APPENDIX 3.12-C
Children's Health and Safety Risk Assessment

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Acronyms

CEQA	California Environmental Quality Act
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
HMF	heavy maintenance facility
HST	high-speed train
NEPA	National Environmental Policy Act

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1.0 Introduction

This appendix describes potential children's environmental health and safety risks in the California High-Speed Train (HST) Fresno to Bakersfield Section study area associated with the No Project Alternative, the alignment alternatives, and proposed station and heavy maintenance facility (HMF) locations.

1.1 Regulatory Setting

Executive Order 13045 (EO 13045), Protection of Children from Environmental Health and Safety Risks, was issued in 1997 to minimize environmental health and safety risks to children, and to prioritize the identification and assessment of environmental health and safety risks that may have a disproportionate impact on children. EO 13045 also ensures that federal agencies, in their policies, programs, activities, and standards, address environmental and safety risks to children. Environmental health risks and safety risks include risks to health or to safety that are attributable to products or substances that children are likely to come into contact with or ingest, such as air, food, drinking water, recreational waters, soil, or products they might use or be exposed to. In proportion to their size, children breathe more air, drink more water, and eat more food than adults. This puts them at greater risk of exposure to pollutants. Children's bodies are also less able to metabolize, detoxify, and expunge these pollutants.

1.2 Methodology and Definitions

The analysis was performed in accordance with EO 13045 and consisted of conducting a demographic analysis and review of the proposed project alternatives and proposed station and HMF locations to qualitatively assess whether the project would result in children's environmental health and safety risks. The analysis is based on the environmental documentation prepared in support of the California HST, Fresno to Bakersfield Section EIR/EIS. The following sections were reviewed because these resources would have the greatest potential to affect children's health and safety: Section 3.2, Transportation; Section 3.3, Air Quality and Global Climate Change; Section 3.4, Noise and Vibration; Section 3.5 Electromagnetic Fields and Electromagnetic Interference; Section 3.8, Hydrology and Water Resources; Section 3.10, Hazardous Materials and Wastes; Section 3.11, Safety and Security; Section 3.12, Socioeconomics, Communities, and Environmental Justice; Section 3.15 Parks, Recreation, and Open Space; and Section 3.19, Cumulative Impacts.

The project study area in this analysis is defined as 0.5 mile from the alternative alignments and from proposed station and HMF locations. This distance is chosen since this is the area where the majority of the project effects occur (i.e., noise impacts only extend about 0.25 mile and local air quality impacts consider sensitive receptors, such as schools, residences, and health care facilities, under 0.25 mile). Some disciplines, such as air quality, analyze a broader area when potential impacts could reach beyond 0.25 mile, but these effects are on a regional level. For the purposes of this analysis, children are defined as the population within the study area under the age of 18.

1.3 Significance

Substantial effects on children's health and safety are defined as those impacts and effects on the environment that result in negative impacts on children as a result of one or more the following (the associated resources are provided in parenthesis):

- Potential respiratory impacts, including asthma from air pollutant emissions and generation of fugitive dust (Air Quality and Global Climate Change).

- Potential noise impacts on health and learning, especially in areas where children congregate (such as schools, parks, and residential areas) (Noise and Vibration).

- Potential impacts from the use of chemicals, such as dust suppression methods and hazardous materials (Hazardous Materials and Wastes).

- Potential safety risks to children, especially where the alternatives are located near areas where children congregate (Transportation; Electromagnetic Fields and Electromagnetic Interference; Hydrology and Water Resources; Safety and Security; Socioeconomics, Communities, and Environmental Justice; Parks, Recreation, and Open Space; and Cumulative Impacts).

2.0 Existing Conditions

This section provides information on demographics, community setting, schools, parks, and other community facilities located within the study area. (Refer to Chapter 2, Alternatives, in the Fresno to Bakersfield Section EIR/EIS for complete information on the alternative alignments as well as the proposed station and HMF locations.)

2.1 Demographics

Table 3.12-B1 provides information on the population under the age of 18 in the cities and communities within 0.5 mile of the HST alternatives. The percentage of the population under 18 in the entire four-county region is 31.2%. Within the study area, the Roosevelt district in the city of Fresno has the highest percentage of the population under 18 (40.0%) and the community of Grangeville has the lowest percentage of population under 18 (24.3%). (For additional information on demographics, refer to Section 3.12, Socioeconomics, Communities, and Environmental Justice.)

Table 3.12-C1
Child Population (%) in the HST Alternatives Locations

Location	Population 2000	Population within 0.5 mile 2000	% of Population under 18
Fresno County	799,407	18,610	32.1%
City of Fresno	427,652	12,680	32.9%
Fresno Central District	16,896	6,243	34.3%
Fresno Edison District	27,992	4,605	39.6%
Fresno Roosevelt District	104,643	1,832	40.0%
Community of Laton	1,236	685	35.9%
Kings County	129,461	14,302	29.0%
City of Hanford	41,686	1,135	31.6%
Community of Grangeville	638	330	24.3%
Community of Armona	3,239	185	35.4%
City of Corcoran	14,458	10,240	24.4%
Tulare County	368,021	619	31.8%
Kern County	661,645	81,699	31.9%
City of Wasco	21,263	7,868	27.4%
City of Shafter	12,736	8,849	36.6%
City of Bakersfield	247,057	31,719	32.7%
Bakersfield Central District	27,466	9,860	29.8%
Bakersfield Northeast District	137,928	37,145	34.8%
Bakersfield Northwest District	52,650	12,659	33.0%
Regional Total	1,958,534	115,230	31.2%

Source: U.S. Census 2000

2.2 Community Setting

The region consists of four counties: Fresno, Kings, Tulare, and Kern. The study area runs through many communities, including the large urban areas of Fresno and Bakersfield, which act as the major social and economic focal points of the region. Most of the residents, businesses, and community resources in the study area are in these largest two cities. The project also passes through smaller communities that contain residences and businesses: Laton, Grangeville, Armona, Hanford, Corcoran, Wasco, and Shafter. The remainder of the study area consists mostly of rural agricultural land with few concentrations of residences, businesses, services and community facilities, or other areas where children would congregate. (For complete information on the community setting, refer to Section 3.12, Socioeconomics, Communities, and Environmental Justice.)

2.3 Schools

2.3.1 School Locations

There are 58 schools, including public and private elementary, middle, and high schools, within the 0.5-mile study area for the alternative alignments (see Table 3.12-B2). Table 3.12-B3 provides a listing of the schools within the 0.5-mile study area for the proposed station and HMF site locations.

Table 3.12-C2
Schools within 0.5 mile of HST Alternatives

Resource Name	Location	HST Alternative								
		BNSF	Hanford West Bypass 1	Hanford West Bypass 2	Corcoran Elevated	Corcoran Bypass	Allens-worth Bypass	Wasco-Shafter Bypass	Bakersfield South	Bakersfield Hybrid
Columbia Elementary School	Fresno- Edison	x								
Lincoln Elementary School	Fresno- Edison	x								
Kirk Elementary School	Fresno- Edison	x								
New Millennium Institute of Education Charter	Fresno- Edison	x								
Lowell Elementary School	Fresno- Central	x								
Fresno Adult School	Fresno- Central	x								
School of Unlimited Learning	Fresno- Central	x								
Pacific Union Elementary School	Monmouth	x								
Monroe Elementary School	Monmouth	x								
Frontier Elementary School	Grangeville		x	x						
Parkview Middle School	Armona		x	x						
Armona Elementary School	Armona		x	x						
College of the Sequoias	Hanford		x	x						
Sierra Pacific High School	Hanford		x	x						
Kit Carson Elementary School	Hanford	x								
Conejo Middle School/ Laton Elementary School	Laton		x	X						
John C Fremont Elementary	Corcoran	x			x					

Table 3.12-C2
Schools within 0.5 mile of HST Alternatives

Resource Name	Location	HST Alternative								
		BNSF	Hanford West Bypass 1	Hanford West Bypass 2	Corcoran Elevated	Corcoran Bypass	Allens-worth Bypass	Wasco-Shafter Bypass	Bakersfield South	Bakersfield Hybrid
School										
John Muir Middle School	Corcoran	x			x					
Corcoran High School	Corcoran	x								
Allensworth Elementary School	Allensworth	x								
Karl F Clemens Elementary	Wasco	x								
Thomas Jefferson Middle School	Wasco	x								
Bethany Christian School	Wasco	x								
St. John the Evangelist School	Wasco	x								
Independence High (Continuation)	Wasco	x								
Golden Oak Elementary	Shafter	x								
Redwood Elementary/ Richland Junior High	Shafter	x								
Sequoia Elementary	Shafter	x						x		
Shafter High School	Shafter	x						x		
Central Valley High (Continuation)	Shafter	x								
Freewill Christian Academy	Shafter	x								

Table 3.12-C2
Schools within 0.5 mile of HST Alternatives

Resource Name	Location	HST Alternative								
		BNSF	Hanford West Bypass 1	Hanford West Bypass 2	Corcoran Elevated	Corcoran Bypass	Allens-worth Bypass	Wasco-Shafter Bypass	Bakersfield South	Bakersfield Hybrid
J. C. Worthy Institute	Bakersfield-Northwest	x							x	x
Rosedale North Elementary School	Bakersfield-Northwest	x							x	x
Rosedale Middle School	Bakersfield-Northwest	x							x	x
Independence Elementary School	Bakersfield-Northwest	x							x	x
Country Christian School	Bakersfield-Northwest	x							x	x
Fruitvale Jr. High School	Bakersfield-Northwest	x							x	x
Columbia Elementary School	Bakersfield-Northwest	x							x	x
Stockdale Christian Elementary School	Bakersfield-Northwest	x							x	x
Caroline Harris Elementary School	Bakersfield-Northwest	x								
St. Francis Parish School	Bakersfield-Central	x								
Franklin Elementary School	Bakersfield-Central	x							x	x
William Penn Elementary	Bakersfield-	x							x	x

Table 3.12-C2
Schools within 0.5 mile of HST Alternatives

Resource Name	Location	HST Alternative								
		BNSF	Hanford West Bypass 1	Hanford West Bypass 2	Corcoran Elevated	Corcoran Bypass	Allens-worth Bypass	Wasco-Shafter Bypass	Bakersfield South	Bakersfield Hybrid
	Central									
Bakersfield High School	Bakersfield-Central	x							x	x
Downtown Elementary School	Bakersfield-Central	x							x	x
Rafer Johnson Children's Center	Bakersfield-Central	x							x	x
Warriors for Christ Academy	Bakersfield-Central	x							x	x
Bessie E. Owens Intermediate School	Bakersfield-Northeast	x							x	x
Bessie E. Owens Primary School	Bakersfield-Northeast	x							x	x
Blanton Education Center	Bakersfield-Central	x							x	X
Our Lady of Guadalupe School	Bakersfield-Northeast	x							x	x
Williams Elementary School	Bakersfield-Northeast	x								x
Mount Vernon Elementary	Bakersfield-Northeast	x							x	x
Virginia Avenue Elementary	Bakersfield-Northeast	x							x	x

Table 3.12-C2
Schools within 0.5 mile of HST Alternatives

Resource Name	Location	HST Alternative								
		BNSF	Hanford West Bypass 1	Hanford West Bypass 2	Corcoran Elevated	Corcoran Bypass	Allens-worth Bypass	Wasco-Shafter Bypass	Bakersfield South	Bakersfield Hybrid
Bethel Christian School	Bakersfield-Northeast	x							x	x
Horace Mann Elementary	Bakersfield-Northeast	x							x	x
Ramon Garza Elementary School	Bakersfield-Northeast	x							x	x
Sierra Middle School	Bakersfield-Northeast	x							x	x

Table 3.12-C3
Schools within 0.5 mile of Stations and HMF Sites

Resource Name	Location	HMF or Station Alternative
Karl F Clemens Elementary	Wasco	Kern Council of Governments—Wasco HMF
Teresa Burke Elementary	Wasco	Kern Council of Governments—Wasco HMF
Thomas Jefferson Middle School	Wasco	Kern Council of Governments—Wasco HMF
Bethany Christian School	Wasco	Kern Council of Governments—Wasco HMF
St. John the Evangelist School	Wasco	Kern Council of Governments—Wasco HMF
Downtown Elementary School	Bakersfield-Central	Bakersfield Station—North Alternative
Rafer Johnson Community Day School	Bakersfield-Central	Bakersfield Station—North Alternative
Sandstone Elementary	Bakersfield-Northeast	Bakersfield Station—North Alternative
Bessie E. Owens Intermediate School	Bakersfield-Northeast	Bakersfield Station—North Alternative
Our Lady of Guadalupe School	Bakersfield-Northeast	Bakersfield Station—North Alternative

2.3.2 School District Boundaries

Outside of the urban areas, the school boundaries are very large and can extend into the transportation corridors. It is likely that many of the students in these areas use transportation provided by the school district, rely on family members, or drive themselves to school. (Refer to Section 3.12, Socioeconomics, Communities, and Environmental Justice, Appendix 3.12-B: Effects on School District Funding and Transportation Bus Routes for Maps of School District Boundaries in the Study Area.)

2.4 Parks and Recreation

Table 3.12-B4 lists the parks and recreation facilities within the study area and includes information on whether the resources are considered passive or active. Passive resources are identified as open-space areas with trails and/or picnic areas. Active resources are identified as those that require development (such as playgrounds and ball fields). Parks that are considered active are associated with more intensive use by children. Table 3.12-B4 demonstrates that of the 25 parks, recreation, and open-space resources in the study area, 3 are passive and 22 are active. Table 3.12-B5 includes the parks within the study area surrounding the proposed station and HMF locations. (Refer to Section 3.15, Parks, Recreation, and Open Space, for more information on the parks located within the study area of the alternative alignments and the proposed station and the HMF locations.)

Table 3.12-C4
Parks, Recreation, and Open-Space Resources within Study Area Surrounding Alignment Alternatives

Resource Name	Location	HST Alternative									Distance from Alignment/ Project Component	Passive/Active
		BNSF	Hanford West Bypass 1	Hanford West Bypass 2	Corcoran Elevated	Corcoran Bypass	Allensworth Bypass	Wasco-Shafter Bypass	Bakersfield South	Bakersfield Hybrid		
Fulton Mall	Fresno	x									450 feet	Passive
Fresno County Plaza	Fresno	x									2030 feet	Passive
Fresno County Courthouse Park	Fresno	x									1290 feet	Active
Laton Kingston Park	Laton		x	x							4500 feet	Active
Armona Recreation Park	Armona		x	x							4340 feet	Active
Father Wyatt Park	Corcoran	x			x						218 feet	Active
John Maroot Park	Corcoran				x	x					1500 feet	Active
Christmas Tree Park	Corcoran	x			x						724 feet	Passive
Southgate Park	Wasco	x									1700 feet	Active
Cormack Park	Wasco	x									2800 feet	Active
Mannel Park	Shafter	x									1050 feet	Active
Town Square	Shafter	x									774 feet	Active
Stringham Park	Shafter	x									991 feet	Active
Kirschenmann Park	Shafter	x									721 feet	Active
James Park	Shafter	x									865 feet	Active
Kern River	Bakersfield	x							x	x	0 feet	Active

Table 3.12-C4
Parks, Recreation, and Open-Space Resources within Study Area Surrounding Alignment Alternatives

Resource Name	Location	HST Alternative									Distance from Alignment/ Project Component	Passive/Active
		BNSF	Hanford West Bypass 1	Hanford West Bypass 2	Corcoran Elevated	Corcoran Bypass	Allensworth Bypass	Wasco-Shafter Bypass	Bakersfield South	Bakersfield Hybrid		
Parkway												
Beach Park	Bakersfield	x							x	x	2260 feet	Active
Jastro Park	Bakersfield								x	x	560 feet	Active
McMurtrey Aquatic Center	Bakersfield	x							x	x	37 feet	Active
Amtrak Station Playground	Bakersfield	x							x	x	199 feet	Active
Central Park at Mill Creek	Bakersfield	x							x	x	0 feet	Active
Mayflower Park/Dr. Martin Luther King Jr. Community Center	Bakersfield								x		435 feet	Active
Greenacres Park and Community Center	Bakersfield	x							x	x	2186 feet	Active
North Rosedale Park	Bakersfield	x							x	x	1500 feet	Active
Mondavi Park	Bakersfield	x							x	x	2010 feet	Active

Table 3.12-C5
Parks, Recreation, and Open-Space Resources within Study Area Surrounding Proposed Station and HMF Locations

Resource Name	Location	HMF or Station Alternative
Fresno County Plaza	Fresno	Fresno Station
Fresno County Courthouse Park	Fresno	Fresno Station
Southgate Park	Wasco	Kern Council of Governments-Wasco HMF

2.5 Community Facilities

For this analysis, community facilities include those places where children congregate, including religious institutions, daycare facilities, museums, libraries, and community centers. Within the study area for the HST alternatives, services and facilities include schools (public and private), religious institutions, parks and recreation facilities, government facilities (such as courthouses, city halls, post offices, and libraries), cemeteries, fire halls, police stations, hospitals, transit stations, and social institutions (such as community centers, senior facilities, and social clubs). The majority of these are in the urban areas, with many centered in the downtown areas of both the large and small cities. Religious facilities represent approximately half, or more, of the study area community facilities in Fresno, Corcoran, Wasco, Shafter, and Bakersfield. Complete information on the type and location of the community facilities within each community is presented in Appendix B, Community Baseline Data, of the Fresno to Bakersfield Section Community Impact Assessment Technical Report (Authority and FRA 2012).

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3.0 Environmental Consequences

This section describes the potential effects to children's health and safety as a result of construction and operation of the proposed project.

3.1 Overview

Analysis in the Fresno to Bakersfield EIR/EIS demonstrates that the HST project would not affect products or substances (i.e., water, soil, and food) that a child is likely to ingest, use, be exposed to, or come into contact with. No significant impacts on children's health and safety are expected from construction or from operation of the alignment alternatives. A potential does exist for air quality and hazardous materials risks resulting from construction and operation of facilities in the proposed station and HMF locations.

3.2 No Project Alternative

The No Project Alternative includes planned projects that will likely be implemented by the year 2035. Chapter 2, Alternatives, in the Fresno to Bakersfield EIR/EIS, provides a complete description of the No Project Alternative, and Section 3.19, Cumulative Impacts, discusses foreseeable future projects, including shopping centers, large residential developments, quarries, and expansion of SR 99. Under the No Project Alternative, school, parks, and community facilities either would not be affected or any resulting effects would be less than substantial under NEPA and any impacts would be mitigated to less than significant under CEQA. The No Project Alternative would likely not result in any significant impacts or effects on children's health and safety because of the regulations that would be required before construction of these associated projects.

3.3 HST Alternatives

3.3.1 Construction Impacts of All HST Alternatives, Stations, and HMF

The impacts on children's health and safety from construction of all alignment alternatives were determined by reviewing the construction impacts associated with the environmental elements addressed in the Fresno to Bakersfield Section EIR/EIS. Table 3.12-B6 provides information about the potential impacts and their significance after the implementation of mitigation measures. Construction activities would be temporary, though these activities would occur over a longer duration in the station areas. (Refer to Chapter 2, Alternatives, for information on the construction period time frame.)

Table 3.12-C6
Construction Impacts on Children's Health and Safety of Alignment Alternatives and Proposed Station and HMF Locations

Environmental Element	Impacts Summary	Relevance to Children's Health and Safety
Transportation	Adverse impacts as a result of local roadway modifications and construction activities may temporarily disrupt circulation patterns in some communities. Although access to some neighborhoods, businesses, or community facilities would be disrupted and detoured for short periods during construction, access would be available. Any roadways that would require realignment would be constructed before the closure of the existing roadway to minimize impacts. Construction would also require an increase in truck trips that could increase congestion. In addition, construction activities would affect pedestrians, bicyclists, and transit because of detours, traffic delays, and increased congestion. During construction, there may be temporary impacts related to school bus detours due to road closures. Standard construction procedures related to traffic management would be used to maintain traffic flow during peak travel periods, including identification of when and where temporary closures and detours would occur. For example, in those areas where a new crossing is required, detours would be built first and traffic diverted. After construction is completed, traffic would be diverted back to the new overcrossing.	Before construction, a Construction Management Plan would be implemented and include information to address communications, safety controls, and traffic controls to minimize impacts and maintain access. Additionally, a Construction Transportation Plan would be prepared before construction to provide information ensuring the safety of school children and advising school districts of construction activities. With mitigation, the effects on children's health and safety would be less than significant.
Air Quality	At the local level, the construction period for the portions of the alignment that run past sensitive receptors within the communities in the study area would be less than 1 year. This short period of exposure is not comparable to chronic exposure and would not increase the cancer risk to sensitive receptors. At the regional level, construction activities would result in increased fugitive dust emissions.	With mitigation measures, the impacts on children's health and safety will be less than significant.

Table 3.12-C6
Construction Impacts on Children's Health and Safety of Alignment Alternatives and Proposed Station and HMF Locations

Environmental Element	Impacts Summary	Relevance to Children's Health and Safety
Noise and Vibration	The potential for temporary construction noise and vibration impacts would be limited to locations within approximately 300 feet of the station and HMF locations. Two schools would experience severe impacts before mitigation (Bessie E Owens Intermediate and Bessie E Owens Primary).	With mitigation, the noise and vibration effects on children's health and safety will be less than significant.
EMF/EMI	There would be no significant impacts during construction because construction equipment generates low levels of EMFs and EMI. The only EMI that might be generated during construction would be occasional licensed radio transmissions between construction vehicles.	There would be no impacts related to children's health and safety.
Hydrology and Water Resources	All operation impacts related to hydrology and water quality as a result of implementing the Fresno to Bakersfield Section of the HST alternatives would be less than significant because of compliance with design standards.	There would be no impacts related to children's health and safety.
Hazardous Materials and Wastes	The construction of any of the project alternatives would involve transporting, using, and disposing of construction-related hazardous materials and wastes. Potentially, such construction could result in accidental spills or releases of hazardous materials and wastes and result in temporary hazards to schools. Mitigation measures will be implemented to ensure the use of extremely hazardous substances or mixture thereof in a quantity equal to or greater than the state threshold quantity will not occur within 0.25 mile of a school.	The effect of HST construction related to routine transport and handling of hazardous or acutely hazardous materials within 0.25 mile of an existing or proposed school would be less than significant. The effect of hazardous materials released to the environment in the unlikely event of a leak or spill as the result of an accident or collision during construction would largely be negligible because of the generally small quantities of materials transported or used at any given time and because of the precautions required by regulations. In general, implementation of regulatory requirements would reduce the potential for a severe spill to a negligible intensity[a], and therefore there would be no significant impacts on children's health and safety.

Table 3.12-C6
Construction Impacts on Children's Health and Safety of Alignment Alternatives and Proposed Station and HMF Locations

Environmental Element	Impacts Summary	Relevance to Children's Health and Safety
Safety and Security	The general public would not have access to construction areas for the HST, HST stations, or the HMF. The roads crossing the HST alignment would be grade-separated, typically with a road overcrossing, which improves the safety of children crossing the HST alignment. During construction, the roads would have to be temporarily closed, and traffic would have to be detoured onto other roads. At these sites, lane closures and detours could potentially create a distraction to automobile drivers, pedestrians, and cyclists. Distraction and unfamiliarity with detours could lead to accidents. In addition, the road closures, detours, and localized automobile congestion could increase the response time for law enforcement, fire, and emergency services personnel, and school buses. Emergency evacuation times could also increase. The project design features would include development of a detailed construction transportation plan that would require coordination with local jurisdictions on emergency vehicle access. The plan would also include a traffic control plan that establishes procedures for temporary road closures, including access to residences and businesses during construction, lane closure, signage and flag persons, temporary detour provisions, alternative bus and delivery routes, emergency vehicle access, pedestrian access, and alternative access locations. Construction of road crossings would be staggered so that the next adjacent road to the north and south of a road temporarily closed for construction would remain open to accommodate detoured traffic. This would typically result in 1 to 2 miles of out-of-direction travel during temporary road closures.	Because the project would implement a construction transportation plan and associated traffic control plan, and restrict access to construction areas, the resulting effects would be less than significant to children's health and safety.

Table 3.12-C6
Construction Impacts on Children's Health and Safety of Alignment Alternatives and Proposed Station and HMF Locations

Environmental Element	Impacts Summary	Relevance to Children's Health and Safety
Socioeconomics, Communities, and Environmental Justice	Construction activities could be particularly disruptive to nearby community facilities and institutions such as schools because construction would occur primarily during their normal hours of operation, when noise, traffic, and other conflicts would be most problematic. For example, construction activities, materials deliveries, etc. (especially with the BNSF Alternative) would conflict with pedestrian and vehicle access to Bakersfield High School via Campus Way and 14th Street when school is in session. Detailed construction access plans would be developed before the start of construction, and the affected cities would review these plans before construction begins. Potential conflicts with special events (e.g., fairs, athletic events, major conventions) would be addressed through a special mitigation measure described in the section entitled Construction during Special Events, in Section 3.2, Transportation. This measure provides mechanisms to prevent roadway construction activities from reducing roadway capacity during major athletic events or other special events that attract a substantial number of visitors. Mechanisms include the presence of police officers directing traffic, special-event parking, use of within-the-curb parking, or shoulder lanes for through-traffic, traffic cones, and so on. Through such mechanisms, roadway capacity would be maintained.	With the mitigation measures proposed for transportation and noise and vibration, impacts related to children's health and safety are expected to be less than significant.
Parks, Recreation, and Open Space	Chukchansi Park (along the BNSF Alternative), Father Wyatt Park (along the BNSF Alternative and Corcoran Elevated Alternative), Christmas Tree Park (along Hanford West Bypass 1 and 2 alternatives), Orchard Park (proposed along the Wasco-Shafter Bypass Alternative), Kern River Parkway (along the BNSF, Bakersfield South, and Bakersfield Hybrid alternatives), and Mill Creek Linear Park (along the BNSF, Bakersfield South, and Bakersfield Hybrid alternatives) would experience construction impacts. These impacts would include increased noise caused by the operation of equipment and visual change caused by construction activities, exposed earth, and stockpiled materials.	The safety measures discussed in Safety and Security, above, would be implemented to restrict access of members of the public, including children, to construction areas. Additionally, with the mitigation measures proposed for transportation and noise and vibration, impacts related to children's health and safety are expected to be less than significant.

Table 3.12-C6
Construction Impacts on Children's Health and Safety of Alignment Alternatives and Proposed Station and HMF Locations

Environmental Element	Impacts Summary	Relevance to Children's Health and Safety
Cumulative Impacts	None of the environmental elements identified in this table would result in any significant cumulative impacts.	The impacts would be temporary and end following construction completion. With mitigation, these effects would be less than significant.

[a] An impact with negligible intensity is defined as an increased risk to the public or to the environment related to hazardous materials or substances that is slightly than, but very close to, the existing conditions.

3.3.2 Project Impacts of All HST Alignment Alternatives

The impacts on children's health and safety from operation of all alignment alternatives were determined by reviewing the project operation impacts associated with the environmental elements addressed in the Fresno to Bakersfield Section EIR/EIS. Table 3.12-B7 provides information on the potential impacts and significance of the impacts after the implementation of mitigation measures.

Table 3.12-C7
Project Impacts on Children's Health and Safety

Environmental Element	Impacts Summary	Relevance to Children's Health and Safety
Transportation	Roadway modifications may change some access and routing of school buses due to road closures, but alternative routes are provided to minimize any impacts. The resulting out-of-direction travel distances required due to road closures would not result in long detours and the Authority will work with the local jurisdictions to provide additional access as needed. The HST alternatives are all grade-separated from the existing transportation corridors, so there is no conflict between school buses and the HST trains. All of the HST alternatives provide new crossings over existing transportation corridors. These overcrossings would remove conflicts with railroads and improve safety and access for buses.	There would be no significant impacts on children's heal school district bus transportation changes. There is the p because roadway crossings would improve safety and ac
Air Quality	All HST alternatives would result in a net benefit on regional and statewide air quality from HST operation because of a decrease in emissions.	There would be no significant impacts. All residents in the San Joaquin Valley would benefit from the decrease in air pollutants associated with the projected shift in transportation modes.
Noise and Vibration	HST operation would result in impacts from increased noise levels. Using sound barriers for mitigation, the number of significant noise impacts would be reduced, as the barriers would shield noise. Five schools would experience moderate impacts before mitigation (Allensworth Elementary, Freewill Christian Academy, Bethel Christian, Blanton Education Center, and Fruitvale Junior High) and two schools would experience severe impacts (Bessie E Owens Intermediate and Bessie E Owens Primary).	With mitigation, the noise and vibration effects on children's health and safety would be less than significant.

Table 3.12-C7
Project Impacts on Children's Health and Safety

Environmental Element	Impacts Summary	Relevance to Children's Health and Safety
EMF/EMI	The various alternative track alignments pass within 1,000 feet of eight schools and one college. In addition, six schools would be located within 0.5 mile of HST stations and HMFs. The closest school to a station or HMF would be Our Lady of Guadalupe School, located 487 feet from the alignment proposed in Bakersfield. Radio communications systems (e.g., wireless local area networks and internet connections) are expected to be in use at these institutions. FCC spectrum frequency allocations allow wireless fidelity (WiFi) systems to operate in their frequency blocks at 2.4, 3.6, and 4.9/5.0 GHz, each divided into channels to allow multiple systems to operate without interfering with one another. Wireless networks used by schools and colleges operate at relatively low power levels and have a limited range of 100 to 300 feet.	The impacts on children's health and safety would be less than significant.
Hydrology and Water Resources	All operation impacts related to hydrology and water quality as a result of implementing the Fresno to Bakersfield Section of the HST alternatives would be less than significant because of compliance with design standards.	No impacts related to children's health and safety would occur.
Hazardous Materials and Wastes	During operation of the HST system, only minor amounts of hazardous materials would be used, and all laws, regulations, and ordinances would be followed with respect to the transport, use, storage, and disposal of hazardous materials.	In general, implementation of regulatory requirements would reduce the potential for a severe spill to a negligible intensity, and therefore there would be no significant impacts on children's health and safety.
Safety and Security	California Code of Regulations (CCR) Title 5, Section 14010c, calls for a separation between schools and power transmission lines of 100 feet for 50–133 kV lines. The Fresno to Bakersfield Section would be powered by a 25 kV system; therefore, the electrification of the trains itself would not be a safety hazard to schools. The project would not require the construction of new power transmission lines in the vicinity of existing or future planned schools. For these reasons, the electrification of the HST project would have no safety effect on school employees and students.	Because the train would be contained in the HST right-of-way in the event of derailment and would not contain cargo or fuel that would result in a fire or explosion, the proposed project would not substantially increase hazards to nearby schools, and the resulting impacts to children's health and safety would be less than significant.

Table 3.12-C7
Project Impacts on Children's Health and Safety

Environmental Element	Impacts Summary	Relevance to Children's Health and Safety
Safety and Security (continued)	Derailment of a train during a seismic event or other natural disaster could be a substantial safety hazard to these schools if the train left the HST right-of-way and collided with other structures or people on adjacent properties. This hazard is associated with the physical mass and speed of the train. Because the HST would carry passengers and be electric-powered, there would be no safety hazard associated with HST cargo or fuel. Physical impact of an HST leaving the right-of-way could only occur within roughly 100 feet of the right-of-way. Therefore, only Bakersfield High School on the BNSF Alternative and Bethel Christian School on the Bakersfield South Alternative would be subject to this safety risk. A basic design feature of an HST system is to contain trainsets within the operational corridor. Thus, if a derailment were to occur next to a school, the train would remain within the HST right-of-way.	
Socioeconomics and Communities	The BNSF Alternative would displace the Industrial Arts building on the Bakersfield High School campus. The Bakersfield South Alternative would displace the Bethel Christian School, but it would be relocated and would not remain within 100 feet of the project right-of-way. Refer to the impacts summary for Safety and Security, above, on how derailment of a train during a seismic event or other natural disaster could be a substantial safety hazard to these schools.	The impacts on children's health and safety would be less than significant.
Parks, Recreation, and Open Space	Impacts on parks, recreation, and open-space resources and school district play areas and recreation facilities would include the direct impacts associated with acquisition of park resources and indirect impacts from HST operations related to the distance between an HST alternative and the park. Refer to the impacts summary for Safety and Security, above, on how derailment of a train during a seismic event or other natural disaster could be a substantial safety hazard to these parks and recreation areas.	The impacts on children's health and safety would be less than significant.
Cumulative Impacts	Beneficial effects would occur with regard to transportation and air quality. No effects would occur due to hydrology and water resources. There are potential effects related to noise and vibration, EMI/EMF, hazardous materials and wastes, safety and security, socioeconomics and communities, and parks, recreation, and open space.	With mitigation, any effects on children's health and safety would be less than significant.

3.3.3 HST Alignment Alternatives Summary

Overall, operation of the alignment alternatives would not result in any significant impacts on children's health and safety.

3.3.4 Proposed Station and HMF Location Impacts

The impacts on children's health and safety for proposed station and HMF locations were determined by reviewing the information for alignments, above, and additionally by examining air quality and hazardous materials impacts associated specifically with construction and operation of stations and HMF facilities. These impacts are taken from the environmental elements addressed in the Fresno to Bakersfield Section EIR/EIS. Table 3.12-B8 provides information on the potential impacts and significance of the impacts after the implementation of mitigation measures.

Table 3.12-C8
Station and HMF Impacts on Children's Health and Safety

Environmental Element	Impacts Summary	Relevance to Children's Health and Safety
Air Quality	Station construction would take place over a period of 4 years, and sensitive receptors at schools could potentially be exposed to cancer risks. Health risk analysis for DPM indicated that sensitive receptors at schools within approximately 9,300 feet of the station construction area may be exposed to cancer risks greater than 10 in a million. Cancer risks at a distance of more than 9,300 feet from the station construction area are estimated to be below 10 in a million. By implementing mitigations measures, risks of cancer may be reduced to greater than 10 in a million to receptors at schools within approximately 1,400 feet of the station construction area. The health risk assessment conducted for prototypical HMF facilities indicates that receptors at schools more than 1,300 feet from the HMF would not be significantly affected by air toxics emissions from the facility. A more detailed health risk assessment will need to be done for schools closer than 1,300 feet after the HMF site has been selected.	There would be significant risks to children's health and safety during construction at these schools and parks: Columbia Elementary School (Fresno Station alternatives) Fresno County Plaza (Fresno Station alternatives) Fulton Mall (Fresno Station alternatives) Chukchansi Park (Fresno Station alternatives McMurtrey Aquatic Center (Bakersfield Station alternatives) Mill Creek Linear Park (Bakersfield Station alternatives) Central Park (Bakersfield Station alternatives) Bakersfield Amtrak Station Playground (Bakersfield Station alternatives) There would be significant risks to children's health and safety during operation at this school: Independence High School (Kern Council of Governments—Wasco HMF)

Table 3.12-C8
Station and HMF Impacts on Children's Health and Safety

Environmental Element	Impacts Summary	Relevance to Children's Health and Safety
Hazardous Materials and Wastes	The use of materials at the HMF could result in accidental spills of hazardous materials that would result in effects of negligible to moderate intensity, depending on the materials and the severity of a spill and the HMF site selected. Independence High School is within 0.25 mile of the Kern Council of Governments—Wasco HMF site. If the HMF is located at this site, mitigation measures will be undertaken so the operator will not handle an extremely hazardous substance or a mixture containing extremely hazardous substances in a quantity equal to or greater than the state threshold quantity specified in subdivision (j) of Section 25532 of the Health and Safety Code, to the extent consistent with project requirements.	The types and quantities of extremely hazardous substances to be used at the HMF site are not yet identified. It may not be feasible to limit the use of all these materials during HMF operations. In the most unlikely and extreme case, such a release could be a potentially significant impact.

3.3.5 Station and HMF Sites Summary

Overall, there would be the potential for significant impacts on children's health and safety as a result of air quality and hazardous materials and waste impacts at proposed station and HMF locations during construction and operation of the HST project.

3.3.6 Project Design Features and Mitigation Measures

The Authority has produced project design features that include avoidance and minimization measures consistent with the Statewide Program EIR/EIS (Authority and FRA 2005). Statewide Program EIR/EIS mitigation strategies have been refined and adapted for this project-level EIR/EIS. The sections of the Fresno to Bakersfield Section EIR/EIS include mitigation measures that would minimize or avoid some of the children's health and safety impacts identified in this analysis. In addition, other sections of the Fresno to Bakersfield Section EIR/EIS contain a number of measures and best management practices that would be implemented, and these would also further minimize or avoid impacts on children's health and safety.

4.0 References

California High-Speed Rail Authority and USDOT Federal Railroad Administration (Authority and FRA). 2005. *Final Program Environmental Impact Report/Environmental Impact Statement (EIR/EIS) for the Proposed California High-Speed Train System.* Vol. 1, *Report.* Sacramento and Washington, DC: California High-Speed Rail Authority and USDOT Federal Railroad Administration.

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