



Wildlife and High Speed Rail

CALIFORNIA HIGH SPEED RAIL PROPOSAL: “HIGH SPEED RAIL AND WILDLIFE”

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(Supplemental materials provided by Dan Leavitt, California High Speed Rail Authority)

Abstract

The California High Speed Rail (HSR) Proposal is in the initial planning phase. In response to increasing population and an overtaxed transportation network, a 700-mile HSR proposal has been proposed to link major metropolitan areas in the state. The HSR proposed would be devised of state-of-the-art technology, travel at a maximum speed of 220 miles, a 50-foot right of way, and include at-grade, aerial, and tunnel alignments. The entire length of the at-grade alignments would be fenced. Due to sophisticated communications systems, trains would be frequent, with options for local as well as long-distance use. Travel times are comparable to, and in some cases surpass, door-to-door travel times for driving or flying alternatives.

The Final Environmental Impact Report/Statement (FEIR/S), which was released in August 2005, concludes that the HSR option leads to decreased energy consumption, reduced air pollutant emissions and improved air quality, uses less land, and has fewer overall impacts to sensitive habitats and water resources than either the option to continue with currently planned transportation projects or to expand existing highways and airports. A major concern in terms of wildlife is the impact of the fencing on wildlife movement and migration corridors. The California HSR Authority has decided to relegate the analysis of this impact to the project-level environmental documents. There is a recognized concern that this approach will fail to provide the landscape-level analysis necessary to accommodate the wildlife movement needs.

The environmental review process revealed several areas of controversy. For the northern mountain crossing connecting the Bay Area to the Central Valley, there was a concern that the Altamont Pass alignment, which tracks I-580, was not included as an option. As a result, the HSR Authority will be working with groups in the Bay Area on an additional EIR/S to specifically choose the alignment on this crossing.

A second area of controversy is the southern mountain crossing, which connects the Bakersfield to Los Angeles stations. Seismic and tunneling constraints caused the southern mountain crossing to be chosen, which cuts east into the West Mojave Desert with a station in Palmdale instead of following I-5 directly south. This decision was made despite major concerns of direct and growth-inducing impacts to the West Mojave Desert. Those with a desire to decrease impacts to public lands or to expand the growth in the city of Palmdale were in support of this option.

The third area of controversy concerned impacts on parks, wildlife areas, and recreational resources. As a result, no alignments were chosen through Henry Coe State Park, Don Edwards San Francisco Bay Wildlife Refuge, or San Luis State Recreation Area. Additionally, alignments which occur adjacent to state parks will occur on existing rail corridors, and other concerns will be considered at the project level.

The final area of controversy was the growth-inducing impact of the stations themselves. All stations are required to serve as multi-modal sites.

Identified environmental impacts will be avoided, minimized, and mitigated. Nearly 70 percent of the alignments will occur on existing transportation corridors and rail lines. Only 24 percent of the alignment will be at-grade in new corridors. Underpasses and overpasses will be designed during the project-level analysis, and tunneling will occur in mountainous habitat in major portions of the undeveloped alignments. Mitigation will be determined at the project-level but may include project-design changes, contribution to a conservation bank or natural management area, relocation of sensitive species, and construction of wildlife underpasses, bridges, and/ or culverts. The FEIR/S also outlines specific mitigation strategies to be employed at the project level for plant communities, biological resources management plans, sensitive plan species, invasive species, wildlife movement and migration corridors, and jurisdictional waters and wetlands.

For details on the California High Speed Rail Proposal, please visit the California High Speed Rail Authority's website at: www.cahighspeedrail.ca.gov

Biographical Sketch: Cynthia R. Wilkerson is a conservation biologist with the California office of Defenders of Wildlife. She has been with Defenders for over three years and has developed and implemented on-the-ground wildlife conservation campaigns focusing on reducing conflicts between humans and bears, desert habitat and species conservation, regional conservation planning, and road ecology. The species covered by this work include the black bear, Channel Island fox, San Joaquin kit fox, desert tortoise, Mohave ground squirrel, and Pacific fisher. Ms. Wilkerson has an undergraduate degree in conservation biology from the University of Washington and a master's of science in wildlife ecology and conservation from the University of Florida. As an undergraduate, she formed a non-profit research organization in British Columbia's Great Bear Rainforest and conducted fieldwork on the acoustic behavior of song sparrows, plant ecology, marbled murrelets, and northern goshawks. Her master's research focused on the importance of isolation to temporary wetlands and included field work as well as spatially-implicit modeling. Ms. Wilkerson's professional interests and experience include natural resource group facilitation and conflict resolution, regional conservation planning, landscape and spatial ecology, and conservation policy.

POTENTIAL ECOLOGICAL IMPACTS ANALYSIS OF CALIFORNIA HIGH SPEED RAIL

Dick Cameron (dcameron@tnc.org), The Nature Conservancy, co-authors Mike White and Jerre Ann Stallcup, with additional material on behalf of Kristeen Penrod, Southcoast Wildlands Project

Abstract

The Nature Conservancy and the Conservation Biology Institute conducted an analysis of the potential environmental impacts of the proposed California High Speed Rail project as detailed in the 2004 Draft Programmatic Environmental Impact Report. The analysis intended to match the scale of the programmatic EIR in order to inform comments and to create a synoptic view of the project with select focal examples of potential impact areas for non-governmental organization partners and funders. An initial, more thorough, analysis covered areas outside of the Bay Area alignments. The question of choosing the high speed rail modal alternative versus the increased highways and airports or no action alternatives was not addressed.

The analysis utilized GIS and was based on high speed rail alignment data, including information on structure (bridge, tunnel, trench) and spatial alignment relative to right of ways (in, adjacent, new). For each geographical region and subset, proposed options were analyzed in terms of their ecological impacts. Data layers used were: public land and private conservation land (2003), wetlands and vernal pools, The Nature Conservancy portfolio conservation areas, the California Natural Diversity Database, potential wilderness, and potential wildlife linkages. Impacts from construction as well as operations and maintenance were included. Direct impacts include removal of vegetation, wildlife mortality, water pollution, noise, light, and vibration. Indirect impacts include changes in surface and groundwater flow, wildlife behavior and movement, potential changes to disturbance, invasion of exotics, growth inducement, and potential benefits associated with restoration opportunities.

An example of the analysis results is displayed, detailing the scope and specificity of the report output. The results indicate that special areas for concern are: habitat fragmentation for wide-ranging species in the southern Sierra Nevada and Transverse Ranges; Orange and San Diego counties in terms of threatened and endangered species, lagoons, interior stream habitats, and wildlife linkages; wetlands and vernal pools in the Central Valley; and the Western Mojave Desert in terms of growth inducement and impacts to groundwater.

The EIR did not provide sufficient information to make a decision on preferred routes. Although a system-wide assessment is the time to consider range-wide effects on ecosystems and species, the programmatic EIR deferred many analyses to project-level review, which is constrained to a specific geography to such a degree that many issues would be ignored.

In order to take advantage of the opportunity to restore connectivity with the high speed rail project, it is recommended that wildlife crossing structures should be: located along natural travel routes, with suitable habitat and topography for target species; designed to accommodate different taxonomic groups; located every 1.5 to 2 kilometers; aligned with crossing structures on Interstates and highways; integrated with sound walls to reduce the adverse affects of noise, vibration, and light on wildlife movement; and integrated with fencing where beneficial to guide animals toward crossing structures.

The overall analysis suggests that there are several thematic areas in need of further consideration at broad scales. Opportunities exist to restore movement barriers, and these options should be further explored. Overall, the EIR/S inadequately analyzed major environmental impacts including noise, light, invasive species management, and wildlife linkages and potential to restore connectivity. The authors conclude that interagency collaboration between the High Speed Rail Authority, transportation agencies, and land management agencies (USFS, BLM, State Parks), and the development of a long-term coordinated plan will improve the project ecologically.

SOUTHEAST HIGH SPEED RAIL (SEHSR): A CASE STUDY

William Gallagher, SEHSR Core Team Member (www.sehsr.org)

Abstract

An overview

With tremendous economic and population growth, the Southeast needs a comprehensive, multi-modal transportation system. High speed rail service will provide business and leisure travelers with a competitive and affordable alternative to air and automobile travel for trips of 100 – 500 miles.

High speed rail in the Southeast will mean top speeds of 110 mph, using advanced energy efficient diesel locomotives, with average trip speeds of 85 – 87 mph. Virginia, North Carolina, South Carolina, and Georgia have joined forces with their business communities to form a four-state coalition to develop a high speed rail network connecting their states with Washington, DC, and the Northeast. This rail network will be developed incrementally, upgrading mainly existing rail rights-of-way and requiring few new right-of-way acquisitions. Environmental, planning, and engineering work is further along in the Washington–Richmond–Raleigh–Charlotte section of SEHSR, where local track and infrastructure upgrading is already taking place, shortening travel times and providing greater capacity and trip reliability.

Tiered environmental process

North Carolina and Virginia, working with FHWA and FRA, completed the Tier I EIS for the Washington–Charlotte portion of SEHSR in October 2002. This study phase examined the need for the project and looked at potential impacts on natural and manmade environments along nine possible route alternatives. Twenty-six public workshops and 18 public hearings were held to solicit feedback on the project. Meetings were regularly held with local and state leaders, railroads, state and federal planners, and resource agencies as part of the process.

The purpose and need developed during this phase included: provide affordable transportation options; ease the growth of congestion of alternate travel modes; improve air quality; improve transportation safety and provide efficient energy use; and minimize environmental impacts.

The Tier II EIS is currently underway for the Petersburg, VA–Raleigh, NC, portion of SEHSR, providing a detailed analysis of possible local impacts, including station spacing, and location and capacity of the trackage infrastructure.