
  - Section 401 requires that a Federal license or permit must be obtained when any activity, including the construction or operation of transportation facilities, may result in any discharge into navigable waters.
  - Section 404 permits may be issued after adequate opportunity for public comment for the discharge of dredged or fill material into the navigable waters at specified disposal sites.
  - National Pollutant Discharge Elimination System (NPDES) permit program controls water pollution by regulating point sources that discharge pollutants into any surface waters. Iowa is authorized to approve NPDES permits, regulate federal facilities, approve pretreatment programs, and approve general permits.

- The Endangered Species Act of 1973 addressed the fact that various species of fish, wildlife, and plants have been rendered extinct as a consequence of economic growth and development untampered by adequate concern and conservation. This Act seeks to conserve endangered and threatened species and to resolve water resource issues in concert with the conservation of endangered species.
  - Section 7 addresses interagency cooperation and consultation to ensure that any transportation project authorized, funded, or carried out is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species.
  - The U.S. Department of Transportation Act of 1966 included a special provision to preserve the beauty and integrity of publicly owned parks and recreation areas, waterfowl and wildlife refuges, and historic sites considered to have national, state, or local significance.
  - Section 4(f) mandates that FHWA and State DOTs cannot approve the use of land from a significant publicly owned park, recreation area, wildlife or waterfowl refuge, or any significant historic site unless there is no feasible and prudent alternative to the use of land, and the transportation project includes all possible planning to minimize harm to the property.
- The National Historic Preservation Act of 1966 focuses on using measures, including financial and technical assistance, to preserve our prehistoric and historic resources and fulfill the social, economic, and other requirements of present and future generations. Section 106 requires that prior to the approval of any federal funds for a transportation project, a detailed assessment must be undertaken which considers the project's impact on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register.

Iowa State Code and Administrative Code have several legislative mandates concerning the environment including the following:

- Sovereign Lands Construction Permit – requires that a person, association, or corporation shall not build or erect any pier, wharf, sluice, piling, wall, fence, obstruction, building, or structure of any kind upon or over any state-owned land or water without first obtaining a written permit.
- Flood Plain Development Permit – requires that a person who desires to construct or maintain a structure, dam, obstruction, deposit, or excavation in any flood plain or floodway must first seek approval. Approval is based on the protection of life and property from floods and to promote the orderly development and wise use of the flood plains.
- The Iowa DNR regulates the construction, operation, and closure of facilities and projects that manage, process, and dispose solid waste. This includes the reuse of soils.
- Open burning requires that burning of landscape waste produced in clearing, grubbing, and construction operations shall be limited to areas located at least one-quarter mile from any building inhabited by other than the landowner or tenant conducting the open burning.
- State permitting and air reporting system required for air quality permits.
- Iowa's endangered and threatened species law was enacted in 1975. The current law, entitled Endangered Plants and Wildlife, is Chapter 481B of the Code of Iowa.
- Iowa law requires transportation agencies to protect woodlands, wetlands, public parks, and prime agricultural lands (Iowa Code 314.23) and to avoid impacts to the natural and historic heritage of the state (Iowa Code 314.24).

An additional federal requirement that transportation projects must adhere to is Executive Order 12898 – Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations. This order was signed in 1994 and protects minority and low-income populations from receiving disproportionately high and adverse impacts as a result of federally funded projects. In addition to reviewing projects from a

natural environment viewpoint, projects are also reviewed in relation to data from the U.S. Census Bureau to ensure they would not violate this order.

Environmental analysis in a long-range transportation plan is not meant to be equal to or substitute for NEPA or other federal and state regulatory processes. However, there are several benefits to linking transportation planning and environmental concerns, including the early identification of potential environmental issues and consultation with various resource groups. Ultimately, compliance with NEPA and other federal and state regulations will be carried out individually for each federally-funded



Depressed road design for the IA Hwy 53 and Viking Rd interchange  
AECOM

project when that project is in development. The environmental analysis overview in this chapter can provide a sense of the resources in the region and the potential of planned transportation projects to affect those resources.

Protecting and enhancing the natural and built environment is an important concern for the MPO. Project sponsors are encouraged to begin coordination with environmental, regulatory, and resource agencies early in the project development process to ensure the best possible project outcome. While it is ultimately the project sponsor's responsibility to fulfill compliance with government regulations, it is in the MPO's best interest to promote sound planning that considers environmental factors and works to preserve and enhance the environment.

### Environmental Strategy

The MPO encourages jurisdictions to follow federal guidance as an environmental strategy. The steps used to define mitigation in 40 CFR 1508.20 should be followed by project sponsors. In order of preference, steps include:

- Avoiding the impact altogether by not taking a certain action or parts of an action.
- Minimizing impacts by limiting the degree or magnitude of the action or parts of an action.
- Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.
- Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
- Compensating for the impact by replacing or providing substitute resources or environments.

Avoidance of damage to the environment should always be the primary goal. When this cannot be achieved, minimizing impacts and compensating for them can help mitigate any negative environmental impacts from transportation projects.

## Local Mitigation Examples

The MPO encourages on-site, in-kind mitigation when possible. This involves compensatory mitigation, which replaces wetlands, streams, or natural habitat or functions lost as a result of a transportation project with the same or similar land use adjacent or contiguous to the site of the impact. On-site mitigation can also involve enhancing public recreation opportunities adjacent to transportation projects. An example is the Cedar Prairie Trail in Cedar Falls which was constructed adjacent to Iowa Highway 58 as part of the environmental mitigation for that project. Another example was the construction of Big Woods Lake, Brinker Lake, and Alice Wyth Lake out of borrow areas used for the construction of U.S. Highway 218.



The location of Big Woods Lake in 1970 and now. The lake was a borrow area for construction of U.S. Highway 218. Iowa DNR Historic Photo Interactive Mapping Site

## Consultation

The MPO conducted an environmental analysis by comparing the locations of proposed transportation projects with a variety of resources. To achieve this, maps and plans from local agencies, the Iowa Department of Natural Resources, the Natural Resources Conservation Office, the Office of the State Archaeologist, and other agencies were utilized (Maps 8.1-8.5).

In addition, several Federal, State, Tribal, and local government agencies were notified when the draft LRTP document was available for review. Feedback on topics relevant to their field of expertise was requested. The list of agencies notified can be found in Chapter 10.

## Mitigation Activities

The project sponsor and regulating agencies will ultimately determine the type of mitigation performed for a particular transportation project. Avoidance of damage to the environment should continually be the primary goal. Nonetheless, this is not always possible. There are many types of activities that can be utilized as mitigation, depending on the size and scope of the project and the environmental resource(s) it may take. Table 8.1 outlines suggestions for potential mitigation activities for transportation projects.

**Table 8.1: Potential Mitigation Activities for Transportation Projects**

Resource	Potential Mitigation Activities
Air quality	<ul style="list-style-type: none"> <li>• Transportation control measures</li> <li>• Transportation emission reduction measures</li> <li>• Control loose exposed soils with watering or canvas sheets</li> <li>• Minimize idle heavy construction vehicles</li> </ul>
Cultural resources	<ul style="list-style-type: none"> <li>• Landscaping for historic properties</li> <li>• Preservation in place or excavation for archeological sites</li> <li>• Memorandum of Agreement with State/Federal resource authorities</li> <li>• Education activities</li> <li>• Photo documentation and/or historic archival recording</li> </ul>
Endangered and threatened species	<ul style="list-style-type: none"> <li>• Time of year restrictions</li> <li>• Construction sequencing</li> <li>• Species research and/or fact sheets</li> <li>• Memorandum of Agreement for species management</li> <li>• Bridge sensitive areas instead of laying pavement directly onto the ground</li> <li>• Design measures to minimize potential fragmenting of animal habitats</li> <li>• Enhancement or restoration of degraded habitat</li> <li>• Creation of new habitat</li> <li>• Establish buffer areas around existing habitats</li> <li>• Modifications of land use practices</li> <li>• Restrictions on land use</li> </ul>
Farmland	<ul style="list-style-type: none"> <li>• Protect one farmland acre for every acre converted</li> <li>• Agricultural conservation easements on farmland</li> </ul>
Forested and other natural areas	<ul style="list-style-type: none"> <li>• Replacement property for open space easements of equal fair market value and equivalent usefulness</li> <li>• Minimize removal and/or selective cutting in forested areas except for what is needed to establish roadways and associated right of way</li> <li>• Preserve and/or reestablish vegetation whenever possible within open areas</li> </ul>
Neighborhoods, communities, homes, and businesses	<ul style="list-style-type: none"> <li>• Context sensitive solutions for communities</li> <li>• Minimize noise impact with sound barriers</li> <li>• Prevent the spread of hazardous materials with soil testing and treatment</li> <li>• Develop sidewalks, bike lanes, recreational areas, etc.</li> <li>• Property owners paid fair market value for property acquired</li> <li>• Residential and commercial relocation</li> </ul>
Noise	<ul style="list-style-type: none"> <li>• Depressed roads</li> <li>• Noise barriers</li> <li>• Plant trees</li> </ul>
Parks and recreation areas	<ul style="list-style-type: none"> <li>• Construct bicycle and pedestrian pathways</li> <li>• Replace impaired functions</li> </ul>
Viewshed impacts	<ul style="list-style-type: none"> <li>• Vegetation and landscaping; screening; buffers; earthen berms</li> </ul>
Wetlands and water resources	<ul style="list-style-type: none"> <li>• Preserve, create, replace, or restore wetland areas</li> <li>• Vegetative buffer zones</li> <li>• Bridge sensitive areas instead of laying pavement directly onto the ground</li> <li>• Improve storm water management</li> <li>• Make perpendicular crossings of streams and riparian buffers rather than lateral encroachments</li> <li>• Restore streams and/or stream buffers</li> <li>• Strict erosion and sedimentation control measures</li> </ul>

## Environmental Analysis

A general environmental analysis has been conducted to raise environmental awareness early in the project development process and to provide the public and decision makers with an overview of potential environmental impacts. To conduct this analysis, ArcGIS was used to create a database of environment-related layers. Transportation projects were then added to determine what environmental characteristics may be of issue in the project right-of-way. Table 8.2 shows the layers and their data sources. This is not an exhaustive list of resources but rather a starting point to review some of the most common environmental concerns. Some types of environmental data, such as cultural and historic sites, are generally available at the section level, and detailed information is not available without a more in-depth review.

**Table 8.2: Environmental Analysis Layers**

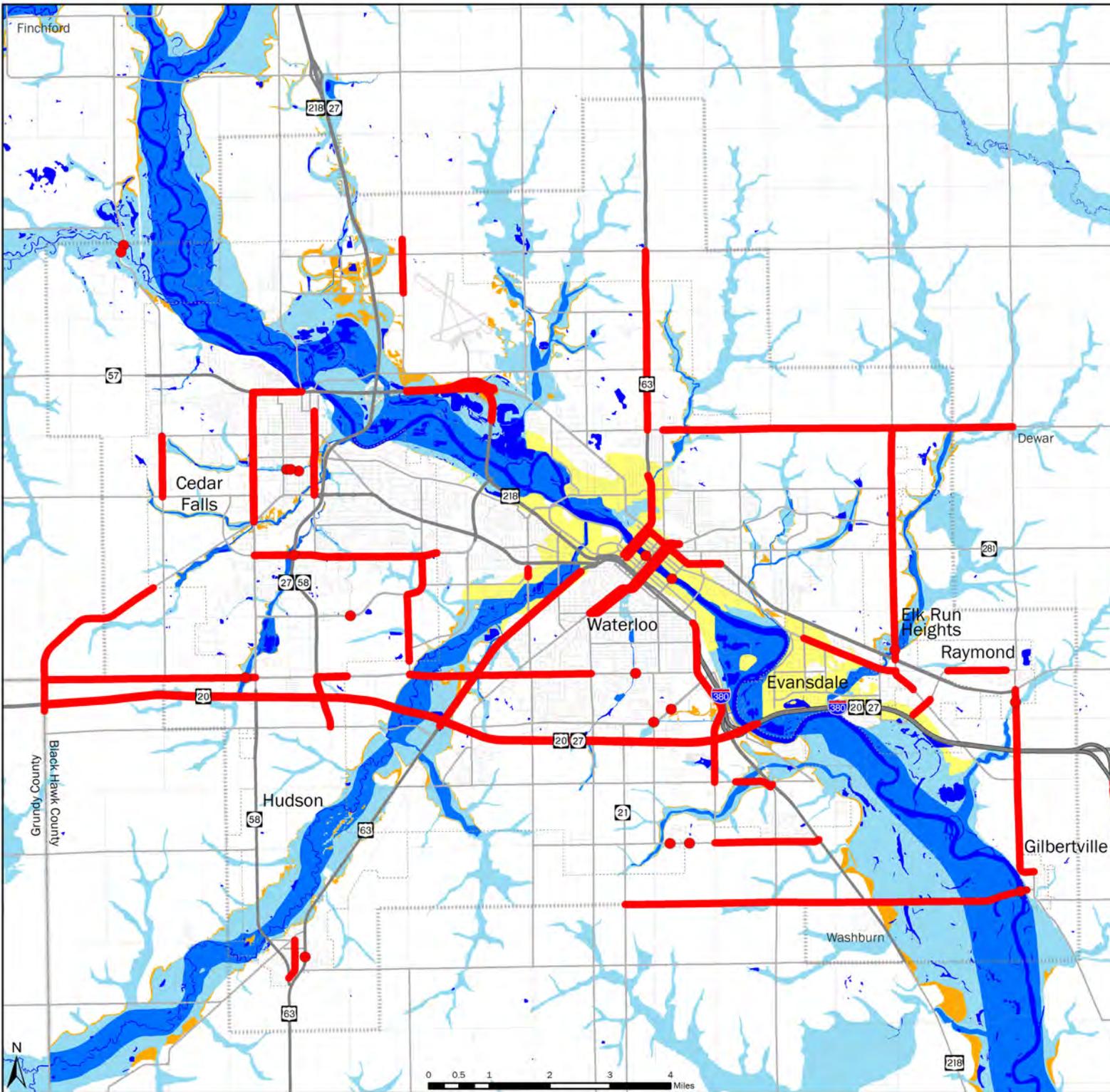
Layer	Data Source
Cemeteries	Iowa Department of Natural Resources
Parks and Trails	Local jurisdictions, INRCOG
Underground and Leaking Storage Tanks	Iowa Department of Natural Resources
Water Feature or Wetland	Iowa Department of Natural Resources
1.0 Percent and 0.2 Percent Annual Chance of Flooding	Iowa Department of Natural Resources
Environmental Justice - Percent Minority	U.S. Census Bureau
Environmental Justice - Percent Poverty	U.S. Census Bureau
Environmental Justice - Limited English Proficiency	U.S. Census Bureau

Maps 8.1-8.5 show the environmental analysis for transportation projects included in the fiscally constrained LRTP. This inventory is not meant to substitute for a project sponsor's responsibilities; rather, it is meant to create awareness of possible environmental impacts early in the planning process. The NEPA process must be completed and other applicable federal and state regulations must be met for each project before any federal funds for transportation improvements are expended for construction.

The alignment for each project is based on information provided by the jurisdictions. The majority of projects shown in the Plan are reconstruction projects and will likely occur within existing right-of-way with minimal environmental impacts. A project could end up requiring additional right-of-way than currently planned, or have a different alignment in final design, in which case other environmental impacts may be observed. Regardless, this environmental analysis provides a starting point for discussion on potential environmental effects of proposed transportation projects.



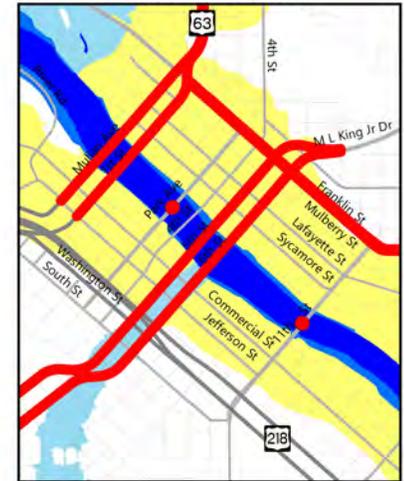
# Projects in Relation to Flood Zones



Downtown Cedar Falls



Downtown Waterloo



### Legend

- City Boundary
- MPO Study Area
- Long Range Transportation Plan Project (Reference Map 3.12, Map 3.13, Table 3.5, Table 3.6)
- Water
- Floodway Areas
- 1.0% Annual Chance of Flooding
- 0.2% Annual Chance of Flooding
- Protected by Levee

### Floodplain Disclaimer

This flood overlay illustration shows the current floodplain designations of the metropolitan area. It was created using the Official National Flood Insurance Program (NFIP) Map (FEMA GIS Flood Plain Data created on July 18th, 2011). This illustration is not intended to supplant or substitute for an Official NFIP Map, and as such, any differences or deviations between this illustration and the Official Map(s) shall be resolved using the Official Map.

For actual determination if a location is within the floodplain please contact your local floodplain administrator.

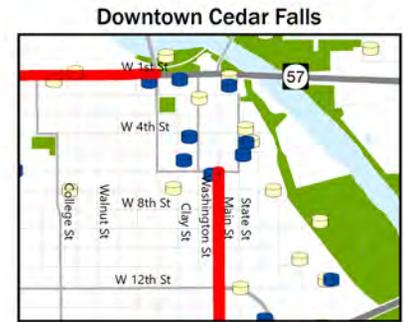
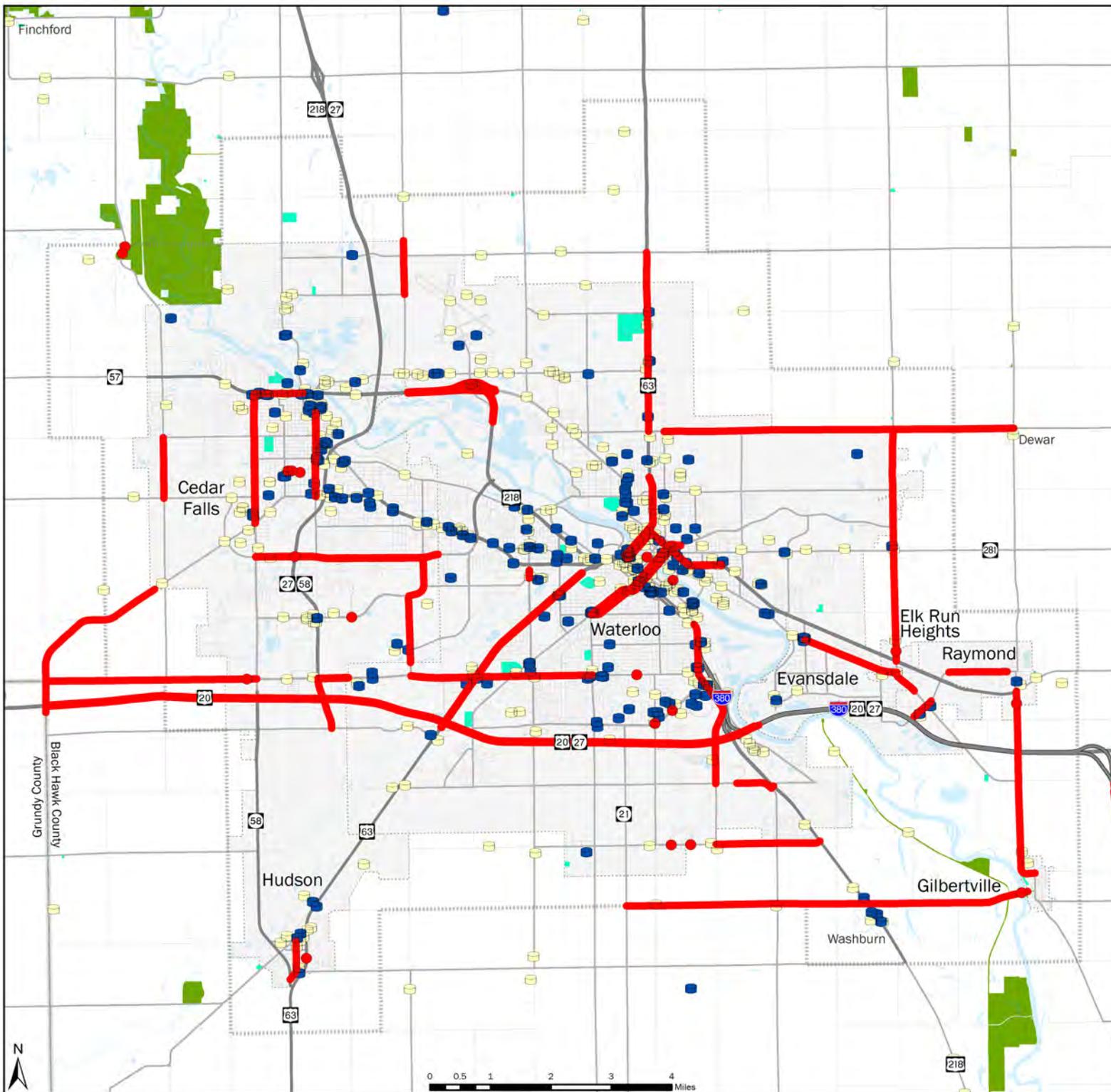
Data Source: INRCOG and the Federal Emergency Management Agency (FEMA)



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# Map 8.2 Projects in Relation to Environmentally Sensitive Areas



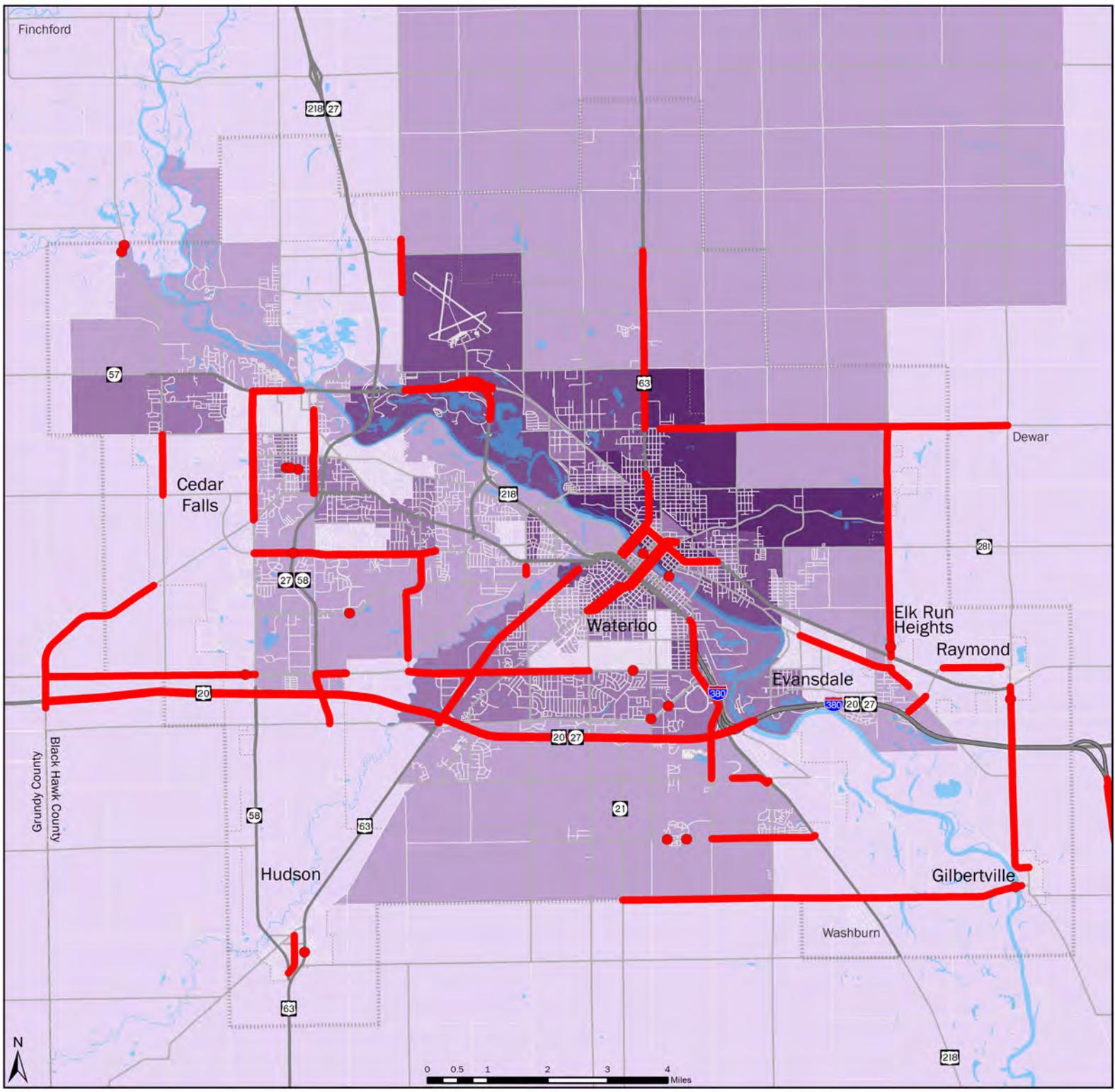
- Legend**
- City Boundary
  - MPO Study Area
  - Long Range Transportation Plan Project  
(Reference Map 3.12, Map 3.13, Table 3.5, Table 3.6)
  - Underground Storage Tank
  - Leaking Underground Storage Tank
  - Park or Natural Area
  - Cemetery

Data Source: INRCOG and Iowa Department of Natural Resources (IDNR)

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# Map 8.3 Projects in Relation to Environmental Justice - Race



Downtown Cedar Falls



Downtown Waterloo



**Legend**

- City Boundary
- MPO Study Area

Long Range Transportation Plan Project  
(Reference Map 3.12, Map 3.13, Table 3.5, Table 3.6)

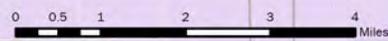
**Percent Non-White Population**

	5.00% or Less		25.01% - 50.00%
	5.01% - 10.00%		Over 50.00%
	10.01% - 25.00%		

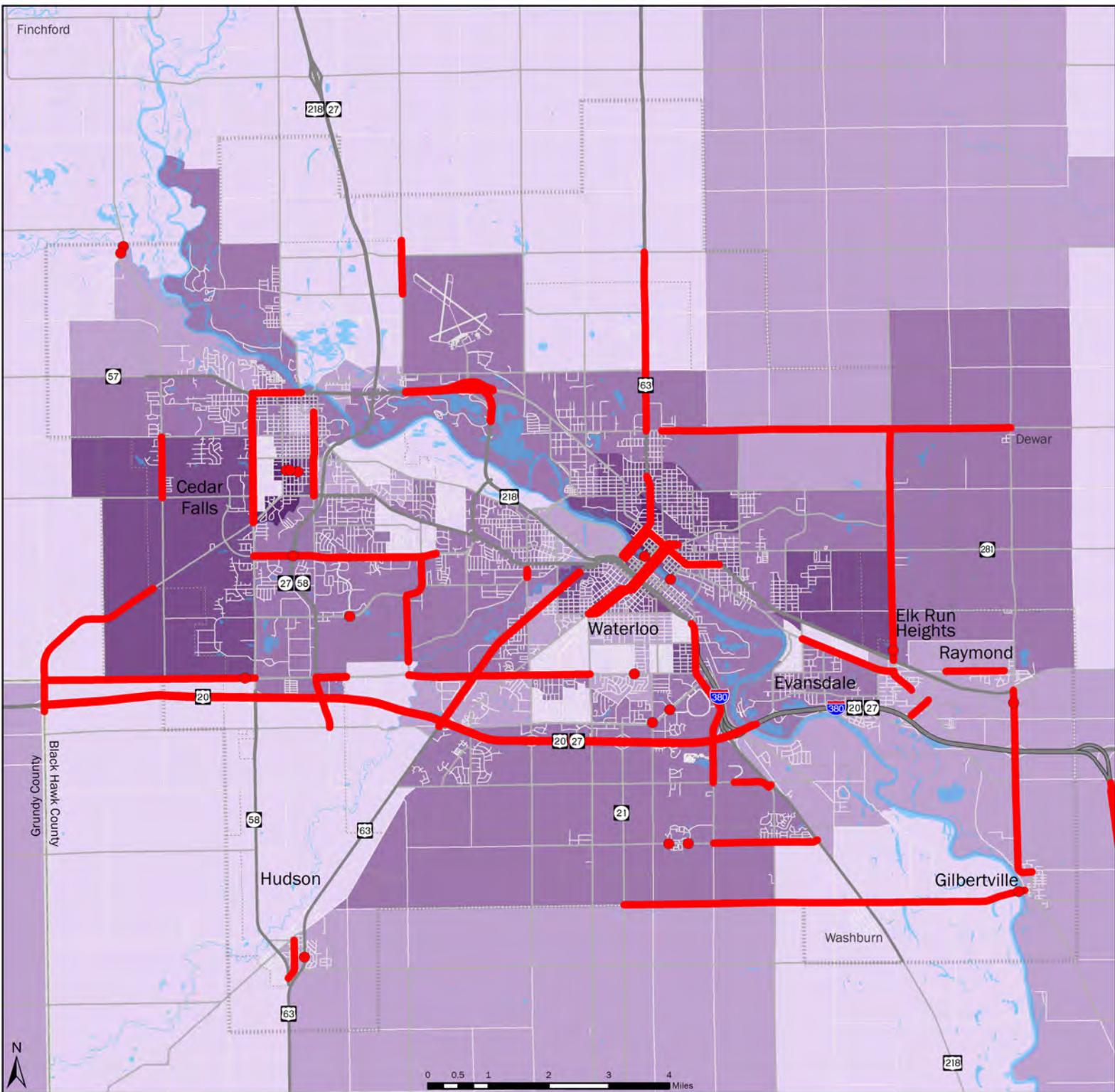
Data Source: INRCOG and U.S. Census Bureau 2012-2016 American Community Survey (ACS) Estimate, Census Block Group

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# Map 8.4 Projects in Relation to Environmental Justice - Poverty



Downtown Cedar Falls



Downtown Waterloo



**Legend**

- City Boundary
- MPO Study Area

Long Range Transportation Plan Project  
(Reference Map 3.12, Map 3.13, Table 3.5, Table 3.6)

**Percent Below Poverty Level**

	5.00% or Less		25.01 - 50.00%
	5.01% - 10.00%		Over 50.01%
	10.01 - 25.00%		

Data Source: INRCOG and U.S. Census Bureau 2012-2016 American Community Survey (ACS) Estimate, Census Block Group

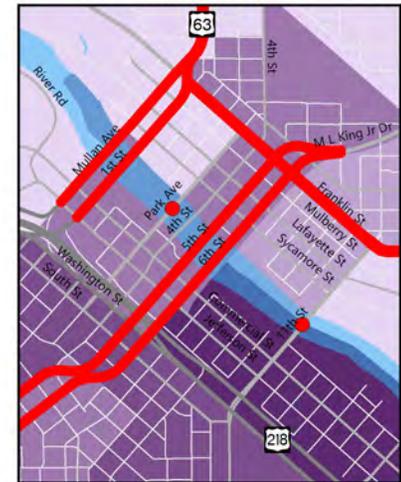
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# Map 8.5 Projects in Relation to Environmental Justice - Limited English Proficiency Downtown Cedar Falls



## Downtown Waterloo



### Legend

- City Boundary
- MPO Study Area

Long Range Transportation Plan Project  
(Reference Map 3.12, Map 3.13, Table 3.5, Table 3.6)

Speak English Less than "Very Well"

	1.00% or Less		10.00% - 16.00%
	1.01% - 2.50%		5.01% - 10.00%
	2.51% - 5.00%		

Data Source: INRCOG and U.S. Census Bureau 2012-2016 American Community Survey (ACS) Estimate, Census Block Group

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