

Environmental Analysis

Logical Termini

Applicability
Regulations, Guidance, and Policy
Development

APPLICABILITY

Logical termini describes the beginning and ending points of a project and whether the selection of these points has a rational basis, considering the project's Need & Purpose (N&P)—see the standalone N&P guidebook for more about the N&P. An analysis of logical termini is only ever required for projects that involve a federal action. Of the project types requiring a federal action, this analysis only applies to capacity-adding projects. These include widening and new location roadway projects, as well as new location interchanges. On rare occasions, logical termini may be an issue on other types of projects.

With respect to National Environmental Policy Act (NEPA) documents reviewed by the Federal Highway Administration (FHWA), federal-aid capacity adding projects are almost always evaluated by Environmental Assessments (EAs) and Environmental Impact Statements (EISs). As a result, it is typically EAs and EISs, not Categorical Exclusions (CEs), that require a logical termini analysis.

A logical termini analysis also applies to state-funded projects that require a Section 404 of the Clean Water Act (CWA) Permit from the United States Army Corps of Engineers (USACE). To issue permits, USACE must agree that the proposed project has independent utility, a criteria of logical termini.

REGULATIONS, GUIDANCE, AND POLICY

Coordination with FHWA and USACE concerning the logical termini analysis is influenced by two federal laws: NEPA and Section 404 of the CWA.

National Environmental Policy Act

NEPA is an umbrella law that encompasses a wide range of environmental laws. It requires that federal agencies consider environmental consequences in their totality when developing their projects and programs. For most federal-aid projects, FHWA serves as the lead agency with responsibility for ensuring compliance with NEPA's logical termini requirements. The requirements are detailed in the Code of Federal Regulations 771.111(f).

Section 404 of the Clean Water Act

Section 404 of the CWA gives the USACE permitting authority for impacts to Waters of the US. On state-funded projects requiring a Section 404 Permit, the USACE assumes the role of lead federal agency. In that role, the USACE must ensure compliance with all the laws falling under the NEPA umbrella.

DEVELOPMENT

Development of logical termini begins during the planning phase with the development of the project's N&P. Ideally, a project will exit the planning phase and enter the Concept Stage with a strong N&P and a logical termini analysis already established. However, many projects enter concept development and environmental review with logical termini concerns. To address these concerns, the Office of Environmental Services (OES) developed the Need, Effectiveness, and Logical Termini (NELT) Form. The form allows the Environmental Analyst to address N&P and logical termini concerns with FHWA before NEPA document submittal.

For a project requiring an EA or an EIS, OES policy requires a NELT Form be provided to FHWA for their review. For CE projects where logical termini are in doubt, the Environmental Analyst should meet with the project team to discuss concerns and decide the best course of action. The project team may decide to schedule a meeting with the FHWA and/or to submit a NELT form to FHWA for review. This should be resolved early in project development.

Concerns arise if the project does not meet the three criteria of logical termini as cited by FHWA regulations:

- > The project should have rational endpoints that are of sufficient length to address broad environmental concerns;
- > The project should have independent utility, i.e., be usable and a reasonable expenditure even if no additional transportation improvements in the area are made and should not force additional improvements elsewhere; and
- > The project should not restrict the consideration of alternatives for other reasonably foreseeable transportation improvements, either connecting or nearby.

Development of Logical Project Termini,
Federal Highway Administration

The following discussions elaborate on these three criteria and offer examples of how the criteria apply to various project situations. They draw on laws and regulations, available guidance materials, and the experience of OES staff concerning logical termini issues.

Rational Endpoints

Rational endpoints, the initial component of logical termini, must be defined in two ways:

1. Rational endpoints for review of the environmental impacts; and
2. Rational endpoints for the transportation improvement.

Having two definitions of a concept tends to be confusing. The key to reconciling these two definitions is to remember two things: 1) an environmental document must cover an entire “transportation improvement,” 2) a “transportation improvement” must cover the transportation problem in its entirety.

The rational endpoints criteria has two important implications. One is that an environmental document may cover more than one project. For example, if the need for widening stretches along a long corridor and the corridor is broken into several projects, all the projects must be included in one document. Preparing documents for each project would be segmenting the “transportation improvement” and segmenting the “review of environmental impacts.” A second implication of rational endpoints is that, on occasion, a document may need to include a segment of corridor for which no project is planned. In the above example, if the transportation problem continues beyond one of the outside termini of the string of projects, that segment will also need to be evaluated in the document even if no project is programmed to widen that segment.

The above example leads to another key point related to all logical termini criteria. When a transportation improvement consists of several projects, logical termini does not dictate that they be constructed at the same time. It only requires that they be evaluated concurrently in one document.

The criteria for determining rational endpoints can vary depending on a project’s N&P. For widening projects—which generally have “congestion relief” as their primary N&P—rational endpoints are typically major intersections. This is because major intersections are the points where traffic volumes change, where existing typical sections change, and, as a consequence, where traffic congestion worsens or lessens. For a new location bypass whose purpose is to divert traffic from a congested downtown route, any two routes which would take enough traffic off the downtown facility to produce an acceptable LOS would be rational.

Defining rational endpoints for other project types is not always straightforward. For example, economic development projects may rely on economic indicators, such as poverty and unemployment rates, and be influenced by qualitative information obtained from GDOT planners and regional planners. Legislation can even play a role. The Governor’s Road Improvement Program, (GRIP), which designates specific state route corridors for widening, is legislation enacted specifically to spur growth in rural areas. Because GRIP corridors can be very long and can be divided into a number of projects, deciding rational endpoints for the evaluation of environmental impacts can be difficult to

establish. Hence, on federal-aid GRIP projects, it is important to coordinate with FHWA and submit a NELT. Similarly, on state-funded GRIP projects for which a Section 404 Permit is required, coordination with the USACE to determine independent utility is essential.

Independent Utility

As noted, independent utility means that the project is a usable and reasonable expenditure even if no additional transportation improvements are made. To meet this requirement, the project must meet two conditions:

1. It must not require other improvements to meet its N&P, and
2. It must not force a need for improvements beyond its termini or on intersecting routes.

To meet the first condition, the project team should assess project performance independently of any benefits from other planned projects. For example, if a corridor widening alone would not provide congestion relief, the project team could not factor the development of a second widening project on a parallel route into its assessment of congestion relief. In this case, the project does not fulfill its N&P without assistance from another project. To meet the independent utility requirements, both the widening of the corridor and the parallel route widening would need to be evaluated in one document.

To meet the second condition of independent utility, the project team must determine whether the project would cause the operations of other corridors to degrade to unacceptable levels, forcing the need for improvements to those corridors. For example, a widening project from Point X to Point Y may draw additional traffic to a corridor. Some of this traffic may spill over to Points Y to Z, resulting in a build condition of LOS F—worse than the no-build condition LOS C. In this case, the environmental document for the X-Y project would have to be extended to add improvements to address the Y-Z segment.

Future Consideration

To have logical termini, a project cannot restrict the consideration of alternatives for reasonably foreseeable projects. Projects within the Statewide Transportation Improvement Program (STIP) are always reasonably foreseeable, and, in most situations, long range projects will be deemed reasonably foreseeable. The risk of restricting avoidance alternatives is most severe for future projects that have a geographic connection to the proposed project—either adjoining with it or intersecting with it. Where this is a possibility, field surveys must be extended some distance onto the future project's corridor to identify resources and assess the current project's alignment to avoid "pointing a loaded gun" at resources along the future project corridor.

Restricting avoidance alternatives will be an issue *only* when the future project and the current project have different rational endpoints and have independent utility. Without meeting these two criteria, the preserving avoidance alternatives criteria will not be an

issue. This is because the future project and its avoidance alternatives will have to be evaluated in the current environmental document with the current project.

Dealing with Logical Termini Problems

Unexpectedly having to include another project, another corridor, or another segment of a corridor in an environmental document will throw the project schedule into disarray. This is especially true when there are no plans or conceptual layouts for the other project, segment, or corridor to work from. If this is the case, rough layouts showing worst case impacts will need to be developed.

Need, Effectiveness, and Logical Termini Form

The NELT Form was developed by OES for major federal-aid projects with a complicated or unconventional N&P. OES requires NELT Forms for EAs and EISs. The form analyzes and supports the N&P, logical termini, and the preferred alternative's effectiveness. It should be submitted for FHWA concurrence early in the Concept Stage. Upon review, FHWA provides written concurrence for these elements.

The form allows the Environmental Analyst to engage FHWA with N&P concerns, such as logical termini issues, prior to submittal of the NEPA document. This can avoid schedule delays resulting from rejected NEPA documents. FHWA's concurrence with the NELT is conditional and may be withdrawn because of changes to the information presented or because of additional information. The Environmental Analyst prepares the NELT in consultation with the PM, the Transportation Planner, the Design Manager, OES, and FHWA.

The Transportation Planner, in particular, may be helpful in elaborating on and filling gaps in the N&P. The Traffic Engineer may be needed to interpret the traffic and capacity analysis. The Environmental Analyst should not prepare a NELT if there are clearly fatal flaws in the N&P, logical termini, and the preferred alternative's effectiveness. Submitting a NELT based on a flimsy analysis—simply in the hope that FHWA will overlook a fundamental problem—makes no sense. The Environmental Analyst should call a team meeting to consider sending the project back to the planning phase.

Guidebook Revision History

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