

Iowa Department of Transportation

Transportation Planning and the Environment

A Resource Document

September 2009

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I. Introduction

The relationship between long-range transportation planning and environmental studies has consistently become more integrated with each successive federal transportation reauthorization (beginning with ISTEA in 1991, to TEA-21 in 1997, and SAFETEA-LU in 2005).

This connection between transportation and environmental planning is intended to provide a mechanism which allows information, analyses, and products from long-range transportation planning efforts to be incorporated into and formally adopted in future NEPA documents.

II. Purpose of This Document

The purpose of this resource document is to provide information concerning how MPOs and RPAs can include environmental considerations within your transportation planning efforts. This document details how an informed planning decision making process includes all considerations for transportation and community needs. In addition, potential impacts that may result from addressing these needs (i.e. adverse impacts from planned projects on environmentally sensitive resources) are also considered. This information should be used by MPOs and RPAs as they formulate their transportation decisions. It is important to note that this analysis is only conducted at the planning level, and is not designed to examine detailed design alternatives or impacts at the individual project level.

The following key points serve as the foundation for coordinating transportation and environment planning on a system-wide basis.

- 1. Avoidance is the over-riding issue.** In concert with federal law, our primary environmental goal in constructing transportation projects is to locate and build these projects without adverse impacts on the environment. Efforts should be undertaken early in the planning process to make adjustments in the location and design of projects in order to avoid harming the environment.
- 2. Simpler is better.** It is quite easy to become overwhelmed in the environmental arena. It is not necessary to write overly detailed and complicated assessments of environmentally sensitive areas in the early transportation planning process.
- 3. Straightforward inclusive approach.** Generally, the earlier that the public and regulatory agencies are informed of potential impacts on the environment and possible mitigation efforts, the lower will be the level of conflict. The general public, as well as all appropriate state and federal agencies, should be invited to participate as early as possible in the transportation planning process.

III. What Level of Environmental Planning Must You Do

The following two steps represent the separate levels of transportation and environment planning coordination. Step 1 is mandatory for all planning agencies. Step 2 is only necessary if an environmental problem is identified through the Step 1 process.

Example of an “Informed” Decision-Making Process

- Compare your current and future land use plans with your environmental resources inventory and environmental conservation plans.
- Are there any conflicts?
- Is there development planned on any environmentally sensitive resources?
- Can these conflicts be avoided?
- If the decision is that development needs to occur on environmentally sensitive areas, it is an “informed” decision.

Step 1—Include environmental resource inventories in your planning process and compare your transportation planning inputs (data gathering) and outputs (overlay maps) to the environmentally sensitive resources to determine possible conflicts or benefits.

Every planning agency must conduct this work.

a. Inventories

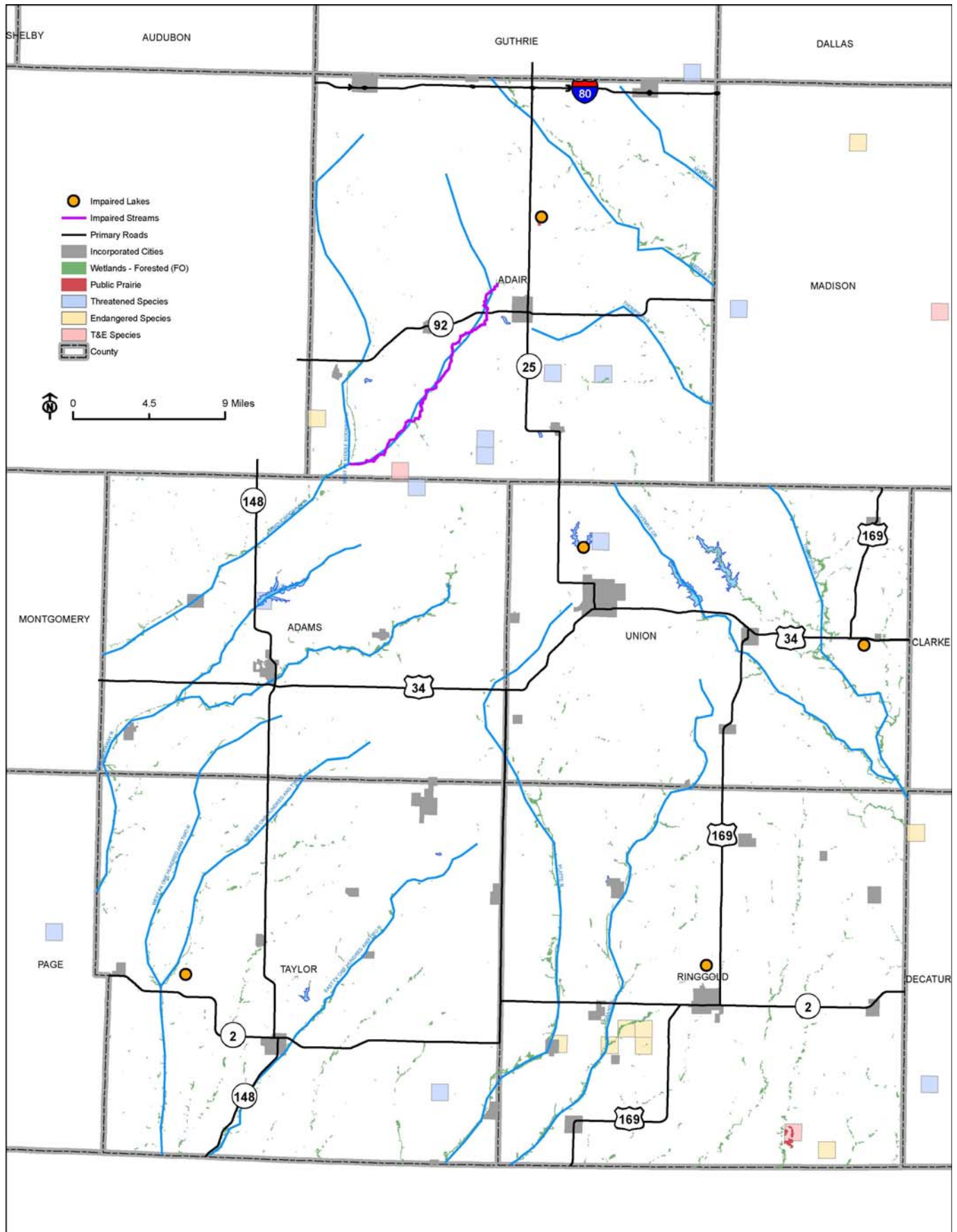
- i. A key to informed decision-making involves a thorough research of exactly “what is out there”. It is important to develop an inventory of environmentally sensitive resources within your planning area (see examples on pages 4 & 5).
- ii. Overlay your existing road network as well as your prioritized transportation projects onto these environmental resource inventory maps.

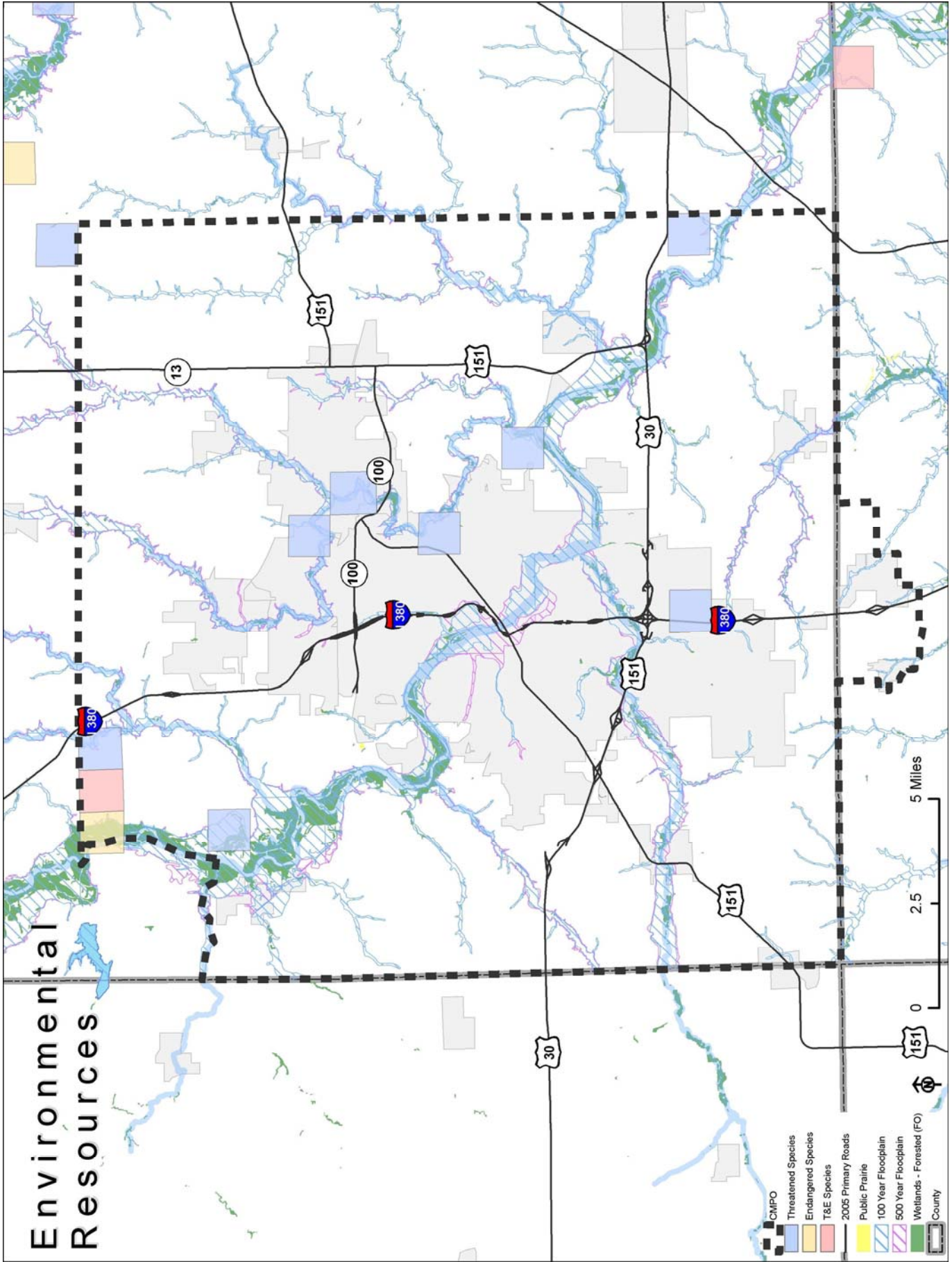
b. Consultation

- i. Possible contacts for some of these environmental sensitive resources are included in Appendix 1. The appendix does not list all the possible environmental resources to investigate—other environmental areas appropriate to your locale should also be inventoried.
- ii. You will need to document your discussions with these resource agencies.

c. Mitigation Discussion at the System-wide Level

- i. Transportation plans must include a generalized discussion of potential mitigation activities (at the policy/strategy-level, not project specific). This written discussion must be developed in consultation with resource agencies, land management agencies, and tribal governments.
- ii. Planning inputs should be thoroughly evaluated to ensure that environmental mitigation opportunities are not limited or eliminated by planned growth. Potential mitigation strategies must be considered in planning for the future because, as growth occurs, mitigation will probably be required.





A helpful resource to use concerning GIS environmental maps is:
<http://csbweb.igsb.uiowa.edu/imsgate/introduction/home.asp>

Step 2—A specific environmental problem has been identified.

Not for every planning agency. Step 2 is only necessary if you have identified a specific environmental problem in relation to your existing and/or planned road network). Also, if your planning agency is fully in a maintenance mode, you will not have to deal with Step 2.

a. The Planning Goals and Objectives lead to the NEPA Purpose and Need Statement

- i. A sound transportation planning process should be the primary source of the project purpose and need.
- ii. The transportation planning process provides a potential forum to define a project's purpose and need by framing the scope of the problem to be addressed by a proposed project.
- iii. Clearly defined and documented goals and objectives within the transportation planning decision-making process establish the basis for developing the project's NEPA purpose and need statement.

b. Mitigation Measures

- i. It is important to clearly outline the MPO's and RPA's policy for mitigating any impacts/disturbances which may occur. These potential impacts/disturbances can be identified by comparing a proposed transportation project to the inventory of environmentally sensitive resources.
- ii. It is important to realize that just because a transportation project crosses into an environmentally sensitive resource area, this does not automatically define the project as "unjustified". Instead, it alerts everyone to a range of possible impacts. The ultimate goal is to make informed transportation planning and project construction decisions while protecting our natural resources.
- iii. It is important that early transportation planning be completed in such a manner that it is thoroughly acceptable for inclusion in later environmental compliance documents. For this to successfully occur, MPOs and RPAs need to establish or reinforce an agency commitment to:
 - AVOID damage to the environment. This is the critical first step. If this can not be achieved, then—
 - MIMINIZE impacts on the environment. Every reasonable effort possible should be undertaken in order to minimize impacts. Once impacts are minimized, then—
 - COMPENSATE for impacts to the environment caused by transportation projects.

Some example mitigation activities may include:

- Replace impacted wetlands at a minimum of 1:1 (or 1:1.5) ratio.
- Replacement of parkland at 1:1 ratio or equivalent usage ratio.
- Avoid parking/storing construction equipment in the vicinity of potential groundwater contamination.
- Preserve trees along watercourses to protect aquatic life and prevent stream bank erosion.
- Construct noise and/or visual barriers.
- Physically move the impacted resource while maintaining the structural integrity and historic qualities.
- Document the historical nature of a structure prior to demolition.

PROJECT SPECIFIC STRATEGIES MUST BE DEVELOPED IN CONSULTATION WITH FEDERAL, STATE, AND TRIBAL LAND MANAGEMENT, WILDLIFE, AND REGULATORY AGENCIES.

So what actions can be taken during the planning process to assist with these mitigation activities?

1. Wetland and parkland replacement are typically most successful when accomplished adjacent to existing wetland or parks. Can this be accounted for on the land use plan and maps?
2. For large projects, consider the needs for construction areas to complete off-site activities, especially in already developed areas.
3. Land use planning should not only consider the protected resource but may need to include buffer areas for noise, visual, and runoff needs.

IV. Points to Consider in the Planning Process

1. **Coordinate with the resource agencies early and often.**
2. **Use commonly available public databases.** Do not re-create the wheel. Numerous GIS databases (free to the public) are available. The GIS tool is extremely helpful in overlaying proposed transportation projects onto maps of environmentally sensitive areas
3. **Iowa Code Prohibitions.** Due to concerns of vandalism or other harm, certain sensitive areas should not be published or shown on public maps, such as threatened and endangered species. In these instances, a general statement can be made indicating that if/when the proposed project develops further that a more in-depth assessment must be conducted.
4. **Public Involvement.** The number of public comments received, as well as their degree of interest/concern (either for or against the project) will give an indication as to the time and staff commitment which may be required to complete, alter, or eliminate the transportation project.
5. **Ecosystem approach.** This involves looking at the entire environment as one functioning system, rather than looking solely at wetlands, archaeological sites, floral and fauna, etc. The Federal Highway Administration encourages this type of holistic approach when you address environmental mitigation.
6. **Environmental mitigation costs.** These costs should be considered as the cost of doing business, and should be reflected as part of the overall transportation project's general cost.
7. **Need for LRTP and/or TIP revisions.** As transportation projects evolve, undergo preliminary engineering, and costs become more refined, the need to revise your LRTP and TIP should be thoroughly assessed.

V. Iowa DOT Resource Contacts

Questions related to environmental **discussions** as part of the LRTP should be directed to:

Craig O'Riley
Office of Systems Planning
515-239-1520
craig.oriley@dot.iowa.gov

Garrett Pedersen
Office of Systems Planning
515-239-1210
garrett.pedersen@dot.iowa.gov

Questions related to actual projects with environmental **problems** should be directed to:

DeeAnn Newell
NEPA Section Leader
Office of Location/Environment
515-239-1364
deeann.newell@dot.iowa.gov

Scott Marler
Water Resources Manager
Office of Location/Environment
515-239-1510
scott.marler@dot.iowa.gov

Randy Faber
Cultural Affairs
Office of Location/Environment
515-239-1215
randy.faber@dot.iowa.gov

APPENDICES

APPENDIX 1

The following environmental resource contacts are in addition to County Conservation Boards, City Park & Recreation Boards (if applicable), and Resource Conservation and Development Organizations (RC&Ds) located in your local area.

Environmental Area	Contact Persons	
	STATE	FEDERAL
Air quality: change in the level of pollutants in the air adjacent to the transportation improvement project.	Iowa Department of Natural Resources Air Quality Bureau 7900 Hickman Road., Suite 1 Urbandale, Iowa 50322 Phone: 515-242-5154	U.S. Environmental Protection Agency Region VII, ENSV 901 North 5 th Street Kansas City, Kansas 66101 Phone: 913-551-7148
Hazardous waste sites: toxic locations containing man-made materials which are harmful.	Iowa Department of Natural Resources Environmental Hazardous Conditions Wallace Building 502 East 9 th Street Des Moines, Iowa 50319 Phone: 515-242-5087	U.S. Environmental Protection Agency Region VII, ENSV 901 North 5 th Street Kansas City, Kansas 66101 Phone: 913-551-7148
Historic-archeological preservation: disruption of items relevant to understanding the evolution of humans, and structures they built.	Office of the State Archaeologist 700 South Clinton Street Building The University of Iowa Iowa City, Iowa 52242-1030 Phone: 319-384-0795 State Historic Preservation Office 600 East Locust Des Moines, Iowa 50319 Phone: 515-281-8744 515-281-4358	Federal Highway Administration Iowa Division Office 105—6 th Street Ames, Iowa 50010 Phone: 515-233-7300 AND Advisory Council on Historic Preservation Old Post Office Building 1100 Pennsylvania Avenue NW Suite 803 Washington, D.C. Phone: 202-606-8503
Noise: increase in the level of decibels attributable to the proposed transportation project.	Iowa Department of Transportation Office of Location and Environment 800 Lincoln Way Ames, Iowa 50010 Phone: 515-239-1410	Federal Highway Administration Iowa Division Office 105—6 th Street Ames, Iowa 50010 Phone: 515-233-7300
Threatened-Endangered species: living environment changes which would affect the health of these animals.	Iowa Department of Natural Resources Conservation and Recreation Division Wallace Building 502 East 9 th Street Des Moines, Iowa 50319-0034 Phone: 515-281-5529	U.S. Fish & Wildlife Service Rock Island Field Office 1511 47th Ave Moline, Illinois 61265 Phone: 309-793-5800 AND U.S. Fish & Wildlife Service 203 West Second Street Federal Building Second Floor Grand Island, Nebraska 68801 Phone: 308-382-6468
Water body modifications: adverse alterations to the natural flow of waterways.	Iowa Department of Natural Resources Water Quality Certification Wallace State Office Building 502 E 9 th Street Des Moines, Iowa 50309-0034 Phone: 515-281-6615	U.S. Army Corps of Engineers Rock Island District, Regulatory Branch Clock Tower Bldg. P.O. Box 2004 Rock Island, Illinois 61204-2004 Phone: 309-794-5249
Water quality: amount of deterioration in water drinkability expected to be caused by the improvement project.	Iowa Department of Natural Resources Water Quality Bureau 401 SW 7 th Street, Suite M Des Moines, Iowa 50309-4611 Phone: 515-725-0282	Natural Resources Conservation Service 210 Walnut Street 693 Federal Bldg. Des Moines, Iowa 50309 Phone: 515-284-6655

<p>Wetlands: impact to the living environment for flora and fauna located in these sensitive land areas.</p>	<p>Iowa Department of Natural Resources Water Quality Certification Wallace State Office Bldg. 502 E 9th Street Des Moines, Iowa 50309-0034 Phone: 515-281-6615</p>	<p>U.S. Army Corps of Engineers Rock Island District, Regulatory Branch Clock Tower Bldg. P.O. Box 2004 Rock Island, Illinois 61204-2004 Phone: 309-794-5249 AND Natural Resources Conservation Service 210 Walnut Street 693 Federal Bldg. Des Moines, Iowa 50309 Phone: 515-284-6655</p>
<p>Woodlands: preserve as many trees and undisturbed woodlands as possible.</p>	<p>Iowa Department of Natural Resources Forestry Bureau Wallace Building 502 East 9th Street Des Moines, Iowa 50319-0034 Phone: 515-242-6898</p>	<p>U.S. Fish & Wildlife Service Rock Island Field Office 1511 47th Avenue Moline, Illinois 61265 Phone: 309-793-5800 AND U.S. Fish & Wildlife Service 203 West Second Street Federal Building Second Floor Grand Island, Nebraska 68801 Phone: 308-382-6468</p>

APPENDIX 2

A. Definitions

1. **National Environmental Policy Act (NEPA)**--The purposes of this Congressional Act are: to declare a national policy which will encourage productive and enjoyable harmony between man and his environment; to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man; to enrich the understanding of the ecological systems and natural resources important to the Nation; and to establish a Council on Environmental Quality.
2. **Environmental mitigation**—during construction projects sometimes unavoidable impacts occur to our environment. In these instances, certain actions are required to offset impacts to the environment. The sequence for environmental mitigation is first avoidance of impacts, then minimization, and finally compensation.
3. **Mitigation bank**—a functioning habitat area which can be used as a credit for environmental mitigation against a highway construction project within the same watershed.
4. **Impact**—a “changed effect”
5. **SAFETEA-LU compliant**—to make the local planning and programming projects compliant with the U.S. DOT’s transportation bill by:
 - Adding visualization—more graphs, charts, and maps
 - Working with other agencies—such as DNR
 - Developing an environmental overview—general consideration of a myriad of sensitive areas, such as wetlands, historic, cultural, waterways

B. Reference Citations

Several publications are available to assist MPOs and RPAs in better understanding the environmental planning requirements. Some of these include:

- FHWA’s website includes several Technical Advisory Notices www.fhwa.dot.gov/. One to particularly read is T 6640.8A (Guidance for Preparing and Processing Environmental and Section 4(F) Documents)
- Clean Water Act, Section 404 www.epa.gov/owow/wetlands/regs/sec404
- Federal Register final guidance. The final guidance is available at the following URL: <http://www.fta.dot.gov/environment/guidance/> for FTA and at <http://www.fhwa.dot.gov/hep/section6002/> for FHWA.
- Threatened and Endangered Species of Iowa and Illinois: www.fws.gov/midwest/RockIsland/activity/endangered/index.htm.

C. Acronyms

1. **CE**—categorical exclusion
2. **CORPS**—U.S. Army Corps of Engineers
3. **DNR**—Department of Natural Resources
4. **EA**—environmental assessment
5. **EIS**—environmental impact statement
6. **EPA**—Environmental Protection Agency
7. **FONSI**—finding of no significant impact
8. **GIS**—geographic information system
9. **LRTP**—long range transportation plan
10. **NEPA**—National Environmental Policy Act
11. **NWI**—National Wetlands Inventory
12. **T & E**—threatened and endangered species
13. **TIP**—transportation improvement program

APPENDIX 3

Long-Range Transportation Planning

Iowa's MPOs and RPAs are required to address the environment within their long-range transportation plans (LRTPs). In order to be SAFETEA-LU compliant (as of July 2007), approved LRTPs must include environmental issues in the planning decision-making process.

SAFETEA-LU requires inviting resource agencies involvement in the planning process. This will provide an opportunity to identify potential conflict areas during the planning process. Consideration of all transportation improvement options should be considered including options that eliminate/limit adverse impacts on the environment, resulting in:

- Project implementation time being significantly reduced
- Travel time delays and congestion being improved sooner
- Traveling public safety being improved quicker
- Environmental resources being better protected
- A smooth transition from transportation planning to NEPA

In order to have an informed planning process SAFETEA-LU requires:

1. Inclusion of environmentally sensitive resources inventory with-in your planning process and long-range transportation plan (LRTP). The environmental resources inventory is to be compared to the LRTP projects to see if there are conflicts and if these conflicts can be avoided or mitigated.
2. Revise your public participation plan so that it defines a process for providing resource agencies, land management agencies, and tribal governments opportunities to be involved in the transportation planning process. This includes involvement in the development of the participation plan itself.
3. Discuss the types of potential mitigation activities and potential areas to carry out these activities. The discussion shall be developed in consultation with resource agencies, land management agencies, and tribal governments.

The key point is that environmental planning should occur in the initial transportation planning efforts, with the flow of data/information for "purpose and need" justification to future environmental documents.

APPENDIX 4

Environmental actions concerning transportation projects are federally mandated via either Federal or State legislation:

- The National Environmental Policy Act (NEPA) was signed into law in 1970. The Act establishes national environmental policy and goals for the protection, maintenance, and enhancement of the environment. The NEPA process consists of an evaluation of the environmental effects of a project including its alternatives. There are three levels of analysis depending on whether or not an undertaking could significantly affect the environment:
 - Categorical exclusion determination (CE)
 - Environmental assessment/finding of no significant impact (EA/FONSI)
 - Environmental impact statement (EIS) with a Public record of decision (ROD).
- The Federal Water Pollution Control Act was enacted in 1972, amended in 1977, and became commonly known as the Clean Water Act. The goal of 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 untempered by adequate concern and conservation. This Act seeks to conserve endangered species and threatened species and to resolve water resource issues in concert with conservation of endangered species.
 - Section 7 addresses interagency cooperation and consultation to insure 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 takes into account 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.
 - 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 erection of any kind upon or over any state-owned land or water without first obtaining a written permit. That form can be used to apply for one, two or all three of the following permits for the activities and jurisdiction as defined in the Iowa Code as stated above.
 - 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 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 the burning of landscape waste produced in clearing, grubbing and construction operations shall be limited to areas located at least one-fourth 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. The best way to find out if your company must submit an application is to contact IDNR and ask.
 - 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).

APPENDIX 5

Data Sources

- A. Iowa Department of Transportation (<http://gis.iowadot.gov>)
 - i. Iowa DOT GIS and Spatial Technologies
 - ii. The Iowa Department of Transportation uses many tools to produce and maintain spatial data. Oracle Spatial is used to store enterprise spatial data and related business data. From Oracle Spatial, Iowa DOT can use spatial data via web, GIS software, report software, etc to make informed decisions. Through Iowa DOT's Linear Referencing System, features can be located along Iowa's statewide network through reference posts, XY's and even Literal Description.
 - iii. List of GIS Data:
 - 1. Roads
 - 2. Rail
 - 3. Trails
 - 4. Bridges & Structures
 - 5. Aviation
 - 6. Boundaries
 - 7. DOT 5 Year Program
 - 8. H & T Maps (Geo-Referenced TIFFs)

- B. Iowa Department of Natural Resources
 - The purpose of the NRGIS Library is to improve the availability, integration, and analysis of natural resource information and improve decisions to carry out agency responsibilities related to the management, protection and development of Iowa's natural resources.
 - i. Statewide Data
 - 1. Boundaries
 - 2. Agricultural
 - 3. Basins (Watersheds)
 - 4. Biologic and Ecologic
 - Amphibians-Reptiles
 - Birds
 - Fish
 - Forest
 - Mammals
 - Natural Areas Inventory
 - Prairie
 - 5. Cultural and Demographic
 - 6. Elevation
 - 7. Environmental Regulation
 - 8. Geographic
 - 9. Geologic
 - 10. Hydrologic
 - Ground Waters
 - Surface Waters
 - 11. Infrastructure
 - 12. Land Description

13. Recreation

- ii. More data is available by project and county levels.

Note: National Wetland Inventory (NWI) and FEMA Floodplain data is available by County.

(<http://www.igsb.uiowa.edu/nrgislibx/gishome.htm>)

C. Iowa State University (<http://www.gis.iastate.edu/>)

- i. Iowa Geographic Map Server (<http://ortho.gis.iastate.edu/>)
- ii. ISU Geospatial Data Explorer (<http://maps.gis.iastate.edu/isudata/>)
 - 1. The GIS Lab maintains the Iowa State University [Geospatial Data Explorer](#). This website provides several methods for data searches. The Geospatial Data Explorer houses metadata documents for geospatial data housed on the ISU FTP Server, references to other potential sources of data on campus, and selected references to popular data clearinghouses.

D. University of Northern Iowa (<http://www.geotree.uni.edu/>)

GeoTREE stands for "GeoInformatics Training, Research, Education, and Extension" Center.

The primary goal of this center is to transfer geospatial technologies to the individuals from federal, state, local, and tribal government (FSLT) agencies through education, multi-disciplinary research, and outreach activities.

GeoTREE is an interdisciplinary center and is unique in transferring geospatial technologies to FSLT agencies by bringing NASA and other scientists, academic members, and members from FSLT agencies together to integrate remote sensing data into GIS in order to improve decision-making through Decision Support Systems (DSS).

i. *Extensions*

1. *GeoLITE*
2. *Iowa LiDAR Mapping Project*
3. *STORM Project*
4. *WebDIP Educational Tool*

E. Environmental Specific

- i. U.S. Fish & Wildlife Service – National Wetlands Inventory (NWI):
<http://www.fws.gov/wetlands/Data/index.html>

Geospatial Wetlands Digital Data - Build, search, query, and download custom digital maps and data in the area you choose.

- ii. Federal Emergency Management Agency (FEMA): Digital Q3 Data -
<http://www.fema.gov/hazard/map/q3.shtm>

Q3 Flood Data is a digital representation of certain features of FEMA's Flood Insurance Rate Maps, intended for use with desktop mapping and Geographic

Information Systems technology. Digital Q3 Flood Data has been developed by scanning the existing FIRM hardcopy and Digital Q3 Data FAQs vectorizing a thematic overlay of flood risks. The vector Q3 Flood Data files contain only certain features from the existing FIRM hardcopy.

iii. Archeological Sites: <http://www2.uiowa.edu/i-sites/public.htm>

iv. National Register of Historic Places: <http://www.nps.gov/history/NR/>

National Register Information System: <http://www.nr.nps.gov/>

The NRIS is a database of information about places listed on or determined eligible for the National Register of Historic Places. This computerized index to America's historic places, based upon a more complete paper record housed in Washington, DC, provides descriptive fields about each property. Currently, you can search by name, architect, significant person, multiple property submission name, location, Federal agency, or any of a number of themes used to organize Web pages. There are over 10,000 links to NPS web pages and we have begun to scan nominations.

To acquire spatial information go to: the download center within the NRIS website or go to - <http://www.nr.nps.gov/NRISGEO>

v. U.S. Army Corps of Engineers: <http://gis.sam.usace.army.mil/>

The Spatial Data Branch, Operations Division (OP-J), Mobile District is composed of engineers, physical scientists, GIS and remote sensing specialists, hydrographers, and CADD technicians that provide a broad, integrated, team-oriented capability for spatial data collection, processing, analysis and GIS/IMS development.

F. Other

i. Iowa Geographic Information Council (<http://www.iowagic.org/>)

The mission of the Iowa Geographic Information Council (IGIC) is to foster an efficient GIS environment through cooperation and coordination with public and private entities that access, collect, provide, and share data, metadata, applications and educational opportunities.

ii. State Data Center of Iowa: <http://www.iowadatacenter.org/>

The State Data Center of Iowa is your source for population, housing, business and government statistics about Iowa, including data from the U.S. Census Bureau, Iowa state agencies, and other state and federal sources.

iii. US Census Bureau: <http://www.census.gov/geo/www/index.html>

Topologically Integrated Geographic Encoding and Referencing, or TIGER, or TIGER/Line is a format used by the United States Census Bureau to describe land attributes such as roads, buildings, rivers, and lakes, as well as areas such as census

tracts. TIGER was developed to support and improve the Bureau's process of taking the Decennial Census.

The TIGER files do not contain the census demographic data, but merely the map data. GIS can be used to merge census demographics or other data sources with the TIGER files to create maps and conduct analysis. TIGER data is available without cost due to the requirement for U.S. Government publications to be released into the public domain.

<http://www.census.gov/geo/www/tiger/index.html>