

Environmental Impact Assessment

Legal Basis

NEPA – the National Environmental Policy Act of 1969:

Provides a general statement of federal policy towards the environment:

Sec. 101: ... "It is the continuing policy of the Federal Government . . . to use all practicable means and measures, including financial and technical assistance, in a manner calculated to foster and promote the general welfare, **to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans.**"

Sec. 102 (C) -- added on as a "**forcing mechanism**" to see that the policy in Sec. 101 was carried out. Required that federal agencies:

"include in every recommendation or report on proposals for legislation and other **major Federal actions significantly affecting the quality of the human environment**, a detailed statement by the responsible official on --

- (i) the environmental impact of the proposed action,
- (ii) any adverse environmental effects which cannot be avoided should the proposal be implemented,
- (iii) alternatives to the proposed action,
- (iv) the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and
- (v) any irreversible and ir retrievable commitments of resources which would be involved in the proposed action should it be implemented."

Also requires the agency to "obtain the comments of any Federal agency which has jurisdiction by law or special expertise with respect to any environmental impact involved."

Sec 102 also requires that agencies:

- 1) Use a systematic interdisciplinary approach
- 2) Develop procedures for considering unquantified environmental amenities in decision making
- 3) Consider alternative use of the resources involved
- 4) Support initiatives to maximize worldwide cooperation to enhance the quality of the environment

- 5) Make information available to others on enhancing the environment Use ecological information for planning of projects.

Other Legislation and Regulations

The environmental analysis process is frequently used to comply with other relevant legislation and regulations. There are a number of federal (and state) statutes that relate to project planning and development. Some of these (this is not a complete list!) are:

Natural Resource Laws

Land and Water Conservation Act

- Provides funds to acquire land for outdoor recreation. Lands acquired under this act shall not be used for other purposes.
- If necessary, must be replaced with equivalent land.

Wildlife Restoration, Fish Restoration

- Provides funds to restore fish or wildlife lands.

Endangered Species Act

- Develop lists of species
- Federal actions should not jeopardize species or their habitats.

Migratory Bird Treaty Act

- Cannot destroy eggs or nests of migrating species.

Wild and Scenic Rivers

- Protection of designated streams.

Rivers and Harbors Act of 1899

- Require permits to ensure navigational clearance.
- Permits to discharge refuse into water required from Army Corps of Engineers (now part of Clean Water Act)

Clean Water Act

- Permits are required to discharge pollutants into navigable waters (known as Section 404 permits).

Coastal Zone Management

- Coordinated program for shoreland areas of the Great Lakes, Atlantic and Pacific coastal areas.

Federal Wetland Management Order (1977)

- Minimize impacts on wetlands.
- Only if there are no practical alternatives and there is all practical measures to reduce hard and replacement.
- Includes privately owned wetlands.

Air and Noise Legislation

Clean Air Act

- Sets targets for air quality
- Special rules for non-attainment areas
- Requires Air quality planning
SIP – State Implementation Plan

Noise Control Act

- Sets noise emission standards

Other Legislation and regulations

Executive Order on Environmental Justice

- Based on the Civil Rights act, bans discrimination under any program or activity receiving federal funding,

Relocation Assistance Law

- Sets procedures for relocation of people and businesses affected by a project.

Farmland Preservation

- Avoid adverse effects on farmland.

Historic Preservation Act

- Buildings on Historic Register need review by Council for Historic Preservation.

Antiquities Act

- Protects ruins and archaeological sites, require a permit.

Archaeological and Historic Preservation Act

- Need to acquire, protect, and preserve archaeological data.

Civil Rights Act

- Community facilities primarily used by minorities must be given attention; displacement, isolation, decreased accessibility.

Sec. 4f of the Department of Transportation Act (Highway Act of 1968) says

The Secretary of Transportation shall not approve any project which requires the use of parkland, recreation areas, wildlife and wildfowl refuges and historic sites of significance unless:

- 1) *There is no feasible and prudent alternative and*
- 2) *All possible planning to minimize harm to the park is included in the project.*

Americans with Disabilities Act

- Cannot discriminate on the basis of disability.

Resources: Environmental Regulations Web pages

Council on Environmental Quality,

Regulations for Implementing NEPA

http://ceq.eh.doe.gov/nepa/regs/ceq/toc_ceq.htm

NEPA's Forty Most Asked Questions

<http://ceq.eh.doe.gov/nepa/regs/40/40P3.htm>

Environmental Protection Agency, Office of Federal Activities

Laws, Regulations and Guidance

<http://www.epa.gov/compliance/index.html>

Environmental Impact Statements

- A. Environmental Impact Statement preparation is a major step in the project implementation process.
- B. Required for all "major federal actions significantly affecting the environment." The project must be **major, federal, an action, and have an effect on the environment that is significant**. These terms were not defined in the original law and have been left for agencies and the courts to define. If the project does not significantly affect the environment a FONSI – a finding of no significant impact is filed instead. If it is not a major federal action neither an EIS nor a negative declaration is required.
- C. Also required by many states (Wisconsin, California, etc.) which have passed similar laws.
- D. The EIS is also used to meet the requirements of other legislation relating to environmental issues, such as parkland preservation, clean air, wetland impacts. etc.
- E. Agencies have three categories of actions; 1) Categorical exclusions, minor actions that do not require any environmental analysis or have by their nature a significant impact, 2) Projects with unknown impacts that may or may not require a full EIS, in that case an environmental assessment (EA) takes place and 3) Significant Projects that automatically require a full EIS. Each agency prepares a list of example projects in each category.
- F. If an EIS is required it is first prepared as a draft EIS for comments by others and then following a decision, the comments and a responses are added and it is issued as a final EIS.
- G. Examples of types of projects requiring a full EIS are highway, transit, airport expansion projects; locks and dams; nuclear power plants; oil drilling permits; major buildings; major policy statements; park developments; waste treatment facilities; railroad abandonment; certain types of private developments; etc.
- H. Environmental assessments are used for projects where it is not known if the impact is 'significant'. In that case, an analysis needs to be conducted of the project to determine significance. This may be as extensive as a full EIS or more limited, if the impacts are in only a few categories.

I. Content of an EIS

- 1) A description of the proposed project and its surroundings.
- 2) The probable impact of the proposed project.
- 3) Any probable adverse environmental effects which cannot be avoided should the proposal be implemented.
- 4) Alternatives to the proposed action.
- 5) The relationship between local, short-term uses of man's environment and the maintenance and enhancement of long-term productivity.
- 6) Any irreversible and irretrievable commitments of resources which would be involved if the project should be implemented.
- 7) Where unavoidable environmental effects are encountered, measures taken and proposed to minimize harm.
- 8) Comments by agencies and the public.

Phases of Analysis

Scoping Process: Determine what alternatives will be analyzed and what criteria will be used. Alternatives include alternative technology and locations. Normally there are a series of 'scoping' meetings where the public and other agencies have input on the scope of the study.

Public participation: Identify how the affected agencies and the public will participate and have input in the process

Determine the affected environment: Identify geographic area affected by the project. Identify any critical populations or natural areas that merit special attention.

Analysis: Assess the impacts for each category for each alternative. Methods used may be highly technical and analytic to subjective depending on the impact category involved.

Mitigation: If adverse impacts are expected to occur, how will they be minimized or eliminated?

Decision making: Select an alternative technology and location. A public participation process should take place where other agencies and the public have an opportunity to provide input. Decisions are ultimately made by the agency conducting the study. These are typically made by elected officials or those who they designate.

Impact Types

There are many potential impacts that could occur from a project. While it is impossible to develop a general list of all impacts that any particular project could have, a checklist of possible impacts is useful. The Wisconsin Department of Transportation gives the following list as used in their Screening Worksheet (procedure 21-15-5)¹. If there is a likely impact in any of the categories, it should be assessed and described for each alternative.

Socio-Economic Impacts

A. General Economic Impacts

- Economic Advantages and Disadvantages of the proposed action
- Potential for Increased or decreased economic development
- Potential job creation

B. Community or Residential Impacts

- Population characteristics of area affected
- Effects on different modes of transport in the community or neighborhood
- Impacts on minorities, elderly, disabled or low income populations
- Traffic Impacts
- Changes in Land Use
- Effects on emergency services, emergency vehicle access, evacuation routes
- Changes in access to property and effects on pedestrians
- Residential buildings to be removed
- Household displaced. and relocation issues.

F. Economic Development and Business Impacts

- Effects of the project on transportation dependant businesses.
- Jobs created or displaced from the project.
- effects of changes in type or volume of traffic
- Effects on businesses that employ minority, elderly, disabled or low income people
- Effects on businesses that serve minority, elderly, disabled or low income people
- Business relocation needs
- Effects on the areas economic development potential

G. Agricultural Impacts

- Effects on farm operations because of land lost due to project
- Effects on access to farm operations
- Severed agricultural operations
- Effects of loss of buildings used for agricultural purposes
- Land acquisition impacts
- Impacts of changes in cattle or equipment crossing changes

¹ Wisconsin Department of Transportation Facilities Development Manual, "Format and Content of Environmental Documents – Environmental Assessment" Procedure 21-15-5.
<https://trust.dot.state.wi.us/extntgtwy/fdm/21/FDM21.pdf> Accessed June 16, 2006

- Effects from the elimination of an old roadway
- Effects of secondary development on agricultural activities
- Impacts on minority or low income persons working in agriculture

H. Environmental Justice Impacts

- Specific impacts on minority or low income populations
- Interrelationships with other environmental factors
- Are there disproportionate impacts on minority and low income populations?
- Does Title VI of the civil rights act apply to individuals?

Natural Area Impacts

E. Wetland Impacts

- Effects on waterfowl and wildlife dependant on the wetland
- Effects on endangered species
- Practicable alternatives to use of the wetland area affected
- Erosion control management
- Impacts of fill to be placed in wetlands on water quality (Sec 404 permit requirements)
- Impacts on navigable waters
- Mitigation techniques

F. Streams and Floodplain Impacts

- Endangered species affected by the project
- Effects on migratory birds and swallow nests from project
- Upstream and downstream effects
- Section 404 permit requirements
- Changes in 100 year flood plain areas.
- Effects on water quality during and after construction
- Erosion control techniques
- Flooding hazards and floodplain zoning and insurance impacts
- Effects on fish and wildlife, open space and aesthetics
- Construction impacts, erosion

G. Lakes and Open Water Impacts

- Endangered species affected by the project
- Effects on migratory birds and swallow nests from project
- Encroachments into water areas, 404 permit requirements?
- Impacts on water quality,
- Impacts on plants and animals from the project
- Erosion control and storm water management measures

H. Upland Habitat Impacts

- Endangered species affected by the project
- Effects on migratory birds and swallow nests from project

- Effects on migration corridors
- Significance of impacts on wildlife
- Secondary impacts from the project

I. Erosion Control

- Areas that are sensitive to erosion or sedimentation.
- Methods to be used for erosion control

J. Storm water impacts

- Impacts on water quality
- Special circumstances
- Storm water management techniques
- Property acquisitions for storm water management

Physical Environmental Impacts

K. Air Quality Impacts

- Non attainment status of the study area
- Carbon Monoxide Impacts
- Ozone impacts
- Conformity determination

L. Construction Sound Impacts

- Impacts of construction noise on sensitive areas such as schools, libraries
- Methods used to minimize construction sound levels during construction

M. Traffic Noise Impacts

- Impacts of traffic noise on sensitive areas such as schools, libraries
- Methods used for abatement of noise levels

Cultural Environmental Impacts

N. Unique Areas Impacts

- Impacts on publicly owned lands such as public parks, recreational lands, wildlife refuges, waterfowl refuges and historic sites
- Significance of each affected publicly owned property
- Alternatives
- Methods used to minimize harm from the project.
- Coordination with other agencies

O. Historic structures and buildings

- Significance of structures and buildings affected by the project
- Methods used to minimize harm from the project.

P. Archaeological Resources

- Notification of Native American tribes concerning project
- National historic landmarks affected by the project
- Traditional cultural properties affected by the project
- Impacts on sacred sites
- Impacts on cemeteries
- Human remains or burial sites encountered

Q. Hazardous substances or underground storage tanks

- Known or suspected contaminants
- Measures used to avoid hazardous materials contamination
- Remediation techniques.

R. Aesthetic Impacts

- Impacts of the project on the visual character of the landscape
- Mitigation measures to minimize or avoid adverse visual impacts

S. Coastal Zone Impacts

- Effects of the project on coastal zones and special coastal areas

The Federal Transit Administration [list of impact categories](#) is as follows:

- A. Social and Economic Impacts
 - Land acquisition
 - Land use and development changes
 - Economic impacts
 - Safety and security
 - Visual Impacts
- B. Air quality
- C. Endangered species
- D. Floodplains
- E. Hazardous materials and brownfields
- F. Historic, archeological and cultural resources
- G. Navigable waterways and coastal zones
- H. Noise and vibration
- I. Transportation impacts
 - Transit
 - Traffic
 - Parking
- A. Water quality
- B. Wetlands