

Chapter 9: Environmental Mitigation

Under 23 USC 135 each state is required to develop and carry out a transportation planning process, this process that provides for the consideration and implementation of projects, strategies, and services that include (e) protect and enhance the environment, promote quality of life, and ensure consistency between state and local jurisdictions. In Iowa, the state transportation commission formed a partnership with local governments in 1994 through the Metropolitan and Regional Planning Organizations. Through this, the state provided funding and the planning organizations assisted with the transportation planning process.

Transportation projects have the potential to have an impact on the environment. When developing transportation projects, the project's effects on the environment must 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 project's impact is uncertain and determine 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, to identify and address any disproportionate high and adverse effects of a project on minority and low-income population. Executive Order 12898

“Federal Actions to Address Justice in Minority Populations and Low-Income Populations” requires federal departments, agencies, sub-recipients, and receiving federal funds or have actions approved by a federal agency (such as FHWA or FTA) to address environmental justice impacts in programs. Environmental justice applies to all transportation programs, polices and activities, including:

- a. Transportation planning decisions, including policy and funding decisions.
- b. Environmental review project development and NEPA.
- c. Preliminary design and final design of projects.
- d. Right-of-Way, construction, and maintenance and operations.

The NEPA document should identify existing minority and low-income populations, policies, and activities. 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 disrupting 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.

The RPA aids in local jurisdictions creating bicycle/pedestrian plans, these plans identify corridors for non-motorized users and allow better access to link the community to natural, environmental areas and parks. Through a local, or regional plan, jurisdictions can then apply for regional STBG or TAP, as well as state and federal, funds for implementation of trails and other improvements.

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. 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>.

The water resources are very important to the region, early on many of the communities developed along the rivers. Today rivers and streams are used for a water source, they are also enjoyed along with other water areas and wetlands for their natural qualities and recreation opportunities. The state, counties, and cities have developed parks that allow people to experience nature, have access to the water, or engage in physical activity and over the last 20 years local jurisdictions have started developing trails to link the community to these natural and recreation opportunities. Existing trails, their connections, parks, their amenities, and planned projects are discussed in detail in Chapter 6: Trails.

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. Maps 9.1-9.5 identifies the general areas of archaeologically significant sites. The Office of the State Archaeologist can help identify sensitive locations during project development

<https://archaeology.uiowa.edu/services/i-sites>.

Endangered Species. There are known endangered and threatened species within the region. These include mammals such as the Indiana Bat which is endangered, and the Northern Long Eared Bat which is threatened. It also includes plants such as the Prairie Bush Clover and the Western Prairie Fringed Orchid that are both threatened. The US Fish and Wildlife Service website for Endangered Species provides a listing of endangered and threatened species by region or state:

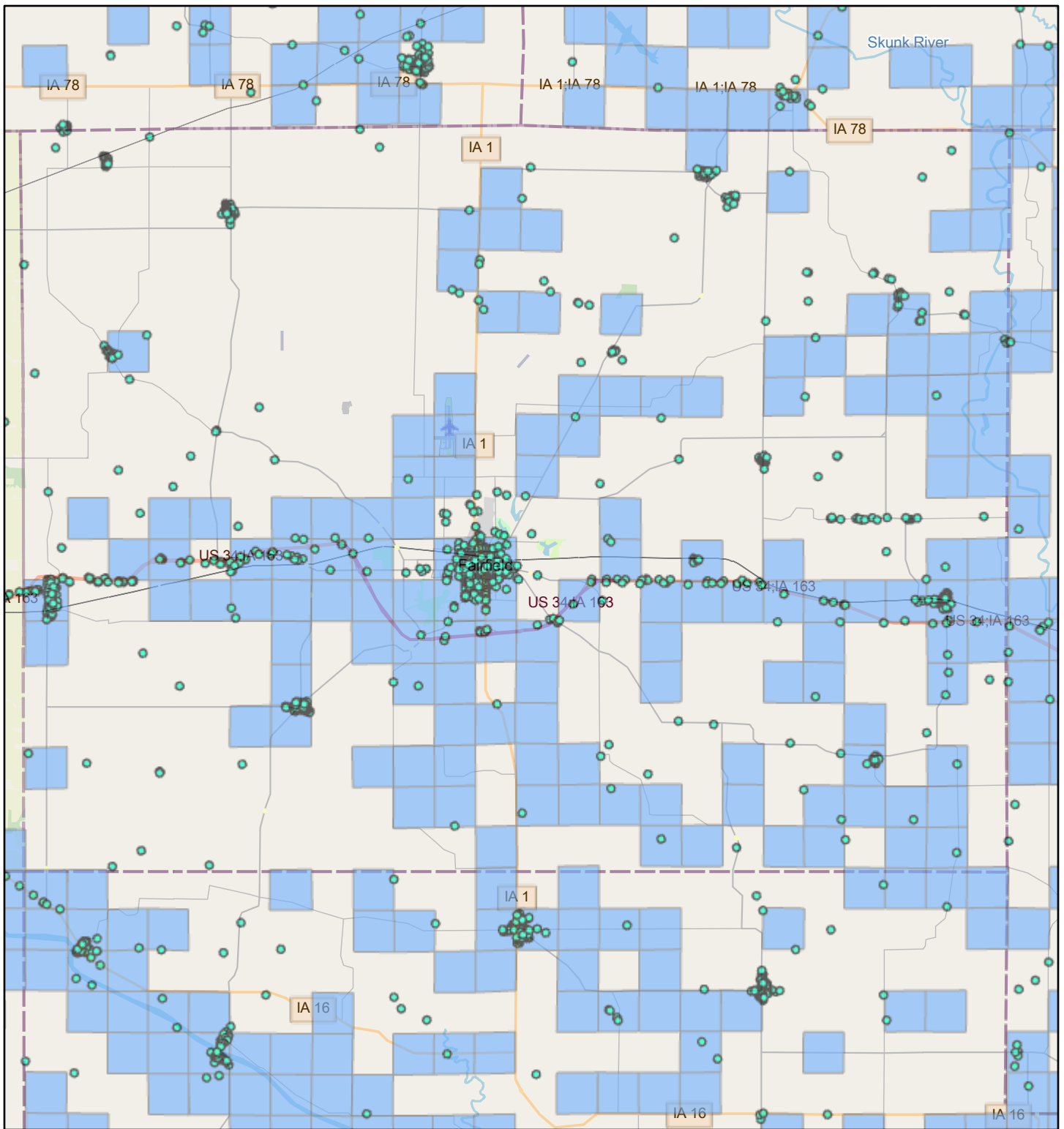
https://www.fws.gov/midwest/endangered/lists/iowa_cty.html. Environmental Review for listed species sensitive areas may be requested from the Iowa DNR through the Environmental Review Program <https://www.iowadnr.gov/conservation/iowas-wildlife/threatened-and-endangered>.

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
- Iowa State Archaeologist
- 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

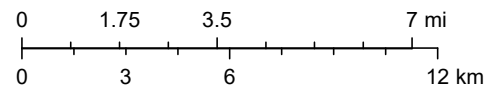
Map 9.1 Jefferson County Historic and Archaeological Sites



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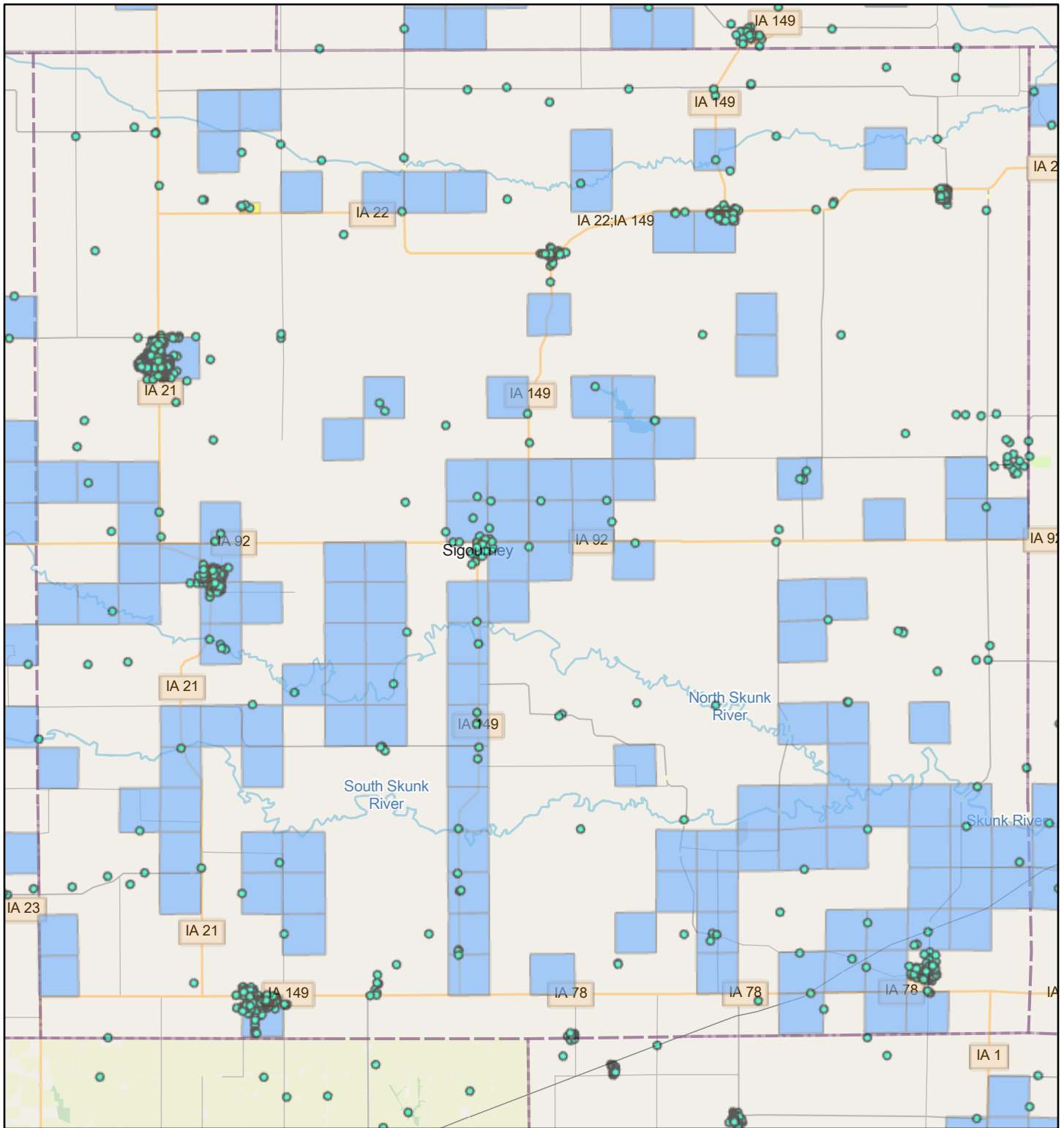
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-  Historic Structures Small Scale
-  National Register Historic
-  Section contains at least one site






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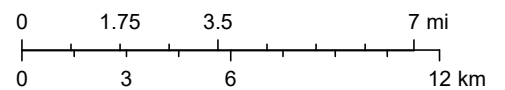
Map 9.2 Keokuk County Historic and Archaeological Sites



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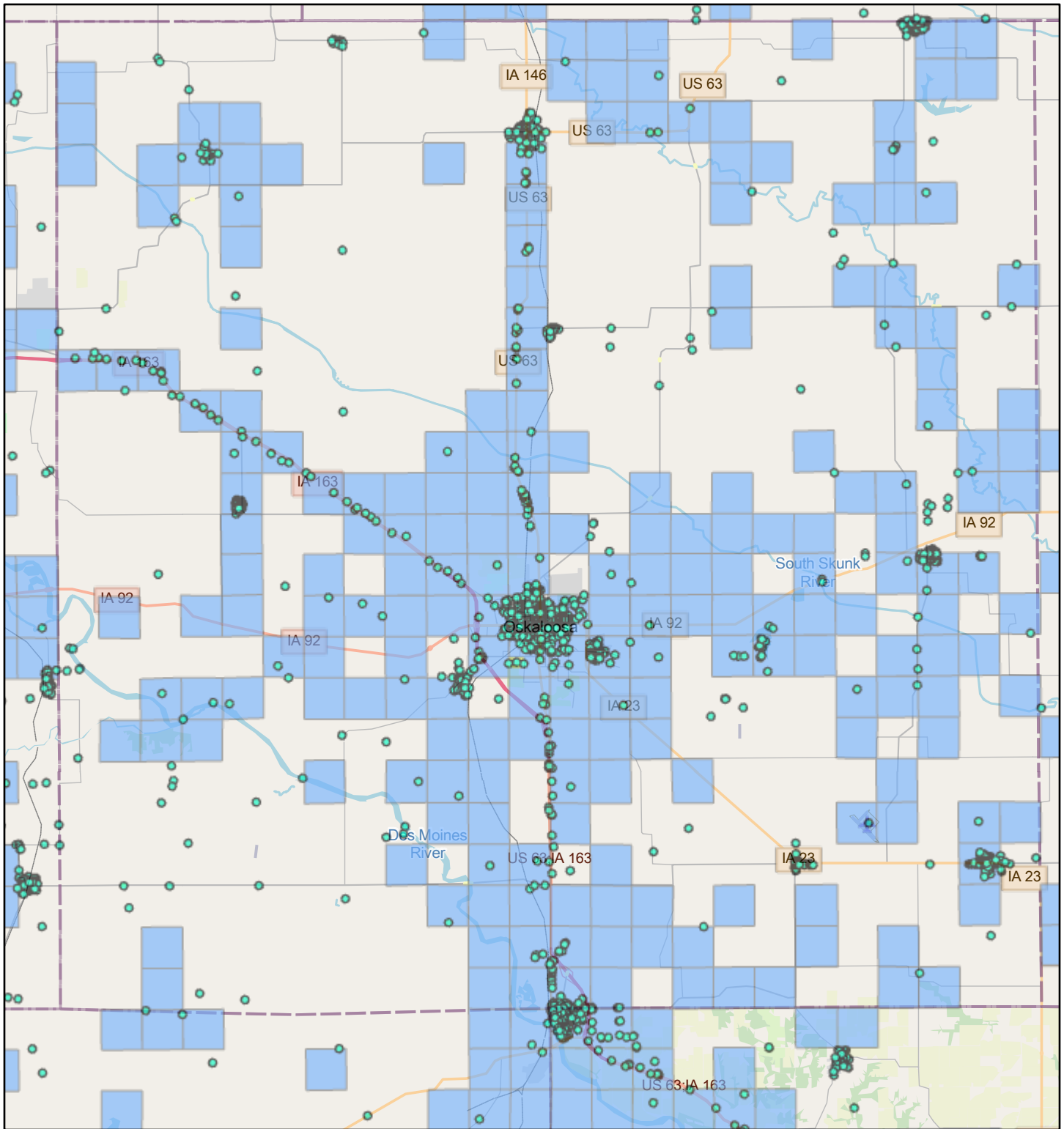
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-  Historic Structures Small Scale
-  National Register Historic
-  Section contains at least one site






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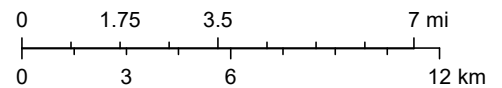
Map 9.3 Mahaska County Historic and Archaeological Sites



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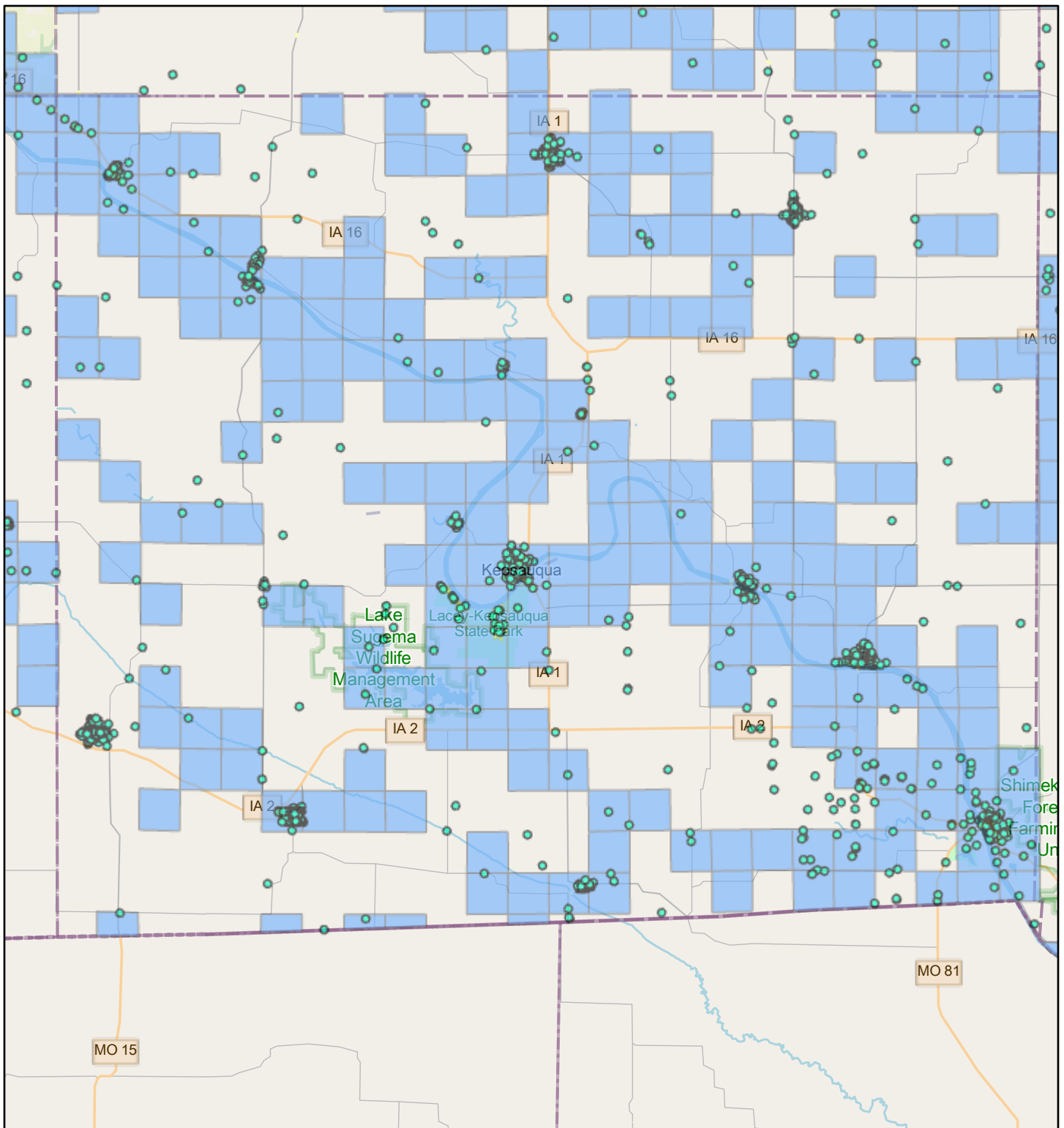
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-  Historic Structures Small Scale
-  National Register Historic
-  Section contains at least one site






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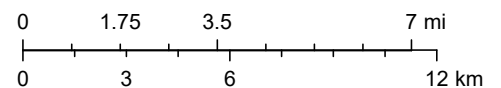
Map 9.4 Van Buren County Historic and Archaeological Sites



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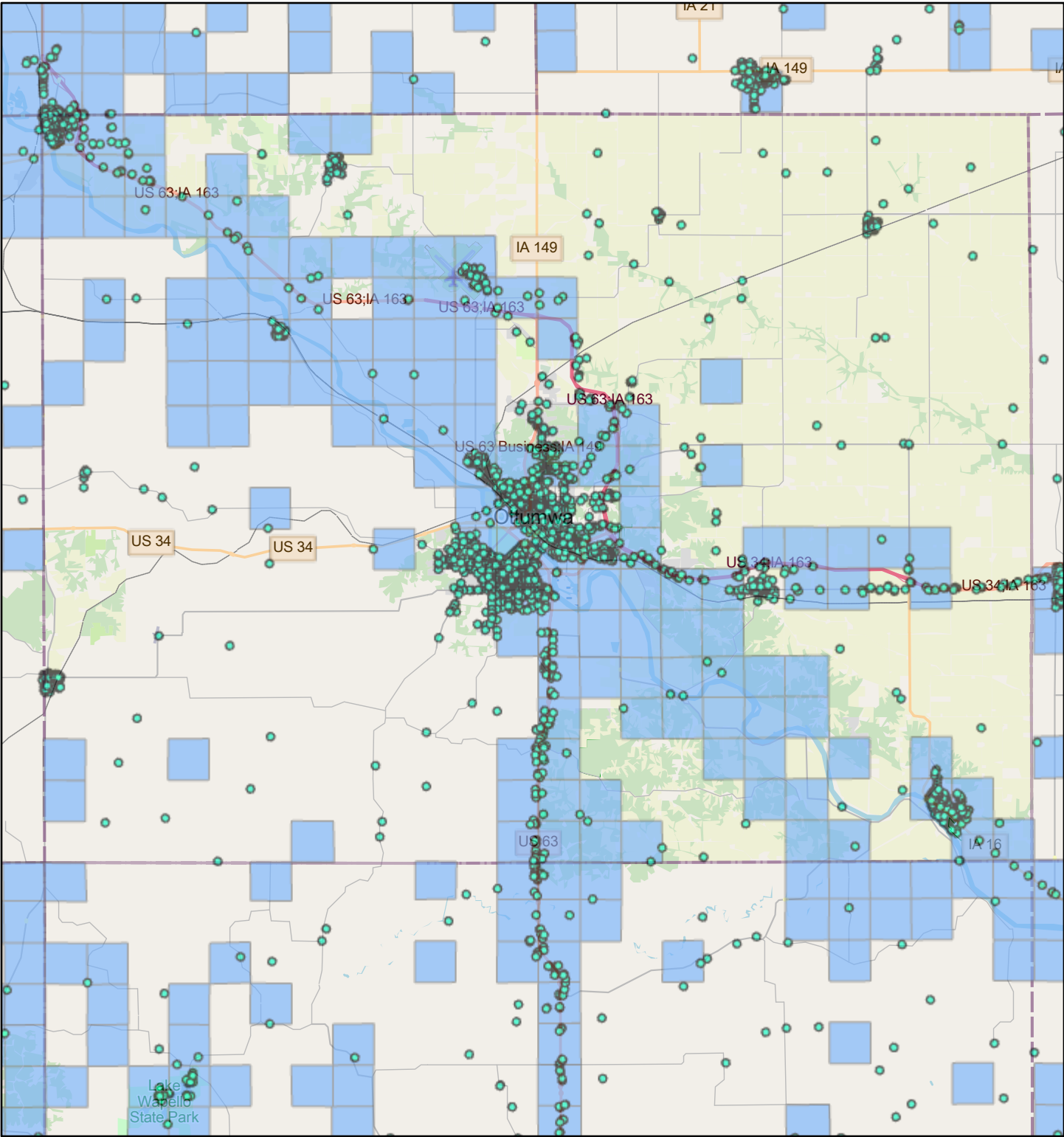
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-  Historic Structures Small Scale
-  National Register Historic
-  Section contains at least one site






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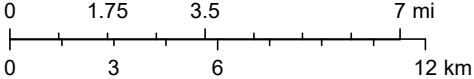
Map 9.5 Wapello County Historic and Archaeological Sites



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-  Historic Structures Small Scale
-  National Register Historic
-  Section contains at least one site



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