



Session 5:

CONTEXT SENSITIVE SOLUTIONS AND THE NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)



You have now finished the four overview sessions that introduced this training program and the main concepts of CSS. The next four sessions are about federal and state policies and how they relate to CSS.

One of the major federal policies that effects the development of transportation projects is the National Environmental Policy Act or NEPA (pronounced “knee-pa.”) This session isn’t about the intricacies of NEPA, but about how NEPA and CSS are compatible processes for developing transportation projects. (For those of you interested in understanding NEPA better, MDOT does offer a separate NEPA training course.)

In order to understand the relationship between NEPA and CSS, it is first necessary to know several key terms, including:

- Environment
- Environmental impacts
- Adverse and beneficial impacts
- Alternatives
- The preferred alternative



Understanding Environmental Issues

What is the environment?

- Natural and built environments
- Social, economic, environmental
- Specific protected resources



The American public has repeatedly indicated that environmental issues are top political, economic, and social concerns. Changes to the existing environment are frequently resisted, with the public requesting an assessment of the impact that a particular government action, such as reconstructing a highway, may have on the environment.

But what do we mean by the word *environment*?

From both a NEPA and a CSS perspective, the environment is composed of natural and built components (the “nouns”) that make up our surroundings. Real plants, real animals, real neighborhoods.

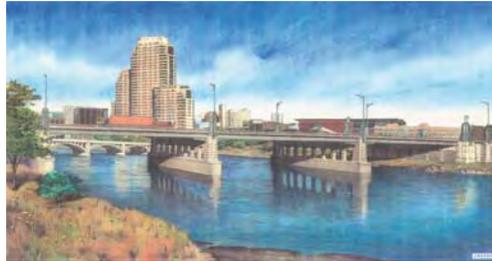
It is also the social, economic, and ecological systems, the interactions between components (the verbs, so to speak). Real animals eating real plants in real woodlands behind your house.

It is also composed of specific resources that have been determined to deserve special legal protection, by either the executive or legislative branches of government, federal or state. For example, federal and state agencies protect endangered plants and animals, conserve ecological communities such as wetlands, and protect historic sites such as Henry Ford’s Fair Lane Estate.



**Natural Environment
+ Cultural Environment
= Context**

The natural and cultural landscapes adjacent to the highway are the context of the transportation project.



US-131, Grand Rapids, MI

Together the natural and cultural environments form the context in which the transportation system exists. Understanding the resources that make up the natural and cultural environments is crucial to responding appropriately to a highway's context.



Natural Environment
+ Cultural Environment
+ People
= Value of the Context

What people value is critical to determining what needs to be considered as part of the transportation project.



US-131, Grand Rapids, MI

Context is another word for *environment*. Traditionally, CSS practitioners have considered context to be a simple equation: the natural environment plus the cultural environment equals the context of a highway. This is an objective or professional way to view the world. It is not necessarily how the public views context, however. The public adds its own values: what it likes and dislikes about the natural and cultural environment. What people like will need to be preserved, even enhanced, and what they don't like may be removed, improved, or screened from view. What neighbors and travelers value is critical to determining what needs to be considered as part of a transportation project.



**“There are many landscapes
without highways.
There are no highways
without landscapes.”**

- Lynn Lynwood, ASLA
MDOT Landscape Architect



I-94, St. Paul, MN

It is easy to imagine a landscape without a highway. But it is impossible to imagine a highway without a surrounding landscape. Highways can only exist in an environmental context, in a landscape composed of natural and cultural resources. As planners and designers we must be as concerned about the quality of the surrounding landscape as we are about the quality of the road.

Watch a car commercial on TV. Advertisers know that a driver's experience cannot be divorced from the roadway's surroundings, so they purposefully display their vehicles in engaging, beautiful landscapes (with great music playing in the background).

If only all of our roads were in commercials. Or, considered another way, is the road you are planning, designing, or maintaining suitable for a car commercial?



Understanding Environmental Issues

What is an impact?

Any change in existing conditions

- Adverse or beneficial changes
- Major or minor changes
- Widespread or localized changes
- Long-term or short-term changes

Adverse impacts require avoidance, minimization, reduction, mitigation, or compensation



What is an impact? Any change in existing conditions is an impact. An impact is adverse if it worsens conditions, beneficial if it improves conditions. Some impacts are major, widespread, or long-lasting. Others are minor, localized, or of a short-duration. Some are significant; others are insignificant.

Agencies analyze the impacts that a proposed project may cause before it is built in order to give decision makers objective information to determine if a project will significantly affect — for better or worse — our quality of life.

If a significant adverse impact is anticipated, the NEPA process, which we will discuss shortly, requires the agency proposing the project to determine the best way to avoid, minimize, reduce, mitigate, or compensate for any harm that could be done to the environment or people before the project is allowed.

In practice, this means that an agency must consider multiple alternatives before selecting the preferred alternative



Understanding Environmental Issues

What is an alternative?

- No-build alternative
- Build alternatives
- Operational alternatives



There are three types of alternatives: (1) the no-build alternative, (2) the build alternative, and (3) the operational alternative.

A no-build alternative does not necessarily mean that there won't be any environmental changes. It only means that the changes will not be caused by the proposed project. Even if lanes aren't added to a bridge, for example, it may become more congested, resulting in increased air pollution. *No-build* does not mean *no impact*.

There can be more than one build alternative. Since these alternatives call for something to be built, some environmental change will occur and so must be evaluated in advance.

For transportation projects, in addition to build and no-build alternatives, a management or operational alternative often exists — a solution that utilizes the existing transportation infrastructure but regulates its use. For example, rather than have MDOT add new lanes to relieve congestion on a bridge, major employers in a community could decide to stagger employees' shifts, thus spreading out rush-hour over several hours rather than concentrating it in one 45-minute period. This solution would eliminate the need for a wider bridge. Operational alternatives like this are increasingly attractive in that they can significantly reduce costs. They usually require extensive stakeholder involvement, typical of projects that use a CSS process during planning and design.

Although NEPA requires an examination of all reasonable and practical alternatives, CSS asks which alternatives have the support of stakeholders. Typically only those alternatives with support move forward in a CSS process, narrowing the field of alternatives early in the project development process.



Understanding NEPA

- The National Environmental Policy Act of 1969
- Requires a review of impacts
- Requires a review of alternatives for major actions
- Applies to all federally funded projects



Ames Lake wetland restoration
St. Paul, MN

NEPA is the National Environmental Policy Act. It was passed by Congress and signed by President Nixon in 1969. It directs any agency spending federal money to conduct a review of the impacts that a proposed action would have on natural and cultural resources. NEPA is concerned with social, economic, and environmental impacts—how a project may affect the way we live, the way we earn our living, and our surroundings in general.

NEPA includes analyses of resources with specific legislative or executive protections, such as a Presidential Order protecting wetlands or a law passed by Congress and signed by the President protecting historic properties.

NEPA requires, at minimum, that two alternatives—build and no build—be examined to determine the best solution.



NEPA in MDOT

- **Categorical Exclusions (CE) - 90% of MDOT Work**
Projects not causing significant impacts
- **Environmental Assessments (EA) - 5% of MDOT Work**
Discovery process to explore impacts, which may be significant (EIS) or not significant (FONSI)
- **Environmental Impact Statements (EIS) - 5 % of MDOT Work**
Significant impacts expected from large and complex projects

Under NEPA, Category II projects have been predetermined to have no significant adverse impacts to the environment. If a project falls into this category (and nearly 90 percent of MDOT projects do) they have been categorically excluded from requiring an Environmental Impact Statement (EIS). Documentation is still required to verify the project's status, so it is still important to use the CSS process.

If it is unknown whether significant impacts will be created, NEPA considers a project to be in Category III, requiring a rather straightforward Environmental Assessment (EA) be completed. This process may determine that an EIS is necessary, or may conclude with a "Finding of No Significant Impact" or FONSI. Again, using the CSS method can accelerate the process by reducing the necessary review times.

If the work being proposed will cause significant impacts to the environment, it is a Category I project under NEPA. In this case, documentation and the required review is an extensive process called an Environmental Impact Statement (EIS), which employs CSS principles such as stakeholder involvement and evaluation of alternatives, as well as a thorough, objective accounting of potential impacts. Typically a draft EIS is distributed for public and agency review and comment. Less than 5% of all MDOT projects require an EIS. When an EIS is necessary, using a CSS process has been shown to expedite the environmental review.



CSS and NEPA: A Common Approach

- Requires collaborative and interdisciplinary teams
- Engages stakeholders
- Addresses and minimizes conflicts
- Employs transparent decision-making processes
- Balances mobility and safety with environmental issues



River Trail, Lansing, MI

A CSS approach to project development and the analysis and reporting of social, economic, and environmental impacts required by NEPA are complementary. The CSS process often generates information and provides coordination needed later by NEPA. Both NEPA and CSS require a collaborative, interdisciplinary team that engages stakeholders, which include the public, regulatory agency personnel, and transportation users. Both work to address and minimize conflicts through a transparent decision-making process. Both attempt to balance mobility and safety with our society's desire to protect and conserve cultural and natural resources.



CSS and NEPA: A Common Approach

MDOT examines a wide range of environmental concerns

- Social issues
- Cultural resources
- Wetlands and floodplains
- Stream, lakes, and drains
- Coastal zones
- Protected plants and animals
- Water quality
- Air quality
- Traffic noise
- Contaminated sites
- Parks and other protected properties



MDOT's environmental review thoroughly examines many issues and resources. These are just some of the issues that MDOT would analyze for a typical transportation project.



MDOT NEPA Staff

The MDOT Environmental Section has the skilled interdisciplinary team necessary to examine issues

- Historians and archaeologists
- Biologists and botanists
- Water quality specialists
- Social analysis specialists
- Noise and air quality specialists
- Contamination specialists
- Public involvement specialists



In order to thoroughly examine issues and analyze impacts to resources, MDOT has a skilled interdisciplinary team of environmental specialists within the department. These specialists conduct investigations, evaluate impacts and alternatives, and produce the required environmental documentation. They work directly with the staff developing the project and with regulatory agencies that oversee MDOT activities.



MDOT NEPA Regional Staff

The role of the Regional Environmental Coordinator

- A liaison assigned to each MDOT Region
- A communication channel to MDOT environmental specialists
- Facilitates environmental clearances



In order to facilitate communication between the MDOT project staff and the MDOT staff writing the environmental documents, MDOT has created the position called Regional Environmental Coordinator. The coordinator acts as a two-way channel of communication between MDOT designers and environmental specialists. Environmental Coordinators work directly with their counterparts in regulatory agencies. Establishing trust and strong working relationships with project designers, environmental specialists, and regulatory staff helps to facilitate efficient processing of environmental documents and the required permits and clearances.



Conclusion

NEPA and CSS complement each other to plan, develop, and deliver transportation projects that benefit both communities and the natural environment.



NEPA requirements and CSS principles complement each other. It is good project management, therefore, to fully integrate NEPA requirements into the CSS process.