

ENGINEERING DIRECTIVE

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CHIEF ENGINEER

National Environmental Policy Act (NEPA) Preliminary Design Requirements for Federally Funded Transportation Projects

Federally funded transportation projects are subject to review under the National Environmental Policy Act (NEPA). Under NEPA, the Federal Highway Administration (FHWA), as the lead federal agency, is required to evaluate and mitigate the potential environmental effects of transportation projects. In order to appropriately and thoroughly complete this analysis, it is necessary to conduct environmental and engineering studies, and to coordinate with federal, state and local agencies, and the public. The extent of these activities varies with the complexity of the project. For large, complex projects it is often necessary to advance certain design and environmental analysis elements beyond preliminary design.

On October 1, 2010, FHWA issued a Policy on Permissible Project Related Activities during the NEPA Process (6640.1A.) The policy clarifies preliminary and final design, and project development activities that may be necessary to fully evaluate potential environmental effects of transportation projects during the NEPA process. Select sections of the policy are included below. The link to the full policy is:

<http://www.fhwa.dot.gov/legsregs/directives/orders/66401a.htm>.

"Preliminary design defines the general project location and design concepts. It includes, but is not limited to, preliminary engineering and other activities and analyses, such as environmental assessments, topographic surveys, metes and bounds surveys, geotechnical investigations, hydrologic analysis, hydraulic analysis, utility engineering, traffic studies, financial plans, revenue estimates, hazardous materials assessments, general estimates of the types and quantities of materials, and other work needed to establish parameters for the final design. Prior to completion of the NEPA review process, any such preliminary engineering and other activities and analyses must not materially affect the objective consideration of alternatives in the NEPA review process."

"Other activities may be considered part of preliminary design: design and engineering activities to be undertaken for the purposes of defining project alternatives; completing the NEPA alternatives analysis and review process; complying with other related environmental laws and regulations; environmental justice analyses; supporting agency coordination, public involvement, and permit applications; development of environmental mitigation plans; development of typical sections, grading plans, geometric alignment (horizontal alignment, vertical alignment and any clearances necessary to meet approved design criteria), noise wall justifications, bridge type/size/location studies, temporary structure requirements, staged bridge construction requirements, structural design (substructure and superstructure), retaining wall design, noise wall design, design exceptions, guardrail length/layout, existing property lines, title and deed research, soil borings, cross sections with flow line elevations, ditch

designs, intersection design/configuration, interchange design/configuration, pavement design, storm/sanitary sewer design(plan/profile), culvert design, identification of removal items, quantity estimates, pavement details/elevation tables, and preliminary traffic control plans to be maintained during construction.”

The activities described above as *preliminary design* are generally deemed to not materially affect the objective consideration of alternatives or have adverse environmental impacts. However, on a case-by-case basis, if the FHWA Division Administrator believes that special factors are present related to the NEPA analysis, the FHWA Division Administrator may determine that one or more preliminary design activities materially affect the objective consideration of alternatives in the NEPA review process or have adverse environmental impacts. In such cases, the activities shall not be advanced as preliminary design.

MassDOT must ensure that any action will not prejudice selection of a preferred alternative or preclude consideration of a reasonable range of alternatives. If there is any concern in this regard, the project manager should consult with the MassDOT Environmental Services Section and FHWA.