Comment Letter AS004 Continued

incorrectly referred to as the State Historic Preservation Office). That is to say, no new additional research has been attempted at this stage of the environmental review process.

With the information so derived, the Draft Program EIR/EIS presents qualitative potential impact ratings based on calculations of number of sites per mile to identify areas as low, medium and high. Depending on the intensity of past archaeological and historical survey and recordation, these calculations could change dramatically. Much property that is in private ownership and even a great deal in public ownership has not been adequately surveyed. This should be addressed in a follow-up study before a realistic evaluation of expected relative impacts to properties is determined. For instance, in the areas of the Henry W. Coe State Park (Santa Clara and Stanislaus Counties) through which several alternative routes are proposed, there has not been adequate survey and recordation of sites along the routes in those locations. A lack of survey work results in the Bay Area to Merced region (table 3.12-1) in the archaeological resources within the potential impacts category as being shown as medium, most probably because the extensive areas of unsurveyed portions are lowering the overall average. As a result, the evaluation of a "no project" alternative in this segment is rated the same as the "modal" and the "HST" categories. Clearly, the impact to a roadless wilderness area state park would be zero in the "no project" and probably in the "modal" alternatives as opposed to a major impact if a whole new transportation corridor were to be developed there. In other words, the averaging out of expected potential impacts over an area encompassing both developed and undeveloped areas would disproportionately impact State Park System units or other non-developed lands that have not been subject to the same archaeological and historical scrutiny as the developed areas. Such data skewing, if it cannot be corrected, should be acknowledged in the final document.

AS004-25 cont.

Of the four areas in the realm of archaeology/history identified in the Draft Program EIR/EIS: the characterization of historic groups as being limited to "Spanish, Mexican, or Anglo-American" (pg. 3.12-7), should be reconsidered. African Americans, Chinese Americans and many other groups are also important historic groups and should be addressed.

AS004-26

The lack of any reference to Cultural Landscapes is of concern, because these are more likely to have a wider areal expanse and thus be more likely to be impacted by a high-speed train route. A prime example would be Colonel Allensworth SHP in Tulare County. Although there is an existing rail line that runs through the area, even including a possible rail station, a futuristic high-speed train whizzing by would be out of keeping with the quiet, farming community setting. The APEs of 500 feet on each side of new rail routes and 100 feet for established routes may not be adequate to accommodate the concept of a Cultural Landscape. There are four general types of cultural landscapes, which are not mutually exclusive: historic sites, historic designed landscapes, historic vernacular landscapes, and ethnographic landscapes, which

AS004-27

should be addressed in the Final Program EIR/EIS. The 1994 National Park Service publication, "Protecting Cultural Landscapes: Planning, Treatment and Management of Historic Landscapes," Preservation Brief 35, by Charles Birnbaum, ASLA, should be consulted before addressing this issue.

AS004-27 cont.

There is a reasonable series of mitigation measures for "listed or eligible historic structures and buildings" in accordance with the Secretary of the Interior's Standards (36 CFR Part 68), with the following included: "repair, stabilize, rehabilitate, restore, relocate and reconstruct." The Final Program EIR/EIS may wish to consider whether "reconstruct" is necessary in this context. If the building has been demolished, then the site is more appropriately seen as an historical archaeological site and should be dealt with in that category.

AS004-28

The Department of Parks and Recreation has identified at least 43 separate State Parks System units that are within a distance of 10 miles from the proposed routes. At least eleven State Park System units that may be intersected by the potential routes would be the primary focus of the eventual cultural review. However, if Cultural Landscapes were factored in there would be additional possible park units that would need to be reviewed. When a more specific proposal of potential routes is prepared, specific focus can be directed to the needs for more intensive survey and evaluation of parklands that may be impacted.

AS004-29

PALEONTOLOGICAL RESOURCES

Section 3.12 describes Paleontological resources as "significant fossils or assemblages of fossils that are unique, unusual, rare, uncommon, and diagnostically or stratigraphically (layers of the earth's surface) important, and/or those that add to an existing body of knowledge in specific areas stratigraphically, taxonomically, and/or regionally." The source of this definition should be provided if possible. Since all vertebrate fossil resources are rare, the area where they are found should be designated as having a high level of sensitivity. Even in areas of abundant fossils, new unique discoveries are still being made. In a further example, the Franciscan (while referred to as a formation on page 3.12-14, it is more properly called the Franciscan Complex) is not considered a major fossil-bearing unit; however, when fossils are found in the Franciscan, they are always significant, since they provide a superior way for dating the unit and provide otherwise unattainable ecological information.

AS004-30

Known significant fossil localities can be found throughout the California State Park System but not all localities have been identified or inventoried. In addition, vertebrate fossil localities are known in the vicinity of San Luis Reservoir (mammoth tusk), and it is safe to assume that similar localities yielding significant fossils may be found within nearby State Park System units along the proposed HST routes. The discussion on page 3.12-5 used number of formations having high paleontologic sensitivity, and the

Comment Letter AS004 Continued

number of paleontologic localities recorded as the basis for sensitivity analysis. As discussed in the Cultural Resources section above, since many areas have not been inventoried the conclusion that few sites are known may incorrectly skew the conclusion. AS004-30 cont.

The federal government is currently assessing the need for unified standards for fossil preservation and management on federal lands. The Secretary of the Interior prepared a report to Congress in 2000, recommending improved inventory and resource management for federal fossil resources. Legislation titled Paleontological Resources Preservation Act (S 546) has passed the Senate (108th Congress), and is currently before the House of Representatives. This legislation should be used as a model, and the spirit of the Department of Interior report should be applied to this project. Lands along proposed HST routes should be evaluated for fossil potential, and avoided, mitigated, or curated for further scientific study. AS004-31

Pending detailed subsequent study and analysis, cumulative impacts on paleontological resources from HST and modal alternatives (pages 3.17-7& 8) should be the same at this point (high). AS004-32

GEOLOGY AND SOILS

The geologic resources described in the Draft Program EIR/EIS are limited to economic resources (oil, gas, geothermal, and minerals). Other geologic resources of particular interest to California State Parks include areas of scientific interest and aesthetic beauty. Unspoiled geomorphic forms and classic landscape features, especially those related to differential erosion, faulting, and tectonic plate relationships are also of particular concern in State Park units (PRC § 5019.53). Rare mineral occurrences, type localities, and perplexing rock associations are also preserved within units of the State Park System. The proposed HST project should consider impacts to representative examples of geological features, type localities (location of formation which exhibits typical formational characteristics and from which the formation derives its name), fragile and rare geological features, and geological features of unusual or exceptional beauty (for example rock outcrops, erosional features, mountain peaks, fault-influenced topography, etc.) in and near units of the State Park System. AS004-33

Due to the proximity of State Park System units to many alternative routes of the proposed HST project, geologically-induced or triggered geologic impacts as a result of construction of the rail system must be specifically considered. AS004-34

With regard to consideration of seismic hazards, it would be better not to rely on legal definitions of "active" but to use specific knowledge of the geology of the regions to evaluate seismic hazards. There has been much advancement in this field over the last few decades, and planning for surface disruption, strong motion shaking, and AS004-35

liquefaction responses would be well advised. The ranking system for seismic hazards relies on surface rupture as the key hazard; however, movement at distance from a surface rupture can be much more severe, as in the Marina District, following the Loma Prieta earthquake. In addition, the coincidence of fire following earthquake disruption should be considered, especially since the HST project will traverse oil and gas fields and pipelines. AS004-35 cont.

Paleoseismic research in coastal northern San Diego and Orange counties has suggested that very large seismic events in the relatively recent geological past have produced significant ground disruptions and liquefaction signatures. Any route in the vicinity of Torrey Pines State Reserve, Leucadia State Beach, and South Carlsbad State Beach needs to take this major type of event into consideration.

The Draft Program EIR/EIS estimates fault crossings as 600' wide. This ignores specific scientific knowledge about well-mapped areas. Many areas of the San Andreas Fault Zone, for example, are more than a mile wide. Excavations in fault zones are not only hazardous for the excavators and analysts, but they can reveal unstable features and produce conduits for subsurface waters. AS004-36

In addition to traditionally under-considered seismic hazards, coastal erosion is another significant hazard that can be expected to worsen, as sediment sources to the beach continue to be trapped by inland water diversions and water and sediment storage facilities. Key features for consideration also include areas of seacliff retreat, liquefaction, lagoons, and special wetlands from San Clemente southward to San Diego. Large landslides have occurred in the cliffs of San Onofre SP (which may have been exacerbated by failed drainage structures in existing transportation infrastructure) and Camp Pendleton, and rapid subaerial erosion episodes have been documented. AS004-37

The slope stability analysis does not consider steepness, debris flow potential, geomorphological mapping, drainage courses, and run-out areas. Areas where the alignment crosses the Coast Ranges are especially subject to landslide hazards and are characterized by debris flows, debris slides, and creep, especially in the mélange units of the Franciscan Complex. The best mitigation for slope stability and landslide issues is avoidance of the hazard. Although avoidance is not always an option, it should always be the first option considered, since its effectiveness is superior to engineered slope treatments and foundation excavations. In particular, the natural slope condition is a superior value in State Park System properties, from an aesthetic, as well as from a geological processes standpoint. Cut and fill operations could result in fill slope and cut slope failures. These areas need to be evaluated, according to their physical properties, such as dip slope, fractures, bedding inclination, joints, etc. Where cuts and fills are constructed, the width of the "affected environment" should be extended to include the full extent of surface disruption. AS004-38

Comment Letter AS004 Continued

Impacts of tunnel construction associated with all HST alternatives need to be further evaluated. The blasting, drilling, and hydrological disruption will have impacts in all segments using new tunnels. Tunnels can interrupt groundwater movement, limiting horizontal flow, as well as capturing flow, thereby "robbing" adjacent areas of water. In areas of fracture permeability (Coast Ranges and Transverse Ranges, in particular) this impact is most critical. In addition, the influence tunnel construction (blasting and excavation) could have on spring behavior is unknown. These fragile and sometimes ephemeral water resources provide invaluable habitat for aquatic plants and animals. In areas of fracture permeability, spring productivity can be very tenuous, and external influences can produce adverse impacts. AS004-39

The middle paragraph of Page 3.14-11 compares impervious surfaces for modal versus HST alternative, but doesn't address the addition of impervious surfaces from the new stations associated with the HST. AS004-40

The limitations for analysis of hydrology are unreasonably limited (100' from centerline of alignments). The area of the physical watershed needs to be added to the analysis and watersheds of 303d-listed waters [Federal Water Pollution Control Act § 303"(d)(1)(A)] to better evaluate the impacts of the proposed project. Mapping only the streams grossly underestimates the area of affected environment. AS004-41

BIOLOGICAL RESOURCES

Units of the California State Park System which may be impacted by proposed alternative HST corridors were created for a variety of purposes including natural resource protection, public recreation, and protection of historic sites. Regardless of a park's classification, biological resources are managed to protect naturally functioning ecosystems, hence California State Park's natural resource management is concerned primarily with the quality of habitat, and with sensitive resources as part of that habitat. Conversely, the Draft Program EIR/EIS focuses on sensitive species and communities, and impacts of HST on habitat in general are not fully developed. In subsequent specific environmental documents, the effects of HST impacts and their magnitude on habitat quality in units of the State Park System must be addressed. AS004-42

The Draft Program EIR/EIS states on page 3.15-18 that the Modal Alternative would potentially affect a greater area or number of sensitive biological and wetland resources than the HST alignment options. That statement does not address the question of the quality of the habitats and occurrences of sensitive species that could experience impacts from the HST alignment options. The impact of building a project of the magnitude of the HST through wilderness areas, public parks and protected conservation lands is different in type than the impact of widening an existing transportation corridor. The specific alignment options need to be compared with this in mind. AS004-43

The biological resources that could be affected, and their general locations are reported, but the effects/impacts on those resources were generally not discussed in depth. As in other resource discussions throughout the Draft Program EIR/EIS, the alignment options were overlaid on maps of sensitive resources and the number of times the alignments and sensitivities intersected were tallied up as unweighted numerical scores and the results were "processed into a series of frequency distributions that allowed an estimate of high, medium, or low for a potential impact." Such a simplistic tally is skewed by the acknowledged lack of site-specific knowledge. Therefore "low" may not truly mean low impact, it really means relatively fewer known "occurrences." In fact, with site-specific investigation, areas of suggested "low" impact may be scored as "high." The Draft Program EIR/EIS acknowledges that "the lack of identification of an impact does not necessarily mean that this portion of the proposed alternative would not result in potential impacts on biological resources, only that location-specific data would be required to make a more precise determination." Potential impacts such as these should be identified at least with a table with the complete listing of these species known from each potential alignment and characterized as needing further investigation, and not left out of the discussion. It is very difficult to compare the alternatives botanically without this information. Specific impacts to park natural resources need to be addressed. AS004-44

For the preparation of subsequent specific environmental documents, it will be important that site-specific studies not be limited by the findings of the Program EIR/EIS. As a single example, we are aware of several vegetation mapping projects currently under way by various governmental and private groups in various parts of the State that may identify sensitive plant communities in addition to those discussed in the Draft Program EIR/EIS. The same may also be true of plant and animal species. All site-specific work should rely on field studies, not on a recitation of the data from previous work.

Construction impacts (disturbance, duration, hazardous materials and pollution, etc) and long-term impacts (barriers to wildlife movement, habitat fragmentation, noise, vibration and ground and surface water changes) to biological resources are not discussed adequately. The potential impact of spreading exotic plant species during construction, operation, and maintenance should be discussed and mitigation measures proposed. Other impacts on biological resources, definite and possible, that need to be further addressed include: AS004-45

- Wildlife habitat degradation and fragmentation, particularly in areas with an intact ecosystem preserved for protection of wildlife habitat, such as at Henry W. Coe State Park, and particularly on species that require large contiguous blocks of habitat, such as mountain lions, AS004-46

- Disruption of regional wildlife movement by at grade alignments, sound walls, etc.,

Comment Letter AS004 Continued

- The importance of riparian areas and wetlands to wildlife in general, and sensitive species in particular,
- The impact and scale of construction/earthmoving activities necessary, particularly for the at-grade and tunnel portions of the alignment; cut and fill, disrupted vegetative cover, compacted soils, access roads, disturbed surfaces, erosion, sedimentation of waterways, hazardous materials, etc., and the long-term effects of such disturbance,
- The impact of support facilities for the HST, such as those needed for access and maintenance,
- The impact of light pollution, such as night lighting for extended construction activities, track lighting, and other associated lighting,
- Potential shadow effects beneath the infrastructure of the HST alternative, and
- Loss of habitat in general where the HST alignment is at-grade and the associated impacts render the habitat no longer habitable.

AS004-46 cont.

If scientific investigations in Europe and Japan where HST systems already exist have considered its impacts to biological resources, these should be discussed. (E.g. (*Use of Non-Wildlife Passages Across a High Speed Railway by Terrestrial Vertebrates,* Rodriquez, Crema, and Delibes, in *The Journal of Applied Ecology,* Vol. 33, No. 6 (Dec., 1996), 1527-1540.)

AS004-47

The Draft Program EIR/EIS is focused on humans and the phrase 'noise sensitive land uses' appears to refer solely to human use. The noise aspect, from construction to daily operation, is one of the most significant impacts of the HST project yet the noise and vibration section does not address impacts on wildlife in a meaningful way.

At higher speeds above 150 mph, the HST noise level will increase over that of conventional trains. Such higher speeds would be expected through the "less constrained areas", so the noise would be loudest in undeveloped areas/parklands, along with potential vibration impacts 200 feet from the tracks. Additionally, on an elevated structure the noise is increased and spreads about twice as far. The effects of noise impacts to the environment, and specifically on wildlife, are not addressed in the document.

AS004-48

During construction years, and during the operation and maintenance of the HST, all the various aspects of noise, such as volume, intensity, duration, suddenness, frequency during the day, time of day/night, all make a difference in whether a species can become accustomed to the disturbance and continue to live nearby or whether it is a disturbance that causes displacement of individuals, and if it continues for a long

enough period of time, causes emigration. The fact that it is not a constant noise, unlike freeway noise, and that it is loud, sudden, and frequent throughout the day and night, makes comparison to the other alternatives/modes of transportation less than useful.

AS004-48 cont.

The Draft Program EIR/EIS discussion of Electromagnetic Fields (EMF) and Electromagnetic Interference (EMI) is focused on personal/human health and potential impacts on electronic and electrical devices. Possible impacts of EMF/EMI on wildlife should be addressed, such as orientation, or simple disturbance. For example, if mobile wildlife species avoid areas of electromagnetic disruption, it could constitute habitat disturbance and, possibly the taking of habitat for sensitive species.

AS004-49

Subsequent analysis should include, in addition to consulting with California Department of Fish and Game on particular species, consultation with other managers of lands administered for natural values regarding the impacts and mitigation strategies for such areas.

AS004-50

While mitigation strategies are suggested in section 3.15.5, the Draft Program EIR/EIS should recognize that greater direction for mitigation design needs to be provided. As a single example to make the point for all mitigation strategies, page 3.15-31 states, ". . . construction of wildlife underpasses, bridges, and/or large culverts, could be considered to facilitate known wildlife movement corridors." Identification of appropriate locations must not only be in existing use areas but must be able to accommodate crossings of a design, shape and size to be sufficiently attractive to encourage wildlife use. Overcrossings if dedicated to wildlife use should be appropriately vegetated to afford cover and other species requirements. Undercrossing approaches should also be appropriately vegetated to afford cover. Functional corridors should be established to provide connectivity to protected lands or land zoned for uses that provide wildlife permeability. For instance, if the upland side only connects to a drainage leading to a dense residential area or area zoned for residential development, its functionality is much reduced, whereas if it connects to parks or openspace it is enhanced. All wildlife corridors should be assessed using the checklist suggested by Beire and Loe; (*A Checklist for Evaluating Impacts to Wildlife Movement Corridors* in Wildlife Society Bulletin, 20:434-440, 1992) developed to determine functionality. Like all proposed mitigations the impacts of such structures, such as visual impact, should be considered and analyzed.

AS004-51

SECTION 4(f) AND 6(f) RESOURCES

The separate regulatory provisions are presented (although misquoted at 4(f)'s subsection (c)) but there is no separation of analysis or conclusion. These resource areas are simply lumped together in the text without differentiation in spite of the fact that the subject area and standards differ.

AS004-52

Comment Letter AS004 Continued

Authoritative interpretation of federal agencies' duties under the 4(f) of the Department of Transportation Act of 1966 was first established and continues to be provided by the 1971 Supreme Court decision in Citizens to Preserve Overton Park, Inc. v. Volpe, 401 U.S. 402, in which the Court overturned the Secretary of Transportation's approval of a six-lane highway through a park in Memphis, Tennessee. In that case Justice Marshall stated that the "very existence" of section 4(f) demonstrates "that protection of parkland was to be given paramount importance." The Court made clear that choosing an alternative that requires use of a public park or recreation area simply because it is the least expensive or most efficient choice does not meet the rigorous mandate of the provision. Overton Park thus sharply limits the discretion of federal agencies in approving proposed transportation projects affecting 4(f) resources.

In enacting section 4(f) of the Department of Transportation Act of 1966, Congress declared that "special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands. Congress accordingly specified two fundamental substantive mandates under the Act: (1) prohibiting federal agencies from approving transportation projects that require use of a public park or recreation area unless there is no feasible and prudent alternatives to using the parkland; and (2) requiring transportation projects which use a public park or recreation area to include all possible planning to minimize harm to the parkland. Predating the National Environmental Policy Act, these provisions of the Department of Transportation Act of 1966 are even more stringent than NEPA's. They direct that alternatives to proposed highway routes which would destroy public parks must be developed when such alternatives are feasible and prudent.

AS004-53

For lands acquired or improved through he use of Land and Water Conservation Fund Act grants (16 U.S.C. §§ 460-4 through 460) conversion requires replacement lands of equal monetary value, location, and usefulness which are stricter replacement standards than those of section 4(f).

Review of the analysis is complicated by the fact that in spite of the statement on page 3.16-2 that "the primary goal of the analysis was the identification of Section 4(f) and 6(f) resources," the presentation makes no identification of the specific resources at risk. This makes it impossible for a reviewer to determine the legitimacy of the data presented. Simply stating a number of resources for a given stretch of proposed corridor is insufficient to determine if the resources for which this Department is responsible have been included as they are not differentiated from other such resources. In addition, the numbers of resources presented are unweighted, equating an undeveloped tot-lot with a multi-thousand acre wildlife area or significant historic site. Even at a program level, some effort to present the reader with a clear understanding of the resources addressed is necessary to obtain a confidence level in the material presented and to determine the most feasible and least environmentally damaging alternative. In spite of the Draft Program EIR/EIS summary stating that "in the Final Program EIR/EIS the Authority and the FRA may also identify one or more potential

HST alignment options as preferred for the proposed HST system…" (Page S-18) there is currently insufficient information in the document to choose an alternative wisely.

AS004-53 cont.

Additional reasons to suspect the verisimilitude of the material presented are frequent 4(f) and 6(f) reference errors. Examples include a "prominent national park (Don Edwards San Francisco Bay National Wildlife Refuge)," "El Pueblo de Los Angeles State Historic Park" which was divested from the State Park System in 1990 to the City of Los Angeles, "Old Town San Diego State Recreation Area" which is a State Historic Park, and mapping the 93,000 acre Wildlands Conservancy Windwolves Preserve as the 205 acre Fort Tejon State Historic Park. This latter error results in the perhaps erroneous conclusion that the State Historic Park will be impacted by the HST alignment when in fact this may not be the case unless the presented corridor over the Grapevine is rerouted.

AS004-54

In several locations the option of tunneling under parks is presented as a potential impact avoidance strategy. As discussed in several other sections of these comments, tunnels may result in damage or loss of critical surface waters. Like other mitigation proposals, such as soundwalls, careful consideration of avoidance strategies is necessary to determine if one potential impact is not simply traded for another. In many cases application of a single mitigation or avoidance strategy may be insufficient, but may require combinations to adequately address an issue.

AS004-55

This Department has previously provided the High-Speed Rail Authority with a list of units of the California State Park System we preliminarily believed might be impacted by the proposed project as well as digitized State Park System unit boundary maps. In Appendix 1 to this letter of comment, we have attempted to present those units of the State Park System located in proximity to the alternative HST corridors, their approximate distance from alternative corridor centerlines, and a preliminary judgment of their potential for being subject to 4(f) and/or 6(f). Pending the initiation of the assurance presented in the last bullet of the avoidance alternatives calling for consultation with those responsible for the resource on page 3.16-11, this appendix may provide a basis for a more supportable analysis in the revised Program EIR/EIS. We recognize however, that as final corridor options are selected, route changes may occur. Consequently, the appendix list provided should be considered preliminary as other State Park System units may be affected as these decisions are made. Again, frequent and early consultation is encouraged with this Department.

AS004-56

The analysis under the 4(f) provisions of the Transportation Act should address the full extent of the "use" of units of the California State Park System by the "constructive" use of the HST caused by noise and other impacts. The application of section 4(f) to these constructive uses has been recognized by the courts in a wide variety of circumstances. The 9th Circuit was the first to recognize such circumstances and has continued to do so. In Brooks v. Volpe, 460 F.2d 1193, 1194 (9th Cir. 1972), for example, the court found that a highway encircling a campground was subject to section

AS004-57