Chapter 9: Environmental Mitigation

Transportation projects have the potential to impact the environment. When developing transportation projects, the project's effects on the environment musts be considered. Projects that use federal funds are required to follow the procedures of the National Environmental Policy Act, many projects that use state funds are required to follow similar procedures. This includes the consideration of alternatives and their effects on the environment.

Federal Requirements

Federally funded transportation projects must comply with the National Environmental Policy Act. This act requires an environmental review of projects as part of their development process. The NEPA review process includes the consideration of alternatives for the project and their effects on the environment. The process also includes public involvement cooperation between federal and state agencies.

There are three types of NEPA document types depending on the project and the significance of its impacts. These document types are: a Categorical Exclusion, Environmental Assessment and an Environmental Impact Statement. A Categorical Exclusion is for projects that have been determined to have no significant environmental impact. Environmental Assessments are performed if a projects impact is uncertain and determines if the project will have a significant impact on the environment. If it is determined that a project will not have a significant impact, then a finding of no significant impact is issued. If it is determined that there will be a significant environmental impact, then an Environmental Impact Statement must be prepared. This is a detailed evaluation of the project and the alternatives.

Part of compliance with the National Environmental Policy Act is the consideration of environmental justice. Executive Order 12898 "Federal Actions to Address Justice in Minority Populations and Low-Income Populations" was signed in 1994 and instructs federal departments and agencies to address any disproportionate and adverse effects of federal programs, policies and activities on minority and low-income populations. The NEPA document should identify existing minority and low-income populations, discuss public participation activities to increase minority and low-income participation, identify disproportionate high and adverse effects. If there are disproportionate high and adverse effects on minority and low-income populations then the document must discuss mitigation and alternatives. The protocol of avoidance first, then minimization, then offset or rectify should be used to minimize adverse effects. If there is a

disproportionate high and adverse effect after mitigation, then the document must evaluate if there is a further mitigation measure or a practicable alternative that would reduce the effect(s).

Other federal requirements in addition to NEPA also apply to transportation projects receiving federal funding. These requirements include: the Federal Water Pollution Control Act, Endangered Species Act and the National Historic Preservation Act. The Federal Water Pollution Control Act regulates water pollution through the control of discharge. For transportation projects a permit is required before construction or operation can begin in any situation that may result of discharge into navigable bodies of water. The Endangered Species Act requires that steps be taken to not jeopardize the existence or habitat of any endangered or threatened species. The National Historic Preservation Act requires that that for districts, sites, buildings, structures or objects on the National Register of Historic places, an assessment of the project's impact on that location must be completed.

Environmental Strategies and Resources

Strategies

Local jurisdictions should always follow federal guidance as their environmental strategy. The definition of mitigation in 40 CFR 1508.20 is:

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

Jurisdictions should attempt to avoid impact to the environment as part of their primary strategy. If this is not possible, then minimizing the impacts and restoring the affected environment can help minimize the negative effects of any projects. Figure 9.1 provides some examples of mitigation activities that may be undertaken for transportation projects.

Figure 9.1: Examples of General Mitigation Activities for Transportation Projects

Type	Activity
Avoidance	Alignment shifts or grade shifts to avoid habitat used by T&E species.
Avoidance	Bridging a wetland instead of constructing a paved surface through the area.
Minimization	Construction during off season to avoid distrupting T&E species during breeding season.
Minimization	Incorporation of drainage structures to control runoff into protected water resources.
Minimization	Construction of sound barriers to minimize noise impacts.
Minimization	Plant trees and/or vegetation to act as a visual screen.
Minimization	Control loose soil with watering, covering or barriers to prevent erosion and runoff.
Mitigation	Add to a park or recreation area to replace lost facilities.
Mitigation	Create or replace a wetland to compensate for lost habitat.
Mitigation	Develop bicycle and pedestrian trails adjacent to road street projects.
Mitigation	Create wildlife underpasses.

Natural and Cultural Resources

Water Resources. Within the region, watersheds and wetlands impact how land is used. The Des Moines River flows through Wapello and Van Buren counties and the North and South Skunk Rivers through Mahaska and Keokuk counties. Many wetlands are located along these rivers as shown in Map 9.1. Floodplains are also more likely to be in these areas. Both wetlands and floodplains may impact a project and should be identified during project development. The location of wetlands may be identified using the US Fish and Wildlife Service's Wetlands Mapper: https://www.fws.gov/wetlands/Data/Mapper.html. The location of floodplains is available using the Federal Emergency Management's Flood Map Service: https://msc.fema.gov/portal/home.

Cultural and Historic Resources. There are many archaeologically significant sites within the region. These sites contain items of cultural and historic significance from either Native American or early European settlements within the region. Map 9.1 identifies the general areas of archaeologically significant sites. The Iowa Department of Natural Resources and State Historic Preservation Office can help identified sensitive locations during project development.

Endangered Species. There are known endangered and threatened species within the region. The Indiana Bat is an endangered mammal and the Northern Long Eared Bat is threatened. Both the Prairie Bush Clover and the Western Prairie Fringed Orchid are threatened flowering plants. Map 9.2 identifies the general areas of threatened and endangered species within the region. The US Fish and Wildlife Service website for

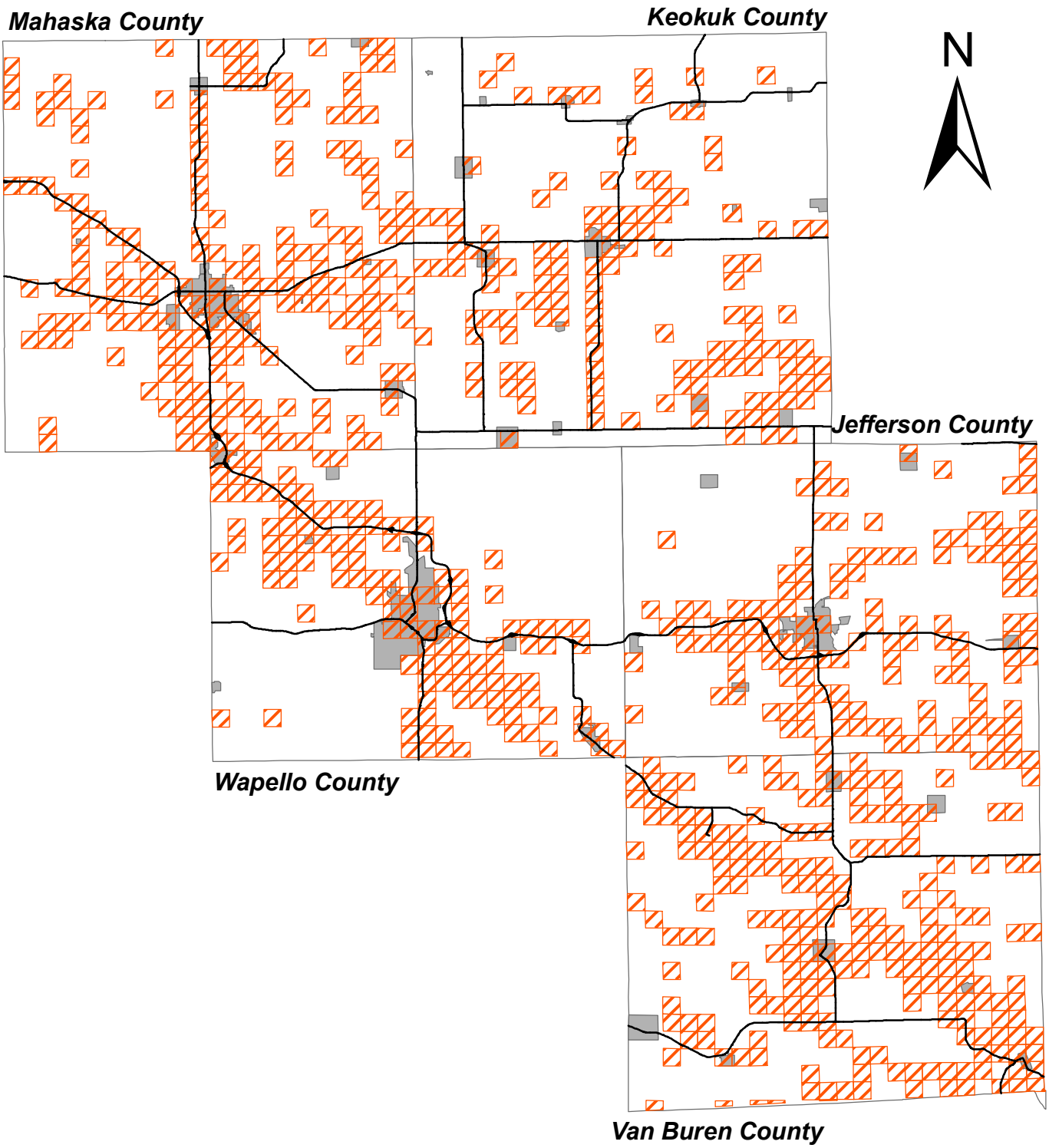
Endangered Species provides a listing of endangered and threatened species by county or location: https://www.fws.gov/midwest/endangered/lists/iowa_cty.html.

Consultation with Resource Agencies

The Regional Planning Affiliation consulted with resource agencies during the development of this Long-Range Transportation Plan to obtain copies of maps and plans. In addition, resource agencies were notified during the review process that the document was available, and their feedback was requested. The following resource agencies were consulted and notified:

- Federal Highway Administration
- Federal Transit Administration
- US Army Corps of Engineers
- Iowa Department of Natural Resources
- Iowa Department of Transportation
- County Conservation Boards
- County Engineers
- City Engineers/Public Works Directors (cities over 5,000)
- Neighboring Regional Planning Affiliations
- Iowa Natural Heritage Foundation
- Pathfinders Resource Conservation & Development

Map 9.1: Achaeological Sites

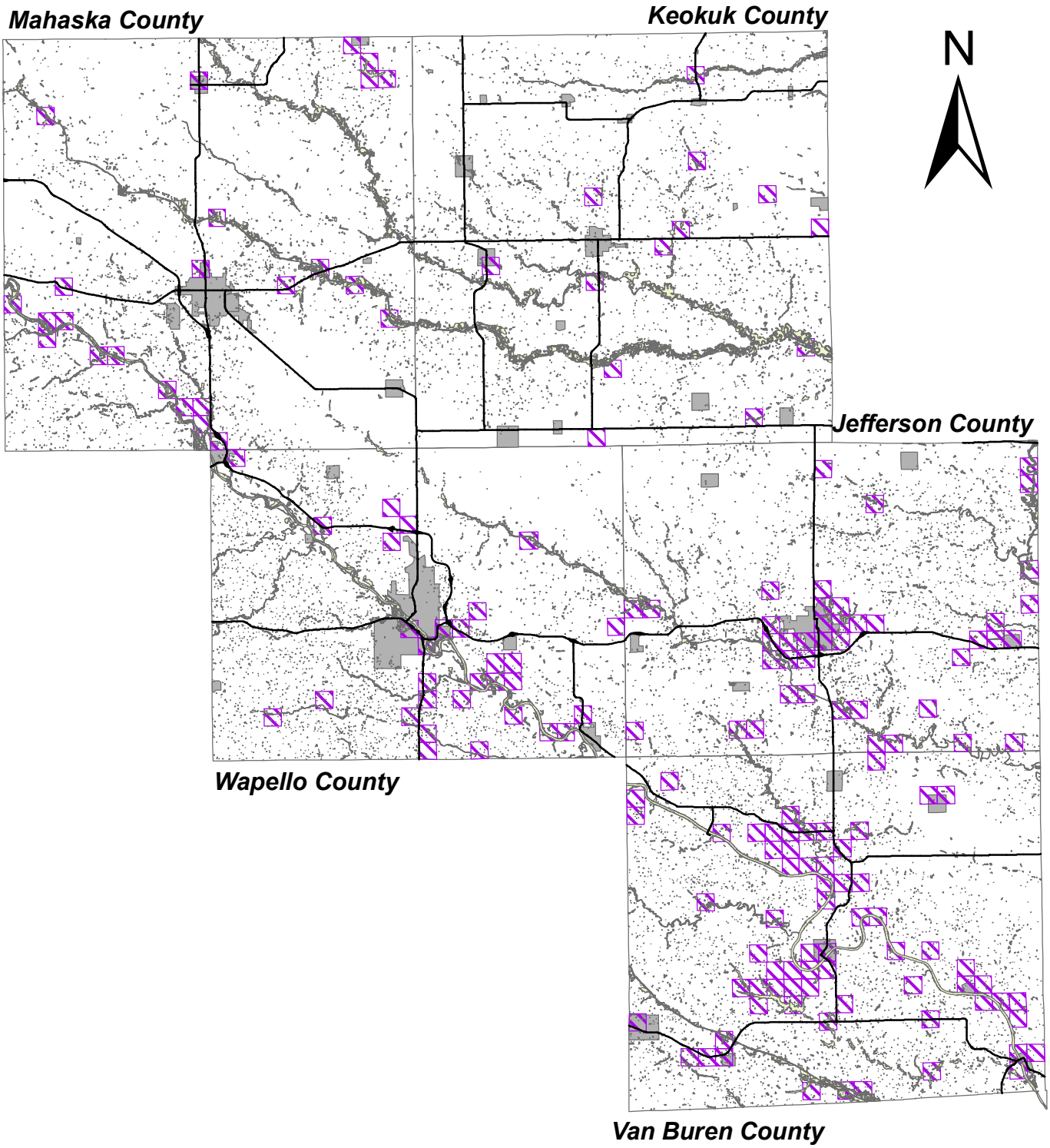


Legend

- Primary Roads
- Archaeological Sites
- Cities

Map prepared by the Area 15 Regional Planning Commission
Sources: ESRI, Iowa DOT and the Iowa DNR
Date prepared: 05-07-19

Map 9.2: Threatened and Endangered Species



Legend

- Primary Roads
- Wetlands
- T & E Species
- Cities

Map prepared by the Area 15 Regional Planning Commission
Sources: ESRI, Iowa DOT and the Iowa DNR
Date prepared: 05-07-19