

SECTION E

Environmental:

Natural and cultural resources often exist along highway projects. Many of these resources such as wetlands, public parks, and historic sites are protected by law for public benefit. Planning and design decisions such as setting roadway alignment and widths, replacing and rehabilitating culverts, and altering drainage patterns or volumes can all directly affect these resources by degrading or destroying them. Such impacts can usually be permitted under specific circumstances but, as impacts increase, permit requirements become more costly and time-consuming. Design elements can also indirectly affect resources and abutting private property by disturbing or exposing a hazardous substance, such as an abandoned, damaged gasoline tank; by channeling storm water toward a wetland or water body, carrying and depositing pollutants and sediment; or by impeding an established travel corridor for moose (land) or fish (water). These conditions can also affect structural integrity, safety or scenic quality of a roadway.

Regulations generally require that we avoid affected resources. Next, if impacts are unavoidable, they should be minimized. Finally, if impacts are unavoidable and exceed a set threshold, compensation or mitigation can be required. One of the most common examples of this include realigning a section of roadway through a wetland, causing a specific area of wetland to be filled in. Regulatory agencies approve where and how these wetlands must be replicated. Another example is the taking of a portion of a historic property, or changing the character of a roadway so it visually affects the setting or character of a historic house. That impact must be evaluated and, if it is found adverse, mitigation must be provided according to regulations. These and other forms of compensation or mitigation can be costly and can extend the project schedule.

The best approach is to avoid compensation, if that is feasible. If not, project schedules and budgets need to be adjusted to allow MDOT to comply with these requirements. Because we continually return to the same agencies for approvals on our projects, it is important that we approach each project responsibly. Developing credibility and a good rapport with agencies will facilitate agency approvals on future projects.

Projects need to be screened for the presence of all types of resources. Some of the natural resources protected by state and federal regulations include wetlands, surface and ground water, fish (habitat and passage)¹, migratory birds, rare plants, and animals¹.

¹ The Department's Fish Passage Policy and Design Guide, Best Management Practices For Erosion and Sediment Control, and more information on animal/vehicle collision issues are available at www.maine.gov/mdot/under publications.

Cultural resources such as archeology sites and architecturally historic structures (e.g., buildings, bridges) are also protected by regulations. MDOT coordinates with a number of agencies such as the Army Corps of Engineers, Maine Department of Environmental Protection, Maine Department of Inland Fisheries and Wildlife, and Maine Historic Preservation Commission, who review projects for compliance with existing laws and regulations.

The FHWA regulates historic resources and publicly owned parks, recreation areas, and wildlife and waterfowl refuges, which are known as “4 (f)” properties. FHWA requires a rigorous search for alternatives before it will consider allowing impacts to such properties.

Temporary erosion and sediment control measures are required during construction on all projects.¹ More protection is needed if a project is closer to a surface water body and if the water body is designated as “sensitive” by regulatory agencies. If the design of a project causes it to encroach on lakes, streams, or other water resources; changes drainage patterns; or increases impervious area above set thresholds, permanent structures may need to be designed and installed to maintain water quality and quantity at preconstruction conditions. This increases construction costs.

By doing a “whole project” assessment and using environmentally sensitive measures, other important social and economic impacts can usually be avoided. For example, selecting appropriate design and roadside treatments (e.g., grading, seeding, mulching, planting) can lower maintenance costs and help protect the character of a roadway. In another case, locating and avoiding an unauthorized dump or spill site of hazardous substance early in the project design can save MDOT from liability and project costs. If there is no feasible alternate design and MDOT must clean up the site, this can usually be completed without affecting the project schedule. Carefully considering potential alignments, widths, and other elements can also help a designer avoid disturbing stable areas and exposing a larger area of soil than necessary.

The highly qualified professionals in the Environmental Office keep up on laws and regulations, politically charged environmental resource issues, and new technologies to help all programs within MDOT deliver safe, effective, and legal projects. By working as part of the project team, ENV staff and Division Coordinators identify potential problems; assess what needs to be done; coordinate, negotiate, and track agency approvals; and provide environmentally sound design recommendations so the best project decisions can be made as early as possible. These decisions serve the entire life

¹ The Department’s Fish Passage Policy and Design Guide, Best Management Practices For Erosion and Sediment Control, and more information on animal/vehicle collision issues are available at www.maine.gov/mdot/under publications.

cycle of the project, from planning and design to construction and maintenance. When this process is applied effectively, time and money can be saved.

The best ways to get environmentally sound projects are to start early, be flexible and contact your Environmental Coordinator and ENV staff to work with you throughout the design process to advise you, to avoid or lessen project delays, and to keep overall costs down.

¹ The Department's Fish Passage Policy and Design Guide, Best Management Practices For Erosion and Sediment Control, and more information on animal/vehicle collision issues are available at www.maine.gov/mdot/under publications.