19 2010 Standard Responses

(2010 Revised Final Program EIR, Volume 2)

12 STANDARD RESPONSES TO FREQUENTLY RAISED COMMENTS

As part of the public review process from March 11, 2010, to April 26, 2010, for the March 2010 Revised Draft Program Environmental Impact Report Material (2010 Revised Draft Program EIR), the High-Speed Rail Authority (Authority) received over 540 comment letters containing more than 3,750 individual comments. Some comments addressed the 2010 Revised Draft Program EIR; however, many addressed the May 2008 Final Bay Area to Central Valley High-Speed Train (HST) Program Environmental Impact Report/Environmental Impact Statement (EIR/EIS) (2008 Program EIR/EIS) and other Authority documents such as the Authority's Business Plan. Many comments offered opinions about the proposed project generally. The following standard responses address the cumulative body of hundreds of comments that raise the same or very similar points regarding the 2010 Revised Draft Program EIR, the portion of the HST system proposed to connect the San Francisco Bay Area to the Central Valley, and the Authority's choice of corridor alignment for the HST system to connect the Bay Area to the Central Valley. This section provides a single location where the most frequently raised comments are addressed. Responses referring to other documents or other reviews, such as project-level environmental studies, are intended to provide information and are not to be construed as prejudging the outcome of this process.

The following standard responses are intended to provide general responses to the most frequently raised comments. Topics include:

- Standard Response 1 Purpose and Scope of the 2010 Revised Draft Program EIR
- Standard Response 2 Tiered Planning Process for HST System and Relationship of Bay Area to Central Valley Program EIR Process to Project-Level EIRs/EISs
- Standard Response 3 Level of Detail for Impacts Analysis and Mitigation
- Standard Response 4 Ridership Modeling
- Standard Response 5 Noise Impacts
- Standard Response 6 Effect of the Project on Property Values, Communities, and Quality of Life
- Standard Response 7 Project Eminent Domain Issues
- Standard Response 8 The Authority's Business Plan
- Standard Response 9 Union Pacific Railroad Issues
- Standard Response 10 Alternatives

STANDARD RESPONSE 1

Purpose and Scope of the Revised Draft Program EIR

Numerous comments assert that the Authority must respond to comments not only on the 2010 Revised Draft Program EIR Material, but also on new comments on the analysis in the 2008 Final Program EIR/EIS. Other comments appear to disregard the context of the current recirculated EIR material and treat the public comment period as an opportunity to raise issues beyond the scope of the recirculated material. Some comments threaten further lawsuits if the Authority does not respond to comments on the 2008 Final Program EIR/EIS. Still other comments suggest that the Authority should have recirculated the entire Program EIR, or that the Authority should have prepared an entirely new Draft Program EIR and started the environmental analysis process anew.

As explained in the 2010 Revised Program EIR, Chapter 1, the Authority circulated the revised Draft Program EIR Material to comply with the final judgment in the *Town of Atherton* litigation on the 2008 Program EIR/EIS. The judgment incorporates the Sacramento Superior Court's ruling, which was included as Appendix A to the Revised Draft Program EIR. In the ruling, the Court concluded that the Authority's 2008 Final Program EIR failed to comply with the California Environmental Quality Act (CEQA) in the following respects:

- **ADEQUACY OF PROJECT DESCRIPTION**: "The Court concludes that the description of the alignment of HSR tracks between San Jose and Gilroy was inadequate even for a programmatic EIR. The lack of specificity in turn results in an inadequate discussion of the impacts of the Pacheco alignment on surrounding businesses and residences which may be displaced, construction impacts on the Monterey Highway, and impacts on Union Pacific Railroad's use of its right-of-way and spurs and consequently its freight operations." (Ruling, p. 6.)
- **RECIRCULATION AFTER UNION PACIFIC RAILROAD ANNOUNCED ITS UNWILLINGNESS TO ALLOW USE OF ITS RIGHT-OF-WAY**: "[T]his Court concludes that various drawings, maps and photographs within the administrative record strongly indicate that [the Pacheco alignment is dependent upon the use of Union Pacific's right-of-way.] The record further indicates that if the Union Pacific right-of-way is not available, there may not be sufficient space for the right-of-way needed for the HST without either impacting the Monterey Highway or without the acquisition of additional amounts of residential and commercial property. These are significant impacts which were sufficient to trigger recirculation of the FPEIR." (Ruling, pp. 19- 20.)
- **LAND USE IMPACTS ALONG SAN FRANCISCO PENINSULA**: "As discussed elsewhere in this Court's ruling, Union Pacific has stated it is unwilling to allow its right-of-way to be used for the project. The need for acquiring additional property is a related issue that will be required to be analyzed in connection with further analysis of the impact of Union Pacific's denial of use of its right-of-way." (Ruling, pp. 15-16.)

The Court also held the Authority's CEQA finding on vibration impacts was not supported by substantial evidence. (Ruling, p. 14.) The Court rejected all other challenges to the content of the 2008 Final Program EIR raised in the litigation. (Ruling, p. 21.)

The Authority revised and recirculated portions of its 2008 Final Program EIR to comply with the *Town of Atherton* court judgment described above. The requirement of the judgment to revise and recirculate portions of the program EIR does not require the Authority to start the program EIR process anew. (*Protect the Historic Amador Waterways v. Amador Water Agency* [2004] 116 Cal.App.4th 1099, 1112.) Recirculation of the EIR "may be limited by the scope of the revisions required." (*Vineyard Area Citizens for Responsible Growth v. City of Rancho Cordova* [2007] 40 Cal.4th 412, 449.) Where the scope of revisions is limited to certain chapters or portions of the EIR, a lead agency need only recirculate the chapters or portions that have been modified. (*Id.*; citing CEQA

Guidelines, § 15088.5, subd. (c)). The 2010 Revised Draft Program EIR Material therefore contains the revised information and analysis to address the issues that the Court identified in its ruling. The final court judgment did not require the Authority to revise and recirculate the entire 2008 Final Program EIR or to start the CEQA process from scratch.

Regarding the Authority's duty to respond to comments under CEQA, the Authority has followed the direction in CEQA Guidelines section 15088.5(f)(2). This provision indicates that, where a lead agency is revising and recirculating only a portion of an EIR, "the lead agency may request that reviewers limit their comments to the revised chapters or portions of the recirculated EIR." The provision further indicates that the lead agency need respond only to those comments received during the recirculation period that relate to the portions of the EIR that were revised and recirculated. Following this CEQA Guideline section, the Authority's responses to comments address all the comments received that pertain to the 2010 Revised Draft Program EIR Material. In addition, the Authority has gone beyond the minimum requirements by providing responses to comments on all significant environmental issues raised in the comments.

STANDARD RESPONSE 2

Tiered Planning Process for HST System and Relationship of Bay Area to Central Valley Program EIR Process to Project-Level EIR/EISs

Many comments have requested information about impacts and mitigation that cannot be known at the program level because the project design and engineering have not progressed to the point where that analysis can be completed. Numerous comments identified information that has been or is being generated as part of project-level EIR/EIS work for the San Francisco to San Jose and San Jose to Merced sections of the HST system and commented that such information should be considered as part of the current program EIR process. Other comments appear to be comments directed at the Authority's project-level preliminary alternatives analysis work. Other comments suggest that the Authority now has an inherent bias in favor of the Pacheco Pass network alternative due to ongoing project-level EIR/EIS work being undertaken while the Program EIR is been revised and recirculated.

Since 2000, the Authority, in cooperation with the Federal Railroad Administration (FRA), has been using the tiering provisions in CEQA and in the National Environmental Policy Act (NEPA) to make discrete, incremental decisions about the HST system in California. Tiering refers to the use of broader and more general EIRs to evaluate general projects or broad policy decisions, followed by more specific EIRs to evaluate more specific projects or decisions at identified locations. The Authority and the FRA completed the *Final Program Environmental Impact Report/Environmental Impact Statement (EIR/EIS) for the Proposed California High-Speed Train System* (Statewide Program EIR/EIS) in 2005 and used that first-tier environmental document to support its selection of the HST system to serve California's future statewide transportation needs, in addition to the state's freeways, highways, airports, and conventional rail systems. The 2005 Program EIR/EIS also supported the Authority's and FRA's selection of preferred general corridor alignments and station locations for further study in second-tier, project-level EIR/EIS documents, with the exception of alignments and station locations for connecting the Bay Area to the Central Valley. For this portion of the future HST system, the Authority and FRA defined the broad corridor between and including the Altamont Pass and the Pacheco Pass for further first-tier, program-level study to be conducted prior to selecting alignments and station locations for further project-level study.

The Authority and FRA completed the Draft Bay Area to Central Valley Program EIR/EIS in July 2007, circulated the document for public comment, and the 2008 Final Program EIR/EIS in May. The 2008 Program EIR/EIS was specifically designed to assist the Authority in making the fundamental choice of a preferred alignment within the broad corridor between and including the Altamont Pass and Pacheco Pass for the HST segment connecting the San Francisco Bay Area to the Central Valley. The Authority certified the 2008 Final Program EIR for compliance with CEQA in July 2008 and selected the Pacheco Pass network alternative with major stations in San Francisco and San Jose as the preferred alternative to advance into project-level, second-tier environmental review.

The Authority's decisions were subsequently challenged in litigation. The result of the litigation was that the Authority rescinded its certification of the May 2008 Final Program EIR/EIS as complying with CEQA and rescinded its selection of the Pacheco Pass network alternative serving San Francisco via San Jose as the preferred alternative for further study. To comply with the final court judgment, the Authority has circulated the 2010 Revised Draft Program EIR for 45 days, has prepared the current responses to comments as part of a Revised Final Program EIR, and will consider these materials before making a determination whether to take the following actions:

1. Certify the Revised Final Program EIR for compliance with CEQA
2. Select a preferred network alternative and station locations for further study

3. Adopt CEQA findings of facts
4. Adopt a statement of overriding considerations, and
5. Adopt a mitigation monitoring and reporting program

The Authority intends to complete the program-level decision making process in the near future at a regularly noticed meeting of the Authority Board. With selection of a preferred network alternative and station locations for further study, the Authority and FRA would move into more detailed, project-level planning and design for the HST system.

As part of the *Town of Atherton* litigation, the Superior Court considered a request by the plaintiffs in the case for an order requiring the Authority to stop its more detailed, project-level planning and design for the HST system in the Bay Area to Central Valley study area until it had corrected its program EIR and made a new program-level decision. The Court declined to issue such an order enjoining the Authority from proceeding with its project-level EIR work. The Authority has therefore proceeded with certain initial steps in project-level planning and environmental review for the San Francisco to San Jose and the San Jose to Merced sections of the HST system. The project-level work has included project scoping as contemplated in NEPA and CEQA, early consultation with state and federal agencies, preliminary screening of potential project-level alternatives, 15% design, and many public information meetings.

For those comments received on the current program-level EIR that appear to address issues identified as part of project-level planning, such as preliminary alternative screening, or comments on issues in detail that goes beyond the program-level analysis, the Authority has referred the comments to the Authority staff and consultants who are preparing the applicable project-level EIR/EIS.

The Authority acknowledges that it must, and intends to, make a new program-level decision on a preferred network alternative and preferred station locations for the Bay Area to Central Valley study area. The Authority further acknowledges that it must, and fully intends to, give fair consideration to all of the information in the 2008 Final Program EIR, the 2010 Draft and Final Revised Program EIR, and the entire record before it in making a new decision. The new decision has the potential to result in changes to the project-level EIR/EIS work currently underway. The extent of any such changes, and any appropriate further direction to staff concerning the preparation of project EIR/EIS documents, can only be determined once a new decision on the 2010 Revised Final Program EIR is made. See also Standard Response 3 below, which discusses the differences between program-level and project-level environmental analyses, 2008 Final Program EIR, Volume 3, pp 19-2 through 19-5.

Tiering provides for a suitable level of detail in an environmental analysis and allows an agency to "focus upon the issues ripe for decision at each level of environmental review," i.e., a broad, more general analysis for broad policy choices to be made based on a programmatic EIR and more detailed, site-specific information for decisions to be made to place facilities at specific locations based on a project-level EIR (Public Resources Code, section 21093, subd.(a)). Thus, each EIR will have an appropriate level of detail for the decisions to be made, and there is no requirement to include in a program EIR the more detailed information now being developed for project EIRs. Such a process would lead to confusion and potentially endless loops of analysis, rather than providing the information needed at the appropriate points for a series of decisions.

Finally, the Authority's actions to proceed with project-level EIR development for the Pacheco Pass network alternative do not create an undue bias because they do not prejudice the consideration of alternatives or limit or impinge on the Authority Board's discretion to make a fair policy choice of a network alternative to connect the Bay Area to the Central Valley. The Authority is aware of its duty under CEQA to consider the full record before it in selecting a network alternative for further study, and that it cannot simply reject alternatives because it has invested in early project-level studies for the Pacheco Pass network alternative. The Authority Board will have before it the staff recommendation of a preferred network alternative, as well as information and analysis regarding the full range of network alternatives identified in the 2008 Final Program EIR. The Authority Board will make a new decision after fairly and

fully considering the full record before it, including the extensive public comment contained in the 2010 Revised Final Program EIR.

STANDARD RESPONSE 3

Level of Detail for Impacts Analysis and Mitigation

Numerous comments were critical of the level of detail of analysis in the May 2008 Final Program EIR/EIS and in the 2010 Revised Draft Program EIR. Many comments suggested the level of detail was not adequate for identifying impacts and distinguishing between alternatives. Other comments suggested the Authority could not defer a detailed analysis of impacts and mitigation and needed to revise and recirculate the program EIR to incorporate a more detailed analysis of various impacts and mitigation.

Program EIRs and Level of Detail

The timing of EIR preparation involves a balance of competing factors. The CEQA Guidelines recognize that a lead agency should prepare an EIR "as early as feasible" in the planning process so that environmental considerations can influence the project design, "yet late enough to provide meaningful information for environmental assessment." (CEQA Guidelines, § 15004, subd. (b).) Tiering of EIRs allows an agency the discretion to strike an appropriate balance between CEQA's mandate for conducting environmental review as early as feasible and the need to take complex decision making processes one step at a time.

As discussed above in Standard Response 2, the Authority and FRA are intentionally using a tiered environmental review process to make decisions about the HST system in California. The HST system consists of logical linear sections in a chain of contemplated actions that would be carried out under the same authorizing statutory and regulatory authority, each section with similar environmental effects that can be mitigated in similar ways or using similar methods applied at specific sites along the system. The 2005 Statewide Program EIR/EIS, the 2008 Program EIR/EIS, and the 2010 Revised Draft Program EIR are part of the first-tier, program-level environmental analysis to support the Authority's consideration of broad policy and program alternatives and program-wide mitigation strategies at an early stage of decision making. For the Bay Area to Central Valley portion of the HST system, the Authority will consider whether to certify the Revised Final Program EIR, and if it does certify the document, then it will consider making the following decisions:

- Choice of a network alternative to connect the San Francisco Bay Area to the Central Valley, i.e., Pacheco Pass, Altamont Pass, or Pacheco Pass with Altamont Pass (local service);
- Choice of alignment alternatives within the selected network alternative; and
- Choice of station location options.

The programmatic level of detail in the May 2008 Program EIR/EIS and the Revised Draft Program EIR is intended to be commensurate with the programmatic nature of the decisions under consideration. More detailed analysis of site-specific environmental impacts and mitigation measures for a more detailed project (selection of specific HST track placement alternative, selection of specific station locations) will be considered in subsequent project-level EIRs/EISs.

Court Consideration of Level of Detail in Town of Atherton Litigation

The issue of the appropriate level of detail for the Authority's program EIR was raised in the *Town of Atherton* litigation. The Superior Court held that the Final Program EIR was adequately detailed for a program EIR with respect to the analysis of biological resources, noise, visual effects, and impacts on mature and heritage trees. (Ruling on Submitted Matter, pp. 10, 13, 14, 16.) The issue for which the Court held additional detail was required involved the description of the project between San Jose and Gilroy and related land use impacts. (*Id.*, pp. 6, 21.) Chapter 2 of the 2010 Revised Draft Program EIR Material provided additional and corrected detail for that portion of the project description and provided additional discussion of the potential for impacts on land use, the Monterey

Highway, and Union Pacific Railroad (UPRR) freight operations in this area. The May 2008 Final Program EIR, as revised by the 2010 Revised Draft and Final Program EIR Material, therefore provides a sufficient level of information for first-tier, programmatic decision making.

Sufficiency of EIR Information for Programmatic Decision and Need for Further Revision and Recirculation

The general level of detail in the EIR's impacts analysis and the general nature of the mitigation strategies are appropriate for the broad decisions to be made. The Program EIR identifies critical environmental impact differences between the Altamont Pass, Pacheco Pass, and Pacheco Pass with Altamont Pass (local service) alternatives for connecting the Bay Area with the Central Valley. The document also reveals differences related to the ability of each option to meet the project purpose, need, and objectives and to be feasibly implemented. These differences are precisely the type of information that is needed for the decision makers to make the overall choice of a network alternative and station locations. The May 2008 Final Program EIR, Chapter 3, "Affected Environment, Environmental Consequences, and Mitigation Strategies," Section 3.0.1, "Purpose and Content of This Chapter," states:

> *… The analysis presented in this chapter addresses the general effects of a program of actions that would make up the proposed HST system in the Bay Area to Central Valley study region. This chapter describes the general differences in potential environmental consequences between the No Project and the HST Alignment Alternatives identified in Chapter 2. The analysis also identifies key differences among the potential impacts associated with the various HST Alignment Alternatives and station location options, to support the selection of preferred alignments and station location options in the Bay Area to Central Valley study region.*

The 2008 Final Program EIR does not purport to be able to identify all of the detailed impacts of each alignment or station location option but rather focuses on identifying and describing key differences in potential impacts for each of the alternatives. More detailed analyses will be provided in future project-level environmental documents.

The general level of detail in a program EIR can be frustrating for those who wish to have much more detail up front at the program level; however, the Authority continues to believe its use of CEQA's tiering provisions is appropriate. The purpose of tiering and program EIRs is to allow a lead agency to focus on decisions that are ripe for review at the first tier. In this case, that decision includes the selection of an overall network alternative for the HST system to connect the Bay Area to the Central Valley based on the information gathered and assessed at a program-level of detail. While second-tier, project-level information has been and continues to be generated in the program EIR study area, the existence of that information does not convert the Authority's program-level decision into a project-level one. Rather, under CEQA's tiering rules, a detailed analysis of impacts and mitigation based on detailed project design is appropriately deferred to second-tier EIRs. Project-level information does not trigger another round of revision and recirculation but rather is appropriately addressed in project-level EIRs.

STANDARD RESPONSE 4

Comments about the Ridership Forecasts

Many comments expressed concern about the ridership forecasts used in the Bay Area to Central Valley Program EIR. Some comments expressed confusion about how the ridership forecasts were derived, as well as the existence of different forecast results prepared for the Program EIR/EIS and the 2009 Business Plan. Many commenters expressed concern that the ridership forecasts were exaggerated or overly optimistic, or lacked an adequate peer review. Many suggested that the forecasts needed to be redone to account for changed economic conditions. Other comments questioned the ridership forecasts on a more technical basis, suggesting that certain parameters of the model were incorrect in a manner that rendered the model a flawed tool for forecasting.

The ridership forecasts used in the 2008 Final Program EIR are not an area identified by the Superior Court for additional work to comply with CEQA. The Authority recognizes, however, that the ridership forecasts for the HST system as a whole and for the Altamont and Pacheco network alternatives are the subject of considerable public interest in light of the many comments received on this topic. This Standard Response is intended to provide a single basic response to the collective set of comments, both general and technical.

At the outset, the Authority does not agree with the general statements in numerous letters that the ridership model is flawed, the forecasts inaccurate, or that the ridership forecasts need to be revised as part of further recirculation of the Program EIR. The California High-Speed Rail Ridership and Revenue model (HSR R&R model) is a complex system of dozens of interrelated, state-of-the-art model components that span different geographies, different trip purposes, and different travel market segments. The model reflects an appropriate blend of theory and judgment, which is always required in real-world applications of travel forecasting models. The model produces realistic results that are sensitive to the key input variables, and is an appropriate tool for the environmental review purpose for which it has been used. No revisions are necessary.

Development of the Ridership and Revenue Forecasting Model

The High-Speed Rail Ridership and Revenue Forecasting Study, which was led by the Metropolitan Transportation Commission (MTC), was a state-of-the-art transportation modeling effort designed to portray what future conditions might look like in California with and without a high-speed train. The study was performed by experts in the field of transportation modeling, Cambridge Systematics, Inc. (CS), and took roughly two years to complete. The resulting ridership and revenue forecast provided, and continues to provide, sound information that the Authority has considered in its planning decisions.

The objective of the study was to develop a new statewide network-based travel demand model that would serve a variety of planning and operational purposes:

- Evaluating high-speed rail ridership and revenue on a statewide basis;
- Evaluating potential alternative alignments for high-speed rail in and out of the San Francisco Bay Area;
- Providing a foundation for other statewide planning purpose, including high-speed rail alignment analysis, and for regional agencies to better understand interregional travel.

The purpose of travel demand models like the HSR R&R Model is to forecast future travel patterns and demand as a function of variables such as population and employment, travel time and cost, fuel costs, rail and airline schedules, etc. Travel demand models provide valuable tools to assist planners and policy makers in analyzing the costs and benefits of various transportation alternatives since they

provide consistent and reproducible forecasts of future travel based on the input assumptions. The HSR R&R Model was developed using accepted modeling practices, and has served as a state-of-the-practice tool to support the Authority's planning efforts.

Travel Surveys Used for Model Development

Some comments questioned the representativeness of the survey data used for the model estimation. It has been suggested that only one of the surveys used for the model estimation, the California Statewide Household Travel Survey from a 2000-2001 project performed for Caltrans "meets the criteria of a California based random sample of trip mode choices." Such a statement is misleading on two fronts:

1. It presupposes that a survey drawn from a purely random sample of the entire population will always produce representative results; and
2. It further presupposes that other survey techniques cannot produce representative results after adjusting for characteristics of the sampling frame.

Both suppositions are incorrect.

Regarding the first supposition, random sample surveys of the entire population are a notoriously poor technique for gathering information on market segments that represent a relatively small portion of the portion. Such is the case with interregional air and rail travelers, which account for 10.9% and 1.1%, respectively, of observed interregional mode share in California (Cambridge Systematics 2006, Table 5.2). The California Statewide Household Travel Survey is a good example of this potential problem. Of the 17,000 households that were randomly surveyed, a mere 25 interregional trips were made by air passengers and rail riders combined. As a result, the California Statewide Household Travel Survey produced a survey dataset in which 94.5% of observed interregional long trips were made by auto, and only 2.2% of such trips were made by air or rail (Cambridge Systematics 2007a, Table 2.2) (compared to 12% in the general population). This "random sample survey" did not produce a dataset that was representative of general travel preferences of Californians.

Regarding the second supposition, the assumption that only a random sample survey can be used for model estimation is incorrect. The use of targeted sampling procedures and discrete choice analysis have been developed and widely used, in part, to address the difficulty and cost of collecting sufficient data for model estimation using simple random sampling techniques (Manski and Lerman 1977, Ben-Akiva and Lerman 1985).

For this project, the survey dataset from the California Statewide Household Travel Survey was enriched by a new data collection effort. Approximately 3,000 new stated-preference surveys were collected reflecting travel by auto, rail, and air. These new observations were collected using a proven technique known as "choice-based sampling." Instead of randomly calling respondents at their homes, surveys were conducted on trains and at airports by randomly intercepting these travelers. These surveys were used to enrich the larger random sample by including more statistically significant response rates from segments of key interest to the project at hand.

However, since more observations were collected from rail riders and air passengers than their share of the interregional travel market, an adjustment had to be made once the models were estimated. The adjustment process is called a "calibration of mode constants." By calibrating mode constants, travel market shares are adjusted to reflect the true market shares in the population. The model development team employed a method that has been proven, has been used widely and consistently to calibrate models, and is well established in literature and in practice.

In summary, a large randomly sampled survey data set was enriched using a supplemental survey to meet project objectives, and to reflect and quantify the decisions made by rail riders and air passengers. In addition, the model development team used the most tested and best available approach to calibrate the model to be more representative of the population. These methods were, and continue to be, both sound and appropriate.

Peer Review Process

Peer review is considered a "best practices" technique when developing travel demand models like the HSR R&R Model. Peer review provides "an objective assessment of a travel demand model with respect to state-of-practice and agency modeling goals (Federal Highway Administration 2010b)." A peer review process helps ensure that the modeling team's technical processes meet an agency's needs, and also meet the standards of professional practice (U.S. Department of Transportation 2010). Importantly, a good peer review process will provide up-front guidance to the model development team on key issues such as intended use of the model, basic model structure, survey design and sampling plan, model estimation results, and reasonableness of validation. While a peer review process may also review and comment upon the reasonableness of model results, peer review generally does not approve or accept specific model details.

The High-Speed Rail Ridership and Revenue Forecasting Study incorporated a robust peer review process at multiple stages of model development. The peer review panel was comprised of international modeling and high-speed rail experts from academia, public agencies, and the private sector. Interaction with the panel occurred on three occasions, with panel members providing technical guidance for the model design, model development, and the resulting forecasts of ridership and revenue. Comments from the first peer review panel meeting resulted in changes to the proposed approaches to the model structure, the survey data collection plan, and to the proposed performance measures. Comments from the second peer review panel meeting resulted in changes to different aspects of the interregional model – including constraining of coefficients - and to the forecast assumptions. The third peer review exchange focused on model validation and the final ridership and revenue forecasts. In summary, the High-Speed Rail Ridership and Revenue Forecasting Study integrated peer review at multiple stages. The overall model structure, details, input variables, and the resulting ridership and revenue forecasts were products of an extensive peer review process.

Final Ridership and Revenue Model

The final HSR R&R model was developed through a standard process of model estimation, calibration, and validation. This development process began in early 2005 and concluded in February 2007. Only one fully developed model has ever existed, and this model has been used to prepare all forecasts. Importantly, model constants and coefficients were final as of February 7, 2007, prior to the development of any forecasts used in the Program EIR/EIS, and did not change after that date.

A number of comments have been offered related to the constraining of coefficients and constants during the model development process. In the development and application of practical travel demand models, it is often the case that various sources of data need to be reconciled with different or conflicting empirical evidence from the model estimation. In these cases, it is absolutely necessary to use analyst judgment to reconcile different data and arrive at the most practical model possible. The decision to constrain certain coefficients was made neither unilaterally nor arbitrarily, but was based on the best available data, published literature, and accepted practice.

These judgments were further scrutinized by peer review during the model development process. The peer review panel reviewed coefficients that were produced through initial model estimation. The panel extensively debated the coefficients and variables, and offered feedback and guidance to the model development team in full knowledge that coefficient values could change through the process of model calibration and validation and that the constants would be finalized at a later date. The model development team proceeded with normal model calibration and validation activities to address the panel's feedback and develop the final model. These activities and the final model included adjustments to the coefficients and estimation of a variety of model constants.

Constraining variables is a common practice in travel model development. Model coefficients are constrained when estimation results are clearly unrealistic or when constraining provides more realistic results during the model calibration and sensitivity testing

process. The Federal Transit Administration (FTA) accepts this practice for Section 5309 New Starts applications and, in its guidelines, provides reasonable ranges for model coefficients relating to travel time and travel cost. While FTA accepts values outside of the specified ranges, they require New Starts applicants to "provide compelling evidence" if a model coefficient is outside of a specified range (Ryan 2004).

Comments regarding the level of constraint have generally focused on the coefficient for service headway being constrained to be equal to the coefficient for in-vehicle travel time. Comments have incorrectly related headway to the average wait time that results from service headways. The headway coefficient is not a coefficient on average wait time. The impact of average wait time for specific modes (air, conventional rail, and high speed rail) has been included in mode specific constants for those modes. Instead, headway represents a convenience measure and should not be related to average wait time coefficients used in urban transportation modeling or other high speed rail models that use different model constructs. Accordingly, the headway coefficient was constrained, and as a result reflects the unique case of high-speed trains that offer far more frequent interregional service than is currently available on conventional intercity rail services such as Amtrak. The adjustment made to the headway coefficient was within the range of reasonable values presented to peer review during the model development process.

Evolution In Input Assumptions and Ridership and Revenue Forecasts

According to the base travel demand forecast prepared using the HSR R&R model, the HST system would carry at least 88 million passengers per year by 2030. This forecast assumes current costs for air and automobile transportation would remain constant in real value, and that the state's economy would grow in-line with long-term projections that existed in 2006. HST service plans were also adjusted to satisfy the new forecast for high-speed train travel demand. Ridership and revenue sensitivity analyses were also performed using different assumptions for a 50% real increase in the costs for air and automobile travel, which resulted in a high forecast of potential ridership for the HST system of 117 million annual passengers for 2030.

The high ridership forecast of 117 million intercity trips served as the representative worst-case scenario for analyzing the potential environmental impacts from construction and operation of the HST system through 2030. This high forecast was generally used to define and develop the HST alternatives and was referred to in the Program EIR/EIS as the "representative demand." In some specific analyses (e.g., energy, air quality, and transportation), the HST system would result in potential benefits. In those cases, the base ridership forecast of 88 million served as the representative demand scenario for analysis in the Program EIS/EIR.

Since the time that the ridership and revenue forecasts were completed for the Program EIR/EIS in 2007, project development activities have continued on the HST project throughout California. These activities have included additional ridership and revenue forecasts using operating, fare, and population inputs that vary from the assumptions used in the Program EIR/EIS. One example of such different forecasts is illustrated by the 2009 Business Plan, which incorporated an HST operating plan with more off-peak service and updated travel times, new assumptions regarding potential parking costs at airports and HST stations, and higher HST fares than assumed in the Program EIR/EIS.

Such changes in assumptions are a normal and expected part of project development, and do not necessitate revisiting decisions reached under prior assumptions. For example, the Federal government understands that assumptions and plans regarding projects and ridership forecasts may change as a project moves through the NEPA and planning processes. One key example of this relates to the FTA New Starts process, illustrated by regulations documented in 49 CFR 611.7; the New Starts process is often integrated with EIS preparation and other project development activities. Those regulations establish a sequence of studies progressing from alternatives analysis, to preliminary engineering, to final design. It is expected throughout the planning and project

development phases that assumptions will be continually refined. In fact, FTA is now requiring updated information to be incorporated as it becomes available - for example new ridership and other surveys. Also significantly, Federal approval to initiate preliminary engineering will be considered only after alternatives analysis is complete and the NEPA process has been initiated. Further, Federal approval for final design will be considered only if preliminary engineering is complete and the NEPA process has been completed through a Record of Decision. For preliminary engineering and final design, FTA "approval will be based on the results of its evaluation as described in Parts §§ 611.9–611.13 of this Rule." The evaluation criteria include mobility improvements, environmental benefits, operating efficiencies, transportation user benefits [which are based on ridership forecasts], and land use and economic development impacts. Part §§ 611.9 further states, "*As a candidate project proceeds through preliminary engineering and final design, a greater degree of certainty is expected with respect to the scope of the project…* [emphasis added]."

More recent guidance from the Federal Highway Administration furthers this point, explaining that: "[t]he project development process can be long, with varying levels of forecasting detail typically necessary at different stages in the process… (Federal Highway Administration 2010a)." This guidance provides examples of project screening, alternatives analysis, and EIS preparation.

Ridership Forecasts and Changing Economic Conditions

Some comments have suggested that ridership forecasts should be redone to reflect the current economic recession. Regeneration of ridership and revenue forecasts is not necessary since the forecasts are for year 2030 and beyond, and rely upon long-term economic and demographic assumptions that are generally unaffected by short-term variations in economic performance. The most current long-term, statewide projections are substantively similar to the values used in the Program EIR/EIS:

- Year 2030 Population: Current statewide projection is 49,240,891 (California Department of Finance 2007). Projection used in the Program EIR/EIS was 48,110,671 (California High-Speed Rail Authority and Federal Railroad Administration 2008, Table 5.3-5).
- Year 2030 Employment: Current statewide projection is 26,338,021 (Woods & Poole Economics 2009). Projection used in the Program EIR/EIS was 28,617,864 (California High-Speed Rail Authority and Federal Railroad Administration 2008, Table 5.3-5).

Importantly, all of the ridership and revenue forecasting conducted for the Program EIR/EIS used identical assumptions for all alternatives, allowing each alternative to be tested in an unbiased manner so that the related benefits and impacts could be estimated and compared across alternatives. For example, all forecasts were developed with the same population and employment projections, fuel costs, air and rail fares, parking cost assumptions, intercity air and rail frequencies and travel times, etc. The only difference, which was a function of the definition of the network alternatives, related to the number of HST trains that operated to the different Bay Area termini.

UC Berkeley Critique

As mentioned in a number of comments, over the last several months UC Berkeley's Institute for Transportation Studies (ITS) has conducted a critique of the HSR R&R model. The ITS Final Report of the critique was provided to the California High-Speed Rail Authority on June 30, 2010. The basic conclusion of the ITS Final Report was that CS "followed generally accepted professional standards in carrying out the demand modeling and analysis," but the HSR R&R model has various alleged flaws. One of the ITS Final Report authors presented the ITS findings to the Authority board at its July 2010 meeting. CS offered its own presentation responding to the ITS Final Report and disputing the conclusions in the ITS report. The Authority board will have the full record of this information before it in conjunction with its anticipated consideration of whether to certify the Revised Final Program EIR and to make a new decision on a preferred HST network alternative for connecting the San

Francisco Bay Area and the Central Valley (California High-Speed Rail Authority 2010a).

Forecast results suggest that HST is most competitive in intermediate to long-distance California markets where it offers:

- Much faster travel times than the lower cost and more convenient auto mode, particularly for people traveling in groups;
- Much faster travel times and higher frequencies than the lower cost conventional rail mode; and
- Equivalent door-to-door travel times and frequencies as the more expensive air mode.

For example, ridership forecasts prepared for the Program EIR/EIS show that more than one-third of the trips between the Los Angeles Basin and Bay Area choose HST; in this market, HSR takes approximately the same door-to-door time as air but costs about half as much under assumptions used in the Program EIR/EIS. For trips between the Bay Area and Central Valley, HST is most competitive for trips that begin or end in the southern Central Valley between Fresno and Bakersfield; in this submarket, HST has a 33% mode share for Pacheco and 27% for Altamont. The submarket between the Bay Area and northern Central Valley is dominated by the auto mode (about 95% mode share), which is about an hour (or less) slower than HST but costs about half as much; the HST mode share for this market is 4% for the Altamont scenario and 2% for Pacheco. HST is also not as competitive as auto for travel within the Central Valley, with HST capturing 4% of the market for the Altamont scenario and 3% for Pacheco.

HST is projected to draw about 98% of its interregional ridership from diversion of auto, air, and conventional passenger rail trips around the state; this portion of HST's projected ridership would exist on the system even if HST were not built. About 75% of this diversion will come from auto, 13% from intra-state air, and 12% from conventional passenger rail.

As noted earlier, in base forecasts prepared for the Program EIR/EIS, the California HST system averaged in the neighborhood of 88 million annual passengers in year 2030. This statewide ridership projection and the HST market shares noted in preceding paragraphs are logical given observed HST ridership patterns around the world.

For example, in Japan, the 343-mile Tokaido high-speed train line connecting Tokyo to Osaka currently carries over 145 million passengers annually. The entire Japanese high-speed train network (1,350 miles) currently carries over 335 million passengers a year. In France the TGV network, consisting of over 1,160 miles of new interconnected high-speed lines, carries over 100 million passengers each year. The Korean KTX trains travel on 420 miles of track carrying over 37 million passengers per year.

In Japan, the Shinkansen has been a very effective competitor with air transportation at distances up to 600 miles. In the market between Tokyo and Osaka (the two largest metropolitan areas in Japan), the Shinkansen carries approximately 81% of the air-rail market. Where the Shinkansen trip time is under two and a half hours, HSR captures at least 75% of the air-rail market. It is not until distances exceed roughly 600 miles (trips of four or more hours) that air travel exceeds the HSR market share.

In Europe, HSR has also captured major shares of air plus rail traffic in many markets (Travel Industry Wire 2007):

- In France, rail held 22% of the combined Paris-Marseille air-rail market before TGV Mediterranean went into service (2001), but in four years that market share rose to 65%. In 2006 it rose to 69% and EasyJet abandoned its Paris-Marseille flights.
- Spain's AVE has 53% of air/rail/road traffic on the Madrid-Seville route.
- The Madrid-Barcelona AVE route has gained 80% of the air/rail market since opening in February 2008.
- The Thalys between Paris and Brussels holds 52% of air/road traffic; after the high-speed rail line went into service, airlines discontinued flights Paris-Brussels.

- Eurostar has more than 70% of London-Paris market, 64% on London-Brussels.

Overall, the ridership projections for the California HST system are quite reasonable and logical when compared to international experience, particularly considering the larger size of the California travel market compared to many of these international examples (California High-Speed Rail Authority 2010b, pp. 16-17).

Availability Of Ridership Information

It is not possible to convey all of the ridership model and forecast information in the body of an EIR. Key comparative ridership information that identifies substantive differences between network alternatives was included in the Summary and Chapters 2 and 7. Remaining ridership results and documentation of the methodology used to obtain projected ridership have been included in a series of technical reports that are posted on the Authority website:

- The model design was described in several publicly available documents during its development: Model Design, Data Collection, and Performance Measures Technical Memorandum (May 2005); Levels-of-Service Assumptions and Forecast Alternatives (August 2006); and Interregional Model System Development (August 2006); Statewide Model Validation, Final Report (July 2007).
- The surveys and other data used to estimate, calibrate, validate and apply the model are discussed in High-Speed Rail Study Survey Documentation (December 2005); Bay Area/California High-Speed Rail Ridership and Revenue Forecasting Study, Socio-Economic Data, Transportation Supply, and Base-Year Travel Patterns Data (December 2005); and Statewide Model Validation, Final Report (July 2007).
- The model and its development are summarized in Bay Area/California High-Speed Rail Ridership and Revenue Forecasting Study, Final Report (July 2007).
- Validation of the model is summarized in Bay Area/California High-Speed Rail Ridership and Revenue Forecasting Study, Statewide Model Validation, Final Report (July 2007).
- The ridership and revenue forecasts generated from the model are documented in Bay Area/California High-Speed Rail Ridership and Revenue Forecasting Study, Ridership and Revenue Forecasts, Final Report (August 2007).

Some comments have questioned why certain components of the HSR R&R model (particular constants and coefficients), were revised, but the final component values were not published in a final report. As stated above, it is universal practice in the industry to calibrate a model in a dynamic, rapidly-paced process that tests dozens of different options. Although MTC did not issue a report detailing all components of the final model, which is consistent with professional practice, it is the Authority's understanding that the ridership and revenue model, including the final constants and coefficients, has been publicly available directly from MTC since the study was completed in 2007. Any member of the public who wished to have access to the model could make a request to MTC, which had modeling experts on staff that could assist with making the model available. It is also the Authority's understanding that some entities, including representatives of Caltrans, the University of California at Davis, the University of California at Berkeley, and the University of Calgary, have requested and received some or all of the model files.

Conclusion

In summary, the model development approach used widely accepted methods and professional standards reflecting the theory and practice of model estimation, validation, and application. The resulting model is policy-sensitive. It allows the Authority to address questions related to alignments and to levels of service. Its sensitivity to a range of different policies has been tested successfully. This sensitivity is the best proof of a carefully developed and calibrated model. It ensures that the HSR R&R model has and will continue to provide the Authority with valuable information in the planning decision-making process.

The HST ridership and revenue forecasts prepared by MTC in partnership with the Authority concluded that both the Pacheco Pass and Altamont Pass network alternatives have high ridership and revenue potential. While additional forecasts with different assumptions may result in somewhat different results, the bottom-line conclusion is expected to remain the same, and therefore ridership was not a major factor in differentiating between the Altamont Pass and Pacheco Pass alternatives.

STANDARD RESPONSE 5

Noise and Vibration Impacts

Many comments requested additional information about potential noise and vibration impacts and mitigation related to the implementation of the HST system. Numerous comments identified information that has been or is being generated during project-level EIR/EIS work for the San Francisco to San Jose and San Jose to Merced sections of the high-speed train system and commented that such information should be considered as part of the current program EIR process.

These comments request detailed information that cannot be known at the program level because the project design and engineering has not progressed to the point where that analysis can be completed. The project-level EIR/EIS noise and vibration studies will provide a detailed assessment of the potential effects of the HST operations on land uses along the proposed alignments and around stations and other facilities. The studies will be conducted in accordance with the Federal Railroad Administration (FRA) procedures presented in the High-Speed Ground Transportation Noise and Vibration Impact Assessment Report prepared October 2005, referred to herein as the FRA Guidance Manual.

Program-Level Analysis of Noise and Vibration

The sufficiency of the program level analysis of potential noise and vibration impacts from the HST system, as included in the 2008 Bay Area to Central Valley Final Program EIR, was challenged and was reviewed by the Superior Court in the *Town of Atherton* case. The Court's ruling in the Town of Atherton case concluded that the Final Program EIR contains an adequate level of detail for programmatic analysis regarding the noise and vibration analysis, noting that the Authority had proceeded in accordance with the FRA Guidance Manual and that more detailed mitigation strategies would for noise and vibration impacts would be developed in the next stage of environmental analysis. (Revised Draft Program EIR, Appendix A, Ruling on Submitted Matter, p. 13.) The Court's ruling noting a defect in the Authority's findings regarding vibration impacts. This is an issue to be addressed in the Authority's future decision on the Final EIR and its selection of a corridor and stations to connect the Bay Area to the Central Valley portion of the HST system.

The FRA Guidance Manual reflects the result of research conducted for the FRA and is presented as part of FRA's efforts to provide guidance in the consideration of HST as a transportation option in those intercity corridors where it has the potential to be a cost effective and environmentally sound component of the intermodal transportation system.

Experience during previous environmental impact reviews of high-speed rail projects has shown that possible increases in noise and vibration are frequently among the potential impacts of most concern to residents in the vicinity of the proposed project. With growing interest in HST projects, FRA saw a need to provide guidance and procedures to assist in the evaluation of potential noise and vibration impacts from such projects. The guidance also provides information on ways in which project design can incorporate measures to reduce impacts to address concerns, and guidance in evaluating potential mitigation. The methodology and procedure presented in the FRA Guidance Manual addresses program and project-level review of noise and vibration impacts related to HST systems.

The noise analysis in the Program EIR/EIS broadly compares the relative difference in potential impacts among the alternatives. Two basic techniques were used for analysis of HST: a screening analysis and a more specific analysis of typologies derived from representation HST locations. The screening analysis is based on the methods presented in Chapter 4, Initial Noise Evaluation, of the High-Speed Ground Transportation Noise and Vibration Impact Assessment Guidance Manual, October 2005 (FRA Manual). The Program level analysis identified the potential impacts of each

alignment alternative and station locations by project corridor. Mitigation strategies that would be used to reduce impacts were identified and subsequent detailed analysis was described to be prepared as part of the project EIR/EIS. These analyses will be done in accordance with the FRA Guidance Manual and will include a detailed noise and vibration assessment study of the effects of the HST operations. These operations will include the noise and vibration generated by the train operations, traffic noise generated at the HST stations, parking facilities, and at the maintenance facilities. Where calculations indicate that the HST operations may exceed the FRA Noise and Vibration impact criteria mitigation measures would be evaluated during the project-level studies, engineering refinement and design of the project.

Future Project-Level Analysis of Noise and Vibration

During detailed noise impact analysis noise sensitive receivers are identified within screening distances of proposed alignments. The screening distances are based on existing noise environment (urban, suburban, or rural/less developed), if the alignment is in or adjacent to a railroad corridor, highway corridor, or through a rural corridor, and speed of the train. These noise sensitive receivers consist of parks, residences and buildings where people sleep such as hotels and motels, institutional land uses with daytime and evening use, such as schools, places of worship, and libraries, and business uses that depend on quiet as an important part of operations, such as sound and motion picture recording studios. Noise measurements are conducted at these representative receivers within the screening distances to determine the ambient existing noise environment. These measured ambient noise levels are the basis of the FRA Noise Impact Criteria which is used to determine if a noise impact would occur at the receivers being studied.

The projected noise from the HST train operations is calculated using the methods in the FRA Guidance Manual. These calculations would reflect the type of HST (electric), expected train speeds, type and elevation of trackwork, distance to the receiver, ground terrain, and shielding provided by buildings between the receiver and the trackwork. Similar calculations are prepared for traffic noise. The projected future noise levels of the HST operations are compared to the existing ambient noise to determine if the receivers being studied would be impacted. At locations where impacts are identified as likely to exceed federal criteria mitigation measures such as noise barriers will be evaluated for their potential to reduce the projected noise levels to receivers. The potential for "startle" effects will be considered and noise effects on livestock and wildlife will also be considered using the FRA criteria.

Receivers that could be affected by vibration from HSTs are identified using the FRA screening distances. The FRA Vibration Impact Criteria are used to establish the limits of vibration at each of the receivers being studied depending on their land use activities and expected train speeds. These FRA criteria address buildings where ambient vibrations must be kept low, such as research facilities and hospitals with diagnostic equipment; residential land uses and buildings where people sleep, such as hospitals; and institutional land uses including schools, churches, other institutions, and quiet offices that do not have vibration-sensitive equipment, but still have the potential for activity interference. It is extremely rare for vibration from train operations to cause any sort of building damage. Any potentially fragile historic buildings located near a proposed alignment will receive case by case review in the project-level studies pursuant to the FRA Guidance Manual and the standards set by the Secretary of the Interior for historic structures.

At receivers that are already within close proximity to existing rail corridors, vibration measurements will be conducted to establish the existing conditions.

At each of the receivers being studied, vibration generated by the HST is calculated using the FRA reference ground-borne vibration levels for an electric motor unit (EMU) high-speed trainset similar to the trainset design that is likely to be used for the CAHST System. These reference vibration levels are adjusted by the ground attenuation of the ground between the track and the receiver. The ground attenuation is a measured value that represents the local conditions along the alignment for varying distances from the track.

The predicted future HST vibration levels are compared to the FRA Vibration Impact Criteria or for those receivers that are already exposed to rail activities, the existing ambient vibration levels, to determine if an impact would occur. Where impacts are identified, mitigation measures in the form of resilient rail design will be included as part of the final project design.

Potential noise and vibration impacts during construction will also be assessed. Noise and vibration limits during construction will be established by the Authority which will consider the land use activities adjoining the construction sites. These criteria will be developed with consideration to local noise ordinances that limit the hours or noise levels of construction. Noise control measures that will be imposed on the Contractor to mitigate impacts could include shielding between the construction sites and the impacted receivers and limiting the operations of noisy or vibratory equipment to certain hours of the day.

STANDARD RESPONSE 6

Effect of the Project on Property Values, Communities, and Quality of Life

Numerous comments express fears, concerns, and opinions that planning for the HST system will result or has resulted in a drop in property values for properties along the existing Caltrain corridor. Numerous comments also express concerns regarding effects on communities along the Caltrain corridor from implementing the HST system, anticipating negative impacts on the quality of life in these communities.

The Authority acknowledges the comments expressing fear and concern over potential negative effects and diminishing property values due to the implementation of the HST system. The Authority is working with more than 100 communities across the state, values their feedback so that the best possible HST system can be developed, and will be addressing the specific mitigation needs of individual communities in project-level EIRs for individual geographic sections of the HST system, as the details of the system are more fully developed. The Authority believes that the HST system will provide substantial economic and environmental benefits to the state as a whole and to the communities it crosses—benefits in creating jobs, reducing air pollution and improving air quality, improving safety and circulation with grade separations, and providing a new transportation option that will relieve congestion on highways and airways. Recent reports, including from the United States Conference of Mayors and from CalPIRG, as well as information on the effects of Japan's Shinkansen system, confirm the generally expected economic benefits to be derived from the HST system (United States Conference of Mayors 2010; CalPIRG 2010). In addition, studies have indicated that in various communities the addition of rail transit has resulted in increased property values for areas near and having access to transit, due to increased access to jobs, services, and activities (Cervero and Duncan 2009). Rail transit has also resulted in increased development opportunity and economic activity for these communities. While some negative effects may be noted, the positive effects generally tended to outweigh the negative, and the studies suggest design approaches to reduce and minimize potential negative effects. Design refinements, community-specific impact studies, and detailed mitigation measures are all matters to be addressed in future project-level environmental studies and engineering design.

The Authority appreciates the comments identifying concerns with social and economic issues related to the proposed HST system in the Bay Area to Central Valley study area. The project's potential impact on individual property owners, as well as on neighborhoods and communities, along the proposed network alternatives continues to be an issue of considerable public and community input, as well as an issue of great concern to the Authority. Such concern is heightened during times of economic difficulty at local, state, and national levels. Anecdotal information of real estate sale prices lower than previous sale prices is evidence of such economic difficulty, is thought to result from multiple factors that cannot be analyzed here, and is not thought to be caused by planning and conducting environmental studies for the HST system. All of these comments will be considered by the Authority Board in making decisions based on the extensive record for the 2008 Final Program EIR, as well as the 2010 Revised Draft and Final Program EIR Material. These issues would be further considered during project-level studies.

At the same time, an important consideration under CEQA is that an EIR is required to focus on the potential significant effects of a proposed project on the *environment*. "[E]nvironment" in this context means the physical conditions which exist within the area that will be affected by a proposed project, including land, air, water, minerals, flora, fauna, noise, and objects of historic or aesthetic significance. Unlike physical changes from a proposed project, "[e]conomic and social changes resulting from a project shall *not* be treated as significant effects on the environment." (CEQA

Guidelines, § 15064(e).) Economic and social information may be included in an EIR in whatever format the lead agency finds appropriate. (CEQA Guidelines, §§ 15131(a), (b); 15382.) The May 2008 Final Program EIR and the 2010 Draft and Final Revised Program EIR Material therefore appropriately focused the discussion on the project's potential to impact the physical environment. Comments expressing fear of future changes were not supported by evidence of physical impacts. Issues of community impacts, aesthetic impacts, and other physical effects resulting from the HST system at specific locations and associated with specific HST profiles and operational characteristics will be studied in detail in project-level EIRs for each part of the system.

STANDARD RESPONSE 7

Project Eminent Domain Issues

A number of comments express fear and concern regarding the Authority's potential need to acquire properties in order to implement the HST system and the potential that as a result of property acquisition the project would displace numerous residents and businesses from such acquired properties. Other comments expressed concern for potential future hardship and disruption to businesses and communities during system construction.

The Authority has sought to use existing transportation corridors, like the Caltrain corridor, to the greatest extent feasible to minimize environmental impacts and property acquisition needs related to the project. The 2010 Revised Draft EIR Material identifies some limited right-of-way acquisition that could be needed along the Caltrain corridor between San Francisco and San Jose in some narrow areas. The amount of property and the specific parcels that may ultimately be needed can be determined only in the future after project-level studies and decisions on the final placement and profile (i.e., at-grade, elevated, or below-grade) of the proposed facilities. The Authority Board committed in July 2008 to investigate profile alternatives to avoid and minimize potential impacts, including property impacts, by considering trench, tunnel, aerial, and at-grade alignments between San Francisco and San Jose.

Although the Authority rescinded its July 2008 program decision, and will make a new decision, it has been examining profile alternatives carried forward into the project-level analysis. Specific property that may be necessary to implement a particular project-level alignment alternative will be addressed during the project-level environmental process. Because this is a program-level document, the analysis considered the potential for property acquisition on a broad scale. During the project-level reviews, the analysis of alternatives will identify the residential and nonresidential properties that could be affected and all locations at which property acquisition, full or partial, would be needed for particular alternatives. The project-level EIR/EIS will include a comprehensive description of relocation impacts and relocation resources, and a Relocation Impact Report will be prepared for the project.

Eminent domain is the government power to acquire private property for public use and to compensate property owners based on the fair market value of their property taken by the government. (United States Constitution, 5th and 14th amendments; California Constitution, Article I.) Any property acquisition and relocation efforts by the Authority will be required to comply with the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act (Uniform Act) of 1970 as amended and Title VI and Title VIII of the Civil Rights Acts of 1964 and 1968, respectively. Any such efforts must follow the completion of project EIRs and the decisions to be made by the Authority about the placement and design of facilities in the system. To provide additional information to the public, the Authority has prepared and posted on its website in English and Spanish a pamphlet titled "Your Property, Your High-Speed Rail Project" (California High-Speed Rail Authority 2009d). The pamphlet is listed in the website Library under the topic "Right of Way."

In addition, project-level studies will include a detailed assessment of potential disruption to businesses and communities during project construction, evaluation of construction phasing and staging needs and impacts, and detailed mitigation plans to address impacts of construction on traffic, circulation, and property access. Such detailed assessments can be provided only when additional design and engineering detail is developed for the project-level studies.

STANDARD RESPONSE 8

The Authority's Business Plan

The Authority received many comments that relate to the Authority's Business Plan rather than to the 2010 Revised Draft Program EIR Many of these comments made general statements, such as "the Business Plan is inadequate" "the Business Plan is flawed," or state that the Authority must have a realistic and defensible business plan. Some comments questioned specific content of the Business Plan or identified information they felt was missing from the plan. Other comments suggested that the Authority had not satisfactorily established the "business case" for constructing the HST system. The Authority does not interpret comments on the Business Plan as comments on the environmental analysis in the 2010 Revised Program EIR. To the extent that the public comment on the Business Plan can be construed as a comment on the HST project as a whole, or the HST project in the Bay Area to Central Valley study area, the Authority provides the following response.

Since the Authority's July 2008 decisions based on the 2008 Final Program EIR, the Authority has prepared two Business Plans and one Business Plan Addendum. The first of these, published in November 2008 (California High-Speed Rail Authority 2008)[1], updated the Authority's first Business Plan from 2000. The 2008 Business Plan was intended to provide a credible, experience-based estimate of the HST system's financial and economic outlook at that time. The 2008 Business Plan provided information on financial and economic studies that had been developed.

The Legislature included in the 2009/2010 Budget Act a requirement that the Authority submit a business plan document to the Legislature by December 15, 2009. Subsequent legislation signed into law requires the Authority to submit a revised business plan to the Legislature every 2 years. (Public Utilities Code, § 185033.)

The Authority prepared a Business Plan and submitted it to the Legislature in December 2009 (California High-Speed Rail Authority 2009c) to comply with the 2009/2010 Budget Act requirements. The content of the 2009 Business Plan included a general discussion of the HST system and anticipated ridership, revenues, project costs, and financing options. The 2009 Business Plan also included a discussion of risk that could jeopardize the project. The content of the 2009 Business Plan was intended to address the specific issues identified by the Legislature in the 2009/2010 Budget Act and included a section at the end identifying how the required topics were addressed. In April 2010, the Authority submitted to the Legislature an addendum to the 2009 Business Plan with additional information to answer questions and issues raised by the Legislative Analyst's Office and legislative oversight bodies (California High-Speed Rail Authority 2010b).

As required by Public Utilities Code, § 185033, the Authority must submit a Business Plan to the Legislature on or before January 1, 2012, and every 2 years thereafter. The statute identifies the required content of future plans:

> *"The business plan shall identify all of the following: the type of service the authority anticipates it will develop, such as local, express, commuter, regional, or interregional; a description of the primary benefits the system will provide; a forecast of the anticipated patronage, operating and maintenance costs, and capital costs for the system; an estimate and description of the total anticipated federal, state, local, and other funds the authority intends to access to fund the construction and operation of the system; and the proposed chronology for the construction of the eligible corridors of the statewide high-speed train system. The*

[1] The following documentation has been publicly available on the Authority's website: California High-Speed Train Business Plan (November 2008); Business Plan 2008 Source Documents (November 2008); 2009 Business Plan Report to the Legislature (December 2009); Addendum to the California High-Speed Rail Authority's Report to the Legislature (April 2010).

business plan shall also include a discussion of all reasonably foreseeable risks the project may encounter, including, but not limited to, risks associated with the project's finances, patronage, right-of-way acquisition, environmental clearances, construction, equipment, and technology, and other risks associated with the project's development. The plan shall describe the authority's strategies, processes, or other actions it intends to utilize to manage those risks."

"In addition to the requirements of subdivision (a), the business plan shall include, but need not be limited to, all of the following elements:

(A) Using the most recent patronage forecast for the system, develop a forecast of the expected patronage and service levels for the Phase 1 corridor as identified in paragraph (2) of subdivision (b) of Section 2704.04 of the Streets and Highways Code and by each segment or combination of segments for which a project level environmental analysis is being prepared for Phase 1. The forecast shall assume a high, medium, and low level of patronage and a realistic operating planning scenario for each level of service. Alternative fare structures shall be considered when determining the level of patronage.

(B) Based on the patronage forecast in subparagraph (A), develop alternative financial pro formas for the different levels of service, and identify the operating break-even points for each alternative. Each pro forma shall assume the terms of subparagraph (J) of paragraph (2) of subdivision (c) of Section 2704.08 of the Streets and Highways Code.

(C) Identify the expected schedule for completing environmental review, and initiating and completing construction for each segment of Phase 1.

(D) Identify the source of federal, state, and local funds available for the project that will augment funds from the bond act and the level of confidence for obtaining each type of funding.

(E) Identify written agreements with public or private entities to fund components of the high-speed rail system, including stations and terminals, any impediments to the completion of the system, such as the inability to gain access to existing railroad rights-of-way.

(F) Identify alternative public-private development strategies for the implementation of Phase 1."

The statute also requires the Authority to hold at least one public hearing on the Business Plan. (Public Utilities Code, § 185033(b)(2).) Future legislation may alter this requirement.

With respect to comments that suggest that the Authority has not established the business case for high-speed rail, the Authority disagrees. One purpose of the 2005 Statewide Program EIR/EIS was to evaluate the consequences of meeting the State's transportation needs over the coming decades. That document identified the environmental and economic cost of proceeding with a "do nothing" alternative as well as with a "modal alternative" that would expand freeways, airports, and conventional rail systems without high-speed rail. The conclusion of the 2005 Statewide Program EIR/EIS process was that the HST system was a less costly alternative and less environmentally damaging overall.

STANDARD RESPONSE 9

Union Pacific Railroad Issues

The Authority received many comments related to Union Pacific Railroad (UPRR). Many comments expressed concerns about the safety of locating the high-speed train in proximity to a freight railroad. Numerous comments identified the importance of UPRR's freight operations and expressed concerns about the Authority imposing limits on UPRR's ability to continue to conduct freight operations. Many comments suggest that UPRR's letters to the Authority are evidence that the alternatives in the 2008 Final Program EIR are infeasible, and that the Authority must therefore identify new alternatives that are not proximate to UPRR tracks.

Authority's Planning Approach of Using Existing Transportation Corridors

The Authority's planning for the HST system since 2000 has been consistently based on locating the HST corridor within or adjacent to major existing transportation corridors, such as rail or highway corridors. Prior studies have shown that co-locating linear transportation facilities minimizes environmental impacts. This is particularly the case for minimizing impacts on agricultural lands, biological resources, wetlands and waters, and special-status species and habitats. Co-locating major linear transportation facilities can also help minimize sprawl. These points have been recognized by regulatory agencies such as the U.S. Environmental Protection Agency and the U.S. Army Corps of Engineers as important considerations in the Authority's compliance with Section 404 of the federal Clean Water Act. Accordingly, the range of alignment alternatives in the 2008 Final Program EIR were mainly located along (within or adjacent to) rail and highway corridors. The location of the HST system in relation to UPRR freight corridors was one basis for recirculating portions of the 2008 Final Program EIR.

Safety Considerations in Locating HST Facilities Near Active Freight Operations

Safety Clearances: Safety is the Authority's highest priority in designing the HST system. The HST system will be designed in accordance with all applicable federally mandated safety laws and FRA implementing regulations, applicable state safety laws and regulations, and safety policies and procedures of other train systems as may be applicable, including those establishing clearance requirements for track separation, overpass structures, trenching requirements, and similar matters.

Equipment Standards: The HST system will operate trains approved for operation in the California HST system by FRA. Current FRA regulations include equipment safety standards for passenger trains operating at speeds up to 150 miles per hour (mph). FRA is reviewing European and worldwide equipment standards and developing guidance for HSTs operating at up to 220 mph. FRA is also exploring improvements and expansions to vehicle and track safety standards through rulemaking. In its *High-Speed Passenger Rail Safety Strategy* (Federal Railroad Administration 2009b), the FRA explains in some detail the safety standards that are under review and asserts that FRA will issue proposed and final rules on these safety standards "as soon as possible" (Federal Railroad Administration 2009b). In addition, the FRA will consider petitions to waive certain equipment standards on a case-by-case basis as necessary or appropriate to the circumstances. A recent example of this is the FRA ruling granting Caltrain a waiver to operate non-FRA-compliant passenger rail equipment between San Francisco and Gilroy (Peninsula Corridor Joint Powers Board 2009, Cothen pers. comm. 2009).

Rule of Particular Applicability: In addition to these rules that will be generally applicable to high-speed passenger trains, the FRA has indicated its expectation that each HSR operation will be

"appropriately tailored to its operating environment" through adoption of a separate rule of particular applicability (RPA) for each HST operation. The Authority is preparing a detailed technical memorandum to support its application for an RPA and intends to make such application at an appropriate time. The Authority's petition for an RPA and the technical assumptions underlying the RPA will be available for review and public comment prior to any formal action by the FRA. Consistent with FRA's strategy document, the Authority anticipates that the RPA will consider crashworthiness, crash energy management, vehicle suspension systems, brake systems, train configurations, and other elements critical for high-speed trainsets. The RPA petition may also identify when particular measures, such as barriers or intrusion detection devices, might be may be appropriate to particular operating environments.

Freight Operations

The Authority acknowledges the importance of safe and efficient freight service to the state and national economies. The Authority is engaging in discussions with freight operators to review current and future projected operating needs and to establish a collaborative environment for considering those needs in the project context. As the design of the HST system advances to include more detail during the project phase, the Authority will be in a better position to define with specificity how much, if any, of a freight railroad's nonoperating property may be necessary for the HST system. At that time, the Authority, in cooperation with the railroad and regulatory authorities will assess whether the intended use of railroad property would unreasonably interfere with railroad operations and whether the intended use of railroad property poses an undue safety risk. The Authority will consider all reasonable alternatives to accommodate and/or mitigate the railroad's needs within program constraints. The Authority is committed to working through all such railroad issues on a good faith basis.

Feasibility of Pacheco Pass and Altamont Pass Network Alternative in Light of UPRR's Position on Its Right-of-Way

UPRR has objected to the use of its right-of-way—including corridors through both the Pacheco Pass and the Altamont Pass—to support the HST project. Through the Program EIR process, the Authority has explored alternatives for both the Pacheco Pass and the Altamont Pass that are located along existing transportation corridors, including along UPRR freight corridors. The Revised Draft Program EIR, Chapter 3, provides information and analysis that clarifies the greater land use and property effects which would result from an alignment for the HST system that must be located adjacent to, rather than within, UPRR right-of-way. At the program level, both Pacheco Pass and Altamont Pass network alternatives remain feasible. There is precedent for UPRR working with proponents of commuter rail to reach mutually agreeable arrangements for passenger rail near UPRR freight rail (Union Pacific 2009a, Union Pacific 2009b). Options are available in the freight/commuter rail context to address freight concerns about liability (Elliott pers. comm. 2009, Government Accountability Office 2009). Although the commuter rail context is not fully analogous to the high-speed rail context, there is precedent developing for freight rail carriers reaching agreements with high-speed rail project proponents to facilitate planning and design of HST system that respect and protect the needs of freight rail (CSX Transportation and New York State Department of Transportation 2010, Shipman 2009).[2]

Cooperative Efforts on High-Speed Rail in California

The Authority has had productive meetings with UPRR representatives on more than one occasion since receiving their April 23, 2010 comment letter. These discussions have been very preliminary and include discussions regarding the possibility for track clearance waivers in limited constrained areas. The Authority appreciates the opportunity to work with UPRR to refine these areas

[2] See also HSRA Board (item 4) and Exec/Admin Committee (item 6) meeting materials regarding work with Burlington Northern Sante Fe Railroad Company, May 2010

in good faith. The Authority looks forward to additional meetings with UPRR to improve the nature and quality of dialogue between the parties during the course of project development.

STANDARD RESPONSE 10

Alternatives

The Authority received many comments expressing very strong views about the alternatives. Numerous commenters expressed their opinion that the Authority was required to start afresh with its alternatives evaluation. Other commenters expressed their opinion that the no project alternative, an Altamont Pass alternative, or a Pacheco Pass alternative should be selected. Many commenters identified additional alternative that they identified as ones that the Authority should or must study to comply with CEQA. This response is intended to provide an overview of the range of comments received on alternatives and the range of options recommended for study in the comments.

The Authority's Actions to Comply With the Town of Atherton Judgment and Identification of a Staff Recommended Preferred Alternative in the Revised Draft Program EIR.

In July 2008, after certifying the 2008 Final Program EIR, the Authority selected the Pacheco Pass Network Alternative serving San Francisco via San Jose (including a shared use Caltrain Corridor between San Jose and San Francisco) as the preferred network alternative for connecting the HST system between the Bay Area and Central Valley. The 2008 Final Program EIR has been revised in response to the Superior Court judgment in the Town of Atherton case. To comply with that judgment, the Authority rescinded its certification of the 2008 Final Program EIR and its approval of the Pacheco Pass Network Alternative serving San Francisco and San Jose. In March 2010, the Authority circulated for public review and comment, the 2010 Revised Final Program EIR. This document responded directly to the Superior Court judgment in the Town of Atherton case, offering additional information and clarification in direct response to the issues identified in the judgment that required further work to comply with CEQA.

The Revised Final Program EIR, which includes the entire 2008 Final Program EIR and the 2010 Revised Program EIR, provide a description and evaluation of a "no project" alternative and 21 representative network alternatives that fall into three groups for linking the Bay Area to the Central Valley: Altamont Pass (11 network alternatives); Pacheco Pass (6 network alternatives), and Pacheco Pass with Altamont Pass (local service) (4 network alternatives). The Program EIR also included alignment options within the representative network alternatives. The Revised Final Program EIR applies consistent evaluation methods and criteria to the study area and network alternatives reviewed.

During the entire program EIR process for the Bay Area to Central Valley, the Authority has been guided by the adopted objectives and criteria for evaluation of alignment and station location options as described below and included in the 2005 Statewide Program EIR and the 2008 Final Program EIR.

In consideration of these objectives and criteria, in Chapter 7 of the 2010 Revised Draft Program EIR, the Authority staff recommended the Pacheco Pass Network Alternative serving San Francisco via San Jose (including a shared use Caltrain Corridor between San Jose and San Francisco) as the preferred network alternative and provided the underlying reasons for the recommendation.

High-Speed Train Alignment and Station Evaluation Objectives and Criteria	
Objective	**Criteria**
Maximize ridership/revenue potential	Travel time Length Population/employment catchment area Ridership and revenue forecasts
Maximize connectivity and accessibility	Intermodal connections
Minimize operating and capital costs	Length Operational issues Construction issues Capital cost Right-of-way issues/cost
Maximize compatibility with existing and planned development	Land use compatibility and conflicts Visual quality impacts
Minimize impacts on natural resources	Water resources impacts Floodplain impacts Wetland impacts Threatened and endangered species impacts
Minimize impacts on social and economic resources	Environmental justice impacts (demographics) Farmland impacts
Minimize impacts on cultural and parks/wildlife refuge resources	Cultural resources impacts Parks and recreation impacts Wildlife refuge impacts
Maximize avoidance of areas with geologic and soils constraints	Soils/slope constraints Seismic constraints
Maximize avoidance of areas with potential hazardous materials	Hazardous materials/waste constraints

Although not meant to be an exhaustive list, some major reasons for the continued recommendation of the Pacheco Pass Network Alternative serving San Francisco via San Jose as preferred are summarized below and discussed in full in Chapter 7 of the 2010 Revised Final Program EIR:

- Maximizes the use of existing publicly owned rail right-of-way through shared-use with improved Caltrain commuter services. The HST is complementary to Caltrain and would share tracks with express Caltrain commuter rail services. This is supported by the Peninsula Corridor Joint Powers Board (PCJPB - Caltrain).
- Provides direct (all HST trains) service to the two largest cities in northern California – San Jose and San Francisco, including the major transit, business, and tourism center in downtown San Francisco. Provides direct service to northern California's major hub airport at SFO.
- Does not require that HST trains be divided into two directions to serve two city centers. Dividing the trains in two directions reduces the number of trains serving each of the termini stations.
- Provides good HST access for the three-county Monterey Bay area with a south Santa Clara HST station.
- Does not involve a new bay crossing and its associated costs and environmental impacts, including impacts on the federal Don Edwards San Francisco Bay National Wildlife Refuge.
- Is the corridor likely to include the Least Environmentally Damaging Practicable Alternative (LEDPA), as identified by the U.S. Environmental Protection Agency and U.S. Army Corps of Engineers.

The additional information in the 2010 Revised Draft Program EIR did not alter the prior staff recommendation in the 2008 Final Program EIR. The identification of the staff recommendation of a preferred alternative in the Revised Draft Program EIR has provided an opportunity for extensive public comment on the recommendation. The Authority has received extensive comments on the staff recommendation of the preferred alternatives, including commenters' recommendations for what alternative should be selected. Many commenters advocate the "no project" alternative be selected. A very large number of commenters, including many Peninsula cities and residents, advocate for an Altamont Pass alternative. Numerous commenters also support the preferred Pacheco Pass network alternative.

Suggestions in Comments for the Study of Additional Alternatives

At the same time that commenters consistently offered their views of the appropriate alternatives choice, a number of comments received on the 2010 Revised Draft Program EIR also suggested that the Authority should, or is required to, study and consider various alternatives in addition to those evaluated in the 2008 Final Program EIR and the 2010 Revised Draft Program EIR. The suggested alternatives varied in their level of development from a mere sentence (consider a high-speed bus alternative instead) to a thick report (Setec Ferroviaire report). In brief, the suggested additional alternatives include:

- An alignment terminating the HST in San Jose—see "Termination at San Jose" below.
- Altamont alignments and not the Caltrain Corridor—see "Altamont and Not the Caltrain Corridor" below.
- Use of U.S. 101 north of San Jose—see "U.S. 101 North of San Jose" below.
- Use of Interstate 280 (I-280) north of San Jose—see "I-280 North of San Jose" below.
- A proposal to use an Altamont Alignment generally along State Route 84 through the east bay, across the San Francisco Bay, and along the west coast of the San Francisco Bay north of Dumbarton Bridge – see "Other Altamont Corridor Alternatives" below
- A proposal prepared by Setec Ferroviaire titled, *Evaluation of an Alignment for the California High-Speed Rail Project Bay Area to Central Valley Segment*, April 25, 2010 – see "Other Altamont Corridor Alternatives" below
- Vertical profile alternatives (primarily below-grade options such as trench or tunnel) – see "Alignment Profile Alternatives" below.

An often repeated rationale in the comments is that additional alternatives must be studied because the Authority's prior alternatives have been rendered infeasible based on UPRR's position denying use of its right-of-way for high-speed rail.

The judgment in the Town of Atherton case did not find fault with the range of alternatives studied in the 2008 Final Program EIR, or require additional study of alternatives. CEQA requires that an EIR study alternatives to the proposed project, or to the location of the proposed project, that are capable of reducing environmental impacts and still accomplish most project objectives. CEQA Guidelines section 15126.6 states: "The EIR must study a reasonable range of potentially feasible alternatives, but is not required to study every alternative suggested or numerous similar alternatives that would not reduce significant environmental effects."

The Superior Court concluded that the 2008 Final Program EIR met the standard of studying a reasonable range of alternatives and also found that it presented a fair and unbiased analysis. (See the 2010 Revised Final Program EIR, Appendix A, p. 17.)

The 2010 Revised Final Program EIR presents additional information and analysis in response to areas noted by the Superior Court as needing additional work under CEQA. In this new material there is no change to the identified preferred alternative and there is no change to the conclusion that the various alignments for the HST project that are studied in the Program EIR are potentially feasible. Accordingly, neither the court's ruling, nor the additional study in the Revised Draft/Final Program EIR, result in a requirement to expand the analysis of alternatives, as various comments suggest.

Overall, the suggested additional alternatives either do not satisfy the project objectives and underlying project purpose, would be infeasible for other reasons, or are similar to alternatives already considered and do not provide any significant reduction in environmental impacts so as to warrant their consideration.

Alternative Terminating in San Jose

The 2008 Final Program EIR evaluates alternatives that would terminate in San Jose and not travel up the Peninsula on the Caltrain Corridor. These alternatives included:

- Altamont Pass Network Alternative with Oakland and San Jose Termini
- Altamont Pass with San Jose Terminus
- Altamont Pass with San Jose, Oakland and San Francisco via Transbay Tube
- Pacheco Pass with Oakland San Jose Termini
- Pacheco Pass with San Jose Terminus
- Pacheco Pass with San Jose, Oakland, and San Francisco via Transbay Tube
- Pacheco Pass with Altamont Pass (local service) with Oakland and San Jose Termini, and
- Pacheco Pass with Altamont pass (local service) with San Jose Terminus.

The description and full evaluation of these network alternatives were not recirculated in the 2010 Revised Draft Program EIR Material, but clarification of the description and evaluation of portions of these alternatives, specifically between San Jose and Gilroy, were provided in response to the Superior Court ruling in Town of Atherton case.

The Authority notes that for these network alternatives, there is reduced opportunity for transfer between the HST and Caltrain with the loss of potential HST stations north of San Jose and the reduced utility of using Caltrain as a feeder to HST north of San Jose.

The Authority Board will make a new decision on a network alternative to carry into the project level environmental documents. The alternatives that terminate in San Jose are not the staff recommended network alternative (identified and discussed in Chapter 7 of the 2010 Revised Program EIR Material or the Revised Final Program EIR) but will be considered by the Authority as part of the new decision. Public comments supporting terminating HST service in San Jose will be part of the record that the Board considers.

Altamont and Not the Caltrain Corridor

As stated above, the 2008 Final Program EIR evaluates alternatives that would terminate in San Jose and not travel up the Peninsula on the Caltrain Corridor In addition, five of the Altamont network alternatives include HST in some or all of the Caltrain Corridor north of San Jose:

- Altamont Pass - San Francisco and San Jose Termini
- Altamont Pass - San Francisco, Oakland, and San Jose Termini
- Altamont Pass - San Francisco Terminus
- Altamont Pass - San Francisco and San Jose—via San Francisco Peninsula
- Altamont Pass - San Francisco, San Jose, and Oakland—no SF Bay Crossing

An analysis of eleven alignments that do not traverse the Caltrain Corridor at all is contained in the 2008 Final Program EIR. The description and full evaluation of these network alternatives were not recirculated in the 2010 Revised Draft Program EIR Material, but clarification of the description and evaluation of portions of these alternatives, specifically between San Jose and Gilroy, were provided in response to the Superior Court ruling in Town of Atherton.

The Authority notes that for these network alternatives, there is reduced opportunity for transfer between the HST and Caltrain with the loss of potential intermediate stations between San Jose and San Francisco and the reduced utility of using Caltrain as a feeder system to/from HST north of San Jose.

The Authority Board will make a new decision on a network alternative to carry into the project level environmental document. The alternatives that do not traverse the Caltrain Corridor are not

the staff recommended network alternative (identified and discussed in Chapter 7 of the 2010 Revised Program EIR l and Revised Final Program EIR), but will be considered by the Authority as part of the new decision. Public comments supporting network Alternatives that do not use the Caltrain Corridor will be part of the record that the Board considers.

U.S. 101 North of San Jose

The Superior Court in the Town of Atherton case held the Authority had substantial evidence supporting the elimination of the U.S. 101 alignment alternative from study in the 2008 Final Program EIR. See Appendix A of the 2010 Revised Draft Program EIR Material (page 19).

The Authority and the FRA considered a potential HST alternative along U.S. 101 between San Francisco and San Jose as part of the Statewide Program EIR process and the Bay Area to Central Valley Program EIR process. As noted in Table 2.5-4 of the 2008 Final Program EIR (page 2-43), the U.S. 101 alternative was screened out from further study in the program environmental documents. As shown in the table, principal reasons for rejection of these alignments included construction, right-of-way, and environmental concerns, particularly visual and land use (right-of-way acquisition) impacts. Please also see Appendix 2-G1.1 in the Final Program EIR for a discussion of alignment alternatives and station location options eliminated from further consideration.

The US-101 Alignment from San Francisco (Transbay Terminal or 4th and King Terminal Station) would follow the US-101 freeway south to San Jose and would use an exclusive guideway. This exclusive guideway alignment would likely require construction of an aerial guideway adjacent to and above an existing active freeway facility while maintaining freeway traffic. In addition, limited right-of-way would require the extensive purchase of additional right-of-way and a nearly continuous aerial structure between San Francisco and San Jose.

The US-101 alignment alternative would require many sections of high-level structures to pass over existing overpasses and connector ramps. With overcrossings about every 1.5 miles, the HST will need to run approximately 45 to 50 feet above grade for the length of the freeway median alignment. This proposed elevation assumes the following:

- The elevation of overcrossings over the freeway is about 20 feet. Another 15 to 17 feet is required clearance above the overdressing. The depth of the spans for the HST viaduct to the top of rail will be 10 to 15 feet.
- A vertical alignment that rises and falls for each overcrossing would produce a substandard condition for 125 mph operations.
- Higher interchanges, such SR 92 would involve much higher viaduct sections to clear flyover ramps.

An elevated HST line above the Millbrae Avenue overcrossing and I-380 interchange would require further analysis to determine if they intrude into the FAA airspace at the end of the SFO runways, which would be a potential fatal flaw to HST above the median of US-101 in the vicinity of SFO. Similar analysis would be necessary for the San Carlos airport and Moffett Field. The aerial structures would introduce a major new visual element along the US-101 corridor that would have visual impacts (intrusion/shade/shadow) on the residential portions of this corridor. In addition, the existing freeway has substandard features (e.g., medians and shoulders) in many places, and it would be unlikely that Caltrans would agree to use available right-of-way for HST facilities, reserving that space for future improvements to the freeway.

For these reasons, the US-101 corridor was rejected and is not a practicable alternative for HST service between San Jose and San Francisco.

I-280 North of San Jose

The Superior Court in the Town of Atherton case held the Authority has substantial evidence supporting the elimination of I-280 alignment alternative from study in the 2008 Final Bay Area to Central Valley Program EIR. See Appendix A of the 2010 Revised Draft Program EIR Material (page 19).

The Authority and the FRA considered a potential HST alternative along I-280 between San Francisco and San Jose as part of the Statewide Program EIR process and the Bay Area to Central Valley Program EIR process.

As noted in Table 2.5-4 of the 2008 Final Program EIR (page 2-43), the I-280 alternative was screened out from further study in the program environmental documents. As shown in the table, principal reasons for rejection of these alignments included construction, right-of-way, and environmental concerns, particularly visual and land use (right-of-way acquisition) impacts.

I-280 is adjacent to protected watersheds for over 10 miles, in places bisecting the watershed. It is designed to support approximately an 80 mph automobile design speed, with grades greater than those allowable for HST, and 7 miles longer from Transbay Terminal in San Francisco to Diridon Station in San Jose.

The Authority notes that, if there would be no opportunity for transfers between HST and Caltrain except at the San Francisco terminal and San Jose Station, and the utility of using Caltrain as a feeder to HST would be substantially reduced. Caltrain passengers would need to travel to one end or another of the Caltrain corridor to access HST.

The Authority and FRA revisited this alignment alternative and have affirmed that the previous conclusions that this alternative was not practicable.

An I-280 Alignment from San Francisco (Transbay Terminal or 4th and King Terminal Station) would follow south along the I-280 freeway alignment to San Jose and be on an exclusive guideway. This exclusive guideway alignment would have major construction issues involving the construction of an aerial guideway adjacent to and above an active existing freeway facility while maintaining freeway traffic. Limited right-of-way in this corridor would require the extensive purchase of additional right-of-way and nearly exclusive use of an aerial structure between San Francisco and San Jose. The portion within the City and County of San Francisco is fully developed, and connecting the alignment alternative to Diridon Station in San Jose would require a guideway passing through developed portions of downtown San Jose. These areas would require considerable property acquisition.

An I-280 alignment alternative would require many sections of high-level structures to pass over existing overpasses and connector ramps (in particular at interchanges with State Routes 17/880, 85, and 92) resulting in high construction costs and constructability issues that would make this alignment alternative impracticable. This alignment alternative would also require relocating and maintaining freeway access and capacity during construction. The aerial structures would introduce a major new visual element along the I-280 corridor that would have visual impacts (intrusion/shade/shadow) on the residential portions, nature preserves, and scenic areas for this alignment alternative. The considerable earthwork and retaining walls needed as the freeway traverses the rolling hills of the peninsula would have potentially significant impacts to nature preserves and adjacent residential neighborhoods. The I-280 corridor would not allow a convenient connection to San Francisco International Airport. For these reasons, the I-280 alignment alternative was rejected and would not be a practicable alternative for HST service between San Jose and San Francisco.

Other Altamont Corridor Alternatives

SR-84/South of Livermore Alignment Alternative

Several alternatives from the East Bay to the Central Valley were considered as part of the Bay Area to Central Valley Program EIR process. As noted in Table 2.5-4 of the 2008 Final Program EIR (page 2-43), SR-84/South of Livermore Alignment Alternative and the SR-84/I-580/UPRR Alignment Alternative were screened out from further study in the program environmental documents. As shown in the table, principal reasons for rejection of these alignments included Natural resources, habitat and endangered species, agricultural lands, water resources impacts. Please also see Appendix 2-G1.4 in the Final Program EIR for a discussion of alignment alternatives and station location options eliminated from further consideration.

SR-84/South of Livermore Alignment Alternative would extend east near the UPRR alignment alternative through Niles Canyon then follow the SR-84 corridor south of Pleasanton and Livermore and continue east (south of Livermore) to the Patterson Pass corridor and to Tracy. Station location options include the Pleasanton (I-680/SR-84) station or Livermore (South Isabel).

The SR-84/South of Livermore alignment alternative was eliminated from further investigation because it would have high potential impacts to the natural environment and to agricultural lands. This alignment alternative would cut through agricultural areas and undeveloped conservation easements, increasing habitat fragmentation. The SR-84/South of Livermore alignment alternative would have greater potential impacts to high value aquatic resources and threatened and endangered species than other alignment alternatives through the Tri-Valley (Livermore, Pleasanton, and Dublin) area.

There are several state and federal Endangered Species Act concerns associated with the SR- 84/South of Livermore alignment alternative. Due to the more undeveloped setting of this alignment alternative, there is a higher likelihood of adverse effects to protected species including California tiger salamanders, California red-legged frog, San Joaquin kit fox, Alameda whipsnakes, and listed branchiopods (fairy shrimp).

The SR-84/South of Livermore alignment alternative would by-pass the existing urbanized areas of Livermore, Pleasanton, and Dublin and is remote with respect to the existing BART and Altamont Commuter Express routes. As such, it would not be feasible to provide regional or longer-distance services which would provide convenient access to downtown Livermore or Pleasanton. Candidate station location options along this segment would not support transit-oriented development as well as downtown stations. Development of a transfer point with BART on the SR-84/South of Livermore alignment alternative would not be feasible without a significant extension of the BART line.

SR-84/I-580/UPRR Alignment Alternative was eliminated from further investigation because it would have high potential impacts to the natural environment and agricultural lands. This alignment alternative would have the same issues as presented for the SR-84/South of Livermore alignment alternative (see above).

Setec Ferroviaire Alternative

An Altamont Pass alternative is described in Exhibit C to comment letter O012, an April 25, 2010, report by Setec Ferroviaire entitled "Evaluation of an Alignment for the California High-Speed Rail Project Bay Area to Central Valley Segment." Although the Superior Court in the Town of Atherton case did not require the Authority to study further alternatives, we have carefully evaluated the proposed Altamont Pass alternative in this report. Response to comment O012-11 summarizes our observations on what we will refer to as the "Setec Alternative." The Setec Alternative described in Exhibit C involves: (1) Altamont Pass to Fremont; (2) routes through Fremont; (3) a San Jose connection from Fremont; (4) a crossing of the Bay at Dumbarton and line to a junction at Redwood City; and (5) and possible use of Highway 101 from Redwood City to South San Francisco.

The Setec Alternative makes certain trade-offs that do not offer any significant benefit above alignment and network alternatives studied as part of the 2008 Final Program EIR for Altamont. In most locations, the alignments share the same characteristics:

- There is a crossing of San Francisco Bay at Dumbarton.
- Newark and Fremont must are crossed using a rail or utility corridor
- Tunneling is required between Fremont and the I-680 corridor near Pleasanton/Sunol
- A new crossing of Altamont or Patterson Pass is made
- Tracy is crossed on/near a UPRR right-of-way (it is unclear in Exhibit C but the alignment shown on Plan 5, while it ends at I-580, it is aligned to meet the UPRR line running south of Tracy)

The alignment characteristic that differs between those studied in the 2008 Final Program EIR and Setec Alternative is how the alignments differ in their path in the area of Pleasanton and

Livermore. The CHSRA alignment alternatives follow existing transportation corridors, either I-680 and I-580 or the UPRR. The Setec Alternative attempts to follow a powerline corridor, but that corridor is in a rural and agricultural area. The impacts and benefits of the CHSRA alignments in urbanized areas are traded for the Setec Alternative's impacts and benefits of a rural alignment. Evidence of some of the obvious potential impacts of Setec Alternative's alignment have been presented above. There is no benefit that stands in favor of the entire alignment verses the Altamont alignments already considered in the 2008 Final Program EIR.

Given that the tangible differences between the Altamont alignments studied in the 2008 Final Program EIR and the Setec Alternative are small, we do not believe the Setec Alternative alters the basic comparison between Altamont Pass and Pacheco Pass network alternatives that serve both San Francisco and San Jose. We do not believe the Setec Alternative merits further consideration.

Alignment Profile Alternatives

The Authority Board committed in July 2008 to investigate profile alternatives to avoid and minimize potential impacts, including trench, tunnel, aerial, and at-grade. Although the Authority has rescinded its July 2008 program decision, the commitment to examine profile alternatives has been carried forward into the project level alternatives screening.

However, the precise alignment and profile options for the HST system in the Caltrain Corridor is being further evaluated and refined as a part of the ongoing preliminary engineering and project-level environmental review. Use of a trench or tunnel concepts in sensitive areas or where it is an appropriate and necessary design option is being further evaluated with more detailed study during this phase. Some of the criteria for the evaluation would include overall ground footprint, potential right-of-way (ROW) requirements, environmental impacts, constructability and construction methods, costs, as well as community cohesion (access across existing corridor). The process will also provide an opportunity for the communities and cities to comment and provide feedback.

Caltrain Service and Corridor Issues

Caltrain has stated that its future as a viable commuter rail system is dependent on funding associated with the HST. Voter approval of the State's first HST system, and the subsequent creation of the Peninsula Rail Program, will ensure the realization of these critical improvements to the Caltrain system in conjunction with the implementation of the HST. In addition, Caltrain will benefit from the creation of a fully grade-separate right of way, allowing trains to operate more safely be eliminating at-grade traffic and pedestrian crossings.

The PCJPB owns the Caltrain right-of-way. The Authority and PCJPB have negotiated a memorandum of understanding (MOU) to work together on the corridor and to develop a "single vision" for the corridor moving forward into the future. The MOU was approved by the California High Speed Rail Authority Board on March 5, 2009, and by the PCJPB on April 2, 2009. The purpose of this agreement is to establish an initial organizational framework whereby CHSRA and PCJPB engage as partners in the planning, design and construction of improvements in the Caltrain Rail Corridor that will accommodate and serve both the near-term and long-term needs of CHSRA intercity high speed rail service and PCJPB commuter rail rapid transit service.

Caltrain and high-speed trains must be able to operate on the same tracks at the same time. In the 2008 Final Program EIR a typical configuration was assumed consisting of the two inside tracks for HST and Caltrain express service operating at compatible speeds and the outside tracks for Caltrain local service and temporally separated freight service. The shared four-track system enables express service to pass local service at each station and maintains schedule reliability. The shared tracks also enable the HST to run fast express service between SF and Jose to achieve 30 minute travel times and provide high frequency service. The Federal Railroad Administration prohibits "mixed traffic" – operating standard American trains and lighter rail equipment on the same tracks. However, Caltrain has received a waiver from the FRA. To avoid collisions, Caltrain will use an enhanced signal system that includes federally mandated Positive Train Control to prevent trains from colliding with each other, with other vehicles or with fixed objects. In addition, Caltrain equipment will use the latest Crash Energy Management technology to distribute or "manage" the energy from a collision, protecting the passengers onboard the train. The waiver allows Caltrain to operate all passenger trains, whether diesel or electric, to run on the same tracks. The Authority will have to seek its own waiver, but the Caltrain waiver is a clear precedent that should help the Authority's waiver request succeed.

As noted in the 2008 Final Program EIR, Caltrain is viewed as complimentary feeder system to the HST system. The Program EIR identified shared stations in San Francisco at the Transbay Terminal, the Millbrae Caltrain / BART station (to serve SFO), a potential station at Palo Alto or Redwood City, Diridon Station in San Jose, and the Gilroy Caltrain station. This distribution of stations along the Caltrain corridor would enable a short trip from any Caltrain station to connect to the HST at a joint station, expanding convenient access to the HST along the Caltrain system.

Overall, the HST system would improve inter-modal connectivity with local and commuter transit systems. Prop 1A ensures that complementary rail capital improvements would be funded by a $950 million portion of bond funds. These funds must be allocated to intercity, commuter and urban rail systems and shall provide direct connectivity and benefits to the high-speed train system and its facilities or be part of the construction of the system.

Construction impacts associated with the implementation of the HST and improvements to the Caltrain infrastructure would be a topic analyzed at the project-level to create a plan to mitigate potential operational impacts to Caltrain's service during the construction period.