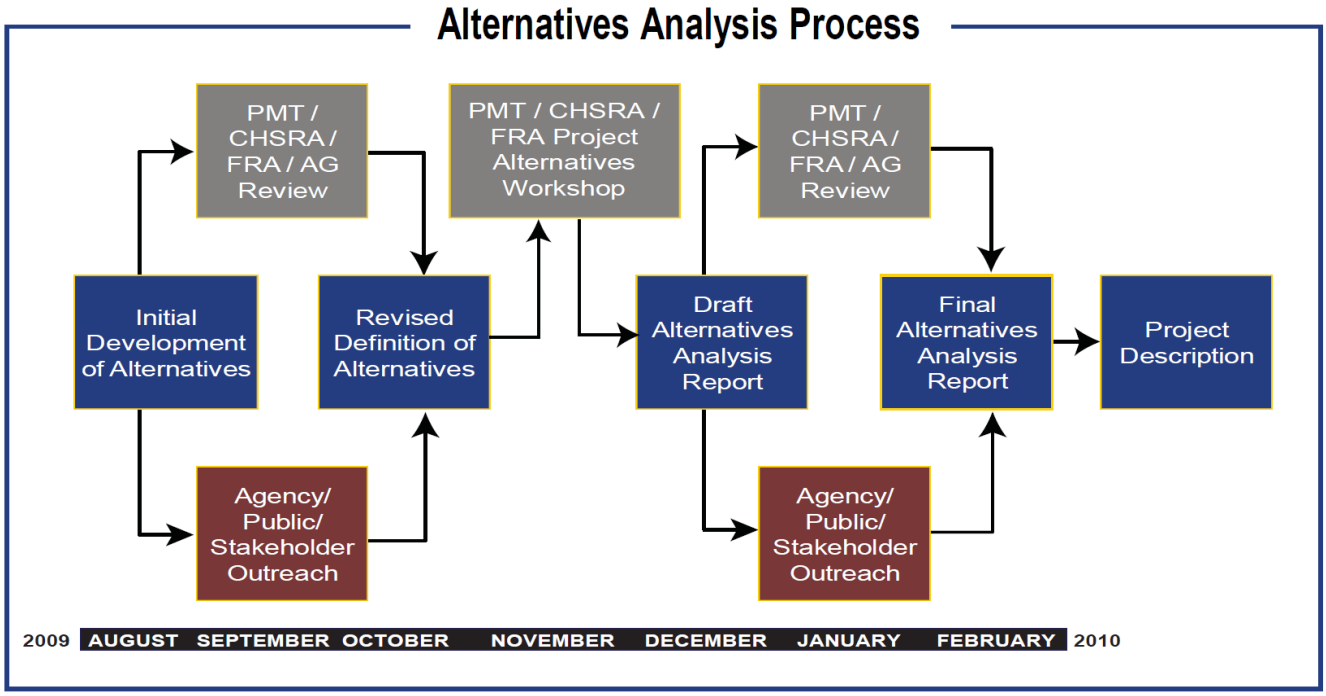
Common Questions and Answers related to the Alternatives Analysis for the San Francisco to San Jose High-Speed Train Section

What is an Alternatives Analysis? The Alternatives Analysis (AA) is a methodical process to provide the California High-Speed Rail Authority (Authority) and the Federal Railroad Administration (FRA) with sufficient information and documentation of the evaluation process used to identify and *define a range of reasonable, practicable, and feasible project study alternatives*. The AA will incorporate conceptual engineering information and will identify feasible and practicable alternatives to carry forward for review and evaluation in the project Environmental Impact Report/Environmental Impact Statement (EIR/EIS) for the San Francisco to San Jose section of the California High-Speed Train Project (CHSTP). The AA will provide information that highlights and compares the alternatives, and will explain why some alternatives will be retained while others will be dropped from further study in the EIR/EIS. The Authority and the FRA will make the results of the AA available for public input.

Where do the alternatives come from? The alternatives will take into account previous work conducted for *the Statewide Program EIR/EIS*. For the San Francisco to San Jose section, the program document identified the Caltrain right-of-way as the CHSTP route, with stations in San Francisco, Millbrae, and San Jose. Optional stations will be considered in Redwood City, Palo Alto, and Mountain View. In addition, the Authority and FRA will consider *public and agency comments* provided during a series of public scoping meetings held this past spring. In addition, input received from the community more recently will also be considered.

How detailed are the alternatives? The AA evaluation will consider preliminary project features based on planning and engineering at a 2% to 4% level of engineering design. This level of detail is enough to understand if an alternative can feasibly be constructed and if the alternative might encounter significant environmental, community, and construction-related impacts. In the San Francisco to San Jose section, with the proposed use of the Caltrain right-of-way, the AA will describe the alternatives based on alignment and "vertical profile;" that is, whether the alignment will be below ground, at-grade, or elevated.

How will the EIR/EIS study alternatives be identified? The Authority has established a ten-step process to identify practicable and feasible alternatives for study in the EIR/EIS. The steps are illustrated in the chart below and described in greater detail on the next page. In the gray boxes below, the following abbreviations are used: PMT = Program Management Team, providing guidance on the design of the overall HST system and to each of the regional planning and engineering teams on behalf of the Authority; CHSRA = California High-Speed Rail Authority; FRA = Federal Railroad Administration; and AG = California Attorney General's Office.



Step 1: Initial Development of Alternatives (August 2009)

Using the selected program-level corridor alignments and station locations, the planning and engineering team will develop site-specific project alternatives considering existing conditions and constraints as well as information gathered during the scoping process. It is essential to start with the selected program alternatives as these were identified as likely to contain the Least Environmentally Damaging Practicable Alternative (LEDPA) with concurrence by the U.S. Environmental Protection Agency and the U.S. Army Corps through the Clean Water Act Section 404 alternatives analysis process.

A presentation will be made to the PMT/Authority/FRA on the initial alternatives developed for further consideration through the AA process based on:

- the program-level selected alternatives, alignment routes, and station locations, and consideration of purpose and need/project objectives;
- public and agency input received during and after scoping; and
- further analysis of the study area to identify alternatives and/or variations and design options that are practicable and feasible.

Step 2: Early Outreach to Agencies, Public, and Stakeholders (September/October 2009)

The alternatives identified for further consideration will be presented informally to the local and regional planning agencies, transportation agencies, and environmental resource agencies in meetings. A similar effort will be conducted to inform the public. Coordination with Cooperating Agencies will also be conducted at this time.

Step 3: Revise Definition of Alternatives (October/November 2009)

Based on information and feedback received from early outreach, the Initial Project Alternatives may be revised and then resubmitted to the Program Management Team (PMT)/Authority/FRA for review.

Step 4: PMT/Authority/FRA Project Alternatives Workshop (November 2009)

A workshop will be conducted by the planning and engineering team with the PMT/Authority/FRA to review the details and information regarding all alternatives studied to date. This will include discussion of severe design constraints or conflicts, and environmental impacts and benefits for each alternative. The purpose of the workshop is to get direction from the Authority and FRA on further investigation of alternatives, to identify alternatives requiring no further analysis, and to evaluation conclusions.

Step 5: Alternatives Analysis (AA) Draft Report (December 2009)

An AA Draft Report will be prepared that presents the results of the AA process to this point.

Step 6: PMT/Authority/FRA/AG Review (December 2009/January 2010)

The AA Draft Report will be reviewed by the PMT/Authority/FRA. When approved for release, the AA Draft Report will be posted to the Authority's website.

Step 7: Presentation to CAHSRA Board (December 2009/January 2010)

The results of the AA Draft Report will be presented to the Board as an information agenda item.

Step 8: Outreach to Agencies, Public, and Stakeholders on the AA Draft Report (January 2010)

The alternatives identified for inclusion in the EIR/EIS will be presented to the local and regional planning agencies, transportation agencies, and environmental resource agencies through a series of meetings. A similar effort will be conducted to inform the public. Coordination with cooperating agencies will also be conducted at this time.

Step 9: Alternatives Analysis (AA) Final Report (February 2010)

The AA Draft Report will be finalized and will include the results of outreach meetings and consultation with cooperating and other agencies. The AA Final Report will be reviewed by the PMT/Authority/FRA and posted to the Authority's website when approved for release.

Step 10: Prepare Draft Project Description (February 2010)

Based on the Final AA report, a project description will be prepared that will identify a preferred alternative. The project description will include information about the CHSTP for the San Francisco to San Jose section including the horizontal and vertical alignment, the stations, other facilities such as sites for maintenance, and the operating schedule for the trains. Design options to the preferred alternative, if any, will also be identified. Options may include variations to a vertical alignment, to a station location or layout, or to any other feature of the design and operation of the HST system that need to be studied to provide the Authority, FRA, and the public with reasonable choices to make an informed decision about the project. The EIR/EIS will evaluate how the preferred alternative changes existing baseline conditions and how significant the changes are.

How are the number and range of alternatives to be narrowed? Broad sets of criteria have been defined to help explain the goals of the HST system. Then, specific measures have been developed to evaluate and compare the project alternatives. The first goal focuses on meeting the purpose and need.

Project Goal	Criteria	Measure
Purpose and Need	Travel time	30 minutes San Jose to San Francisco (Express Service)
	Intermodal connectivity (Stations)	Connections with other transit services and airports
	Operations and maintenance costs	Relative measure (None, Low, Medium, High) relative to one-another

The following criteria and measures seek to expand on HST goals to be supportive of local land use plans, be feasible from an engineering perspective, minimize disruption to neighborhoods and communities, minimize impacts to environmental resources, and minimize impacts to the natural environment.

Project Goal	Criteria	Measure
Land Use Planning Support	Sites within ½ mile available for significant Transit Oriented Development	Acres suited to redevelopment/revitalization within ½ mile
	Consistent with existing plans and policies	Review of existing zoning , redevelopment and general plans

Constructability	Vertical profile feasibility, compatibility with adjacent segments	Vertical control points, grades, length of curves, combined vertical and horizontal curves, vertical profile of adjacent segments
	Horizontal clearance through existing structures (columns, bents, etc.)	Locations of existing columns, bents and width of structures
	Major utility relocations	Existence of major utilities requiring relocation
	Ability to maintain Caltrain operations during construction	Qualitative assessment of High, Medium, Low
	Ability to maintain critical traffic operations during construction	Qualitative assessment of High, Medium, Low
	Construction costs	Relative measure (None, Low, Medium, High compared to one another)
Neighborhood Compatibility	Property displacements – acquisitions (full and partial)	Number of full or partial residential acquisitions
	Properties with access affected	Number of properties with changes in access
	Local traffic effects	Street closures/un-resolvable capacity constraints
	Development/construction foot print (stations)	Property acquisitions/relocation to accommodate station (residential/commercial)
Protection of Environmental Resources and Natural Environment	Waterways/wetlands/sensitive species habitat	Potential jurisdictional wetlands and habitat for listed species
	Cultural resources (historic, archaeological, paleontological)	Listed historic resources/known archaeological/known paleontological sites
	Parklands	Existing parklands/community facilities that provide recreation (Section 4(f))
	Noise and vibration	Sensitive receptors (schools, hospitals, convalescent homes, daycare) within FRA screening distance

Protection of Environmental Resources and Natural Environment (Continued)	Visual/scenic	Obstruction of designated view corridors and scenic resources by elevated structures
	Geologic/soils	Soil and slope constraints (high landslide susceptibility), seismic constraints (very strong groundshaking, cross active faults)
	Hazardous materials	Known hazardous materials/wastes sites from database lists

What might be reasons to not advance an alternative for further study? The AA identifies the alternatives evaluation process. Not all alternatives will be evaluated in the EIR/EIS. Reasons that could provide a rationale to exclude an alternative from further consideration include:

- Alternative does not meet the purpose and need and project objectives.
- Alternative has environmental or engineering issues that would make approvals infeasible.
- Alternative is not feasible or practical to construct.
- Alternative does not reduce or avoid adverse environmental impacts.