

I-395 – Route 9 Transportation Study Alternatives Identification and Evaluation

February 2001

Purpose and Needs

The purpose and need define what can be considered reasonable, prudent, and practicable alternatives. The decision-making process should first consider those alternatives that meet the purpose and need for the project, at an acceptable cost and level of environmental impact relative to the benefits that will be derived from the project.

Practicable – Available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purpose.

Alternatives Identification and Evaluation

Identifying and studying alternatives in response to project need(s) is the key to the NEPA process' objective of finding solutions that help preserve and protect the value of environmental and community resources.

Evaluation of alternatives should present the project needs and all the alternatives in comparative form, to define the issues and provide a clear basis for choice among the alternatives. The regulations implementing NEPA require that agencies shall:

- (a) Rigorously explore and objectively evaluate all reasonable alternatives and for alternatives which were eliminated from detailed study, briefly discuss the reasons for their having been eliminated.
- (b) Devote substantial treatment to each alternative considered in detail including the proposed action so that reviewers may evaluate their comparative merits.
- (c) Include reasonable alternatives not within the jurisdiction of the lead agency.
- (d) Include the alternative of no action.
- (e) Identify the agency's preferred alternative or alternatives, if one or more exists, in the draft statement and identify such alternative in the final statement unless another law prohibits the expression of such a preference.
- (f) Include appropriate mitigation measures not already included in the proposed action or alternatives.

-- 40 CFR 1502.14

Range of Reasonable Alternatives

All reasonable alternatives should be discussed at a comparable level of detail.

Although the "no-build alternative" (includes short-term minor activities, like safety upgrading and maintenance projects) might not seem reasonable, it must always be included in the analysis. It serves two purposes: 1) it may be a reasonable alternative, especially for situations where the impacts are great and the need is relatively minor, and 2) the no-build serves as a baseline against which the other alternatives can be compared.

Logical Termini and Segmentation

The FHWA regulations on evaluating environmental impacts (23 CFR 771.111(f)) require that:

In order to ensure meaningful evaluation of alternatives and to avoid commitments to transportation improvements before they are fully evaluated, the action evaluated in each environmental impact statement (EIS) or finding of no significant impact (FONSI) shall:

- 1. Connect logical termini and be of sufficient length to address environmental matters on a broad scope;*
- 2. Have independent utility or independent significance, i.e., be usable and be a reasonable expenditure even if no additional transportation improvements in the area are made; and*
- 3. Not restrict consideration of alternatives for other reasonably foreseeable transportation improvements.*

The development of a transportation project should consider how the end points are determined, both for the improvement itself and for the scope of the environmental analysis. In developing an alternative, need to consider a single and complete project.

Logical termini for project development are defined as (1) rational end points for a transportation improvement, and (2) rational end points for a review of the environmental impacts.

Alternatives should satisfy the project needs and should be considered in the context of the local area socioeconomics and topography, the future travel demand, and other infrastructure improvements in the area.

Without framing a project in this way, proposed improvements may miss the mark by only peripherally satisfying the need or by causing unexpected side effects which require additional corrective action. A problem of "segmentation" may also occur where a transportation need extends throughout an entire corridor but environmental issues and transportation need are inappropriately discussed for only a segment of the corridor.

Other Requirements Involving Alternatives Analysis

Beyond the CEQ regulations requirement of evaluating a reasonable range of alternatives, there are other more action-limiting requirements for alternatives under Section 4(f), the Executive Orders on Wetlands and Floodplains, and the Section 404(b)(1) guidelines. To address these requirements and conclusively demonstrate that some alternatives are not prudent or practicable, a well justified purpose and need are vital.

The use of land from a Section 4(f) protected property (significant publicly owned public park, recreation area or wildlife and waterfowl refuge, or any significant historic site) will not be approved unless a determination is made that there is no feasible and prudent alternative to the use.

There are numerous factors, which could render an alternative “not prudent” because of unique problems, including cost, and environmental impacts. If an alternative does not meet the project's purpose or satisfy the needs then the alternative is not prudent provided the purpose and need section can substantiate that unique problems will be caused by not building the project.

If a proposed action is to be located in a wetland or it entails a floodplain encroachment with significant impacts, a finding must be made that there is no practicable alternative to the wetland take or floodplain encroachment. Any alternative, which does not meet the need for the project, is not practicable.

If the project's purpose and need are not adequately addressed, specifically delineated and properly justified, resource agencies, interest groups, the public or others will be able to generate one or possibly several alternatives which avoid or limit the impact and "appear" practicable. Sometimes long, drawn out negotiations or additional analyses are needed to clearly demonstrate that an alternative is not practicable, where a well-described justification of the project's purpose and need would have clearly established it.

If an alternative does not satisfy the purpose and need for the project, as a rule, it should not be included in the analysis as an apparent reasonable alternative.

There are times when an alternative that is not reasonable is included based on the request of another agency or due to public expectation. In such cases, it should be clearly explained why the alternative is not reasonable (or prudent or practicable), why it is being analyzed in detail and that because it is not reasonable that it will not be selected.

Alternatives Screening Process

The alternative analysis should be able to give a clear indication of WHY the particular range of alternatives were developed, through what process, with what kind of public and agency input.

Just as important is examining why alternatives have been eliminated from consideration during the NEPA process (through the use of what criteria, at what point in the process, and what parties

were involved in establishing the criteria for assessing alternatives and measures of effectiveness).

It is important to be candid about the rationale for generating, evaluating, and eliminating alternatives. Being as specific as possible is essential - if an alternative is eliminated from further consideration because it "does not meet the purpose and need", there should be adequate explanation of *how* or *why* it doesn't meet the purpose and need.

MDOT uses series of three matrices to comparatively evaluate alternatives.

Range of Reasonable Alternatives to be Considered

No build – fully developed for the year 2030.

Strategies

Transportation System Management – activities that maximize the efficiency of existing system: fringe parking, ridesharing, HOV lanes, and traffic signal timing optimization. Most effective in urban areas.

Travel Demand Management – actions whose purpose is to reduce traffic problems through improved management of vehicle trip demand. Primarily directed at commuter travel, structured to reduce dependence on SOVs, alter the timing of travel, or somehow otherwise maximize the movement of people.

Upgrade Alternative

Corridors & Alternatives on New Alignment

Alternative Performance Criteria

- must address purpose and needs
- 300-meter wide corridors (100 foot r/w)
- limited or controlled access