

Alternatives Analysis - Frequently Asked Questions

Question 1 - How many alternatives are required for my document?

For a quick summary of the number of alternatives required by document type, please see Table 1.

CEQA: The purpose of an Initial Study (IS) is to determine the environmental impacts associated with a proposed project and to determine if the project will have a significant adverse effect on the environment. As such, only one alternative—the proposed project—need be evaluated.

If the IS reveals that the project will have a significant adverse effect on the environment, an Environmental Impact Report (EIR) will be required. This will necessitate the consideration of a range of reasonable alternatives that would achieve most of the basic objectives of the project but would also avoid or substantially lessen any of the significant effects of the project.

Section 15126.6 of the 2010 [CEQA Guidelines](#) states:

An EIR shall describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives. An EIR need not consider every conceivable alternative to a project. Rather it must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation. An EIR is not required to consider alternatives which are [infeasible](#).

NEPA: The requirements under NEPA for an alternatives analysis in an Environmental Assessment (EA) are less rigorous than the requirements for an Environmental Impact Statement (EIS) (Federal Highway Administration [Alternatives Analysis White Paper](#)).

As noted in the Federal Highway Administration's (FHWA) [Technical Advisory T 6640.8A](#) (October 30, 1987), the purpose of an EA is to determine whether or not an EIS is needed. The [Technical Advisory](#) provides the following instructions for the alternatives section of an EA:

Discuss alternatives to the proposed action, including the no-action¹ alternative, which are being considered. The EA may either discuss (1) the preferred alternative and identify any other alternatives considered or (2) if the applicant has not identified a preferred alternative, the alternatives under consideration. The EA does not need to evaluate in detail all reasonable alternatives for the project, and *may be prepared for one or more build alternatives*.

When the project for which an EA will be prepared is complex or controversial, it is advisable to consider more than one build alternative in order to lessen the risk of a legal challenge. Additionally, any alternatives considered but eliminated (see Question 8) *prior* to preparation of the EA should be thoroughly discussed and the reasons for their elimination clearly explained. In recent legal cases where environmental assessments were challenged for failing to consider a reasonable range of alternatives, the courts have viewed alternatives rejected earlier in the NEPA process as evidence that a reasonable range of alternatives *was* considered. However, these alternatives and the reasons for their elimination must be documented in the EA.

Although an EA is similar to an IS in that the purpose is to determine if a higher level document is needed, there are differences in the treatment of alternatives. An EA must consider the “no-action” alternative (See Question

¹ This guidance uses the terms “no-action,” “no-project,” and “no-build” interchangeably.

4) and under certain circumstances, must include a consideration of Transportation System Management (TSM) and Transportation Demand Management (TDM) alternatives (see Question 12).

If the EA reveals that the project, as a whole, will not result in a significant impact, then a Finding of No Significant Impact can be made. If the EA reveals that the project, as a whole, will result in a significant impact, then an EIS must be prepared.

The alternatives analysis is considered the “heart” of the EIS² and must discuss a range of alternatives, including all “reasonable alternatives.” The [Council on Environmental Quality \(CEQ\) Regulations](#) state 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.

Table 1 – Alternatives Required by Level of Environmental Document

Document Type	Alternatives Required
CEQA	
Categorical Exemption	Build alternative only.
Initial Study	Build alternative only.
Environmental Impact Report	Reasonable range of alternatives, including those which would attain most of the basic project objectives while avoiding or reducing the environmental effects of the project. No-build must be considered.
NEPA	
Categorical Exclusion	Build alternative only.
Environmental Assessment	One build alternative is allowable, but for a complex or controversial project, more than one alternative is advised. No-build must be considered.
Environmental Impact Statement	All reasonable alternatives including no-build. Each alternative must be considered and discussed to a comparable level of detail.

When developing project alternatives under NEPA, both logical termini and independent utility *must* be considered. For more information, please see FHWA’s [The Development of Logical Project Termini](#).

² 40 C.F.R. § 1502.14

Question 2 - What is a “reasonable range” of alternatives?

CEQA: Section 15126.6 of the [CEQA Guidelines](#) states:

An EIR need not consider every conceivable alternative to a project. Rather it must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation. An EIR is not required to consider alternatives which are [infeasible](#). The lead agency is responsible for selecting a range of project alternatives for examination and must publicly disclose its reasoning for selecting those alternatives. There is no ironclad rule governing the nature or scope of the alternatives to be discussed other than the rule of reason.

The “rule of reason” requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. The alternatives must be limited to ones that would avoid or substantially lessen any of the significant effects of the project. Of those alternatives, the EIR need examine in detail only the ones that could feasibly attain most of the basic objectives of the project. The range of feasible alternatives must be selected and discussed in a manner to foster meaningful public participation and informed decision-making.

NEPA: Under NEPA, “reasonable” is generally understood to mean those technically and economically feasible project alternatives that would satisfy the primary objectives of the project defined in the Purpose and Need (P&N) statement (FHWA [Alternatives Analysis White Paper](#)). CEQ’s “[Forty Questions](#)” adds that “Reasonable alternatives include those that are practical or feasible from the technical and economic standpoint and using common sense, rather than simply desirable from the standpoint of the applicant.” Further information on alternatives screening can be found in the [AASHTO Practitioners Handbook 07: Defining Purpose and Need and Determining the Range of Alternatives for Transportation Projects](#).

Question 3 - Are there any special coordination requirements related to the development of project alternatives?

Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)

When preparing an EIS, Section 6002 of SAFETEA-LU requires:

- Involvement of the public and participating agencies in defining the purpose and need of a project.
- Involvement of the public and participating agencies in *developing the range of alternatives for a project*.
- The development of a coordination plan.

For more information regarding coordination under Section 6002 of SAFETEA-LU, please see: [Caltrans Environmental Management Office SAFETEA-LU](#) and [FHWA/FTA SAFETEA-LU Environmental Review Process Final Guidance](#).

NEPA/404 Integration

In 2006, Caltrans entered into a new [NEPA/404 Integration MOU](#) with FHWA, the U.S. Environmental Protection Agency (USEPA), the U.S. Fish and Wildlife Service (USFWS), the Army Corps of Engineers (USACE), and NOAA Fisheries to merge the NEPA and Clean Water Act Section 404 processes. Projects that have five or more acres of permanent impacts to waters of the United States and that require the preparation of an EIS are subject to the MOU.

The integration process includes on-going coordination, meetings at specified points, and three checkpoints, which require responses from each of the signatory agencies. The checkpoints are: 1) Purpose and Need, 2) *identification of the range of alternatives to be studied in the Draft EIS*, and 3) the Preliminary Least Environmentally Damaging Practicable Alternative (LEDPA) and Conceptual Mitigation Plan (CMP). The checkpoint for identification of the range of alternatives to be studied also includes consideration of the criteria used to select and analyze the range of alternatives to be studied in the draft EIS.

Question 4 - Why do I need to include the no-build or no-project alternative?

Both CEQA and NEPA *require* the consideration of the no-build or no-project alternative.

CEQA: An EIR must include a discussion of the “no project” alternative and its impact. The discussion of the “no project” alternative allows the public and the decision-makers to assess the effects of approving the project versus the effects of not approving the project.

According to Section 15126.6(e)(1) of the [CEQA Guidelines](#):

The specific alternative of “no project” shall also be evaluated along with its impact. The purpose of describing and analyzing a no project alternative is to allow decision makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project. The no project alternative analysis is not the baseline for determining whether the proposed project’s environmental impacts may be significant, unless it is identical to the existing environmental setting analysis which does establish that baseline.

The "no project" analysis must discuss the existing (baseline) conditions at the time the Notice of Preparation (NOP) is published as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved. In other words, if disapproval of the proposed project would result in predictable actions by others, such as the proposal of some other project, this "no project" consequence should be discussed.

NEPA: FHWA’s [Technical Advisory](#) discusses the need for the “no-action” alternative in both an EA and an EIS. CEQ’s “[Forty Questions](#)” provides two interpretations of the no-action alternative, the second of which is most applicable to transportation projects. No-action would mean that the proposed project would not be built and the resulting environmental effects would be compared to those if the project were built. When the no-build alternative would result in predictable actions by others, these actions should be discussed. For example, if a new highway is the proposed project and the local jurisdiction has a plan in place to build a local arterial in the event the new highway is not built, the local jurisdiction’s arterial would be included in the “no project” alternative.

Question 5 - Why are avoidance alternatives necessary?

One of the primary purposes of both CEQA and NEPA is to identify, through the evaluation of alternatives to the proposed project, ways in which the environmental effects of a project can be avoided or minimized.

CEQA: Section 21002 of [CEQA](#) states, in part, that: “... it is the policy of the state that public agencies should not approve projects as proposed if there are feasible alternatives or feasible mitigation measures available which would substantially lessen the significant environmental effects of such projects...”

NEPA: Section 1500.2 (Policy) of the [CEQ Regulations](#) states that “Federal agencies shall to the fullest extent possible: ...Use the NEPA process to identify and assess the reasonable alternatives to proposed actions that will avoid or minimize adverse effects of these actions upon the quality of the human environment.”

Question 6 - When are avoidance alternatives required?

In addition to CEQA and NEPA, there are other requirements under Section 4(f), the Executive Orders on Wetlands and Floodplains, and the Section 404(b)(1) guidelines, which require the development of project alternatives.

[Section 4\(f\) and Related Requirements](#): The intent of Section 4(f) of the U.S. Department of Transportation Act (1966) is to avoid the use of significant public parks, recreation areas, wildlife and waterfowl refuges and historic

sites as part of a project, unless there is no [feasible and prudent alternative](#) to the use of such land. Section 4(f) *mandates* the consideration of alternatives which will avoid the Section 4(f) resource.

[Executive Order \(EO\) 11990 Protection of Wetlands](#): This EO requires federal agencies (such as FHWA) to avoid new construction in wetlands unless there is no practicable alternative to such construction and to ensure that the proposed action includes all practicable measures to minimize harm to wetlands which may result from such use. When documenting the “Wetlands Only Practicable Alternative Finding,” which must be included in the Final Environmental Document (FED), the federal agency may take into account economic, environmental, and other pertinent factors.

[Executive Order \(EO\) 11988 Floodplain Management](#): This EO requires that federal agencies avoid impacts associated with the modifications of floodplains and to avoid the direct or indirect support of floodplain development wherever there is a practicable alternative. If a project will result in a significant floodplain encroachment, FHWA will need to approve the floodplain encroachment and concur in the “Only Practicable³ Alternative Finding,” which must be included in the FED. The finding must refer to Executive Order 11988 and to Title 23 of the Code of Federal Regulations (CFR) 650, Subpart A and must be supported by the following:

1. The reasons why the proposed action must be located in the floodplain;
2. The alternatives considered and why they are not practicable; and
3. A statement indicating whether the action conforms to applicable state or local floodplain protection standards.

[Section 404\(b\)\(1\) Guidelines](#): These guidelines allow the discharge of dredged or fill material into the aquatic system only if there is no practicable alternative⁴ which would have less adverse effects. The environmental document for any project which requires an Individual 404 permit from the USACE, including a Letter of Permission, must include an alternatives analysis which identifies the Least Environmentally Damaging Practicable Alternative (LEDPA). This is true even if the “thresholds” for using the NEPA/404 integration process (five or more acres of permanent impacts and an EIS) have not been met.

Question 7 - When can I eliminate alternatives?

Both NEPA and CEQA provide criteria for the elimination of alternatives. Alternatives that do not meet the project objectives (CEQA) or purpose and need (NEPA), and alternatives that are not reasonable or feasible may be eliminated from further consideration.

CEQA: Under CEQA, an alternative may be eliminated for any of the following reasons:

- The alternative fails to meet most of the basic project objectives.
- The alternative is infeasible.
- The alternative does not avoid significant environmental impacts.
- An alternative for which the implementation is remote and speculative and for which the effects cannot be reasonably ascertained.

³ "Practicable" shall mean capable of being done within reasonable natural, social, or economic constraints.

⁴ According to the Guidelines, “practicable alternatives include, but are not limited to: 1) Activities which do not involve a discharge of dredged or fill material into the Waters of the U.S. or ocean waters; and 2) Discharges of dredged or fill material at other locations in Waters of the U.S. or ocean waters.” Additionally, an alternative is “practicable” if it is “available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.”

Section 15126.6(f)(1) of [CEQA Guidelines](#) provides the following guidance regarding feasibility:

Among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries (projects with a regionally significant impact should consider the regional context), and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site (or the site is already owned by the proponent)...

NEPA: NEPA also allows the elimination of alternatives that are not reasonable or feasible or do not meet the Purpose and Need (P&N) of the project (for more information on preparing the P&N statement see the following Caltrans Division of Environmental Analysis website: [Purpose and Need](#)). For the purposes of NEPA, reasonable means those alternatives which may be *feasibly* carried out based on technical, economic, environmental, and other factors. Under certain circumstances, alternatives considered but eliminated during the transportation planning process may be incorporated by reference into the NEPA document. However, there are very rigorous requirements that must be met to exercise this option, which include participation by relevant agencies and the public during the planning process. Additionally, the reasons for the elimination of these alternatives must still be included in the environmental document. For more information, please see Appendix A to Part 450 which can be downloaded as a Word file from the bottom of the following webpage: [RE: NEPA - Linking the Transportation Planning and NEPA Processes](#) and the FHWA [Alternatives Analysis White Paper](#).

Question 8 - Do I need to discuss eliminated alternatives in my document?

Under both CEQA and NEPA, alternatives eliminated prior to the draft environmental document (DED) should be briefly discussed in the environmental document. It is recommended that a DED include a section titled "Alternatives Considered but Eliminated from Further Discussion," along with the reason for rejecting them during the scoping process. For example, if an alternative was explored during the early planning process, but rejected because it did not meet the Purpose and Need of the project, the DED should contain a section entitled "Alternatives Considered but Eliminated from Further Discussion" with a description of the eliminated alternative and the reasons why it did not meet the Purpose and Need. Alternatives and/or design options that were rejected due to increased environmental impacts should be discussed here as well. For example, if widening a highway to the outside was determined to have more environmental effects (right-of-way, biological impacts, aesthetic impacts, etc.) than widening to the inside (i.e., reducing the width of the median), the outside widening alternative should be discussed as an alternative considered but eliminated. For the FED, the section should be re-titled "Alternatives Considered but Eliminated from Further Discussion Prior to Draft ED."

Alternatives that *will* be considered in the DED should not be placed in this section as they remain viable alternatives.

Question 9 - What is the difference between an alternative and a design option (or variation)?

As noted under Question 4, one of the primary purposes of both CEQA and NEPA is to identify, through the evaluation of project alternatives, ways in which the environmental effects of a project can be avoided or minimized while still satisfying the primary objectives of the project. *In general*, an alternative will have a greater potential to either significantly increase or lessen the environmental effects of a project when compared to a design option or variation. For example, a slight modification in a roadway alignment to avoid a small area of wetland habitat is more likely to be a design modification rather than an alternative. However, a substantial shift in an alignment to avoid what could be a significant impact to wetlands would probably be considered an alternative. An high occupancy vehicle (HOV) lane project is another example in which the difference between an alternative and a design option is tied to the potential to increase or lessen the environmental effects of the project. Although a general purpose lane and an HOV lane would occupy the same physical space, each would be expected to have substantially different effects to air quality as an HOV lane will generally result in less traffic volume and higher speeds than a general purpose lane, and each will have different effects on traffic volume

and speed in the other travel lanes. Smaller changes to the project, such as different operating hours for the HOV lane, would probably result in lesser overall effects to air quality, making this a design option instead. An intersection improvement project provides a final example. While an at-grade intersection and a grade-separated interchange represent two different project alternatives, the specific configurations of the interchange (diamond, partial cloverleaf, full cloverleaf, etc.) may represent design options or variations as they are less likely to substantially alter the overall environmental effects of the project.

Question 10 - Can I identify the preferred alternative?

CEQA: The CEQA Statute and Guidelines do not address the question of a preferred alternative.

NEPA: Generally, a preferred alternative (PA) is not identified until after the DED has circulated and public comments have been taken into account. However, when a proposed PA has been identified at the DED stage, it **must** be disclosed. Explain in some detail why the alternative has been identified as the PA. When identifying a PA at the DED state, it is suggested that the following language be used:

After comparing and weighing the benefits and impacts of all of the feasible alternatives, [include examples as appropriate], the project development team has identified Alternative [X] as the preferred alternative, subject to public review. Final identification of a preferred alternative will occur after the public review and comment period.

If a local government or organization has a preference for a particular alternative, this can be stated in a Caltrans document if the alternative is labeled the “Locally Preferred Alternative.” Note that the identification of a “Locally Preferred Alternative” is *required* if the project is a Federal Transit Agency (FTA) project.

Question 11 - Do all alternatives have to be developed to the same level of detail?

Generally, NEPA requires that alternatives be developed to a fuller degree than does CEQA.

CEQA: The EIR must evaluate the comparative merits of the alternatives, including the “no project” alternative. Section 15126.6(d) of the CEQA Guidelines states:

The EIR shall include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project. A matrix displaying the major characteristics and significant environmental effects of each alternative may be used to summarize the comparison. If an alternative would cause one or more significant effects in addition to those that would be caused by the project as proposed, the significant effects of the alternative shall be discussed, but in less detail than the significant effects of the project as proposed.

NEPA: Under NEPA, alternatives must be considered and discussed to a comparable level of detail, which usually also necessitates that the alternatives *be developed* to a comparable level. Section 1502.14 of the Council on Environmental Quality (CEQ) Guidelines states that in the “Alternatives” section of an EIS, agencies shall “Devote substantial treatment to each alternative considered in detail including the proposed action so that reviewers may evaluate their comparative merits.”

Under specific circumstances, SAFETEA-LU Section 6002 allows the lead agencies to develop the alternative that has been officially identified as the preferred alternative (PA) to a higher level of detail than the others. SAFETEA-LU permits the PA to be developed to a higher level of detail than the other alternatives for only the following reasons: 1) to facilitate the development of mitigation measures or 2) to facilitate concurrent compliance with other applicable environmental laws. Refer to the [FHWA/FTA SAFETEA-LU Environmental Review Process Final Guidance](#) section on [Preferred Alternative](#) for a detailed discussion of how and why to use

this provision and when an alternative may be officially identified early so that it may be developed to a higher level of detail in the draft EIS.

Question 12 - When must specific types of alternatives be considered?

When preparing an EIS or EA for a project located in an urban area with a population over 200,000 (Transportation Management Areas), Transportation System Management (TSM) and Transportation Demand Management (TDM) alternatives must be considered. In these urban areas, HOV and mass transit alternatives should be considered for all major projects.

TSM Alternative including High Occupancy Vehicle Lanes and Mass Transit

TSM strategies increase the efficiency of existing facilities; they are actions that increase the number of vehicle trips a facility can carry without increasing the number of through lanes. Examples of TSM strategies include: ramp metering, high-occupancy vehicle lanes, auxiliary lanes, turning lanes, reversible lanes and traffic signal coordination. TSM also encourages automobile, public and private transit, ridesharing programs, and bicycle and pedestrian improvements as elements of a unified urban transportation system. Modal alternatives integrate multiple forms of transportation modes, such as pedestrian, bicycle, automobile, rail, and mass transit. As described by the [Technical Advisory](#), the mass transit alternative:

... includes those reasonable and feasible transit options (bus systems, rail, etc.) even though they may not be within the existing FHWA funding authority... Consideration of this alternative may be accomplished by reference to the regional or area transportation plan where that plan considers mass transit or by an independent analysis during early project development.

TDM Alternative

TDM focuses on regional means of reducing the number of vehicle trips and vehicle miles traveled as well as increasing vehicle occupancy. It facilitates higher vehicle occupancy or reduces traffic congestion by expanding the traveler's transportation options in terms of travel method, travel time, travel route, travel costs, and the quality and convenience of the travel experience. Typical activity within this component is providing contract funds to regional agencies that are actively promoting ridesharing, maintaining rideshare databases, and providing limited rideshare services to employers and individuals.

Alternatives Outside the Lead Agency's Jurisdiction

CEQA: CEQA does not specifically address whether or not a lead agency must consider alternatives outside that agency's jurisdiction, although the discussion found in Section 15126.6(f)(1) of [CEQA Guidelines](#) regarding feasibility (see Question 7) suggests that an agency may reject as infeasible an alternative outside its jurisdiction.

NEPA: NEPA, on the other hand, clearly requires that lead agencies consider alternatives that may not be within the jurisdiction of their agency (CEQ "[Forty Questions](#)" 2a and 2b). With regard to alternatives outside the jurisdiction of the lead agency, CEQ's "[Forty Questions](#)" provides the following information:

An alternative that is outside the legal jurisdiction of the lead agency must still be analyzed in the EIS if it is reasonable. A potential conflict with local or federal law does not necessarily render an alternative unreasonable, although such conflicts must be considered... Alternatives that are outside the scope of what Congress has approved or funded must still be evaluated in the EIS if they are reasonable, because the EIS may serve as the basis for modifying the Congressional approval or funding in light of NEPA's goals and policies.