

Chapter 28

**CONSTRUCTION IMPACTS**

**MDT ENVIRONMENTAL MANUAL**

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## Chapter 28

# CONSTRUCTION IMPACTS

### 28.1 OVERVIEW

The analysis of environmental impacts of proposed highway projects for compliance with the *National Environmental Policy Act* (NEPA) (42 USC 4321, et seq.) and the *Montana Environmental Policy Act* (MEPA) (MCA 75-1-101, et seq.) must include consideration of potential short-term adverse impacts associated with construction of reasonable alternatives under study. Depending upon the scope of the proposed project and the nature of the affected environment, the short-term impacts of project construction could involve a broad range of issues (e.g., air quality, noise, water quality, traffic congestion, detours, safety, visual quality/aesthetics). Where potential adverse construction impacts are identified, the analysis must also evaluate measures for avoiding, minimizing and mitigating those impacts.

This Chapter provides guidance and procedures for identifying, analyzing and documenting potential construction impacts and measures to avoid, minimize and/or mitigate adverse impacts.

## 28.2 LAWS, REGULATIONS AND GUIDANCE

### 28.2.1 23 USC 139 “Efficient Environmental Reviews for Project Decision-Making”

For projects involving preparation of an environmental impact statement and for environmental assessments being prepared in accordance with the FHWA “SAFETEA-LU Environmental Review Process Final Guidance,” this Part of the *United States Code* (USC) requires that, at appropriate times during the study process, the lead agency or agencies for the project collaborate with agencies serving as participating agencies to determine the methodologies to be used and the level of detail required for assessing impacts, including construction impacts. See [Chapters 11 “Preparing Environmental Documentation,” 13 “Environmental Assessment/FONSI”](#) and [14 “Environmental Impact Statement/ROD”](#) for further guidance on this requirement.

### 28.2.2 40 CFR 1508.27 “Significantly”

This Section of the *Code of Federal Regulations* (CFR) is within the “Terminology and Index” Part of the *Council on Environmental Quality (CEQ) Regulations*. It indicates that both short- and long-term effects are relevant in determining the significance of the effects of a proposed action. It also states that significance of effects cannot be avoided by terming an action temporary or by breaking it down into small component parts.

### 28.2.3 ARM 18.2.238 “Determining the Significance of Impacts”

This part of the *Administrative Rules of Montana* (ARM) requires agencies to determine the significance of impacts associated with a proposed action. In evaluating the significance of impacts, agencies must consider the severity, duration, geographic extent and frequency of occurrence of the effects.

### 28.2.4 FHWA Technical Advisory T 6640.8A

The Technical Advisory, dated October 30, 1987, reflects that a project’s environmental documentation should discuss potential adverse impacts (particularly air, noise, water, traffic congestion, detours, safety and visual) associated with construction of each alternative and identify appropriate mitigation measures. The Technical Advisory also indicates that where the impacts of obtaining borrow or disposal of waste material are important issues, they should be discussed, along with any proposed measures to mitigate these impacts.

## 28.3 PROCEDURES

### 28.3.1 Information Gathering

The Preliminary Field Review (PFR) is the initial step in the analysis of the construction impacts of a proposed project. The Design Team (DT) notifies and invites appropriate MDT personnel, including the Project Development Engineer (PDE) and other personnel from the MDT Environmental Services Bureau (ESB), to the field review. The PDE reviews the list of ESB attendees and includes others as necessary to ensure appropriate ESB personnel are in attendance. The PDE and other appropriate ESB personnel participate in the PFR to make a preliminary evaluation of available information on the project scope and the potential for direct, short-term impacts resulting from project construction. Following the field review, the DT prepares a PFR Report summarizing the issues discussed during the PFR including construction issues. The DT distributes the final PFR Report for review and comment. Within ESB, the PDE serves as the document champion to collect and coordinate comments from the other Sections. The PDE compiles the comments into a PFR review memorandum for signature by the Environmental Services Bureau Chief.

For projects subject to the requirements of 23 USC 139 “Efficient Environmental Reviews for Project Decision-Making,” the PDE, in cooperation with FHWA, collaborates with participating agencies in determining the appropriate methodologies to be used and the level of detail required in the analysis of construction impacts of project alternatives.

As project development proceeds, the PDE coordinates with other ESB staff as they inventory and evaluate environmental resources within the area that could be affected by short-term project construction impacts. Appropriate ESB personnel also coordinate with the DT to obtain more detailed information on the project scope and aspects that could result in short-term construction-related impacts. The following list indicates the type of information necessary for evaluating each of the categories of potential construction-related impacts:

1. Noise and vibration issues to consider may include:
  - type of construction activities to be conducted (e.g., blasting, pile-driving, compaction of embankments);
  - type of equipment to be used;
  - potential for impacts to spawning fish, nesting birds and threatened and endangered species;
  - duration of the use of the equipment;
  - presence/proximity of receptors that would be sensitive to noise/vibration impacts; and
  - requirements of local noise ordinances that may affect the conduct of the construction work.
2. Air quality issues to consider may include:

- extent to which the project involves dust-generating activities (e.g., exposing soil through grading or excavation, milling of roadway surfaces), open burning or removal of lead-based paint or asbestos;
  - potential for exhaust emissions from contractor equipment that could affect nearby receptors; and
  - presence/proximity of receptors that would be sensitive to the air quality impacts.
3. Water quality issues to consider include:
- the extent to which the project involves in-stream work (e.g., culvert replacement, temporary crossings, bridge construction, bridge removal) or work that exposes soils, generates dust or involves the use of chemicals that could be washed into adjacent water bodies or wetlands; and
  - whether the work will require the contractor, or MDT and the contractor as co-permittees, to obtain Montana Pollutant Discharge Elimination System (MPDES) and/or National Pollutant Discharge Elimination System (NPDES) permit coverage for storm water discharges from construction sites and/or comply with provisions of the MPDES General Permit for Small Municipal Separate Storm Sewer Systems (MS4).
4. Traffic issues to consider include the extent to which the project involves temporary closing of lanes, creation of detours or other similar construction activities and the estimated duration of these activities.
5. Detour/bypass (socio-economic impact) issues to consider may include:
- extent to which the project involves use of detours and/or bypasses;
  - anticipated duration of road closures and estimated length of detours;
  - presence of pedestrian, bicycle or other alternative transportation mode corridors that would be affected by the detours/bypasses; and
  - presence of communities, businesses or facilities that could be adversely affected by limiting traffic flow.
6. Access (socio-economic impact) issues to consider may include:
- extent to which the project involves detours, bypasses or other construction changes or constraints that could compromise access to driveways or other roads; and
  - presence of residential or commercial properties whose access could be adversely affected by detours, bypasses, etc.
7. Excess materials disposal/haul road issues to consider include anticipated plans for dealing with excess materials such as demolition debris, contaminated and/or excess soil, timber, etc. (e.g., if/where it will be stored on the construction site, if/where it will be

- taken off-site, roads to be used for hauling materials off-site, need for/location of temporary haul roads).
8. Visual issues to consider include the extent to which construction operations, equipment and materials would be within view for residences, businesses or roadways in the project area.
  9. Safety issues to consider include the nature and extent of potential effects of construction on the safety of drivers, pedestrians and the project area as a whole.
  10. Wildlife issues to consider include the potential need for timing restrictions on certain work (e.g., tree removal, bridge work) to avoid impacts to nesting birds.
  11. Cultural issues to consider include the potential need for addressing Tribal customs for construction work that may affect resources important to Tribes (e.g., cloth offerings for removal of trees).

### **28.3.2 Analysis and Findings**

The PDE evaluates the information gathered to assess the potential for construction-related impacts. For aspects that would involve potential adverse effects, the PDE evaluates the nature and magnitude of the potential impacts and the extent to which the *MDT Standard Specifications for Road and Bridge Construction (Standard Specifications)* would impose constraints that would avoid or minimize the adverse impacts. The *Standard Specifications* include a number of provisions for controlling temporary construction-related impacts. Examples include those that address air quality, noise pollution, water pollution control and stream protection.

If the appropriate ESB personnel determine the *Standard Specifications* adequately address construction-related impacts, they document the nature of the impacts and the basis for determining that they are appropriately addressed by the *Standard Specifications*. The ESB personnel include the documentation in the project file and provide copies to the DT.

If the appropriate ESB personnel determine the *Standard Specifications* do not adequately address construction-related impacts, they coordinate with the DT to evaluate whether measures can be implemented to avoid or minimize the impacts.

The following paragraphs discuss possible mitigation measures for various impact areas:

1. Examples for noise and vibration issues include:
  - restricting work to certain daylight hours;
  - imposing seasonal restrictions to avoid spawning fish, nesting birds and threatened and endangered species;
  - fitting internal combustion engines with noise control equipment; and
  - locating material stockpiles to screen sensitive noise receptors.

2. Examples for air quality issues include:
  - minimizing the area of soil exposed at any given time,
  - paving or re-vegetating as soon as practical after grading,
  - watering exposed areas during dry and windy conditions,
  - requiring the contractor to obtain and comply with the provisions of applicable air quality permits, and
  - keeping streets serving the project area clean.
3. Examples for water quality issues include:
  - minimizing in-stream work;
  - ensuring the contractor, or the contractor and MDT as co-permittees, obtain and comply with the provisions of applicable storm water permits;
  - requiring the contractor to obtain and comply with the provisions of applicable Section 404 permits, 401 water quality certification, MS4 local ordinances, Tribal permits and SPA 124 Notifications for temporary facilities;
  - ensuring that the contractor revegetates disturbed areas in accordance with the revegetation special provision developed by the MDT Botanist; and
  - requiring that stockpiled materials and soils be adequately covered.
4. An example for traffic issues would be requiring the contractor to develop and implement a traffic control plan designed specifically for the project in accordance with the *Manual on Uniform Traffic Control Devices*.
5. Examples for detour/bypass (socio-economic impact) issues include:
  - ensuring proper signage or use of Intelligent Transportation System technology;
  - providing notification of detours and bypasses through newsletters, flyers, newspaper articles or public meetings; and
  - installing signing to direct patrons to affected businesses and facilities.
6. Examples for access (socio-economic impact) issues include:
  - providing alternative access for affected residential and commercial properties, and
  - scheduling construction to minimize access disruption.
7. Examples for visual issues include:
  - designating specific construction staging areas,
  - installing fencing to screen construction material sites, and
  - requiring covering of stockpiled materials.
8. An example for safety issues would be ensuring implementation of measures to keep the public separated from construction activities (e.g., fencing, proper signage, public awareness initiatives).

The coordination on potential mitigation measures begins at the PFR and continues through construction of the project.

Some construction impacts will require permits and authorizations in the name of the contractor (e.g., those associated with temporary facilities). Because the contractor generally determines the nature and location of temporary construction facilities, the contractor is responsible for temporary facilities permitting. The contractor coordinates the process through the District Environmental Engineering Specialist (DEES) after the project is awarded. The preconstruction environmental analysis should include consideration and discussion of the potential need for temporary facilities permits.

The PDE ensures the results of the analysis of construction impacts, including proposed mitigation measures and potential need for temporary facilities permits, are appropriately reflected in the environmental documentation for the project. If the project involves an environmental impact statement, environmental assessment or narrative categorical exclusion, the PDE includes an itemized list of impacts, mitigation and commitments, including those associated with project construction. (See [Chapters 11 “Preparing Environmental Documentation,” 12 “Categorical Exclusion,” 13 “Environmental Assessment/FONSI” and 14 “Environmental Impact Statement/ROD”](#)). The PDE and other appropriate ESB personnel coordinate with the DT to ensure the contract plans appropriately implement the mitigation measures and commitments for construction impacts (e.g., through incorporation of standard specifications, special provisions, and/or design features/modifications).

### **28.3.3 Mitigation and Commitments**

Appropriate ESB personnel and the DT ensure the project plans accurately reflect mitigation measures that are to be implemented for the project. To the extent possible, appropriate ESB personnel and the DT should prepare the contract documents using the *MDT Standard Specifications* to minimize the need for special provisions.

The DEES and appropriate ESB personnel monitor project construction to ensure that all mitigation measures are implemented in accordance with the approved project plans.

