

SECTION 3.14 - HYDROLOGY AND WATER RESOURCES

1. GROUNDWATER IMPACT IN MOUNTAINOUS REGIONS AND TUNNEL SEGMENTS NOT DISCUSSED

Groundwater in the mountainous regions of the Bakersfield to Sylmar segment, between the points represented by the San Gabriel and Tehachapi Mountains is highly variable, affected by fracture permeability in rock units and local alluvial valleys that are relatively restricted in their extent. This is the area where the largest expanse of tunnels on the entire project is located. This type of impact has the potential to be significant. Currently, there is little discussion of this issue and any mitigation that may be available.

Bakersfield to Los Angeles

Groundwater (page 3.14-7). Groundwater in the mountainous regions between the points represented by the San Gabriel and Tehachapi Mountains is highly variable, affected by fracture permeability in rock units and local alluvial valleys that are relatively restricted in their extent. This is the area where the largest expanse of tunnels on the entire project is located. This type of impact has the potential to be extremely significant and currently little discussion is available and little in the way of mitigation could be developed.

The document mentions that it is impossible to determine which alternative would effect more groundwater resources. At the Program EIR level, however, the amount of tunneling could be compared and used as an indicator of the potential significance of this effect for each alignment (page 3.14-15).

2. METHOD FOR EVALUATING STREAM IMPACTS IS FLAWED

Use of the total number of linear feet of streams that may be impacted is an inappropriate measure of impact significance. The text indicates that the I-5 corridor has a higher potential to impact 30,000 linear feet of streams, while the SR 58 route would impact 60,000 linear feet. The report does not mention anything on the types of streams, flow rates, length of downstream impacts. An appropriate number for analysis might be stream crossings (perennial vs. intermittent or ephemeral). This impact could be quantified and could result in a number that could be calculated into acres.

B. METHOD OF EVALUATION OF IMPACTS

Quantitative Assessment (page 3.14-2 and -3) Acreage of surface waters and linear feet of surface waters measurement methodology has no relevance (second bullet on page 3.14-

2). Measuring the number of linear feet of streams within the analysis corridor has no value unless the number is for downstream impacts only.

3.14.4 Comparison of Alternatives by Region

Bakersfield to Los Angeles--High-Speed Train Alternative (page 3.14-15)

The number of linear feet of impacts to streams is a meaningless number in this analysis. The text indicates that the I-5 corridor has a higher potential to impact 30,000 linear feet of streams, while the SR 58 route would impact 60,000 linear feet. The report does not mention anything on the types of streams, flow rates, length of downstream impacts. An appropriate number for analysis might be stream crossings (perennial vs. intermittent or ephemeral). This impact could be quantified and could result in a number that could be calculated into acres.

3. I-5/GRAPEVINE HST ALIGNMENT WITH POTENTIAL IMPACT TO LAKES

Hydrology and Water Resources by Region (page 3.14-15). The discussion indicates that the SR 58 HST alignment would not encroach on any lakes, whereas both of the I-5 Tehachapi alignment(s) would potentially encroach on 18 ac (7 ha) of lakes including Castaic Lake in the Castaic Valley of the Tehachapi, and Upper Van Norman Lake south of the San Fernando Pass. The existing conditions section does not mention Castaic Lake and the impacts discussion fails to mention Pyramid Lake.

4. THE HYDROLOGICAL RESOURCES TECHNICAL REPORT INCLUDES VARIOUS INCONSISTENCIES

Section 2.2.2 State Regulations. This section does not reflect the latest CDFG Stream Alteration regulations. (page 9)

Section 2.3.4 Groundwater - There is no discussion of aquifers in section other than to mention that there are three major aquifers types in the region. The potential to intercept groundwater aquifers might be a factor in differentiating between the tunneling impacts of the I-5 Corridor and the SR 58/Antelope Valley Corridor.

Table 2.3-1 Summary of Affected Area for Hydrology and Water Quality. This table has little value unless some explanation and documentation as to how these impacts were assessed is provided. Also, It is misplaced and should be in Section 3.

SECTION 3.15 - BIOLOGICAL RESOURCES AND WETLANDS

Confidence in the accuracy of the assessment of biological resources and wetlands impacts in the Bakersfield to Sylmar segment is lacking due to inherent weaknesses in the database coverage and methodology used in the DEIR/S. These flaws are described in the specific comments that follow.

1. VARIABLE STUDY AREA WIDTHS REQUIRE FURTHER JUSTIFICATION

The biological resources study area was 1,000 ft in urbanized areas, 0.25 miles in undeveloped areas, and 0.50 miles in sensitive areas. The criteria for urbanized, undeveloped, and sensitive is not defined in the DEIR/S. The DEIR/S goes on to state that the study area in the Bakersfield to Los Angeles region was 0.5 miles, which was supposed to be used in sensitive areas. The document further states that the broader study area was used due to the Tehachapi mountain crossings. The urbanized area study area does not appear to have been used in the highly urbanized area of Los Angeles. The use of each buffer area differed from segment to segment based upon the judgment of the technical report team. This judgment cannot be reproduced by other reviewers, and a method that can be reproduced or evaluated equally should be developed.

2. DATA SOURCES ARE UNRELIABLE

The data used to compare the potential impacts to biological resources in the DEIR/S was limited to available digitized data that was dated or inherently unreliable. These data sources are described below.

Data sources used to determine which sensitive vegetation communities, and special status plant and wildlife species may occur within the buffer zone were limited to the California Gap Analysis and California Natural Diversity Database (CNDDDB). It should be noted that USFWS designated critical habitat was reported for other HST sections, but not for the Los Angeles-Bakersfield section, although it is sure to include areas with such designation. Additionally, Appendix 3-15C states that the California Native Plant Society (CNPS) database was also not included in the analysis since digital GIS data was not available.

3. NO FIELD VERIFICATION OF CALIFORNIA GAP ANALYSIS DATA WAS PROVIDED

California Gap Analysis - The California GAP Analysis project was conducted by the University of California, Santa Barbara in coordination with the USGS Biological Resources

Division. The maps were created through photointerpretation of digital satellite data guided by overlays of existing vegetation maps, land use maps, and forest inventory data. Unlike the NWI maps, specific standards for resolution and scale, accuracy, and format were set. However, it should be noted that no field verification was conducted.

This data set was used in the EIR/S to determine what sensitive vegetation communities exist within the buffer area. Sensitive vegetation communities include coastal sage scrub, willow riparian woodland, and alluvial fan sage scrub that could require mitigation for impacts under CEQA. The maps are expected to provide a regional context for vegetation and habitat, but may not provide information at a suitable scale for basing alignment recommendations or decisions on.

4. LIMITATIONS OF RELIANCE UPON CNDDDB DATA BASE

CNDDDB - The CNDDDB database is an inventory of special status habitats, plants, and wildlife. The CNDDDB records are submitted by biologists who observe the species during surveys, or are historical records. Therefore, the areas that have been surveyed for several projects or large projects, or are considered biologically sensitive would have more recorded occurrences of sensitive species.

Each occurrence in the CNDDDB database is recorded on a USGS 7.5-minute quadrangle, which encompasses an area of 49 to 70 square miles. In many segments of the HST alignments, an area this large would include several habitat types and elevations. The CNDDDB database lists the habitat type for each species, and often includes a detailed description of its location, however, it does not appear that these factors were taken into consideration during the preparation of the DEIR/S.

As shown in Figure 3-15-05, the CNDDDB GIS data contains large polygons of different shapes that apparently depict threatened and endangered species habitat. How these polygons are designed based upon submitted records is not explained.

5. DIFFERENT WETLAND DATA SOURCES USED IN OTHER SEGMENTS

The data used to calculate the amount of jurisdictional waters resources within the buffer area was limited to the National Wetland Inventory maps and United States Geological Survey (USGS) topographic maps. It should be noted that different sources of data were used in each segment. For example, data sources used in the San Diego to Inland Empire segment included Thomas Brothers Guide maps and USFWS vernal pool maps.

6. TOPOGRAPHIC MAP SOURCES USED FOR WETLANDS IDENTIFICATION ARE DATED

National Wetlands Inventory Maps - The U.S. Fish and Wildlife Service (USFWS) created the NWI maps, which are provided on a USGS 7.5-minute quadrangle base. The metadata provided with the maps clearly states that the NWI does not show all wetlands or riparian areas since the maps are derived from aerial photo-interpretation of maps of varying scale and quality, and dated between 1971 to 1997. These aerial photos include older 1970s-era black and white photography at a scale of 1:80,000 and more recent color infrared photography. The maps are inventoried using different techniques depending upon the interpreter, and no field verification was conducted. The USFWS clearly states in the metadata that information provided by the NWI is limited and users should not rely solely on the NWI maps, but consult other information, such as soil survey reports and local and state government wetland information.

Additionally, 24 of the quadrangles that comprise the Los Angeles to Bakersfield study area were not available. Therefore, the final analysis may not include wetland data for approximately one-half of the study area.

USGS Topographic Maps -According to Appendix 3.15-C, a manual review of USGS topographic maps were used to calculate the linear feet length of perennial, intermittent, and ephemeral drainages within the study area. USGS maps are based upon information compiled in the 1960's and 1970's with some updates in the 1980's.

7. INAPPROPRIATE METHODS OF EVALUATING IMPACTS TO STREAMBEDS AND WATERBODIES

Reporting potential impacts to streambeds in linear feet is not appropriate since these impacts are permitted by resource agencies based upon acreage of impacts. The different streambed types were reported in the Technical Report, but not used in the EIR/S alternatives comparison table, which includes all streambed types as "non-wetland waters".

Because the NWI maps included any ponds, rivers, and lakes that were visible in the aerial photographs used, many of the waterbodies within the buffer areas may have been counted twice in the analysis. They would have been counted first in acre-feet from the NWI maps and then in linear feet from the USGS topographic maps.

8. SPECIFIC WEAKNESSES IN METHODS OF EVALUATION

Specific comments concerning the methodologies used to evaluate biological resources impacts are provided below. The comments highlight the difficulty in drawing reliable impact conclusions from the data and methods relied upon.

3.15.1 REGULATORY REQUIREMENTS AND METHODS OF EVALUATION

B. METHOD OF EVALUATION OF IMPACTS (PAGE 3.15-1 AND -2)

Wetlands were determined from NWI maps. The report admits that the information was incomplete in some areas, but does not specifically spell out where areas of deficiency occur. This section states that detailed information should be carried forward into the next phase of analysis.

No field studies were completed and all biological activity is based on database information. That means that if a resource were somewhere within a search area, the species or vegetation type would be represented in the data. This could over represent impacts in some areas if there is a high biological diversity in the area. The SR58/Soledad Canyon Route is such an area with multiple zones that could or could not contain sensitive species.

The document states that “. . . the identification of a potential impact on a specific resource is intended to be conservative and in some instances may be an overstatement, because neither habitat that is sensitive or species of concern may be found in or near the footprint of the proposed corridor or actual alignment.”(page 3.15-3) Again they recommend this analysis at the next level of analysis.

3.15.2 AFFECTED ENVIRONMENT

The study area for the I-5 corridor is defined as 0.5 miles on either side of the highway and rail corridors and around stations (page 3.15-4). We presume this is for both the I-5 and SR 58 segments. This number potentially over-inflates impacts. It is impossible to tell if the overrepresentation is equal on both routes due to the different nature of the terrain and routes.

3.15.4 COMPARISON OF ALTERNATIVE BY REGION

C. BAKERSFIELD TO LOS ANGELES

General Comment

The High-Speed Train Alignment Option Comparison states that the SR-58/Soledad Canyon route would have a slightly greater potential for impacts on biological resources than for the I-5 route. This determination appears to have been based upon the fact that the SR-58/Soledad Canyon alignment had a higher total number of special status species and more linear feet of waters of the U.S. than the I-5 alternative. Special status species include federal and state listed threatened and endangered species, species of special concern, and CNPS 1B listed plants. As the names and status of these species is not provided, it is not possible to determine which alignment has the highest number of state and federally listed threatened and endangered species. Threatened and endangered species have a higher level of sensitivity and protection than species of special concern and CNPS 1B listed plants.

The two routes are roughly equivalent on impacts to biological resources. However it is difficult to know within the report what species are potentially impacted and where. Based on the information provided, it is impossible to make any kind of meaningful comparison. On page 3.15-31 the document states that alignments could be adjusted to reduce impacts. This would be the case in most instances. In fact, the footnote on page 2-73 of the DEIR/S indicating the SR-14 alignment has been carried forward along with the Soledad Canyon alignment suggests that the ability of this alignment variation to further reduce biological resource impacts has not even been considered in Section 3.15 at all. The DEIR/S also states that the broad range of information may not accurately correspond to actual field conditions.

The SR-58/Soledad Canyon route includes more than 700,000 linear feet of streambed than the I-5 alignment. Much of this disparity is due to the fact no avoidance or minimization methods were assumed for the SR-58 Soledad Canyon route, but the segments of the I-5 alignment that involved tunneling were assumed to avoid all impacts to jurisdictional waters and wetlands without addressing the potential for biological impacts resulting from dewatering. The comparison of linear feet of potential streambed impacts is meaningless, since impacts are reported in acres and the width of streambeds and riparian corridors differ significantly. Additionally, there is a huge unexplained disparity between the linear feet of non-wetland waters (streambeds) reported in the Biological Resources section and the linear feet of streams reported in the Hydrology and Water Resources section. However, both sections reference 1:24,000 scale (7.5 minute) USGS topographic maps as the source of data.

LEDPA Definition

Because construction of the HST project will involve temporary and permanent fills in waters of the U.S., issuance of a permit under Section 404 of the Clean Water Act from the U.S. Army Corps of Engineers (Corps) will be required. In accordance with the Clean Water Act, the Corps "cannot permit a discharge of dredged or fill material into waters of the U.S. if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences." The least environmentally damaging practicable alternative is known as the LEDPA.

When an individual 404 authorization is requested from the Corps, the LEDPA is determined through the preparation of an alternatives analysis. The alternative analysis must "rigorously explore and objectively evaluate" all reasonable and practicable off- and on-site alternatives capable of achieving the purpose of the proposed activity. *Practicable* is defined by *cost, technical and logistic factors*. The Corps has developed specific criteria to evaluate practicability of alternatives. As a consequence, the project must be:

- Environmentally Sensitive
- Logistically Feasible.
- Feasible by Engineering Practices/Standards.

The Biological Resources section of the DEIR/S needs to provide substantial evidence to support identification of the LEDPA for the HST system preferred corridor and alignments in the Final Program EIR/S.

9. COMMENTS ON METHODS USED IN THE BIOLOGICAL RESOURCES AND WETLANDS TECHNICAL REPORT

Biological Resources General Comments

The specific starting point for the Bakersfield to Los Angeles Segment of the report does not start at the same location in Bakersfield for each three routes. The lack of a common start point could have a localized difference on effects in the Sacramento to Bakersfield Segment Studies.

The Biological Resources section of the EIR/S compared the number of sensitive species that could occur within each alignment. Twenty-three (23) species were recorded for the SR58/Soledad Canyon alignment and thirteen (13) to fourteen (14) species were recorded for the I-5 alignment, depending upon the segment chosen (Union Station or Wheeler Ridge). However, both of the alignments are divided into several segments that were

analyzed separately in the technical document. This resulted in multiple counts of the same species for each alignment. When analyzed by alignment, the potential impacts to special status species is summarized below:

	I-5 Alignment		SR58/Soledad Canyon
	Union Station Segment	Wheeler Ridge Segment	
Special Status Plants	5	3	11
Special Status Wildlife	8	9	9
Total Number of Special Status Species	13	12	20

The analysis of potential impacts to special status species in the EIR/S is limited to a comparison of the total number of species, which as demonstrated above, is reduced when the entire alignments are compared rather than segments. However, a more suitable analysis would be a comparison of potential impacts to the most sensitive species, indicated by its state and federal status and the level of probability for it to occur. A species may be protected at different levels at the state and federal level, or more commonly, included on the CNPS list, simultaneously. Therefore, the table below includes a count based upon the highest level of protection granted for each species.

	I-5 Alignment		SR58/Soledad Canyon
	Union Station Segment	Wheeler Ridge Segment	
Federal or State Threatened or Endangered Species	9	8	10
Federal or State Species of Special Concern	4	4	7
CNPS List 1 Plant Species	0	0	2
CNPS List 3 Plant Species	0	0	1

It should be noted that one plant species, Parry's spineflower, included in the SR58/Soledad Canyon alignment is only included on the CNPS List 3 species (page 27). This designation indicates that CNPS needs more information on the plant. Therefore, it may not be appropriate to include this species in the list.

The technical documents include the types of habitat and elevations associated with each species and their potential to occur within the alignment from low to high. The potential to occur was based upon records of occurrence in the CNDDDB and CNPS databases and occurrence of suitable vegetation based upon the CNDDDB Gap Analysis maps. These records often consisted of undated herbarium records that ranged from the 1920's to the mid-1990's. More recent information provided by the CNPS online inventory indicates that many historic occurrences of Bakersfield smallscale, Bakersfield cactus, Lancaster milk vetch, San Joaquin woollythreads and San Fernando Valley spineflower have been extirpated. No field work was conducted to confirm that suitable soils, vegetation, or other habitat constituents exist. Additionally, the elevations at each segment of the alignment were not compared to the elevational range associated with each species, as is common with biological reviews, especially to determine the potential occurrence of plant species. However, based upon the designations assigned in the technical document, the number of threatened or endangered species that could occur within each of the alignments are comparable as indicated in the table below. The differences between the SR58/Soledad Canyon alignment and I-5 alignment would not appear to be substantial enough to justify selection of one alignment over another on the basis of biological resources considerations, at the Program EIR level of review.

	I-5 Alignment						SR58/Soledad Canyon		
	Union Station Segment			Wheeler Ridge Segment			Low	Mod.	High
	Low	Mod.	High	Low	Mod.	High			
Federal or State Threatened/ Endangered	1	4	4	1	4	3	1	4	5
Federal or State SOC	0	1	3	0	1	3	0	0	7
CNPS List 1 Plant Species	0	0	0	0	0	0	0	1	1

Section 3.3 Impacts Assessment (page 62) talks about the lack of sensitive area and indicates that buffers examined varied from 305 meters to 0.4 kilometers. Nowhere does the report indicate where the changes occur and if the changes shifted back and forth along the routes.

The Technical Document states that . . . "Where feasible, construction type was factored into the impacts assessment. Because the segment type and construction type occurred in

two separate GIS layers, it was not possible to conduct the impacts analysis on both segment and construction type. That is, we could quantify impacts of each segment or each construction type from Bakersfield-to-Los Angeles, but not both. To remedy this situation, biological resources from the CNDDDB were overlain on construction type to determine which of these resources occurred in tunnel and noting which construction segment or segments the tunnel areas corresponded to. Then, for a given segment, if all occurrences of a particular resource (sensitive plant community, for example) were only identified within tunnel areas, then impacts to this resource were assumed to be non-existent. If some occurrences of a particular resource were identified in tunnel areas and some in areas of a different construction type (cut and fill, for example), then qualifying statements were added to Section 4.0 identifying that impacts to the resource would be reduced due to tunneling where some of these resources were located. Acreages of plant communities occurring within tunnel sections for a given segment were estimated by taking the fraction of the acreage of the plant community polygon occurring within the tunnel segment. However, this was not done for jurisdictional waters and wetlands due to the nature of the database. For the purposes of this analysis, it was assumed that tunneling would not result in impacts to biological resources within tunnel sections because the tunnel will be lined and sealed as construction with a tunnel boring machine takes place, with no impacts on groundwater levels and no potential for dewatering impacts on surface resources. Some surface disturbance associated with tunnel portal construction would occur, but this disturbance would only occur for a minimal distance (approximately 100 feet, for instance) at the beginning and end of the tunnel sections (page 63)."

How does this take into account the roads leading to tunnel segments, the portal areas which we presume are wider than the construction ROW and the spoils from tunneling? This could be a significant issue when comparing the greater length of tunneling associated with the I-5 Tehachapi Corridor as compared with the SR58/Soledad Corridor.

The report states that"For the purposes of this analysis, it was assumed that tunneling would not result in impacts to biological resources within tunnel sections because the tunnel will be lined and sealed as construction with a tunnel boring machine takes place, with no impacts on groundwater levels and no potential for dewatering impacts on surface resources." (page 63). [This is a huge assumption to make considering results of some of the studies for tunneling under the Cleveland National Forest associated with the MWD Inland Feeder tunneling project.]

Section 4.3.1 Impacts to Biological Resources from the I-5 Tehachapi Corridor (page 83) indicates that the corridor construction and operation would impact Santa Ana sucker, San

Joaquin antelope squirrel, San Joaquin kit fox, California condor, and unarmored threespine stickleback.

Depending on the exact location of the at grade sections at the Grapevine, there is a potential for impacting the Tehachapi slender salamander as well. Specimens of the salamander have been observed in the Grapevine Creek vicinity of the northbound runaway truck ramp along I-5. The Modal Alternative also indicates potential impacts to the arroyo toad. The arroyo toad could also be impacted by construction of the HSR alternative in this area of the I-5 corridor.

SECTION 3.16 - SECTION 4(F) AND 6(F) RESOURCES (PUBLIC PARKS AND RECREATION)

This section of the DEIR/S indicates the SR 58/Soledad Canyon alignment alternative (Antelope Valley alignment) within the Bakersfield to Sylmar segment is environmentally superior with respect to 4(f) and 6(f) resources, and provides a clear rationale for its selection over either of the I-5/Tehachapi alignments (Wheeler Ridge and Union Station).

1. SECTION 4(F) AND 6(F) RESOURCE REQUIREMENTS ARE IDENTIFIED

3.16.1 REGULATORY REQUIREMENTS AND METHODS OF EVALUATION

The requirements for this section of the Department of Transportation Act of 1966 spells out procedures for preserving the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites.

Section 4(f) (c) states that "The Secretary may approve a transportation program or project (other than a project for a park road or roadway under Section 204 of Title 23) requiring the use of publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, state, or local officials; or land of an historic site of national, state, or local significance,(as determined by the federal, state, or local officials having jurisdiction over the park, area refuge, or site) only if,

- (1) There is no prudent and feasible alternative to using the land; and
- (2) The program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use.
(page 3.16-1)

Section 6(f) of the Land and Water Conservation Fund Act has similar provisions that prohibit the conversion to non-recreational purposes of property acquired or developed with these grants without the approval of the U.S. Department of the Interior's (DOI) National Park Service. Section 6(f) directs DOI to ensure that replacement lands of equal value (monetary), location, and usefulness are provided as conditions to such conversions. (pages 3.16-1 and -2)

2. ANTELOPE VALLEY ALIGNMENT MINIMIZES IMPACTS TO 4(F) AND 6(F) RESOURCES

3.16.4 COMPARISON OF ALTERNATIVES BY REGION--BAKERSFIELD TO LOS ANGELES

High-Speed Train Alignment Options Comparison

This section clearly indicates that the SR 58/Soledad Canyon Alignment would result in the fewest potential impacts (one) (page 3.16-9). The general comment in Section 3.16-1 suggests that the I-5 corridor might not meet the intent of Sections 4(f) and 6(f) and the alternative route (SR 58) would be the preferred alternative.

The text on page 3.16-4 in this section mentions Vasquez Rocks County Park, however the Map (Figure 3.16-2) does not show the park location.

3.16.5 Impact Avoidance Strategies, Including Alternatives Screened from Further Consideration

Page 3.16-10 states that “Based on the overall screening evaluation, several segments in the Bakersfield to Los Angeles region were removed from further consideration, in part due to potential impacts on Section 4(f) and 6(f) resources (see Figure 3.16-2). The figure references show no removal of impacts. The routes are certainly within several 100 feet of the resources on the I-5 Tehachapi Corridor. The SR 58 Route would have significantly fewer impacts to Section 4(f) and 6(f) resources and thus would be the preferred alternative.

3. SECTION 4(F) AND 6(F) TECHNICAL EVALUATIONS SUPPORT SELECTION OF THE ANTELOPE VALLEY ALIGNMENT

Bakersfield to Los Angeles Section 4(f) and 6(f) Technical Evaluations

This section is very favorable to the SR58/Soledad Canyon Routing. Page 18 of the document states that “As shown in Table 3.1-2, the HST segment on Wheeler Ridge/I-5: Tehachapi would result in high potential for use of eight Section 4(f) resources; medium potential for constructive use of ten Section 4(f) resources and high potential for use and constructive use impacts on NRHP listed and eligible resources. The Union Avenue/I-5: Tehachapi segment would result in substantially reduced impacts with high potential for use of five Section 4(f) resources; medium potential for constructive use of two Section 4(f) resources and high potential for use and constructive use impacts on NRHP listed and eligible resources.”

Page 18-19 further states that “SR58/Antelope Valley/Palmdale Station Siding/Soledad Canyon alignment would result in the least impacts, with high potential for use of only one

Section 4(f) resource; high potential for constructive use of one Section 4(f) resource; medium potential for constructive use of one Section 4(f) resource and medium potential for use and constructive use impacts on NRHP listed and eligible resources. Based on the potential for impacts on Sections 4(f), 6(f) and 106 resources, the SR-58/Antelope Valley/Palmdale Station Siding/Soledad Canyon alignment would result in the least impacts of the HST alignments considered for the Bakersfield to Sylmar segment”.

Table 3.2-1 indicates that resources would be at varying distances from the three I-5 routings. The Wheeler Ridge Corridor would have the highest potential impact to Fort Tejon State Historical Park. The I-5 Tehachapi Corridor would have high potential impact to Hungry Valley State Vehicle Recreation Area; Pyramid Lake; and the Angeles National Forest. The Table states that the impacts would be adjacent; however impacts at Pyramid Lake; the Angeles National Forest; and Santa Clarita Woodlands Park and Towsley Canyon would be across lands rather than adjacent. It appears from the maps that tunneling would not occur in these localities.

Table 3.3-1 fails to mention the types of NRHP and CHL Sites on the Wheeler Ridge Route. The Table also fails to mention Fort Tejon State Park as either an NRHP or CHL site.

Section 3.5 (misabled as Section 6.5) on Avoidance Alternatives or Reasons For No Prudent Or Feasible Alternative For 4(f) Or 6(f) Use. This section spells out the criteria for 4(f) and 6(f) classification. Based on the criteria, the I-5 Tehachapi Corridor would not be selected because the SR58/Antelope Valley/Soledad Valley route would be less impacting. Table 3.4-1 provides a clear summary of the impacts.

SECTION 3.17 - CUMULATIVE IMPACTS EVALUATION

1. NO ANALYSIS OF CUMULATIVE IMPACTS OF ALTERNATIVE HST ALIGNMENTS IS PROVIDED

This section provides only a superficial discussion of cumulative impacts for the System Alternatives, and provides no information on the cumulative impacts of HST alignment alternatives. Appendix 3.17a provides information on cumulative projects on the SR 58 corridor, but nothing for any of the other alignments between Bakersfield and Los Angeles.

2. THE CUMULATIVE ANALYSIS DOES NOT MEET THE INTENT OF CEQA FOR A PROGRAM LEVEL EIR

The analysis of system alternatives cumulative effects for each impact topic is quite brief. The discussion indicates on page 3.17-1 that cumulative impacts are addressed separately for each environmental topic *as appropriate for a program-level environmental analysis*. However, review of these topical sections indicates these impacts are typically not identified in the topical text sections (i.e. with a heading), and cannot be readily distinguished from the general analyses of 'environmental consequences'. Contrary to the intent of CEQA Guidelines 15168(b)(2), the Program EIR does not reflect a thorough consideration of cumulative effects associated with the HST alignment alternatives.

3. THE CUMULATIVE ANALYSIS DOES NOT PROVIDE ANY DISCUSSIN ON THE HST ALTERNATIVE IMPACTS TO AIR TRAVEL

The DEIR/S states that potential improvements to existing highways and airports under the Modal Alternative would worsen congestion on surface streets between intercity highways and airports, resulting in adverse cumulative traffic impacts. The document presents no justification of this finding. Indeed, there is no mention of the Modal Alternative's potential impact on air travel at all.

The document also contains no discussion of the HST Alternative's potential impacts on air travel within California. This omission compares with the statement that the HST Alternative could result in 38.5 million fewer long-distance auto passenger trips annually than under the Modal Alternative. The effect of the HST on air travel demand is a key "objective" of the project, and one that is sure to generate intense controversy. The environmental document must provide a thorough analysis and discussion of this issue.

The derivation of data regarding changes in travel by mode on page 3.17-2 is not explained or discussed. Even with reference to Section 3.1 and 3.2, a full No-Project trip table cannot

be constructed, and therefore it is impossible to verify or validate the stated impacts of the HST Alternative on highway and air travel.

CHAPTER 4: COSTS AND OPERATIONS

This brief chapter presents a highly summarized version of the information contained in the Statewide Operations Technical Report and Statewide Cost Technical Report. For the analysis of the high speed train Alternative (Section 4.2.2), it is indicated that the system of alignment and station options that represent the “highest return on investment system”, as presented in the Business Plan, is represented in the cost data and ranges presented. As with other sections of the DEIR/S, it is unclear specifically which combination of alignment and station options this represents.

SECTION 4.2 - CAPITAL COSTS—MODAL ALTERNATIVE (4.2.1)

1. THE METHODS USED TO DETERMINE SPECIFIC NEEDS FOR THE MODAL ALTERNATIVE HIGHWAY AND AVIATION COMPONENTS ARE NOT ADEQUATELY DESCRIBED

A. HIGHWAY COMPONENT

It is not clear whether or how costs were compared for urban solutions involving either structure or acquisition of additional right-of-way. The methodology used to determine specific needs for new roadway facilities is not adequately described, nor are the calculations underpinning the results. The information presented in Chapter 2, Appendix 2-D, Appendix 2-F, and Appendix 4-A does not adequately address these issues, either. See other comments for Appendix 4-A.

B. AVIATION COMPONENT

The methodology used to determine specific needs for new runways, gates, and other facilities at specific airports is not adequately described, nor are the calculations underpinning the results. The information presented in Chapter 2, Appendix 2-E, Appendix 2-G, and Appendix 4-B does not adequately address these issues, either.

See other comments for Appendix 4-B.

2. HST UNIT COSTS ARE QUESTIONABLE

Capital Costs--High-Speed Train Alternative (4.2.2)

A. UNIT COST ESTIMATES

On page 4-3, the statement, "Many of the cost elements were reviewed by HST owners and operators as part of the peer review of the corridor evaluation study commissioned by the Authority (DE-Consult Deutsche Eisenbahn-Consulting GmbH 2000)." does not appear to be correct, based on independent checking with European and Japanese high-speed rail operators. In addition, many of the unit costs have been questioned by an independent consultant retained by the City of Palmdale to review Project tunneling assumptions and analysis (Geodata, SPA).

B. ADJUSTMENTS TO UNIT COSTS

The description of the “tunneling conference” held in December 2001 strongly implies that participants gave explicit guidance regarding particular unit costs. The tunneling conference summary document does not substantiate this implication. The conference dealt generally with geologic conditions, constructability, and alignment selection, and most of the non-US participants were not in a position to evaluate the reasonableness of US construction costs.

SECTION 4.3 - OPERATIONS AND MAINTENANCE COSTS-- HST ALTERNATIVE (4.3.2)

3. O&M UNIT COSTS REQUIRE INDEPENDENT VERIFICATION

F. OPERATIONS AND MAINTENANCE ANNUAL COSTS

The sum of all unit costs in Tables 4.3-2 and 4.3-3 equals \$26.01/train-mile. This is approximately half (50%) of the cost now be used for planning conventional rail service in northern California. It is unclear why there is such a large discrepancy, and careful review of these costs by a third party should be undertaken.

In Table 4.3-3 (page 4-7), it appears that the heading of the second (middle) column should not contain the word "Annual".

4. A COMPARISON OF ACTUAL OPERATING COSTS OF ALTERNATIVES IS NEEDED

Operations and Maintenance Costs--Operating Cost Comparison of the Alternatives (4.3.3)

The comparison of costs as presented in this section (Table 4.3-4) is misleading, in that costs are limited to "infrastructure maintenance" only. The DEIR/S does not provide any comparison of actual *operating* costs for the alternatives, and thus it is not possible to make a total O&M cost comparison among them.

Review of Appendices 4-A, 4-B and 4-C (Capital Costs)

5. THE REPORT DEFINING ROADWAY PROJECTS NEEDS TO BE MADE AVAILABLE

Appendix 4-A (Capital Costs: Highway Element)

The *System Alternatives Definition Report* cited on page 4-A-4 has not been provided by the Authority for review. This report is critical in understanding how the specific roadway projects were defined. Without it, the reported cost of \$66 billion cannot be checked for reasonableness and accuracy. In particular, it appears that a standard widening of the entire length of facilities such as I-5 and SR-99 was used, rather than selective widening in urban/congestion locations. This assumption could greatly bias the final cost estimate, and cannot be evaluated with the information provided in either the DEIR/S or appendices.

The right-of-way cost definitions are not consistent between (1) the Highway element and (2) the Aviation and HST elements (Appendices 4-A, 4-B, and 4-C, respectively).

6. AVIATION ELEMENT COST ANALYSIS APPEARS TO ASSUME NO RESIDUAL CAPACITY IN PRESENT SYSTEM

Appendix 4-B (Capital Costs: Aviation Element)

The analysis appears to assume that no residual capacity at all exists in the present system – landside or airside; all projected growth is translated into additional capacity with associated costs. The basis for this very important assumption is not provided, and it would appear to be incorrect in at least some locations.

Assumption of need to acquire land for runways (1 mile x ~2,100 ft) is undocumented and appears to be excessive.

7. HIGHWAY, AVIATION AND HIGH SPEED TRAIN ALTERNATIVE 'CONTINGENCY' AND 'SOFT COST' FACTORS APPEAR TO BE UNDERSTATED (APPENDICES 4-A, 4-B, 4-C)

It appears that “contingency” (25%) and most “soft cost” factors (preliminary engineering – 2.5%, final design – 5%, design management – 5%, construction management – 5%, agency and force account costs – 2%, and risk management (insurance) – 6%) are significantly understated. At this point in project development, contingency should be at least 35-40%. The following soft cost factors are too low, as well: final design, design management, construction management, and force account costs.

Financing costs are not included anywhere in the DEIR/S or in any of the cost technical reports. A financial analysis prepared in 1999 apparently has not been updated.

Comments on the Statewide Operations Technical Report and Statewide Cost Technical Report follow.

Operations Technical Report (Statewide)

1. There is no comparative analysis of Bakersfield-Sylmar alignment alternatives (Antelope Valley and I-5) provided in this report.

Cost Technical Report (Statewide)

1. There is no place in the Cost Report where all HST costs are totaled. Thus, it is not possible to understand the basis for the \$33-37 billion estimate presented in the DEIR/S Summary on page S-5.
2. The tunneling cost figures in the spreadsheets do not agree with those in the main Cost Report. As well, the costs in provided Cost Report do not agree with those in the DEIR/S.
3. The segment lengths provided in the Cost Report do not agree with those in the DEIR/S.
4. There are no references to maps showing alignment segments in the Cost Report. It is difficult, if not impossible, to understand the cost figures presented in Appendix E and Appendix F without being able to refer to alignment maps.
5. Aside from a single mention of \$44 million per trainset (Cost Report, Appendix E), there is no accounting of vehicle costs (locomotives, coaches, other vehicles and equipment) anywhere in the Cost Report or DEIR/S.
6. Right-of-way costs used in the analysis appear to be significantly understated. The figures used are equivalent to \$1.5 million/acre for "dense urban," or \$34.44 /square foot, and \$160 thousand/acre for "suburban," or \$3.67 /square foot.
7. Contingency (25%) and most "soft cost" factors (preliminary engineering – 2.5%, final design – 5%, design management – 5%, construction management – 5%, agency and force account costs – 2%, and risk management (insurance) – 6%) are significantly understated. At this point in project development, contingency should be at least 35-40%. The following soft cost factors are too low, as well: final design, design management, construction management, and force account costs. In particular, the force account provision is off by an order of magnitude with respect to costs involving the railroads.
8. Financing costs are not included anywhere in the DEIR/S or in any of the cost technical reports. A financial analysis prepared in 1999 apparently has not been updated.
9. Operations and maintenance costs are not described, explained, or discussed in the DEIR/S. The discussion in the Cost Report provides only limited detail regarding the buildup of costs. The comparison of so-called "infrastructure costs" does not present a complete view to analysts and decision-makers. Though not stated directly, the total estimated annual O&M cost for the HST totals more than \$700 million (\$703.2

million). There is no attempt to compare this cost with total costs associated with the "No Project" and "Modal" alternatives. Further, it is difficult to comprehend how maintenance of way for 700 miles of highly-engineered, low-tolerance HST facilities (\$76.5 million / year) could be only slightly more than half (56%) of the cost of maintaining 740 linear miles of four-lane concrete highway (\$135.6 million / year). In addition, an annual insurance premium of 0.1% of the value of the completed facility also appears low, as does an annual station maintenance budget of \$500 thousand per station.

CHAPTER 5: ECONOMIC GROWTH AND RELATED IMPACTS

This section provides comments on Chapter 5: Economic Growth and Related Impacts and the background technical report by Cambridge Systematics entitled: *Economic Growth Effects of the System Alternatives for the Program Environmental Impact Report/Environmental Impact Statement*. (Cambridge report) These documents were reviewed 1) to determine consistency with CEQA requirements for discussion of growth-inducing effects (CEQA Guidelines Section 15126.2 (d)), 2) to determine the basis and source of information in support of the broad conclusions identified for 'growth induced impacts' attributable to the I-5 and SR-58/Soledad Canyon Corridor (Antelope Valley) alignments in Section 6.4.1 of the DEIR/S, and 3) to determine if a fair and accurate assessment of regional growth attributable to HST service to the Antelope Valley has been presented

1. THE DEIR/S INCLUDES NO DISCUSSION OF GROWTH-INDUCING EFFECTS (PER CEQA GUIDELINES SEC. 15126.2(D))

Chapter 5 makes no reference to its intent to comply with this provision of the Guidelines. However, the discussion included would appear to comply *at the System-level* with the intent of this section of the Guidelines.

2. THE DOCUMENTS CONCLUDE, BASED SOLELY ON AN ANALYSIS OF INTER-COUNTY TRIPS, THAT THE PALMDALE DESIGN OPTION WILL REDUCE ECONOMIC BENEFITS STATEWIDE.

The analysis in these documents predicts that (in comparison to the base HST Alternative) the Palmdale Design Option will result in a statewide reduction of 14,000 jobs and 22,000 people due to the longer HST travel times associated with this alignment. The analysis predicts that 60 percent of this decrease will occur in Southern California and most of the remainder in the Bay Area. However, the analysis also predicts that the Palmdale Design Option will result in an additional 25,000 people and 15,000 jobs (in comparison to the No Project Alternative) for the Antelope Valley. In other words, the Palmdale Design Option will increase economic growth in the Antelope Valley at the expense of decreases in economic growth in LA County, Southern California and statewide.

The background for these finding is as follows:

Economic activities (including employment, productivity, population and urbanization) stemming from construction and operation of the HST are analyzed in the Cambridge Report. Analysis is conducted using five separate regions of the state—four of which are traversed by the HST and one termed merely “rest of State.” The level of detail is on a County level. Current population, employment and urbanized land area are cited for 21 of the State’s 58 counties (DEIR/S section 5.2.1 pp 5-1 and 5-2).

Sophisticated macroeconomic simulation models were used including Regional Economic Models, Inc (REMI), a business attraction model, an employment allocation model and a residential spatial allocation model. Eight specific growth parameters were projected (see DEIR/S page 5-6). In general, the analysis predicts that, in comparison to the No Project Alternative, population and employment both statewide and in LA County, in the year 2035, will increase by 1% under the Modal Alternative and 2% under the HST Alternative. (DEIR/S Table 5.3-5, p. 5-15). The analysis predicts that urbanized acres in the year 2035, in comparison to the No Project Alternative, will increase by 1.41% Statewide under the Modal Alternative and decrease by 0.6 % under the HST Alternative. In Los Angeles County, urbanized area is predicted to increase by 1.07% under the Modal Alternative and decrease by 3.81% under the HST Alternative. (Table 5.3-6 p. 5-21) (This is regarded as a positive impact-better utilization of land.)

Alignment options were analyzed for differences in economic growth, and the DEIR/S (p. 5-21) states that the alignment options would not create meaningful differences in overall urban area size or station-area density. The Cambridge Report (p 5-10,11) reflects this statement by indicating that “...all HST design options exhibit county-level (emphasis added) growth and land consumption effects that are of the same general magnitude as the primary system alternatives, and there is no meaningful differences in these results to distinguish between design options.”

However, the Cambridge report (p. 4-9) acknowledges some minor differences between the design options in the range of 17,000 jobs and 29,000 people or about 0.06%. Also, a footnote in the DEIR/S (p. 5-21) reads: “For the Palmdale scenario analysis, results suggest that the likely growth effect in the Antelope Valley (including potential station sites in both Palmdale and Sylmar) would be on the order of 25,000 people and 15,000 jobs relative to the No Project Alternative, and 3,000 people and 1,000 additional jobs relative to the base HST scenario.”

Clarification detail appears in the Cambridge report on tables 4.7 through 4.11 and is summarized (p. 4-14) as follows:

"4.2.1 Palmdale Design Option

The Palmdale design option includes an additional station at Palmdale... This somewhat slower alignment between Los Angeles and Bakersfield increases travel times between Southern California and the Central Valley and Bay Area regions. The longer travel times translate into slightly reduced ridership and travel efficiency benefits compared to the base HST Alternative. Taken together, these differences lead to a state reduction of 14,000 jobs and 22,000 people compared to the base HST Alternative in 2035. Nearly 60 percent of this reduction is expected to occur in the Southern California region, while most of the rest is expected to occur in the Bay Area. "

While Section 4 of the Cambridge report indicates that overall state growth will be less with the Palmdale Option, Section 5 indicates that despite the statewide losses, there will be increases in the Antelope Valley. The detailed numbers are presented on Tables 5.8 through 5.11 and are summarized (p.5-16) as follows:

"Palmdale Design Option

... By adding a station at Palmdale, the primary effect of this design option is to increase projected urbanized land requirements in Los Angeles County by more than 2,250 acres (0.3 percent). Due to increased travel times involved with an Antelope Valley alignment, the Palmdale design option also slightly reduces requirements for urbanized land in nearly every study area county as a result of reduced population and employment growth. In total, the reductions in other counties outweigh the increase in Los Angeles County, resulting in a net decrease in statewide urbanized area of approximately 2,100 acres in 2035.

Although specific land consumption results were not generated at a subcounty level, the county-level results can be used to draw general inferences about the potential extent of growth in the Antelope Valley with this design option. As noted, this design option has decreased overall population and employment in Los Angeles County (emphasis added) due to longer travel times. At the same time, it has slightly increased land consumption suggesting an increased amount of development in lower density areas (e.g., the Antelope Valley). The total year 2035 incremental growth (relative to the No-Project Alternative) in Los Angeles County is about 147,000 people and 90,000 jobs. If this incremental population and employment increase were to be spatially allocated in proportion to HST station boardings, the growth effect for the Antelope Valley with this design option would be on the order of

*25,000 additional people and 15,000 jobs relative to the No-Project Alternative.”
(The Cambridge report also acknowledges in a footnote (p. 5-16) that some of the
growth at Sylmar and Santa Clarita under the base HST Alternative may spill over
into the Antelope Valley.)*

Accordingly, it can be inferred from these passages that under the Palmdale Design Option, the Antelope Valley will experience increases in economic activity while the remainder of LA County, Southern California and the state will experience decreases.

3. THE DOCUMENTS DO NOT TAKE INTO ACCOUNT THE POTENTIAL ECONOMIC BENEFITS FROM INTRA-COUNTY TRIPS.

An exhaustive review of the Cambridge report and all its appendices reveals no consideration of intra-county effects related to HST trips. There are no variables or input data within the multitude of tables that refer only to inter-county HST trips.

The analysis does not appear to consider any HST inter-city trips between destinations within LA County or within other regions (e.g. San Jose to San Francisco). The analysis does not appear to consider commuter traffic between Antelope Valley and Burbank/Downtown LA even though the comparison of alignment options in Chapter 6 of the DEIR/S on page 6-49 mentions that an AV alignment would serve the population there and that trip time between Palmdale and LA would be 26 minutes.

One reference document located is entitled: *Traffic, Transit, Circulation and Parking Technical Evaluation, January, 2004*. (It can be found on the web site under Regional Studies/ Bakersfield to Los Angeles.) The document primarily addresses vehicle traffic and parking needs. The origin and destination tables that comprise this Appendix include no origin or destination passengers for intra-county trips. If no traffic or passengers were considered on these routes, it can be surmised that the potential for economic benefits resulting from such trips was similarly not considered.

4. THE DOCUMENTS FAIL TO CONSIDER THE ECONOMIC BENEFITS ARISING FROM THE POTENTIAL OF THE HST TO PROVIDE AN IMPETUS TO DEVELOP PALMDALE AIRPORT.

The needs of the region for additional airport capacity and the desire to speed development of Palmdale Airport are well documented. SCAG's final version of the Regional Transportation Plan calls for 13 million annual passengers at Palmdale Airport. The City of LA has promoted expansion of Palmdale Airport with a high speed travel connection for

years. Furthermore, there is growing evidence (including traffic analysis in the HST EIR) showing increased vehicle congestion on Highway 14. Development of existing airports is hampered by political and environmental concerns not evident at Palmdale. The emergence of viable air service at Palmdale Airport will have vast economic implications for the Antelope Valley and the region.

Despite this need, the DEIR/S does not acknowledge the potential effects of an HST connection between urbanized areas of LA County and Palmdale Airport. Despite several passing references made to inter-modal benefits, the analysis throughout the documents ignores Palmdale Airport because it does not now service air passengers. The DEIR/S (page 5-23) under Transportation states: *"The potential impacts of the induced growth, to the degree that they can be detected, would be most apparent around urban HST stations and airports, (emphasis added) where the additional traffic generated by induced growth is expected to be concentrated."* Similarly, on page 5-24 the DEIR/S states: *"To the degree they are concentrated, (growth) impacts are likely to be focused on property surrounding freeway interchanges and airports (emphasis added)."* Furthermore, in Chapter 6 (p. 6-67), the evaluation matrix states: *"The Palmdale Transportation Center would potentially serve the Antelope Valley population. The station option maximizes opportunities for intermodal connectivity. It is close to Palmdale Airport, with the opportunity for convenient shuttle or people-mover service, and it is the Metrolink station for Palmdale and a hub for local bus service."* It could be surmised that any increases in economic activity in the Antelope Valley would stem from commuters between the housing rich Antelope Valley and the job rich Burbank and Downtown area, and from air travelers at the Palmdale Airport. However, no documents or references could be found to confirm that any such analysis was performed.

In section 4.2.1 *Trip Generation by Airport*, (p. 73), the Burbank Airport station is forecast to add 665,807 HST trips due to air traffic. There are several other Figures and Tables referring to the Burbank Airport Station, but there is no corresponding mention of the Palmdale Airport in this section even though there is passing reference to it in other sections. Under General Description, (p.10), the document mentions that the proposed HST station in Palmdale is 2.3 miles from Palmdale Airport. However, the most telling aspect of this report is in *Appendix G: Intercity HST Ridership by Source*. The origin and destination tables that comprise this Appendix include no origin or destination passengers for the Palmdale Station to or from anywhere else in LA County.

The above comments indicate that the EIR does not consider the potential that the HST will serve air passengers or commuters between the Antelope Valley and either Burbank or Downtown LA. It also appears that the report ignores any impetus to the growth of

Palmdale Airport. If this is true, as it appears to be, then it follows that the economic analysis also does not analyze this potential.

The apparent failure of the Economic Analysis to mention intra-County HST travel seems to indicate that a significant potential for economic growth has been overlooked, and that the conclusions regarding a decrease in economic activity with the Palmdale Design Option could be reversed.

5. THE REPORT FAILS TO CONSIDER THE ECONOMIC BENEFITS ASSOCIATED WITH SMART GROWTH

The Smart Growth document (Freilich) incorporated by reference and introduced in earlier comments (see section 3. 7 Land Use) includes persuasive evidence related to the economic benefits of reducing sprawl and maintaining prime agricultural lands. These include better job creation, higher tax revenues and reduced infrastructure costs. The economic growth portion of the HST report confirms this aspect by drawing attention to the better utilization of land in its analytical methods. (Lower acreages of urbanized land are treated as a benefit.) The full implications of these benefits need to be considered and added into the calculations in this section.

CHAPTER 6: HIGH SPEED TRAIN ALIGNMENT OPTIONS COMPARISON

1. CONSTRUCABILITY AND COST REGARDING UTILIZING EXISTING FREIGHT RAILROAD CORRIDORS

The Document does not provide any explanation or discussion regarding how the HST facility might be constructed within existing UPRR and BNSF rights-of-way. There are no references to discussions with the railroads, nor to how those companies' operations would be protected. The "Statewide Property Impacts Technical Evaluation Memo" does not address this question. It is also relevant that (1) the assumed speeds throughout the Central Valley are not consistent with the existing freight railroad corridor geometry, and (2) that the capital cost estimates presume largely at-grade construction. It is not clear whether those costs include the extensive relocation of freight railroad facilities that would be required.

The following comments are focused upon the summary table for the Bakersfield to Los Angeles Region (Section 6.4), and the Bakersfield to Sylmar Alignment Options (Section 6.4.1).

2. THE SUMMARY TABLE IS SUPERFICIAL AND LACKS REFERENCES AND SOURCES TO SUPPORT THE COMPARISONS

The summary table used in Section 6.4 is very brief and masks problems associated with the methodologies used to derive impact conclusions in several key impact categories. No references and sources are provided to support the entries in the comparison tables

On page 6-48 under 'Ridership', it is difficult to understand how and why the increase in commuter ridership would exactly equal the decrease in intercity ridership (1.7 million each). The DEIR/S provides no description of the methods used to arrive at these figures, and no references to where such descriptions might be found.

The statement in the 'Constructability' row of the table on page 6-48, that this segment of the project "would be one of the most challenging sections in the HST system to construct," while true, does not provide the reader with any tangible information by which to evaluate the difficulty, risk, and cost of the various options. More detailed information must be provided in this section and throughout the EIR/S document.

On page 6-49, under “Travel Conditions,” the Documents notes that “The I-5 alignment options would not *directly* serve the Antelope Valley.” (Emphasis added.) This is a misstatement, as the I-5 alignment would provide *no* service to the Antelope Valley.

The data presented for Biological Resources on page 6-52 does not match the numbers identified for these same alignments in the Biological Resources Section 3.15 (page 3.15-25). In particular, the impact to 835,296 linear ft. of ‘waters’ (158 miles) attributed to the SR-58/Soledad Canyon Corridor on page 6-52 is absurd on its surface.

3. ON BALANCE THE ANTELOPE VALLEY ALIGNMENT IS ENVIRONMENTALLY SUPERIOR

The table presents the SR-58/Soledad Canyon Corridor (Antelope Valley) alignment in a relatively favorable light as compared with the I-5 alternatives. Environmental Impact categories which identify the Antelope Valley alignment as either *comparable* or *superior* to the I-5 alternatives include the following:

- Travel Conditions (connectivity/access to Antelope Valley)
- Noise and Vibration (overall segment comparisons)
- Farmlands (superior to I-5 alignments)
- Aesthetics and Visual Resources (overall comparable impacts/localized impacts with all alignments)
- Hydrology and Water Quality (floodplains/lakes/lower overall potential for water-related impacts)
- Biological Impacts (wetlands/sensitive vegetation)
- Section 4(f) and 6(f) Resources (superior to I-5 alignments)
- Growth Induced Impacts (low potential/comparable impacts with I-5)

The DEIR/S also identifies environmental impact categories which identify the Antelope Valley alignment as *inferior* to the I-5 alternatives include the following:

- Travel Conditions (travel time)
- Noise and Vibration (impacts in the Palmdale area)
- Land Use and Planning (“not compatible in Palmdale”/potential property impacts in Palmdale and Lancaster)

- Cultural and Paleontological Resources (known sites per mile/higher sensitivity for Antelope Valley)*
- Hydrology and Water Resources (streams)*
- Biological Resources (number of special status species impacted/'waters')*

However, additional support for these conclusions needs to be provided in this and other sections of the DEIR/S, particularly in light of the information provided in the foregoing comments concerning 1) the Smart Growth advantages of the Antelope Valley alignment, 2) the tunneling risks associated with the I-5/Grapevine alignment, and 3) identified methodological problems associated with various resource impact conclusions (e.g. Hydrology and Wetlands, Biological Resources, Cultural Resources, and Aesthetic and Visual Resources).

CHAPTER 7: UNAVOIDABLE ADVERSE ENVIRONMENTAL IMPACTS

This brief section appears to have been prepared to reconcile the DEIR/S document format and content with a number of the required contents of EIRs and EISs, pursuant to CEQA and NEPA, respectively. The first paragraph on page 7-1 notes the chapter has been prepared to "...describe any significant irreversible or irretrievable commitments of resources or foreclosures of future options that would result from the proposed HST system or the alternatives"—an apparent reference to requirements in CEQA that these issues be specifically discussed in EIRs where a plan is being adopted by a public agency, or a project where an EIS is also being prepared pursuant to NEPA (CEQA Guidelines §§ 15126, subd. (c), 15126.2, subd. (c), 15127). This requirement should be cited and separately discussed under a separate subheading in this chapter of the DEIR/S.

SECTION 7.1 - UNAVOIDABLE POTENTIALLY SIGNIFICANT IMPACTS

1. RELIANCE ON GENERAL STATEMENTS OF IMPACTS WEAKEN THE DEIR/S

Biological Resources and Wetlands, Agricultural Land, Section 4(f) and 6(f) Resources, Cultural and Paleontological Resources, and Visual Resources (7.1.2)

On page 7-2, the statement is made that "Only general statements of potential impacts can be made at this program level of review because field studies were not conducted and the buffer area used for the analysis was many times larger than the actual right-of-way for the alternatives under consideration in most instances." This statement goes to the heart of the deficiencies of the DEIR/S, as revealed in our prior comments on each of the resource sections of the DEIR/S. The lack of any field verification of alignment information, the use of highly variable and overly broad potential zones of impact, and implied recognition that impacts may therefore be overstated for particular alignments renders the document suspect, even at the program-level of review.

2. UNAVOIDABLE CONSTRUCTION IMPACTS ARE NOT ADEQUATELY DESCRIBED FOR HST ALIGNMENT ALTERNATIVES

Construction Impacts (7.1.3)

As noted in previous comments, an adequate analysis of construction impacts by topic (i.e. air quality, geology/soils, traffic and circulation, noise) is lacking in the document. Here, the unavoidable construction impacts of the project and alternatives are only briefly mentioned, again with the caveat that more detail will be provided during project-level analysis. More information on the nature, location and duration of these unavoidable impacts, by impact

category for each alternative and alternative HST alignment, can and should be provided in the program EIR/S.

3. DISCUSSION OF CEQA THRESHOLDS OF SIGNIFICANCE NEEDS TO BE DIRECTLY LINKED TO IMPACT ANALYSIS SECTIONS OF THE DEIR/S

California Environmental Quality Act Significance

The introduction to this section on page 7-3 discusses different uses of the term 'significant' under CEQA and NEPA, and attempts to provide a justification for discussing CEQA significance criteria (i.e. thresholds of significance) separately in this section. There is no valid justification for detaching the identification of impact thresholds from the sections of the DEIR/S where the analysis of impacts occurs. The determination of significance based on clear thresholds is an underpinning of CEQA that is circumvented by this approach.

CEQA Significance Thresholds (7.3.1)

On page 7-4 under further discussion of thresholds, the DEIR/S indicates "In the current analysis, the CEQA checklist thresholds have been used to evaluate the significance of effects of the HST Alternative." Our review of this chapter and each of the impact sections of the DEIR/S indicates that this is clearly not the case.

4. STATEMENTS WEAKEN THE ABILITY TO USE THE DEIR/S TO MAKE HST ALIGNMENT DECISIONS

Significant Unavoidable Adverse Effects (7.3.2)

This section includes statements that undercut the adequacy and use of the current DEIR/S. The section needs to be rewritten, and the deficiencies noted in response need to be remedied.

"The planning level of environmental review presented in this Program EIR/EIS does not seek to quantify impacts as would typically be done at a project level. Instead, this Program EIR/EIS evaluates the potential for significant effects for each alternative based on the density or resources and/or sensitive receptors within the project vicinity and ranks the potential for impact as high, medium or low. This is an appropriate assessment of potential impacts at this stage of such a large, statewide undertaking." (page 7-4)

The program or planning level of review does not relieve the EIR/S preparer from the need to quantify data and impacts to support conclusions. Our previous comments have highlighted how methods which rely upon regional assessments of densities of resources

with data gaps, and broad-band Areas of Potential Effects without field verification or survey, can mislead or distort the comparison of alignment impacts.

“Based on this planning level of analysis, potentially significant unavoidable impacts are only identified generally.” (page 7-4)

Pursuant to CEQA, all such impacts should be clearly identified in the EIR, even if they can only be generally described.

“Depending on the alignment options that may ultimately be selected, potentially significant unavoidable effects can be expected at some locations within the proposed HST system in the general environmental categories of agricultural lands, biological resources and wetlands, hydrology and water resources, and cultural resources. However, neither the extent of such potential impacts, nor the potential locations for such impacts, can be determined at this level of analysis.” (page 7-4)

There is no practicable reason why the general location and extent of such impacts (i.e. other than ‘high’, ‘medium’ or ‘low’) for alignment options cannot be determined within this Program DEIR/S. Aerial photo sets of 1”=200” scale Plan and Profile sheets for alignment options are available and have been used in preliminary alignment studies by the Authority’s consultants.

“For several of the environmental categories listed in the table below (including agricultural lands, wetlands, hydrology, and cultural resources), the quantities presented represent areas within which potential impacts might occur by including all the potentially affected resources or acreage in the study area for the resource topic listed.” (pages 7-4, 7-5)

By including all of the acreage or resources within these broad study areas, this method of evaluation exceeds even a reasonable ‘worst case’ impact scenario for alignment impacts, and can distort the alignment comparisons.

CEQA Environmentally Superior Alternative (7.3.3)

This section fails to identify an environmentally superior alternative from among the HST alignment options. Provided that additional documentation and support for this conclusion can be provided in Chapter 3, such as the Tunneling Study and the Smart Growth Study, the Final Program EIR/S should make this determination.

CHAPTER 8: PUBLIC AND AGENCY INVOLVEMENT

1. LACK OF PUBLIC MEETINGS IN ANTELOPE VALLEY

The apparent lack of any public meetings in the Antelope Valley during this entire California High Speed Train environmental process is a notable omission.

2. INTERAGENCY INPUT TO ENVIRONMENTAL PROCESS IS NOT ADEQUATELY DISCUSSED IN SCOPING SUMMARY OR SCOPING REPORT

Neither this section nor the Final Statewide Scoping Report (12/14/01) evidence the substantive interagency input to the environmental review process that is referenced on page 8-5. In particular, there is no summary provided of the interagency input derived from the 27 interested federal and state agencies that participated in the nine consultation meetings and six federal cooperating agencies meetings identified in the Section 8.2.2.

The Final Scoping Report was not made available with NOP/NOI in the DEIR/S Appendices, as it should have been for wider public review, and was only obtained by the City of Palmdale during the DEIR/S public review period after a specific request and trip to the Authority's Sacramento offices. The copy of the Final Scoping Report thus obtained is missing several Appendices, including Appendix C-Scoping Meetings Announcement, Regional Mailing Lists within Appendix D, Regional Attendance Lists within Appendix F, Appendix I-Written Public Scoping Period Comments, and Appendix K-Record of Verbal Comments.

CHAPTER 9: ORGANIZATION, AGENCY AND BUSINESS OUTREACH

The outreach listing is noticeably lacking in organizations and agencies from the Antelope Valley. Only one contact (Antelope Valley Board of Trade) is identified from among approximately 300 contacts listed statewide in this section.

CHAPTER 11: DRAFT PROGRAM EIR/EIS DISTRIBUTION

On page 11-1 the statement is made that “the entire Draft Program EIR/EIS, Appendices, and supporting reports are available on the Internet at the Authority’s web site”. Many of the supporting reports listed in Section 12 of the DEIR/S were not initially available following release of the DEIR/S in February 2004, either on the web site, on CD, or in hard copy. The City of Palmdale was able to obtain most of these key source documents, including key regional technical reports, only after a specific written Public Records Act request was made to the Authority. Even so, at least one document (The System Alternatives Definition Report, cited on page 4-A-4 of Appendix 4-A) was not available for reviewers.

CHAPTER 12: SOURCES USED IN DOCUMENT PREPARATION

'Sources' listed in this section include statewide and regional technical studies that were not initially available at the outset of the DEIR/S public review period. These should have been listed and included as Appendices to the DEIR/S. The efforts of the City of Palmdale to obtain an accurate and complete set of documents relied upon by the Authority in the drafting of the DEIR/S are detailed in a separate comment letter from counsel to the City of Palmdale.