

community

mobility

environment

Chapter 11: Environmental Coordination and Mitigation

CHAPTER 11: ENVIRONMENTAL COORDINATION AND MITIGATION

Transportation projects have the potential to impact the natural and man-made environment. The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy For Users (SAFETEA-LU) requires long range transportation plans to consider these impacts at the policy or program level. Projects included in a long range plan are often years away from final design and alignment; therefore, a detailed environmental review is not feasible at this stage of the planning process. However, the AAMPO can consult with resource agencies to discuss potential impacts to natural and historic resources, and develop policies or strategies to ensure that transportation projects have minimal impacts on the environment.

11.1 FEDERAL REQUIREMENTS

Federal code outlines the requirements for metropolitan planning areas (MPO) regarding environmental consultation. 23 Code of Federal Regulations (CFR) Section 450.322 states that the transportation plan should 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 discussion shall be developed in consultation with Federal, State, and Tribal land management, wildlife, and regulatory agencies.” This consultation shall involve comparison of transportation plans with State conservation plans, maps, and inventories of natural and historic resources. The overall purpose of this consultation is to integrate environmental values into the decision-making process from the broad planning level to the specific project level.

The AAMPO area (part of Story and Boone counties) is in attainment for all criteria pollutants (EPA, June 15, 2010); in accordance with 40

CFR 93.102, transportation conformity requirements for transportation plans do not apply.

11.2 NATIONAL ENVIRONMENTAL POLICY ACT OVERVIEW

Through the use of federal funding or the need for a federal approval or permit, many projects will be required to comply with the National Environmental Policy Act (NEPA). The issue of whether the project requires federal action is the determining factor in whether the project is subject to the requirements of NEPA. “Federal actions” are generally defined as those actions that are new or continuing federal activities that are either funded, assisted, conducted, or approved by a federal agency. NEPA established a supplemental mandate for Federal agencies to consider the potential environmental consequences of major Federal actions (such as Federally-funded, permitted, or approved transportation projects), assess reasonable alternatives to agency proposed actions, identify and evaluate potential adverse environmental effects, document the analysis, and make this information available to the public for comment prior to implementation. Compliance with NEPA is required before final design.

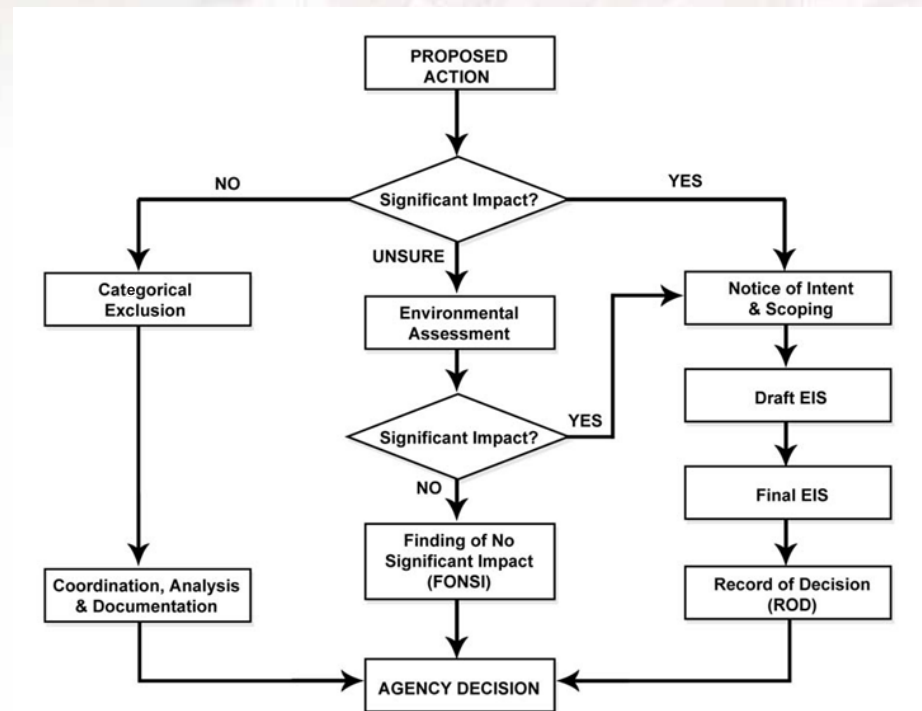
Transportation projects that do not utilize Federal funding and do not require a Federal permit or approval are not subject to NEPA. Complying with NEPA is generally the responsibility of the project sponsor. The NEPA process includes the consideration of alternatives for the project and their environmental effects, as well as public involvement and interagency collaboration.

Once it has been determined that a project is a federal action and is subject to NEPA, the type of environmental documentation must be determined. The type and scope of environmental document required by NEPA depends on the nature of the project and the significance of its impacts. The three document types, in order of complexity, are a Categorical Exclusion (CE), an Environmental Assessment (EA), and an Environmental Impact Statement (EIS).

- A CE is the simplest process, and is applicable if the project meets certain criteria for actions that do not individually or cumulatively have a significant effect on the environment.
- An EA is prepared for actions in which the significance of the environmental impact is not clearly established. If the environmental analysis and interagency review during the EA process finds that a project would have no significant impacts on the quality of the environment, a finding of no significant impact (FONSI) is issued. However, if the EA determines that there may be significant environmental consequences from the project, an EIS must be prepared.
- An EIS is a more detailed evaluation of the proposed project and its alternatives, and includes opportunities for other agencies and the public to comment. An EIS is prepared when it is anticipated that the action will have a significant effect on the environment, or to save procedural time when the significance of potential impacts is uncertain.

FIGURE 11.1 illustrates the process used to determine the level of NEPA documentation.

FIGURE 11.1. NEPA DOCUMENT DECISION PROCESS (NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM)



Environmental analysis in a long range transportation plan is not meant to be equal to or substitute for the NEPA process. However, there are several benefits to linking the transportation planning and NEPA processes, including the early identification of potential environmental issues and consultation with various resource groups. Ultimately, compliance with NEPA will be carried out individually for each federally-funded project, or projects requiring a federal permit or approval when that project is in development. However, this transportation plan environmental analysis can provide an overview of resources in the AAMPO area, and the potential of planned transportation projects to affect those resources.

11.3 AGENCY COORDINATION

The AAMPO will consult with environmental, resource, and regulatory agencies to develop policies and implementation strategies aimed at completing the aforementioned objectives. The AAMPO has begun coordination and the following agencies have responded to a letter requesting their comments on the Ames Area 2035 Long Range Transportation Plan:

- **U.S. ARMY CORPS OF ENGINEERS (USACE), ROCK ISLAND DISTRICT:** The letter received from USACE provided a brief summary of the activities which would require USACE review. The letter stated that any project that would result in discharge of dredged or fill material into waters of the U.S. will require Department of Army Section 404 authorization. The letter also provided an overview of the Army's permitting process and requirements, and recommending contacting the Iowa Emergency Management Division to determine if proposed project areas would impact floodways.
- **U.S. DEPARTMENT OF HOMELAND SECURITY, UNITED STATES COAST GUARD:** The letter received from the Coast Guard indicated that the project will not require a Coast Guard permit and the project area will not fall within Coast Guard jurisdiction.

- **IOWA DEPARTMENT OF NATURAL RESOURCES (IDNR):** The letter received from the IDNR detailed potential environmental impacts associated with the projects, including wetlands, waters of the U.S., and threatened and endangered species. The letter also stressed the importance of implementing best management practices (BMP) as the projects proceed. The IDNR should be contacted to request an environmental review of natural resources in the project area, including threatened and endangered species.
- **STORY COUNTY CONSERVATION (SCC):** The letter received from the SCC stressed the importance of maintaining and improving pedestrian and bicycling facilities in the MPO area, preserving greenways and undeveloped areas, providing transportation infrastructure to areas east of Interstate 35, and limiting urban sprawl.
- **STATE HISTORIC PRESERVATION OFFICE (SHPO):** The letter received from the historic preservation office requested coordination with the Ames Historic Preservation Commission, the Office of State Archaeologist, and SHPO to gather information regarding historic and archeological resources located in Ames.

11.4 ENVIRONMENTAL ANALYSIS

A general environmental analysis has been conducted to help raise environmental awareness early in the project development process and to provide the public and decision-makers with an overview of potential environmental impacts of projects. To conduct this analysis, a Geographic Information System (GIS) has been used to create a database of environmental-related layers. Transportation projects were then analyzed to determine what environmental characteristics may be an issue in the project limits of construction.

The AAMPO area includes part of Story County and Boone County. Many areas are too small or too numerous to map at a regional level and can only be clearly identified through a project-level analysis. Some areas are yet to be identified and will only become known once a project-

level analysis is completed. When a project is ready to move from the Long Range Transportation Plan (LRTP) into design phases, the project sponsor will be responsible for conducting the necessary analyses as required by state and Federal regulations to determine the type, location, and impact to environmentally-sensitive areas within the project study area.

RESOURCES POTENTIALLY AFFECTED

Environmental resources that could potentially be affected by transportation projects identified in the LRTP are discussed in the following sections. These resources include both the natural and human environment. The natural environment encompasses all living and non-living things occurring naturally on Earth, such as rivers, wetlands, species and natural areas. The human environment includes the physical environment and the relationship of people with that environment and includes items such as contaminated sites, institutions, parks and historic properties. The location of natural and human environmental resources are mapped and illustrated in **FIGURE 11.2** and **FIGURE 11.3**, respectively.

FIGURE 11.2. NATURAL ENVIRONMENT

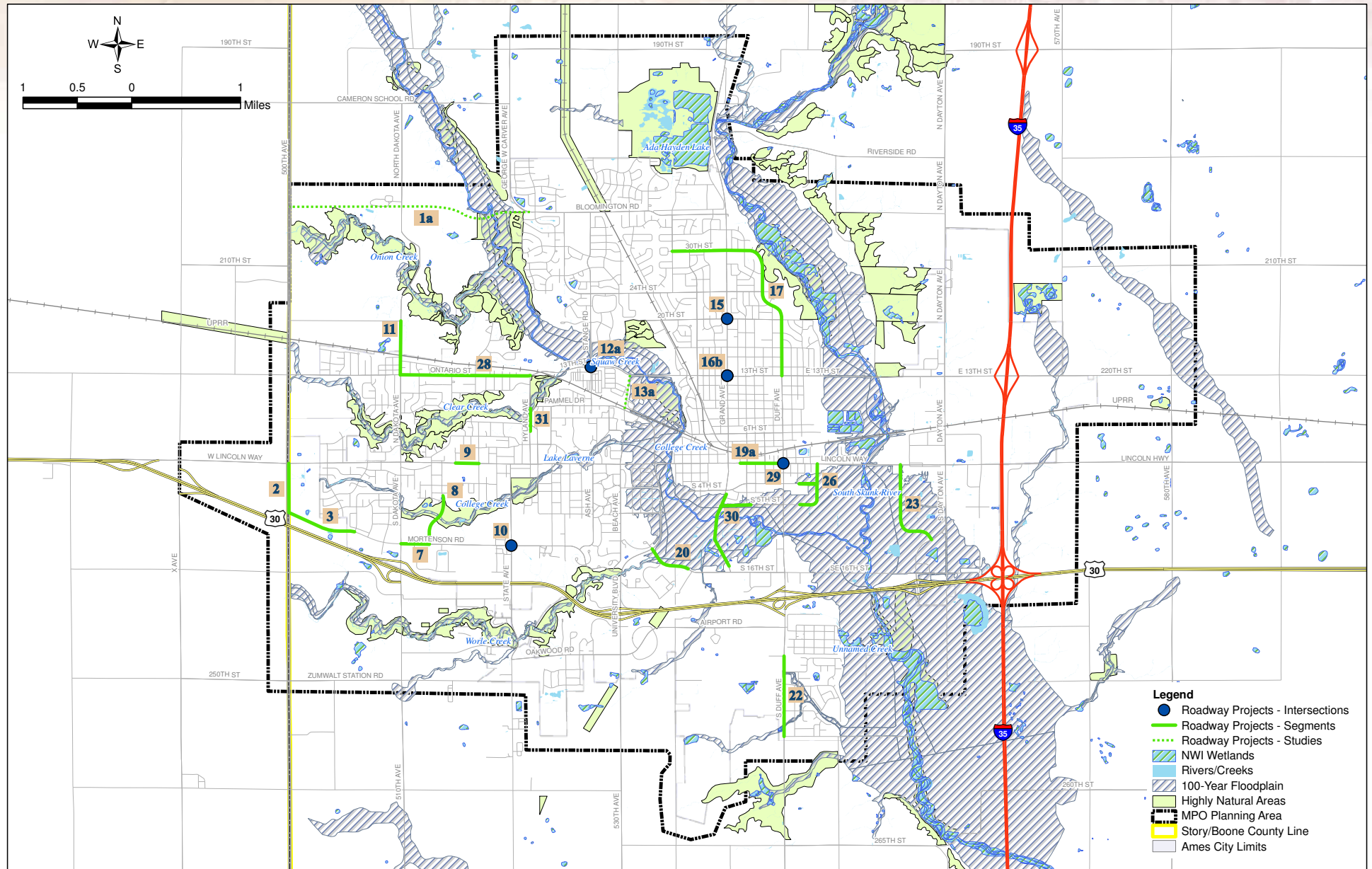
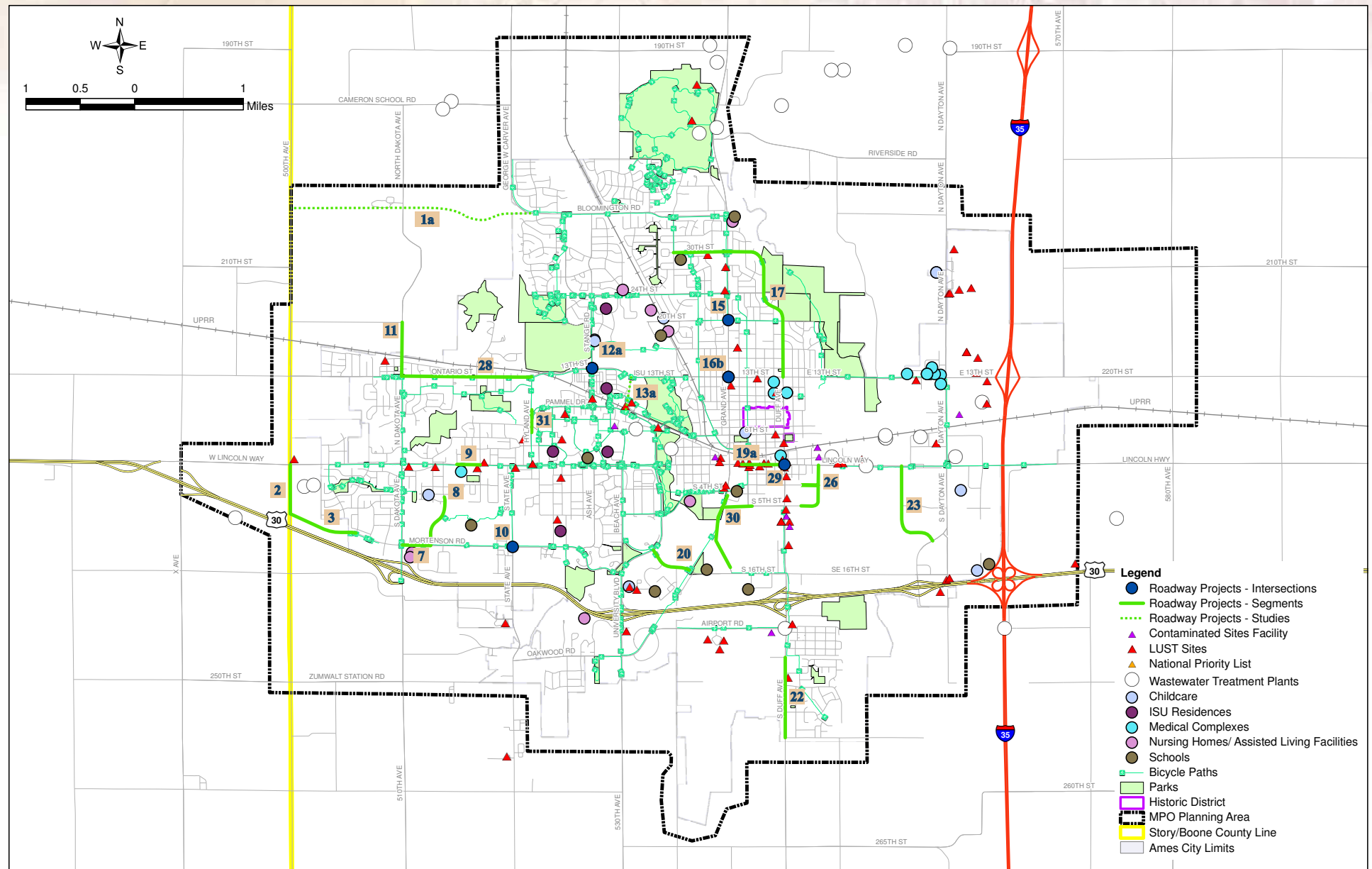


FIGURE 11.3. HUMAN ENVIRONMENT



AIR QUALITY

The Clean Air Act requires EPA to set National Ambient Air Quality Standards for six common air pollutants. These air pollutants (also known as “criteria pollutants”) are found throughout the United States. They are particle pollution (often referred to as particulate matter), ground-level ozone, carbon monoxide, sulfur dioxide, nitrogen oxides, and lead. The Iowa Department of Natural Resources (IDNR) Air Quality Bureau is responsible for air quality monitoring in Story and Boone counties. Both Story and Boone counties are in attainment for all criteria pollutants. One of the goals of the LRTP is to increase the efficiency of existing traffic movement to reduce air pollutants and greenhouse gases from automobiles. Consequently, it is anticipated that air quality would not be adversely affected by implementing LRTP improvements.

FARMLAND

The Farmland Protection Policy Act of 1981 (FPPA) (7 CFR 658) requires that Federal projects minimize the conversion of farmland to nonagricultural uses. To the extent practicable, state and local farmland policies are to be considered. Farmland is defined as prime or unique farmland or farmland of statewide or local importance. According to the Guidelines for Implementing the Final Rule of the Farmland Protection Policy Act for Highway Projects, prime farmland which is already in or committed to urban development is by definition not subject to the FPPA (FHWA, May 1989). The FPPA defines urban development as lands identified as ‘urbanized area on the Census Bureau Map, urban area mapped with a tint overprint on the USGS topographical maps, or land with a density of 30 structures per 40-acre area (7 CFR 658).

Transportation projects within the urbanized area of Ames would not be subject to the FPPA. A few of the projects on the periphery of Ames, such as the Bloomington Road Extension, the 500th Avenue Reconstruction, and the Mortensen Road Extension, may be subject to the FPPA.

FLOODPLAINS

Executive Order (EO) 11988, Floodplain Management, documented in 42 Federal Register (FR) 26951, requires that Federal agencies identify potential floodplain encroachment by projects they fund and that they assess the impact of this encroachment on human health, safety, and welfare and on the natural and beneficial values of the floodplain. A floodplain is defined as the area adjacent to a watercourse, including the floodway, inundated by a particular flood event. A floodway is the channel and any adjacent floodplain areas that must be kept free of encroachment to ensure that the 100-year (1 percent annual chance) flood is conveyed without increasing the flood height by more than 1 foot. For purposes of the discussion in this LRTP, floodplain is synonymous with the 100-year floodplain. Several recent storm events have resulted in floods that exceeded the 100-year flood.

Constructability of a project relies on accurate drainage and floodplain data. Consideration must be given to existing drainage and floodplain conditions to ensure that the project avoids the potential for flood hazards or substantial disturbance to drainage patterns. Impacts on floodplains typically occur when the topography within a floodplain is substantially modified by either placement or removal of materials within the floodplain.

The Federal Emergency Management Agency (FEMA) has mapped floodplains for the South Skunk River, Squaw Creek, Worrell Creek, College Creek, Clear Creek, Onion Creek, and several unnamed tributaries of these streams. Several of the planned road projects cross these floodplains; these roads should be designed to minimize flooding impacts during significant storm events. Some of the proposed road improvement projects may require a floodplain permit from IDNR. Further mitigation measures are discussed in the Mitigation Activities section of this document.

WETLANDS AND OTHER WATERS OF THE U.S.

Waters of the U.S., including wetlands, waterways, lakes, natural ponds, and impoundments, are regulated by USACE under Section 404 of the Clean Water Act, which requires a permit to authorize the discharge of dredged or fill material into waters of the U.S. (33 USC 1344). The USACE Rock Island District has jurisdiction over wetlands potentially affected by the Project. IDNR is responsible for Section 401 Water Quality Certification for any project requiring a Federal permit or license that includes a discharge into a water of the state. U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory maps have been developed for Story and Boone counties and identify several wetlands that could potentially be affected by the proposed road projects. Several of the streams in the area have been identified as waters of the U.S. Consequently, Section 404 permits would be required for these projects. Whether these projects are Federally-funded or not, acquisition of a Section 404 permit is a Federal action requiring NEPA compliance.

WILDLIFE AND THREATENED AND ENDANGERED SPECIES

Threatened or endangered (T&E) species are protected under the Endangered Species Act of 1973, as amended (ESA) (16 USC 1531 et seq.). The ESA provides for the protection of animal and plant species determined to have a declining population and to be in jeopardy of becoming extinct. USFWS has the authority of the Federal government to administer the protection of such species. Significant adverse effects on a Federally listed species or its habitat would require consultation with USFWS under Section 7 of the ESA. Section 7 requires Federal agencies to ensure that actions that they authorize, fund, or carry out are not likely to jeopardize the continued existence of T&E species or result in the destruction or adverse modification of their critical habitat.

Within the AAMPO planning area, rivers, streams, wetlands, and upland highly natural areas (prairies, woodlands, and wetlands) provide habitat for a diversity of wildlife species. USFWS lists two Federally-threatened species, the prairie bush clover and the western prairie fringed orchid as

threatened in Story County; IDNR lists 38 state-protected species (13 animal and 25 plant species) in Story County. One Federally-endangered species (the Topeka shiner) is listed by USFWS in Boone County; IDNR lists 33 state-protected species in Boone County. Three of the proposed transportation projects are adjacent to highly natural areas. Potential adverse effects on a Federally-listed species or its habitat would require formal consultation with USFWS under Section 7 of the ESA. Section 7 requires Federal agencies to ensure that actions that they authorize, fund, or carry out are not likely to jeopardize the continued existence of T&E species or result in the destruction or adverse modification of their critical habitat.

The Ames High Prairie Preserve, an Iowa State Preserve area, is located within the City of Ames. This remnant prairie and woodland area provides habitat for hundreds of species, including at least two state-protected species (IDNR, no date). The proposed 13th and Stange Road intersection project is approximately 0.3 miles southwest of this preserve; no other LRTP project is in close proximity to this State Preserve.

HISTORIC AND ARCHAEOLOGICAL PROPERTIES

Section 106 of the National Historic Preservation Act of 1966, as amended (NHPA), and implementing regulations in 36 CFR 800 require Federal agencies to determine whether their undertakings will have adverse effects on historic properties (any archaeological site, historic structure, or other property listed on or eligible for listing on the National Register of Historic Places [NRHP]) and to afford the Advisory Council on Historic Preservation a reasonable opportunity to comment (16 USC 470f). This is generally accomplished through the Section 106 compliance process, which consists of the following steps:

- Identify consulting parties.
- Identify and evaluate historic properties located within the area of potential effect established for an undertaking.
- Assess adverse effects on properties listed on, or eligible for listing on, the NRHP.

- Consult with the Iowa SHPO, the Office of State Archaeologist, the Ames Historic Preservation Commission and, as appropriate, the Advisory Council on Historic Preservation and other interested parties to resolve adverse effects.

The American Indian Religious Freedom Act of 1978, as amended (42 USC 1996), was passed by Congress to protect and preserve for American Indians their inherent right of freedom to believe, express, and exercise their traditional religions, including, but not limited to, access to sites, use and possession of sacred objects, and the freedom to worship through ceremonials and traditional rites. Therefore, the law requires that the effects of a Federal undertaking on Native American sites or places (prehistoric or historic) having religious, ceremonial, or sacred aspects be evaluated within the context of this law. Coordination with tribes acknowledged to have occupied this area of Iowa would need to be completed as part of the Section 106 compliance process and documented in the NEPA documentation for each project.

Two historic districts (Bandshell Park and Old Town) and twelve individual properties within the City of Ames are included on the NRHP. The historic districts are shown on **FIGURE 11.3**; individual NRHP sites are not mapped, and the location of potentially NRHP-eligible sites would need to be determined for each LRTP project. Each of the projects in the LRTP would need to be evaluated for potential impacts to these historic sites, as well as any properties that are potentially eligible for the NRHP.

SECTION 4(F)

Section 4(f) of the U.S. Department of Transportation Act of 1966 states that FHWA "...may approve a transportation program or project... requiring the use of publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, State, or local significance, or land of an historic site of national, State, or local significance (as determined by the Federal, State, or local officials having jurisdiction over the park, area, refuge, or site) only if...there is no prudent and feasible alternative to using that land; and...the program or project includes all

possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use" (49 USC 303[c]).

A "use" of a Section 4(f) resource, as defined in 23 CFR 774.17, occurs: "(1) when land is permanently incorporated into a transportation facility, or (2) when there is a temporary occupancy of land that is adverse in terms of the statute's preservation purpose, or (3) when there is a constructive use of land." A constructive use of a Section 4(f) resource occurs when the transportation project does not incorporate land from the Section 4(f) resource, but the project's proximity impacts are so severe that the protected activities, features, or attributes that qualify a resource for protection under Section 4(f) are substantially impaired. Substantial impairment occurs only when the protected activities, features, or attributes of the property are substantially diminished by a substantial interference from noise, aesthetic changes, or loss of access.

Four of the LRTP projects are adjacent to or in close proximity to city parks. All LRTP projects, with the exception of the 13th and Grand Avenue intersection project, cross or are parallel to designated bike paths. Designated bike lanes within city streets are generally considered transportation resources and are not Section 4(f) properties, but recreational bike paths separate from streets are considered Section 4(f) properties. Other recreation areas, such as swimming pools, the aquatic center, and public-owned golf courses, baseball, and softball fields, are considered to be protected under Section 4(f). Each of the Federally-funded LRTP projects would need to be evaluated for potential use of Section 4(f) properties as part of the NEPA documentation.

SECTION 6(F)

Parkland or recreation land that was acquired or developed with funding authorized under Section 6(f) of the Land and Water Conservation Fund Act of 1965 (LWCFA) must not be converted to non-park/recreation use without the approval of NPS unless it is determined that there are no practicable alternatives to the conversion and that there will be provision of replacement property that is of at least equal fair market

value and of reasonably equivalent usefulness for recreation purposes as the land proposed to be taken. If Section 6(f) land would be used for a transportation project, coordination with the U.S. Department of Interior, respective state agencies, and the local agency with jurisdiction over the park or recreation area would be necessary (16 USC 460l-4 through 460l-11). The LWPCA funded project database lists two parks in the City of Ames receiving LWPCA funding; neither of these parks are in close proximity to LRTP projects (NPS, August 16, 2010).

NOISE

FHWA has developed noise abatement criteria (NAC) and procedures for use in planning and designing Federally funded roadways. These criteria and procedures are set forth in 23 CFR 772, Procedures for Abatement of Highway Traffic Noise and Construction Noise. In addition, Iowa DOT's Noise Analysis and Abatement Policy for Federal-Aid Projects was written to conform to the Federal policy and guidelines as stated in 23 CFR 772.

There are numerous sensitive receptors in the vicinity of LRTP projects, such as schools, child care, nursing homes, medical complexes, churches and other places of worship, and residences. The location of licensed child care facilities, Iowa State University residences, medical complexes, nursing homes, assisted living facilities, and schools are mapped on **FIGURE 11.3**. In accordance with Iowa DOT guidance, the appropriate level of noise analysis would need to be completed for each of the LRTP projects as part of the NEPA documentation.

HAZARDOUS WASTE

Properties where hazardous or other regulated materials have been stored can present a future risk if spills or leaks have occurred. Contaminated or potentially contaminated properties are of concern for transportation projects because of the associated liability of acquiring the property through ROW purchase, the potential cleanup costs, and safety concerns related to exposure to contaminated soil, surface water, or groundwater. The use, storage, disposal, and transportation of hazardous materials and waste is regulated by numerous Federal regulations, such as the

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the Resource Conservation and Recovery Act (RCRA), and the Toxic Substance Control Act (TSCA), and state regulations (Iowa Administrative Code 567). Documentation of contaminated sites is available through the Environmental Protection Agency (EPA) and IDNR.

At a minimum, sites identified by this environmental review include those on the National Priorities List (NPL); Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) list; Iowa Registry of Hazardous Waste or Hazardous Substance Disposal Sites, known leaking underground storage tank (LUST) sites, and any sites currently or formerly operating as gas stations, bulk petroleum plants, rail yards, electrical substations, dry cleaners, landfills, junkyards, vehicle repair and auto body/paint shops, fleet maintenance facilities, and agricultural chemical and fertilizer dealerships. Contaminated sites, including LUST sites and an NPL site, are mapped on **FIGURE 11.3**.

Many of these sites are in close proximity to LRTP projects. Appropriate studies, in accordance with the Iowa DOT Office of Location and Environment Manual (Iowa DOT, August 2009) would be conducted for projects subject to NEPA. For non-NEPA projects, studies would also be conducted as part of the due diligence process to minimize the possibility of acquiring contaminated property that could affect or be affected by the project.

ENVIRONMENTAL JUSTICE

Title VI of the Civil Rights Act of 1964 (42 USC 2000d et seq.) ensures that individuals are not excluded from participation in, denied the benefit of, or subjected to discrimination under any program or activity receiving Federal financial assistance on the basis of race, color, national origin, age, sex, and disability. In addition, Executive Order 12898 (59 FR 7629) on environmental justice (EJ), dated February 11, 1994, directs that a Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs,

policies, and activities on racial minority (as defined by the census: Black or African American, American Indian and Alaska Native, Asian, Native Hawaiian and other Pacific Islander, some other race, or two or more races), ethnic minority (Hispanic or Latino), and low income populations, referred to as environmental justice populations.

As defined in FHWA Order 6640.23, FHWA Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, dated December 2, 1998, a disproportionately high and adverse effect on minority and low-income populations means an adverse effect that: “(1) is predominantly borne by a minority population and/or a low-income population; or (2) will be suffered by the minority population and/or low-income population and is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the nonminority population and/or non low-income population.” Human health or environmental effects, including interrelated social and economic effects, may include, but are not limited to, “bodily impairment, infirmity, illness, or death; air, noise, and water pollution and soil contamination; destruction or disruption of man-made or natural resources; destruction or diminution of aesthetic values; destruction or disruption of community cohesion or a community’s economic vitality; destruction or disruption of the availability of public and private facilities and services; vibration; adverse employment effects; displacement of persons, businesses, farms, or nonprofit organizations; increased traffic congestion; isolation, exclusion, or separation of minority or low-income individuals within a given community or from the broader community; and the denial of, reduction in, or significant delay in the receipt of, benefits of FHWA programs, policies, or activities.”

To address potential environmental justice issues at a broad scale for the LRTP, the AAMPO area was analyzed at the census block group level for the presence of ethnic and racial minorities, and low income populations that are substantially above the percentage of the City of Ames (those census block groups where the percentage of minority or low-income populations are at least 40 percent higher than the population of Ames). These locations are mapped and illustrated on **FIGURE 11.4 AND FIGURE**

11.5, respectively. Substantial ethnic and racial minority populations reside in much of central Ames. Several LRTP projects, such as the Dotson Drive, Lincoln Way, 30th Street/Duff Avenue, and Ontario Street projects could affect environmental justice populations. NEPA documentation for the LRTP projects would analyze these populations at a more detailed level, address potential disproportionate impacts to these populations, document efforts to inform them of proposed road improvement activities, and document efforts to minimize and avoid environmental impacts to the environmental justice populations.

AIRPORTS

The Ames Municipal Airport, a general aviation airport open to the public, is located approximately 0.2 mile south of US 30 and approximately 0.4 mile west of US 69 (locally designated at South Duff Avenue). The primary runway is 5,701 feet in length and is constructed of asphalt (Federal Aviation Administration [FAA], July 29, 2010). A 3,491-foot concrete runway serves as a secondary runway. On average, 92 aircraft operations occur per day, 93 percent of which consist of general aviation; the balance consists of air taxi and military operations (FAA, July 29, 2010).

Because the primary runway is greater than 3,200 feet in length, FAA requires that potential obstructions to airspace from construction of projects within 20,000 feet of the runway be evaluated in accordance with 14 CFR 77, Objects Affecting Navigable Airspace. This includes temporary construction equipment that could potentially interfere with airspace. FAA should be notified of any potential airspace obstructions, as specified in 14 CFR 77. All of the LRTP projects are within 20,000 feet of the Ames Municipal Airport and would need to be evaluated for potential airspace obstruction.

11.5 MITIGATION ACTIVITIES

Transportation planning activities considered in Ames Area 2035 Long Range Transportation Plan are regional in scope and all of the ideas included in the alternatives analysis are general concepts with limited

FIGURE 11.4. RACIAL AND ETHNIC MINORITY POPULATIONS

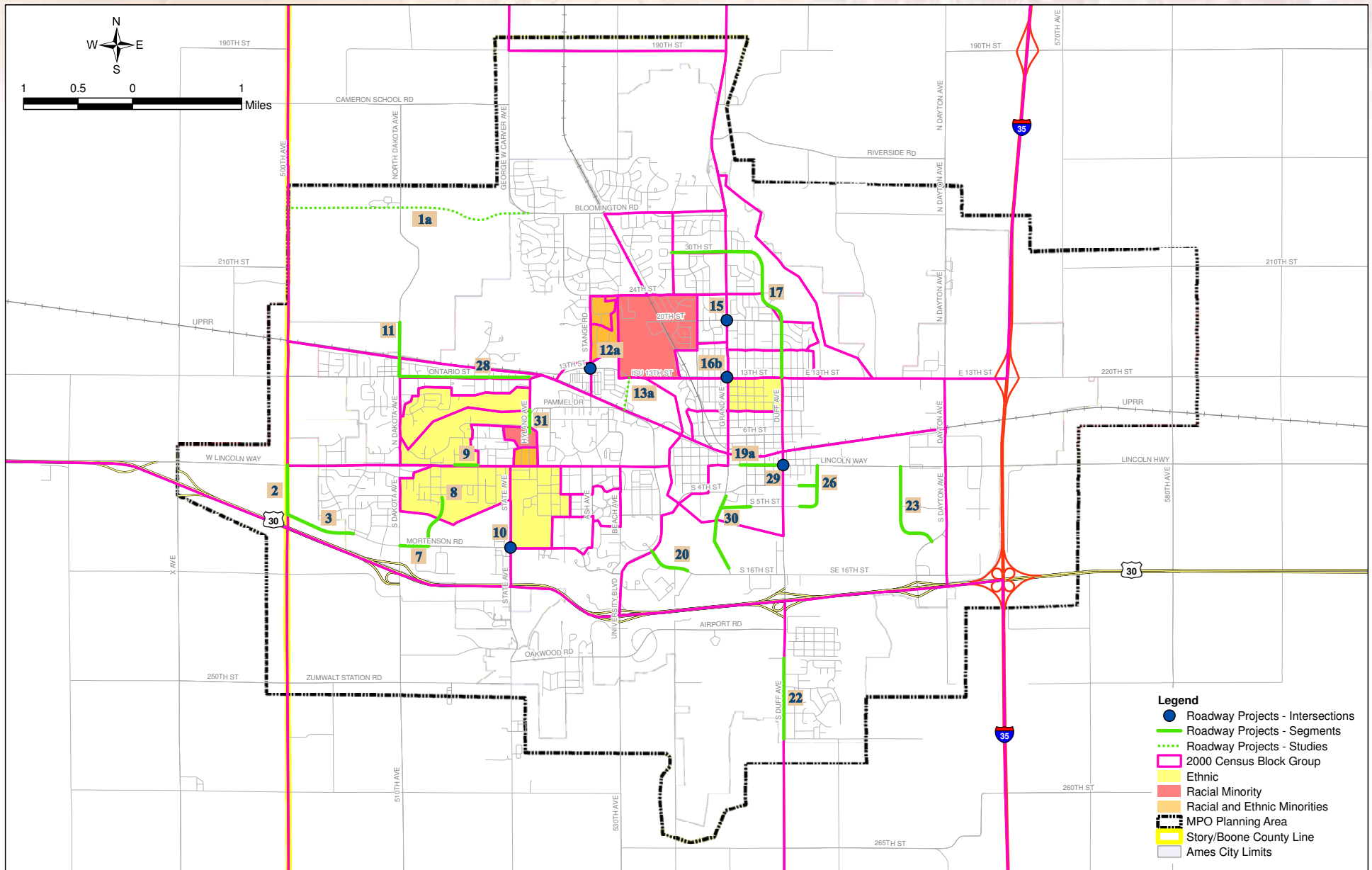
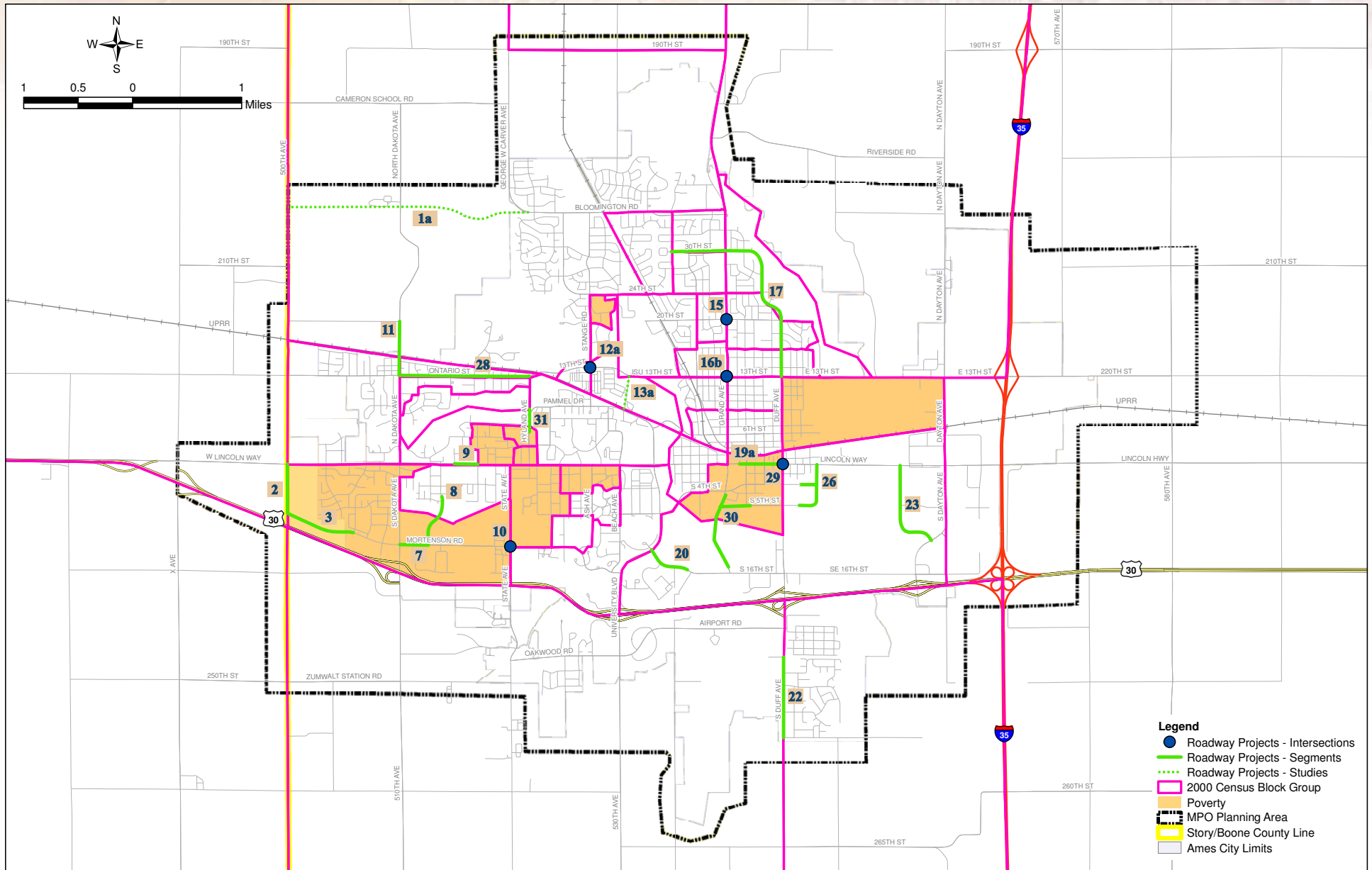


FIGURE 11.5. LOW-INCOME POPULATIONS



detail on those elements that would impact the physical and social environment. Thus, the environmental mitigation discussion does not focus on individual projects within the transportation, but rather offers a summary of:

- The types of environmental sensitive areas of interest.
- The generalized mitigation strategies that could be considered in an effort to minimize negative effects that a project may have on an environmentally-sensitive area.
- The analysis to be conducted in future early stages of project development to identify potential conflicts between improvement concepts and environmentally-sensitive areas.

The AAMPO and the jurisdictional partners are committed to minimizing and mitigating the negative effects of transportation projects on the natural and built environments. The AAMPO recognizes that not every project will require the same type and / or level of mitigation; but to the extent possible, the design phase for transportation projects should include strategies to minimize off-site disturbance in sensitive areas, to preserve air and water quality, to limit tree removal, to minimize grading and other earth disturbance, to incorporate BMPs for erosion and sediment control, and limit noise and vibration impacts. Alternative designs or alignments should be promoted, where feasible, to avoid environmentally-sensitive areas.

The AAMPO 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; they are:

- 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 and its implementation.
- 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 resource or environment.

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

Protecting and enhancing the natural and built environment is an important concern for the AAMPO. Project sponsors are encouraged to begin coordination with environmental, regulatory, and resource agencies as early in the project development process as possible to ensure the best possible project outcome. While it is ultimately the project sponsor's responsibility to fulfill compliance with NEPA (as it applies to Federal actions), it is the AAMPO's best interest to promote sound planning that considers environmental factors and works to preserve, and if possible enhance, the environment. In the process of developing the long range transportation plan, the AAMPO has established a goal of protecting environmental resources.

AAMPO should continue to develop a multi-modal transportation system that preserves and enhances the natural and built environment while improving quality of life in the AAMPO area.

Objectives that will help achieve this goal include the following:

- Minimize transportation system infringement into undisturbed areas of significant natural resources.
- Establish new transportation corridors that have been planned, in part, to minimize impacts to significant natural resources.
- Increase the efficiency of existing traffic movements to reduce air pollutants from automobiles.

- Incorporate natural resources as an attraction to the community.
 - Protect, preserve, and enhance natural, historic, cultural, and recreational resources by managing the existing transportation system and making transportation investments with these valued community resource in mind.
 - Implements public outreach programs to include all sectors of the community, including minority and low-income groups to involve the public in the decision-making process.
 - Promote energy efficiency and conservation in the movement of people and goods.
 - Encourage the protection of wetlands, green spaces, and other natural resources in the planning and design of new transportation facilities, and utilize appropriate mitigation if unavoidable impacts will occur.
 - Encourage the use of existing right-of-way for the expansion of the transportation system and encourage multiple uses of the right-of-way when possible.
 - Advocate that aesthetic quality and scenic beauty be taken into account in roadway design and adjacent land development, including the use of native vegetation.
- The need for a Section 404 permit through the USACE should be evaluated for those projects potentially affecting wetlands or other waters of the U.S. Required wetland mitigation typically involves enhancement or restoration of wetlands in a specified area.
 - Each project should be evaluated for potential impacts to threatened or endangered species, bald eagles, migratory birds, and other protected species. Consultation with the USFWS and IDNR should be conducted as needed. Typical mitigation involves construction timing restrictions or avoidance of specific habitat.
 - Potential impacts to parks, recreation areas, waterfowl and wildlife areas, and historic sites would be evaluated within the Iowa FHWA Division Office: 5-Step Decision Process for determining uses of a Section 4(f) property. All minimization and avoidance measures would be documented and any unavoidable uses (where there is no feasible or prudent alternative to such use) of Section 4(f) properties would require concurrence from the officials having jurisdiction over the affected land.

As the planning and environmental documentation process proceeds, mitigations for specific environmental resources would be developed through coordination with regulatory agencies. Examples of these mitigations are as follows:

- The need for a floodplain development permit should be evaluated for each project located in a floodplain. Hydraulic and hydrological modeling is often required to document anticipated changes in the water surface elevation of the 100-year flood.



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