

4.0 Final Section 4(f)/6(f) Evaluation

4.1 Introduction

This chapter provides the analysis to support determinations to comply with the provisions of 49 U.S.C. 303 (hereinafter referred to as "Section 4(f)") and the Land and Water Conservation Fund (LWCF) Act of 1965 (hereinafter referred to as "Section 6(f)").

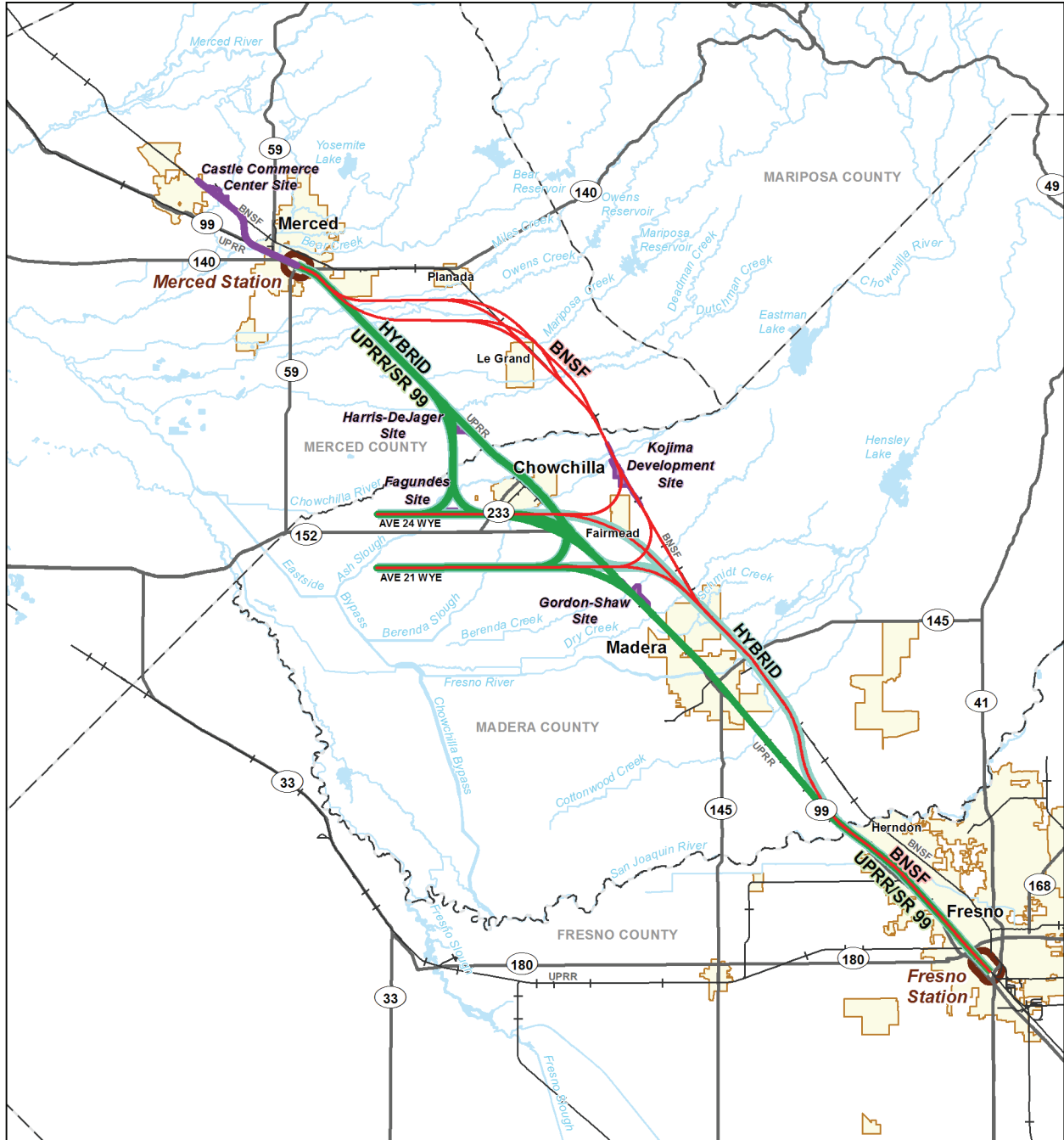
Section 4(f) properties are publicly owned parks, recreation areas, or wildlife and waterfowl refuges or properties of a historical site of national, state, or local significance as determined by the federal, state, regional, or local officials having jurisdiction over the resource. Under Section 4(f) an operating administration of the U.S. Department of Transportation may not approve a project that uses protected properties unless there are no prudent of feasible alternatives and the project includes all possible planning to minimize harm to such properties. This chapter will (1) describe the statutory requirements associated with Section 4(f); (2) identify the properties protected by Section 4(f) in the project area; (3) determine whether the Merced to Fresno High Speed Train Project will result in the use of those properties; (4) to the extent a use results, identify feasible and prudent alternatives, to the extent any exist, that would avoid or minimize use of the properties; (5) identify measures to minimize harm; and (6) complete a least-harm analysis for the project alternatives.

Section 6(f) properties are recreation resources funded by the LWCF Act. Land purchased with these funds cannot be converted to a non-recreation use without coordination with the National Park Service (NPS) and mitigation that includes replacement of the quality and quantity of land used. Additional information on publicly owned parklands, recreation lands, wildlife and waterfowl refuges, and historic sites is provided in Section 3.15, Parks, Recreation, and Open Space; Section 3.17, Cultural and Paleontological Resources; and the *Merced to Fresno Section Historic Properties Survey Report* (Authority and FRA 2012a). This chapter describes the statutory requirements associated with Section 6(f) and the methodology for identifying Section 6(f) properties, and makes a final Section 6(f) determination.

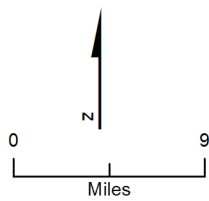
The study area as defined below identifies the Section 4(f) and Section 6(f) properties considered for evaluation. Figure 4-1 depicts the Merced to Fresno Section of the HST System.

U.S. Department of Transportation Act 49 U.S.C. 303(c) [Section 4(f)]

Compliance with Section 4(f) is required for transportation projects that are undertaken by an operating administration of the U.S. Department of Transportation or that may receive federal funding and/or discretionary approvals from the Department. Section 4(f) protects publicly owned land of parks, recreational areas, and wildlife refuges. Section 4(f) also protects historic sites of national, state, or local significance located on public or private land. FRA's Procedures for Considering Environmental Impacts (64 FR 25445, May 26, 1999) contains FRA process and protocols for analyzing the potential use of Section 4(f) protected properties. In addition, although not subject to the Title 23 Section 774 regulations regarding Section 4(f) for highway and transit projects, FRA uses these regulations as additional guidance regarding the requirements established in 49 U.S.C. 303.



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- UPRR/SR 99 Alternative
- BNSF Alternative
- Hybrid Alternative
- Potential Heavy Maintenance Facility
- City Limit
- Station Study Area
- - - County Boundary
- + + + Railroad

Figure 4-1
 Project Location Map

FRA may not approve the use of a Section 4(f) property, as defined in 49 U.S.C. 303(c), unless it determines that there is no feasible and prudent alternative to avoid the use of the property and the action includes all possible planning to minimize harm resulting from such use *or* the project has a *de minimis* impact consistent with the requirements of 49 U.S.C. 303(d). An alternative is not feasible if it cannot be built as a matter of sound engineering judgment. In determining whether an alternative is not prudent, the FRA may consider if the alternative will result in any of the following:

- Compromising the project to a degree that is unreasonable for proceeding with the project in light of its stated purpose and need;
- Unacceptable safety or operational problems;
- After reasonable mitigation, severe social, economic, or environmental impacts; severe disruption to established communities; severe disproportionate impacts on minority or low-income populations; or severe impacts on environmental resources protected under other federal statutes;
- Additional construction, maintenance, or operational costs of an extraordinary magnitude;
- Other unique problems or unusual factors; or
- Multiple factors that, while individually minor, cumulatively cause unique problems or impacts of extraordinary magnitude.

If there is both the use of a 4(f) property and FRA determines that there is no prudent and feasible alternative, the project must include all possible planning to minimize harm to the site, which includes all reasonable measures to minimize harm or mitigate impacts (49 U.S.C. 303(c)(2)).

After making a 4(f) determination and identifying the reasonable measures to minimize harm, if there is more than one alternative that result in the use of a 4(f) property, FRA may also compare the alternatives to determine which alternative has the potential to cause the least overall harm. The least overall harm may be determined by balancing the following factors:

- The ability to mitigate adverse impacts on each Section 4(f) property (including any measures that result in benefits to the property).
- The relative severity of the remaining harm, after mitigation, to the protected activities, attributes, or features that qualify each Section 4(f) property for protection.
- The relative significance of each Section 4(f) property.
- The views of the official(s) with jurisdiction over each Section 4(f) property.
- The degree to which each alternative meets the purpose and need for the project.
- After reasonable mitigation, the magnitude of any adverse impacts on resources not protected by Section 4(f).
- Substantial differences in costs among the alternatives.

4.1.1 Section 4(f) Use Definition

4.1.1.1 Permanent Use

A permanent use of a Section 4(f) resource occurs when property is permanently incorporated into a proposed transportation facility. This might occur as a result of partial or full acquisition, permanent easements, or temporary easements that exceed limits for temporary use, as noted below.

4.1.1.2 Temporary Use

A temporary use of a Section 4(f) resource occurs when there is a temporary occupancy of property that is considered adverse in terms of the preservationist purposes of the Section 4(f) statute. A temporary occupancy of property does not constitute a use of a Section 4(f) resource when the following conditions are satisfied:

- The occupancy must be of temporary duration (e.g., shorter than the period of construction) and must not involve a change in ownership of the property.
- The scope of work must be minor, with only minimal changes to the protected resource.
- There must be no permanent adverse physical impacts on the protected resource or temporary or permanent interference with activities or purpose of the resource.
- The property being used must be fully restored to a condition that is at least as good as existed prior to the proposed project.
- There must be documented agreement of the appropriate officials having jurisdiction over the resource regarding the foregoing requirements.

4.1.1.3 Constructive Use

A constructive use of a Section 4(f) resource occurs when a transportation project does not permanently incorporate land from the resource, but the proximity of the project results in impacts (e.g., noise, vibration, visual, access, ecological) that are so severe that the protected activities, features, or attributes that qualify the resource for protection under Section 4(f) are substantially impaired. Substantial impairment occurs only if the protected activities, features, or attributes of the resource are diminished. This determination is made through the following:

- Identifying the current activities, features, or attributes of the resource that may be sensitive to proximity impacts.
- Analyzing the potential proximity impacts on the resource.
- Consulting with the appropriate officials having jurisdiction over the resource.

In addition, it is important to note that erecting a structure over a Section 4(f) property, and thus requiring an air lease, does not in and of itself constitute a use unless a constructive use is present.

4.1.1.4 De Minimis Impact

According to 49 U.S.C. 303(d), the following criteria must be met to reach a *de minimis* impact determination):

- For parks, recreation areas, and wildlife and waterfowl refuges, a *de minimis* impact determination may be made if a transportation project will not adversely affect the activities, features, and attributes qualifying the property for protection under Section 4(f) after mitigation. In addition, to make a *de minimis* impact determination, there must be:
 - Public notice and opportunity for public review and comment
 - Written concurrence received from the officials with jurisdiction over the property.
- For a historic site, a *de minimis* impact determination may be made only if, in accordance with the Section 106 process of the National Historic Preservation Act (NHPA), it is found that the transportation program or project will have no effect or no adverse effect on historic properties and FRA has received written concurrence from the State Historic Preservation Officer (SHPO).

4.1.1.5 Section 4(f) Applicability

A park qualifies for protection under Section 4(f) if: (1) the property is publicly owned, (2) the park is open to the general public, (3) it is being used for outdoor recreation, and (4) it is considered significant by the authority with jurisdiction. The park must be publicly owned at the point at which "use" occurs.

A historic site on or eligible for the National Register of Historic Places (NRHP) may qualify for protection under Section 4(f) if land from the site is permanently or temporarily incorporated into the project. If a project does not physically take (permanently incorporate) historic property but causes an adverse effect, the proximity impacts must be evaluated to determine if the proximity impacts will substantially impair the features or attributes that contribute to the NRHP eligibility of the historic site or district. While the statutory requirements of Section 106 and Section 4(f) are similar, even if a proposed action results in an "adverse effect" under Section 106, there will not automatically be a Section 4(f) "use" absent a separate analysis and determination by FRA.

In order for a cultural resource to be protected by Section 4(f), it must be on or eligible for listing on the NRHP.

The US Department of Interior, National Park Service (NPS) provides guidance in applying criteria for evaluation to assist in making a determination of eligibility of the site to the NRHP.

The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and meet one or more of the following criteria:

(a) that are associated with events that have made a significant contribution to the broad patterns of our history; or

(b) that are associated with the lives of persons significant in our past; or

(c) that embody distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

(d) that have yielded, or may be likely to yield, information important in prehistory or history.

Archaeological sites whose importance as a resource can be documented through a data recovery process alone are generally not protected under Section 4(f). An archaeological resource that is eligible only under NHPA "Criterion D" is considered valuable only in terms of the data that can be recovered from it. For such resources (such as pottery scatters and refuse deposits), it is generally assumed that there is minimal value attributed to preserving such resources in place. Conversely, resources eligible under Criteria A, B, and/or C are considered to have value intrinsic to the resource's location. For a property to be eligible for the NRHP, it must meet at least one of the four NRHP main criteria. With Criterion A, "Event," the property must make a contribution to the major pattern of American history. With Criterion B, "Person," the property must be associated with significant people of the American past. Criterion C, "Design/Construction," concerns the distinctive characteristics of the building by its architecture and construction, including having great artistic value or being the work of a master.

In other words, Section 4(f) does not apply to a site if, a federal agency, after consultation with the SHPO and the appropriate Native American Tribes and/or Tribal Historic Preservation Officer (THPO), concludes that the archaeological resource is important chiefly because of what can be learned by data recovery and has minimal value for preservation in place and therefore is likely not protected under Section 4(f).

4.2 Coordination

49 U.S.C. 303(b) requires cooperation and consultation with the Secretary of the Interior (and the Secretaries of Housing and Urban Development and Agriculture, if appropriate) and the states in the

development of transportation projects. Throughout the EIR/EIS process, the Authority and FRA consulted with the SHPO, local jurisdictions, the California Department of Fish and Game (CDFG), and the Native American Heritage Commission and interested tribes. Section 4(f) determinations may be aided by coordination with the SHPO, pursuant to 36 CFR Part 800, and agencies of jurisdiction in identifying Section 4(f) properties and assessing impacts on the properties.

Table 4-1 lists the Authority and FRA 4(f)-specific coordination to date with these agencies. Related coordination activities, such as for Section 106 of the NHPA or Tribal Consultation, are summarized in Section 3.17, Cultural and Paleontological Resources. The Authority consulted with the agencies with jurisdiction over the public park properties, including the cities of Merced, Madera, and Fresno, to discuss potential park impacts. The Authority also coordinated with the CDFG regarding impacts on Camp Pashayan.

Table 4-1
 Section 4(f) and 6(f) Evaluation Consultation Summary

Date	Form	Participants	General Topic(s)
May 17, 2010	Meeting	City of Fresno Parks and Recreation staff and project consultant staff	Roeding Park Sections 4(f) and 6(f)
May 18, 2010	Meeting	City of Madera staff and project consultant staff	Sharon Avenue Linear Park and Riverside Park Section 4(f)
June 28, 2010	Meeting	CDFG staff and project consultant staff	Camp Pashayan Section 4(f) and Title 14
June 28, 2010	Meeting	City of Fresno Planning Department staff and project consultant staff	Roeding Park Sections 4(f) and 6(f)
January 28, 2011	Telephone	Merced County Parks Department	Joe Stefani Elementary School (park status)
July 8, 2011	Meeting	City of Fresno staff and Authority staff	Review Roeding Park 4(f) status.
September 20, 2011	Meeting	City of Fresno staff and Authority staff	Review Roeding Park 4(f) status. City anticipates their desire will be to have a sound wall up to 14 feet high.
January 31, 2012	Meeting	City of Fresno staff, Chaffee Zoo staff, and Authority staff	Review potential impact/solutions such as sound walls; consistency with the City's Master Plan; access and Golden State Blvd; impacts to circulation, parking and ponds.
March 2, 2012	Telephone Conference	CDFG staff, Wildlife Conservation Board, Authority staff and consultants	San Joaquin River crossing, potential impacts on Camp Pashayan and the San Joaquin River Ecological Reserve.
March 5, 2012	Meeting	Zoo Counsel member, Chaffee Zoo staff, Authority and consultants	Follow up from January 31 meeting regarding impact/solutions such as sound walls; consistency with the City's Master Plan; access and Golden State Blvd; impacts to

Date	Form	Participants	General Topic(s)
			circulation, parking and ponds.
March 19, 2012	Meeting	City of Fresno staff, Chaffee Zoo staff, Authority staff and consultants	Discussed an MOU with the City of Fresno; discussed sound walls and Golden State Blvd and adjustments to the Master Plan.
March 20, 2012	Meeting	City of Fresno staff, Authority and consultants	Visual Design Review: sound walls, other mitigation.
March 28, 2012	Meeting	City of Fresno staff, Authority and consultants	Discussed Authority response to City's Draft EIR/EIS comments. Confirmed agreement on Roeding Park/Zoo; sound wall and loss of planned (future) Golden State Blvd can be accommodated, discussed adjustments to the Master Plan.
March/April 2012	Telephone and emails	CDFG staff and FRA	Impacts to Camp Pashayan, concepts to avoid effects on the resource, and attributes of the resource.
March/April 2012	Telephone and email	City of Madera Parks Department and FRA	Impacts to City of Madera parks in general and 4(f) impact finding for Riverside Park and the planned extension of the Vern McCullough Fresno River Trail.

A preliminary 4(f) evaluation for affected resources was included with the Draft EIR/EIS and made available for public comment. FRA and the Authority received some comments on 4(f) issues which were addressed, as appropriate, and reflected in this chapter or included in the response to comments in Volume IV of the EIR/ EIS. No Section 4(f) resources affected by an HST alternative necessitated extra coordination with the Departments of the Interior, Agriculture, or Housing and Urban Development, per 23 CFR §774.5. No comments on the Draft Section 4(f) Evaluation were received from any of the aforementioned federal agencies.

4.3 Purpose and Need

The purpose of the statewide HST System is to provide a reliable high-speed electric-powered train system that links the major metropolitan areas of the state, and that delivers predictable and consistent travel times. A further objective is to provide an interface with commercial airports, mass transit, and the highway network and to relieve capacity constraints of the existing transportation system as increases in intercity travel demand in California occur, in a manner sensitive to and protective of California's unique natural resources (Authority and FRA 2005).

The purpose of this Merced to Fresno Section of the California HST Project is to implement the California HST System between Merced and Fresno to provide the public with electric-powered high-speed rail service that provides predictable and consistent travel times between major urban centers and connectivity to airports, mass transit systems, and the highway network in the south San Joaquin Valley, and to connect the northern and southern portions of the system. For more information on the project

objectives and/or the need for the HST System in California and in the central part of the San Joaquin Valley region, please refer to Chapter 1.

4.4 Alternatives

Three alternatives in addition to the No Project Alternative are the UPRR/SR 99 Alternative, the BNSF Alternative, and the Hybrid Alternative, which extend between Downtown Merced and Downtown Fresno. All three alternatives would include a station in Downtown Merced and Downtown Fresno. In addition, there are five potential HMF sites and various support facilities such as substations and HMFs. A brief description of the HST alternatives is provided below; Chapter 2, Alternatives, provides a detailed description of all HST Project alternatives, including the No Project Alternative, and other project components and operational characteristics.

4.4.1 No Project Alternative

The No Project Alternative would not include the construction of the HST or any associated facilities, thus it would have no impact on any Section 4(f) or Section 6(f) resources. However, it would not address the state's purpose and need for the project. This alternative is insufficient to meet existing and future travel demand; current and projected future congestion of the transportation system would continue to result in deteriorating air quality, reduced reliability, and increased travel times. Because the No Project Alternative does not meet the project purpose and need, it is neither feasible nor prudent, and is not discussed further as an avoidance alternative for any Section 4(f) or Section 6(f) resources.

4.4.2 UPRR/SR 99 Alternative

This section describes the UPRR/SR 99 Alternative, including the Chowchilla design options, wyes, and HST stations.

4.4.2.1 North-South Alignment

The north-south alignment of the UPRR/SR 99 Alternative would begin at the HST station in Downtown Merced, located on the west side of the UPRR right-of-way. South of the station and leaving Downtown Merced, the alternative would be at-grade and cross under SR 99. Approaching the City of Chowchilla, the UPRR/SR 99 Alternative has two design options: the East Chowchilla design option, which would pass Chowchilla on the east side of town, and the West Chowchilla design option, which would pass Chowchilla 3 to 4 miles west of the city before turning back to rejoin the UPRR/SR 99 transportation corridor. These design options would take the following routes:

- **West Chowchilla design option:** This design option would travel due south from Sandy Mush Road north of Chowchilla, following the west side of Road 11¾. The alignment would turn southeast toward the UPRR/SR 99 corridor south of Chowchilla. The West Chowchilla design option would cross over the UPRR and SR 99 east of the Fairmead city limits to again parallel the UPRR/SR 99 corridor. The West Chowchilla design option would result in a net decrease of approximately 13 miles of track for the HST System compared to the East Chowchilla design option and would remain outside the limits of the City of Chowchilla. The West Chowchilla design option connects to the HST sections to the west via the Ave 24 Wye, but not the Ave 21 Wye.
- **East Chowchilla design option:** This design option would transition from the west side of the UPRR/SR 99 corridor to an elevated structure as it crosses the UPRR and N Chowchilla Boulevard just north of Avenue 27, continuing on an elevated structure away from the UPRR corridor along the west side of and parallel to SR 99 to cross Berenda Slough. Toward the south side of Chowchilla, this design option would cross over SR 99 north of the SR 99/SR 152 interchange near Avenue 23½ south of Chowchilla. Continuing south on the east side of SR 99 and the UPRR corridor, this design option would remain elevated for 7.1 miles through the communities of Fairmead and Berenda until reaching the Dry Creek crossing. The East Chowchilla design option connects to the HST sections to the west via either the Ave 24 or Ave 21 wyes (described below).

The UPRR/SR 99 Alternative would continue toward Madera along the east side of the UPRR south of Dry Creek and remain on an elevated profile for 8.9 miles through Madera. After crossing over Cottonwood Creek and Avenue 12, the HST alignment would transition to an at-grade profile and continue to be at-grade until north of the San Joaquin River. After the alternative crosses the San Joaquin River, it would rise over the UPRR on an elevated guideway, supported by straddle bents, before crossing over the existing Herndon Avenue and again descending into an at-grade profile and continuing west of and parallel to the UPRR right-of-way. After elevating to cross the UPRR on the southern bank of the San Joaquin River, south of Herndon Avenue, the alternative would transition from an elevated to an at-grade profile. Traveling south from Golden State Boulevard at-grade, the alternative would cross under the reconstructed Ashlan Avenue and Clinton Avenue overhead structures. Advancing south from Clinton Avenue between Clinton Avenue and Belmont Avenue, the HST guideway would run at-grade adjacent to the western boundary of the UPRR right-of-way and then enter the HST station in Downtown Fresno. The HST guideway would descend in a retained-cut to pass under the San Joaquin Railroad spur line and SR 180, transition back to at-grade before Stanislaus Street, and continue to be at-grade into the station. As part of a station design option, Tulare Street would become either an overpass or undercrossing at the station.

4.4.2.2 Wye Design Options

The following text describes the wye connection from the San Jose to Merced Section to the Merced to Fresno Section. There are two variations of the Ave 24 Wye for the UPRR/SR 99 Alternative because of the West Chowchilla design option. The Ave 21 Wye does not connect to the West Chowchilla design option and, therefore, does not have a variation.

Ave 24 Wye

The Ave 24 Wye design option would travel along the south side of eastbound Avenue 24 toward the UPRR/SR 99 Alternative and would begin diverging onto two sets of tracks west of Road 11 and west of the City of Chowchilla. One set of tracks would travel to the northeast of Road 12, joining the UPRR/SR 99 north-south alignment on the west side of the UPRR just north of Sandy Mush Road. The southbound HST guideway would continue east along Avenue 24, turning south near SR 233 southeast of Chowchilla, crossing SR 99 and the UPRR to connect to the UPRR/SR 99 Alternative on the east side of the UPRR near Avenue 21½. The Ave 24 Wye design would vary depending upon selection of the East or West Chowchilla design option. The north-south alignment of the West Chowchilla design option between Merced and Fresno diverges along Avenue 24 onto Road 12, on the north branch of the wye, allowing the HST alternative to avoid traveling through Chowchilla and to avoid constraining the city within the wye triangle.

Ave 21 Wye

The Ave 21 Wye would travel along the north side of Avenue 21. Just west of Road 16, the HST tracks would diverge north and south to connect to the UPRR/SR 99 Alternative, with the north leg of the wye joining the north-south alignment at Avenue 23½ and the south leg at Avenue 19½.

4.4.2.3 HST Stations

The Downtown Merced and Downtown Fresno station areas would each occupy several blocks, to include station plazas, drop-offs, a multimodal transit center, and parking structures. The areas would include the station platform and associated building and access structure, as well as lengths of platform tracks to accommodate local and express service at the stations. As currently proposed, both the Downtown Merced and Downtown Fresno stations would be at-grade, including all trackway and platforms, passenger services and concessions, and back-of-house functions.

Downtown Merced Station

The Downtown Merced Station would be between Martin Luther King Jr. Way to the northwest and G Street to the southeast. The station would be accessible from both sides of the UPRR, but the primary station house would front 16th Street. The major access points from SR 99 include V Street, R Street, Martin Luther King Jr. Way, and G Street. Primary access to the parking facility would be from West 15th Street and West 14th Street, just one block east of SR 99. The closest access to the parking facility from the SR 99 freeway would be R Street, which has a full interchange with the freeway. The site proposal includes a parking structure that would have the potential for up to 6 levels with a capacity of approximately 2,250 cars and an approximate height of 50 feet.

Downtown Fresno Station Alternatives

There are two station alternatives under consideration in Fresno: the Mariposa Street Station Alternative and the Kern Street Station Alternative.

Mariposa Street Station Alternative

The Mariposa Street Station Alternative is located in Downtown Fresno, less than 0.5 mile east of SR 99. The station would be centered on Mariposa Street and bordered by Fresno Street on the north, Tulare Street on the south, H Street on the east, and G Street on the west. The area around the station contains a mixture of land uses, with industrial uses located along the UPRR corridor closest to the station and commercial, civic, and residential uses farther away from the rail corridor. This alternative would be located next to the Southern Pacific Railroad Depot, a historic Queen Anne-style railroad depot built in 1889 that has been listed on the NRHP since 1978.

The station building would be approximately 75,000 square feet, with a maximum height of approximately 64 feet. The two-level station would be at-grade; with passenger access provided both east and west of the HST guideway and the UPRR tracks, which would run parallel with one another adjacent to the station. The first level would contain the public concourse, passenger service areas, and station and operation offices. The second level would include the mezzanine, a pedestrian overcrossing above the HST guideway and the UPRR tracks, and an additional public concourse area. Entrances would be located at both G and H Streets. The eastern entrance would be at the intersection of H Street and Mariposa Street, with platform access provided via the pedestrian overcrossing. This entrance would provide a "front door" connection with Downtown Fresno on an axis that also includes the County Courthouse and City Hall to the east. The main western entrance would be located at G Street and Mariposa Street.

The majority of station facilities would be located east of the UPRR tracks. The station and associated facilities would occupy approximately 18.5 acres, including 13 acres dedicated to the station, short-term parking, and kiss-and-ride accommodations. A new intermodal facility, not a part of this proposed undertaking, would be located on the parcel bordered by Fresno Street to the north, Mariposa Street to the south, Broadway Street to the east, and H Street to the west (designated "Intermodal Transit Center" in Figure 2-41). Among other uses, the intermodal facility would accommodate the Greyhound facilities and services that would be relocated from their current location at the northwest corner of Tulare and H streets. The site proposal includes the potential for up to three parking structures occupying a total of 5.5 acres. Two of the three potential parking structures would each sit on 2 acres, and each would have a capacity of approximately 1,500 cars. The third parking structure would have a slightly smaller footprint (1.5 acres), with 5 levels and a capacity of approximately 1,100 cars. An additional 2-acre surface parking lot would be provided. The Authority would work with the City of Fresno and other interested parties to phase parking supply to support HST ridership demand and the demand for emerging uses in the area surrounding the station. Under this station alternative, the historic Southern Pacific Railroad depot and associated Pullman sheds would remain intact and could be used for station-related functions.

Kern Street Station Alternative

The Kern Street Station Alternative for the HST station is also situated in Downtown Fresno and would be centered on Kern Street between Tulare Street and Inyo Street. This station would include the same components and acreage as the Mariposa Street Station Alternative, but under the Kern Street Station Alternative, the station would not encroach on the historic Southern Pacific Railroad Depot just north of Tulare Street and would not require relocation of existing Greyhound facilities.

The station building would be approximately 75,000 square feet, with a maximum height of approximately 60 feet. The station building would have two levels housing the same facilities as the Mariposa Street Station Alternative (i.e., UPRR tracks, HST tracks, mezzanine, and station office). The approximately 18.5-acre site would include 13 acres dedicated to the station, bus transit center, surface parking lots, and kiss-and-ride accommodations. Two of the 3 potential parking structures would each sit on 2 acres and each would have a capacity of approximately 1,500 cars. The third structure would be slightly smaller in footprint (1.5 acres) and have a capacity of approximately 1,100 cars. Like the Mariposa Street Station Alternative, the majority of station facilities under the Kern Street Station Alternative would be sited east of the HST tracks.

4.4.3 BNSF Alternative

This section describes the BNSF Alternative, including the Le Grand design options and wyes. It does not include a discussion of the HST stations because the station descriptions are identical for each of the three HST alignment alternatives.

4.4.3.1 North-South Alignment

The north-south alignment of the BNSF Alternative would begin at the proposed Downtown Merced Station. This alternative would remain at-grade through Merced and would cross under SR 99 at the south end of the city. Just south of the interchange at SR 99 and E Childs Avenue, the BNSF Alternative would cross over SR 99 and UPRR as it begins to curve to the east, crossing over the E Mission Avenue interchange. It would then travel east to the vicinity of Le Grand, where it would turn south and travel adjacent to the BNSF tracks.

To minimize impacts on the natural environment and the community of Le Grand, the project design includes four design options:

- **Mission Ave design option:** This design option would turn east to travel along the north side of Mission Avenue at Le Grand and then would elevate through Le Grand adjacent to and along the west side of the BNSF corridor.
- **Mission Ave East of Le Grand design option:** This design option would vary from the Mission Ave design option by traveling approximately 1 mile farther east before turning southeast to cross Santa Fe Avenue and the BNSF tracks south of Mission Avenue. The HST alignment would parallel the BNSF for a half-mile to the east, avoiding the urban limits of Le Grand. This design option would cross Santa Fe Avenue and the BNSF tracks again approximately one-half mile north of Marguerite Road and would continue adjacent to the west side of the BNSF corridor.
- **Mariposa Way design option:** This design option would travel 1 mile farther southeast than the Mission Ave design option before crossing SR 99 near Vassar Road and turning east toward Le Grand along the south side of Mariposa Way. East of Simonson Road, the HST alignment would turn to the southeast. Just prior to Savana Road in Le Grand, the HST alignment would transition from at-grade to elevated to pass through Le Grand on a 1.7-mile-long guideway adjacent to and along the west side of the BNSF corridor.

- **Mariposa Way East of Le Grand design option:** This design option would vary from the Mariposa Way design option by traveling approximately 1 mile farther east before turning southeast to cross Santa Fe Avenue and the BNSF tracks less than one-half mile south of Mariposa Way. The HST alignment would parallel the BNSF to the east of the railway for a half-mile, avoiding the urban limits of Le Grand. This design option would cross Santa Fe Avenue and the BNSF again approximately a half-mile north of Marguerite Road and would continue adjacent to the west side of the BNSF corridor.

Continuing southeast along the west side of the BNSF, the HST alternative would begin to curve southeast just before Plainsburg Road through a predominantly rural and agricultural area. One mile south of Le Grand, the HST alignment would cross Deadman and Dutchman creeks. The HST alternative would deviate from the BNSF corridor just southeast of S White Rock Road, where it would remain at-grade for another 7 miles, except at the bridge crossings, and would continue on the west side of the BNSF corridor through the community of Sharon. The HST alignment would continue at-grade through the community of Kismet until crossing at Dry Creek. The BNSF Alternative would then continue at-grade through agricultural areas along the west side of the BNSF corridor through the community of Madera Acres north of the City of Madera. South of Avenue 15 east of Madera, the alignment would transition toward the UPRR corridor, following the east side of the UPRR corridor near Avenue 9 south of Madera, then continuing along nearly the same route as the UPRR/SR 99 Alternative over the San Joaquin River to enter the community of Herndon. After crossing the San Joaquin River, the alignment would be the same as for the UPRR/SR 99 Alternative.

4.4.3.2 Wye Design Options

The Ave 24 Wye and the Ave 21 Wye would be the same as described for the UPRR/SR 99 Alternative (East Chowchilla design option), except as noted below.

Ave 24 Wye

As with the UPRR/SR 99 Alternative, the Ave 24 Wye would follow along the south side of Avenue 24 and would begin diverging into two sets of tracks (i.e., four tracks) beginning west of Road 17. Two tracks would travel north near Road 20½, where they would join the north-south alignment of the BNSF Alternative on the west side of the BNSF corridor near Avenue 26½. The two southbound tracks would join the BNSF Alternative on the west side of the BNSF corridor south of Avenue 21.

Ave 21 Wye

As with the UPRR/SR 99 Alternative, the Ave 21 Wye would travel along the north side of Avenue 21. Two tracks would diverge, turning north and south to connect to the north-south alignment of the BNSF Alternative just west of Road 21. The north leg of the wye would join the north-south alignment just south of Avenue 24 and the south leg would join the north-south alignment just east of Frontage Road/Road 26 north of the community of Madera Acres.

4.4.4 Hybrid Alternative

This section describes the Hybrid Alternative, which generally follows the alignment of the UPRR/SR 99 Alternative in the north and the BNSF Alternative in the south. It does not include a discussion of the HST stations, because the station descriptions are identical for each of the three HST alignment alternatives.

4.4.4.1 North-South Alignment

From north to south, generally, the Hybrid Alternative would follow the UPRR/SR 99 alignment with either the West Chowchilla design option with the Ave 24 Wye or the East Chowchilla design option with the Ave 21 Wye. Approaching the Chowchilla city limits, the Hybrid Alternative would follow one of two options:

- In conjunction with the Ave 24 Wye, the HST alignment would veer due south from Sandy Mush Road along a curve and would continue at-grade for 4 miles parallel to and on the west side of Road 11¾. The Hybrid Alternative would then curve to a corridor on the south side of Avenue 24 and would travel parallel for the next 4.3 miles. Along this curve, the southbound HST track would become an elevated structure for approximately 9,000 feet to cross over the Ave 24 Wye connection tracks and Ash Slough, while the northbound HST track would remain at-grade. Continuing east on the south side of Avenue 24, the HST alignment would become identical to the Ave 24 Wye connection for the BNSF Alternative and would follow the alignment of the BNSF Alternative until Madera.
- In conjunction with the Ave 21 Wye connection, the HST alignment would transition from the west side of UPRR and SR 99 to an elevated structure as it crosses the UPRR and N Chowchilla Boulevard just north of Avenue 27, continuing on an elevated structure along the west side of and parallel to SR 99 away from the UPRR corridor while it crosses Berenda Slough. Toward the south side of Chowchilla, the alignment (with the Ave 21 Wye) would cross over SR 99 north of the SR 99/SR 152 interchange near Avenue 23½ south of Chowchilla. It would continue to follow along the east side of SR 99 until reaching Avenue 21, where it would curve east and run parallel to Avenue 21, briefly. The alignment would then follow a path similar to the Ave 21 Wye connection for the BNSF Alternative, but with a tighter 220 mph curve. The alternative would then follow the BNSF Alternative alignment until Madera.

Through Madera and until reaching the San Joaquin River, the Hybrid Alternative is the same as the BNSF Alternative. Once crossing the San Joaquin River, the alignment of the Hybrid Alternative becomes the same as for the UPRR/SR 99 Alternative.

4.4.4.2 Wye Design Options

The wye connections for the Hybrid Alternative follow Avenue 24 and Avenue 21, similar to those of the UPRR/SR 99 and BNSF alternatives.

Ave 24 Wye

The Ave 24 Wye is the same as the combination of the UPRR/SR 99 Alternative with the West Chowchilla design option, and the Ave 24 Wye for the BNSF Alternative.

Ave 21 Wye

The Ave 21 Wye is similar to the combination of the UPRR/SR 99 Alternative with the Ave 21 Wye on the northbound leg and the BNSF Alternative with the Ave 21 Wye on the southbound leg. However, the south leg under the Hybrid Alternative would follow a tighter, 220-mph curve than the BNSF Alternative, which follows a 250-mph curve.

4.4.5 Heavy Maintenance Facility Alternatives

The Authority has determined that an HST rail heavy-vehicle maintenance and layover facility would be sited in either the Merced to Fresno Section or the Fresno to Bakersfield Section of the California HST System. The HMF would be situated on a parcel of approximately 154 acres in proximity to the HST alignment. The HMF would also have connections to highways and utilities on a parcel zoned for heavy industrial activities.

The Authority is studying five HMF sites (see Figure 2-1) within the Merced to Fresno Section, one of which may be selected.

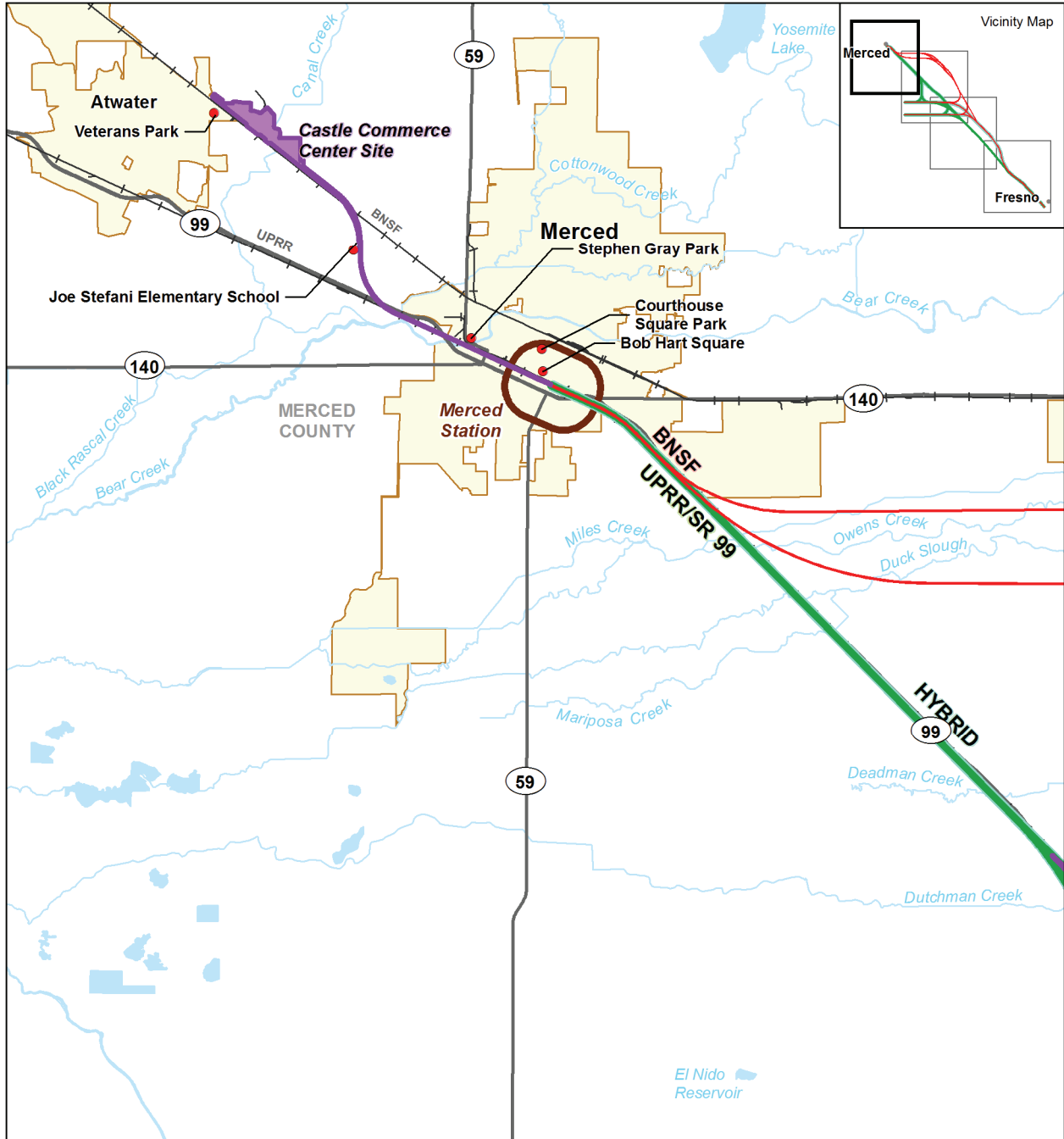
- **Castle Commerce Center HMF site** – A 370-acre site located 6 miles northwest of Merced, at the former Castle Air Force Base in northern unincorporated Merced County. It is adjacent to and on the east side of the BNSF mainline, 1.75 miles south of the UPRR mainline, off of Santa Fe Drive and Shuttle Road, 2.75 miles from the existing SR 99 interchange. The Castle Commerce Center HMF would be accessible by all HST alternatives.
- **Harris-DeJager HMF site** – A 401-acre site located north of Chowchilla adjacent to and on the west side of the UPRR corridor, along S Vista Road and near the SR 99 interchange under construction. The Harris-DeJager HMF would be accessible by the UPRR/SR 99 and Hybrid alternatives if coming from the Ave 21 Wye and with the UPRR/SR 99 Alternative with East Chowchilla design option and Ave 24 Wye. The property owners of the Harris-DeJager site initially offered their site for consideration during the alternative development process, but withdrew their site from consideration for use as an HMF following release of the Draft EIR/EIS (Kopshever 2011).
- **Fagundes HMF site** – A 231-acre site, located 3 miles southwest of Chowchilla on the north side of SR 152, between Road 11 and Road 12. This HMF would be accessible by all HST alternatives with the Ave 24 Wye.
- **Gordon-Shaw HMF site** – A 364-acre site adjacent to and on the east side of the UPRR corridor, extending from north of Berenda Boulevard to Avenue 19. The Gordon-Shaw HMF would be accessible from the UPRR/SR 99 Alternative.
- **Kojima Development HMF site** – A 392-acre site on the west side of the BNSF corridor east of Chowchilla, located along Santa Fe Drive and Robertson Boulevard (Avenue 26). The Kojima Development HMF would be accessible by the BNSF Alternative with the Ave 21 Wye.

4.5 Section 4(f) Applicability Analysis

This section describes the methodology used to identify the park, recreation, open space, and wildlife refuge properties that meet the criteria for protection as Section 4(f) resources, which are illustrated in Figures 4-2 through 4-5, and provides information about the attributes of each of the properties.

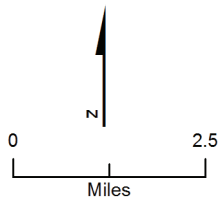
4.5.1 Parks, Recreation, and Open Space

The locations of park and recreation resources in the study area are shown on Figures 4-2 through 4-5. This section identifies publicly owned parks, recreation areas, or wildlife and waterfowl refuges or properties of a historical site of national, state, or local significance as determined by the federal, state, regional, or local officials having jurisdiction over the resource. Table 4-2 describes potential uses of Section 4(f) parks and recreation resources associated with the HST alternatives. Data collection to identify potential Section 4(f) parks and recreation resources consisted of a review of the plans and policies listed in Table 3.15-1 of EIR/EIS Section 3.15 (Parks, Recreation, and Open Space), interviews with local planning and public works organizations, and the use of GIS data banks. The cities and counties provided the boundaries for parks and recreation properties within 1,000 feet of the alignment, 0.5 mile of an HST station, 0.5 mile of an HMF, and 1,000 feet of any road construction required to implement the HST System in GIS data format and in adopted plans.



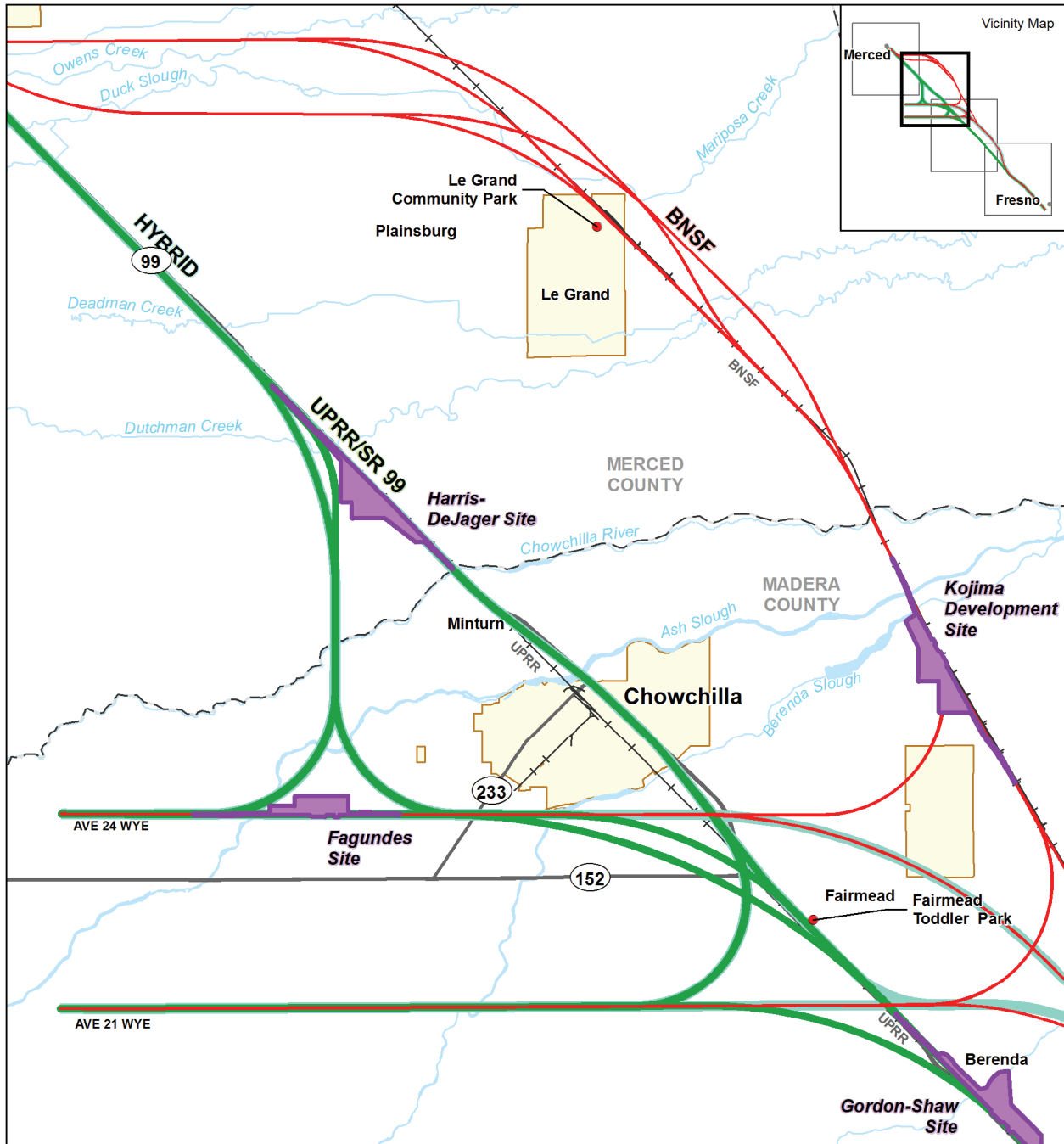
Source: City of Atwater (2000); City of Merced (1997, 2003, 2004); Merced County (1990).

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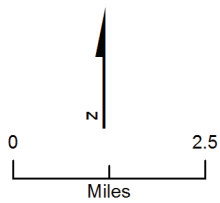
- UPRR/SR 99 Alternative
- BNSF Alternative
- Hybrid Alternative
- Potential Heavy Maintenance Facility
- Station Study Area
- City Limit
- County Boundary
- +— Railroad
- Park, Recreation, and Open Space
- Planned Extension of Vern McCullough Fresno River Trail

Figure 4-2
 Park Properties in the Merced
 Project Vicinity



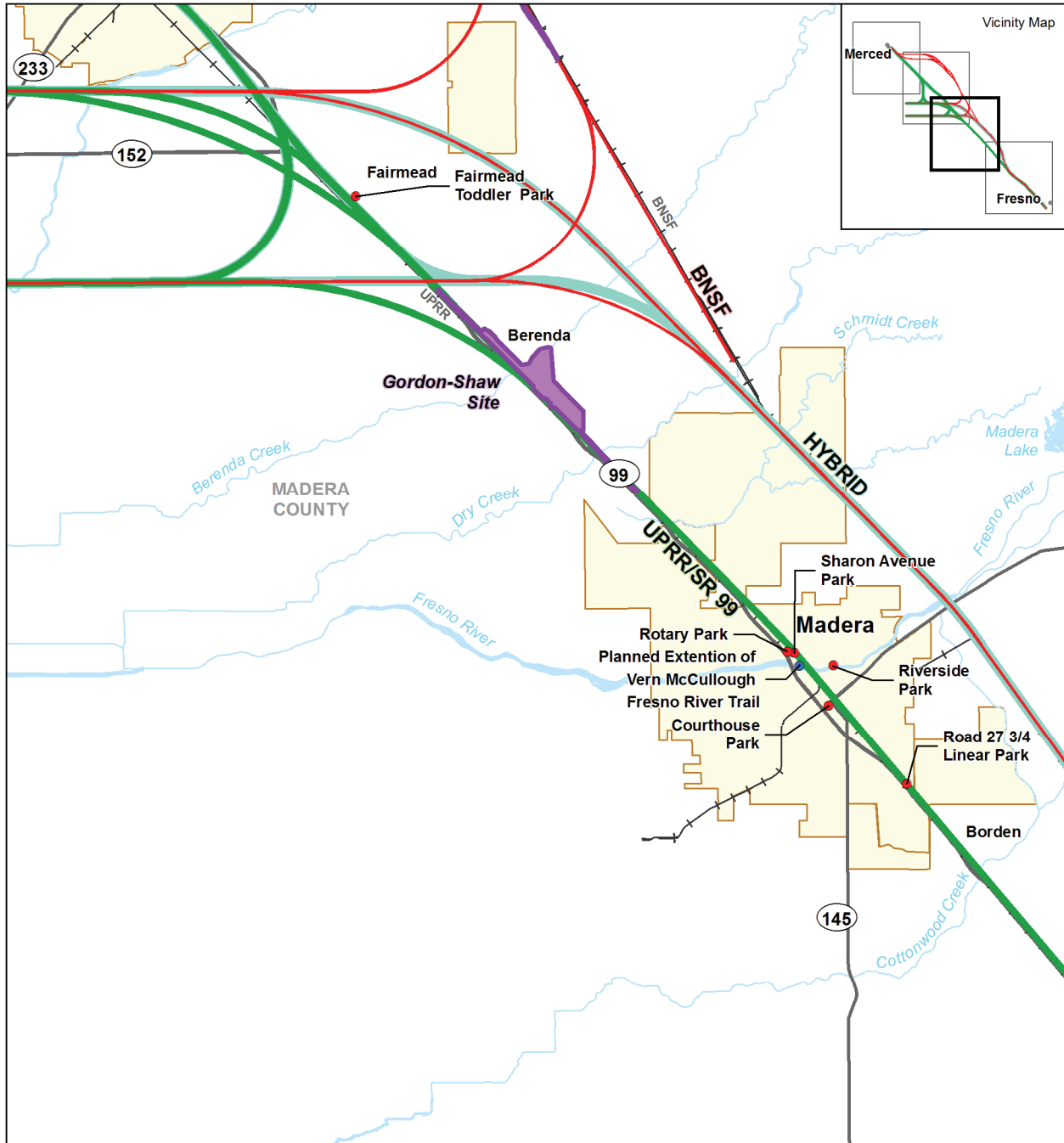
Source: City of Chowchilla (2009).

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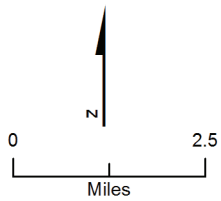
- UPRR/SR 99 Alternative
- BNSF Alternative
- Hybrid Alternative
- Potential Heavy Maintenance Facility
- Station Study Area
- City Limit
- County Boundary
- ++ Railroad
- Park, Recreation, and Open Space
- Planned Extension of Vern McCullough Fresno River Trail

Figure 4-3
 Park Properties in the Chowchilla
 Project Vicinity



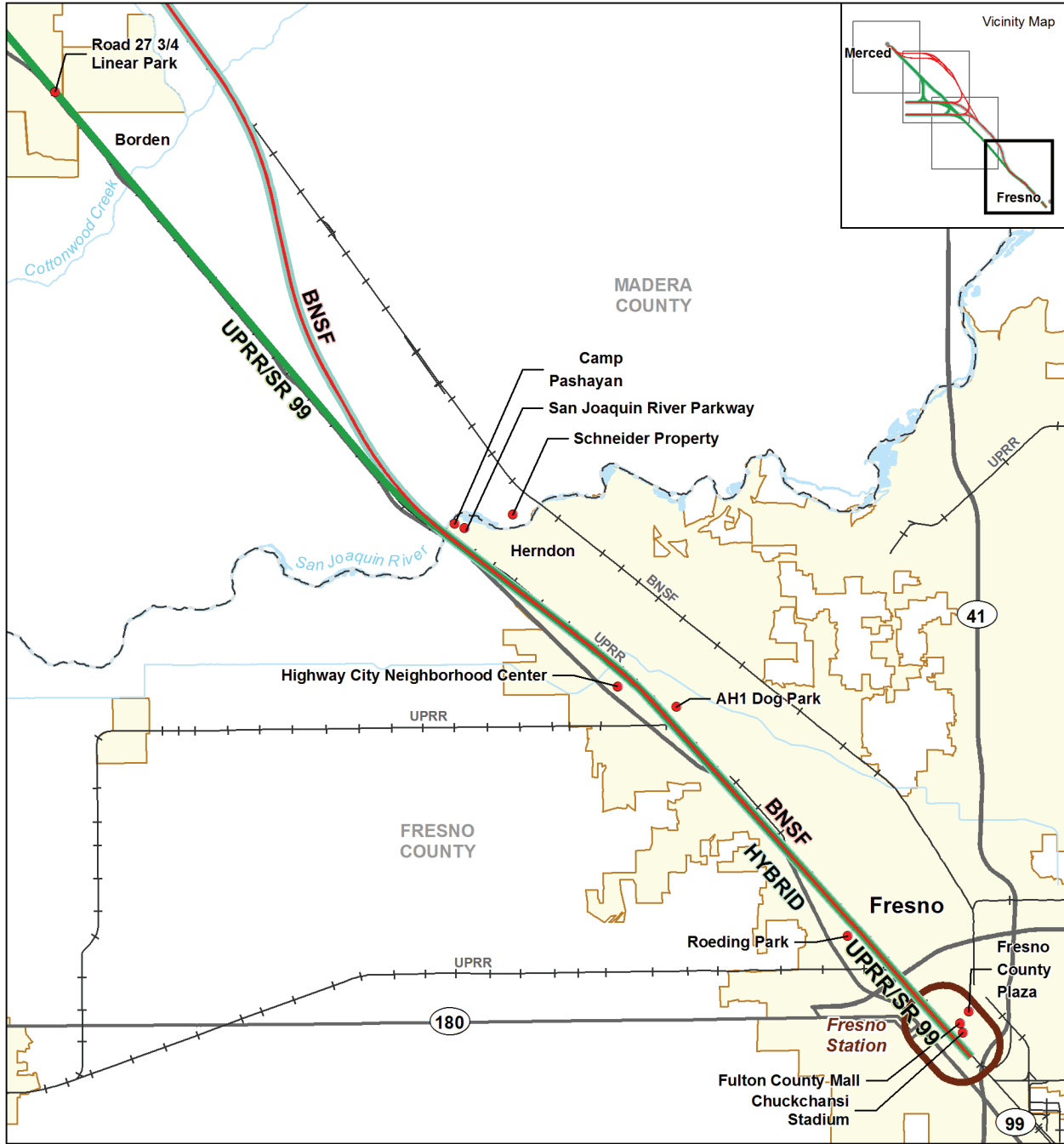
Source: City of Madera (2009a); Madera County (1995).

MF_EIS_PR_01-04_c Feb 24, 2012



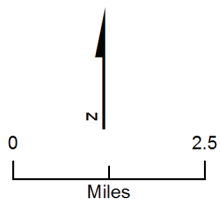
- UPRR/SR 99 Alternative
- BNSF Alternative
- Hybrid Alternative
- Potential Heavy Maintenance Facility
- Station Study Area
- City Limit
- - - County Boundary
- +— Railroad
- Park, Recreation, and Open Space
- Planned Extension of Vern McCullough Fresno River Trail

Figure 4-4
 Park Properties in the Madera
 Project Vicinity



Source: City of Fresno (2002); Fresno County (2000).

MF_EIS_PR_01-04_d Feb 24, 2012



- UPRR/SR 99 Alternative
- BNSF Alternative
- Hybrid Alternative
- Potential Heavy Maintenance Facility
- Station Study Area
- City Limit
- County Boundary
- | Railroad
- Park, Recreation, and Open Space
- Planned Extension of Vern McCullough Fresno River Trail

Figure 4-5
 Park Properties in
 the Fresno Project
 Vicinity

Table 4-2
 Park and Recreation Areas Evaluated for Section 4(f) Use

Property Name	Description	North-south Alignment	HMF	Distance from Project (feet)
Rotary Park	Location: Madera Size: 9.7 acres Features: Softball field, soccer field, children's play structure area, water play feature, horseshoe pavilion, skate park, dog park, open green space, passive recreation area, volleyball courts, restroom facilities, covered picnic shelter sites, and an exterior walking path that connects to the western segment of the Vern McCullough River Trail.	UPRR/SR 99 Alternative		100
Sharon Avenue Linear Park	Location: Madera Size: 1.5 acres Features: Paved pathway and benches.	UPRR/SR 99 Alternative		30
Riverside Park	Location: Madera Size: 3.3 acres Features: Paved pathway, benches, and landscaped turf area used for passive recreation.	UPRR/SR 99 Alternative		75
County Road 27¾ Linear Park	Location: Madera Size: 2.8 acres Features: Linear park with sidewalk and landscaping.	UPRR/SR 99 Alternative		0
Vern McCullough Fresno River Trail	Location: Madera Size: 0.2 linear mile Features: Planned extension of linear trail.	UPRR/SR 99 Alternative		0
Camp Pashayan	Location: Fresno Size: 31.0 acres Features: Part of the San Joaquin River Parkway. Picnic areas, fishing, boating access facilities, nature trails. Admission fee for vehicles.	All HST alternatives and Herndon Substation		50
Roeding Regional Park	Location: Fresno Size: 159.0 acres Features: Tennis and handball courts, soccer field, dog park,	All HST alternatives		0 to 100

Property Name	Description	North-south Alignment	HMF	Distance from Project (feet)
	play area, dance platform, World War II Memorial, and numerous barbecues and picnic tables. Picnic shelters available for rent, Storyland and Playland attractions, and boat rentals available on Lake Washington in the park (shallow cement pond). Vehicles required to pay a fee to park inside the park. Includes Fresno Chaffee Zoo, home to 125 species, and requires a paid admission. LWCF funding used for park development.			
Joe Stefani Elementary School (associated with the guideway to the Castle Commerce Center HMF)	Location: Merced County Size: 14.5 acres Features: Baseball, basketball, football/ soccer field, playground equipment.		Castle Commerce Center	0 (from Castle Commerce Center HMF site guideway)

Sharon Avenue Linear Park

Size and Location

Sharon Avenue Linear Park, shown in Figure 4-6, is located in the City of Madera and is 0.5 acre in size. The linear park is located adjacent to Sharon Avenue (to its east) and the existing UPRR tracks (to its west); the trail extends north-south between Avenue 15 1/2 and Riverside Drive.

Ownership

Sharon Avenue Linear Park is owned and maintained by the City of Madera.

Usage of Park (Intended; Actual/Current; Planned)

The park is primarily used for pedestrian and bicycling recreation and as a connection from adjacent residential areas to nearby commercial areas. It consists of a paved pathway, benches, and landscaping along the east side of the UPRR corridor. The City plans to connect this trail to the planned Vern McCullough Fresno River Trail extension.

Unusual Characteristics Reducing or Enhancing Park Value

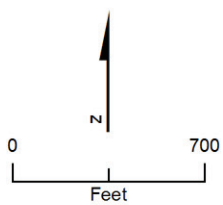
The park is relatively urban in character and is located directly adjacent to an active rail corridor. The trail provides a link in the city's off-street trail network.





Source: Greer (2010).

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- UPRR/SR 99 Alternative
- BNSF Alternative
- Hybrid Alternative
- Existing Vern McCullough Fresno River Trail
- Park, Recreation, and Open Space
- - Planned Extension of Vern McCullough Fresno River Trail
- Park
- Construction Footprint

Figure 4-6
 Rotary Park, Sharon Avenue Linear Park, Riverside Park,
 and Vern McCullough Fresno River Trail
 City of Madera

Access

The park is accessible via bicycle or foot from all of the neighborhood streets located to its east; it is also accessible via its connection to Riverside Park (at its southern end).

Relationship to Similarly Used Lands in Vicinity

As noted, the trail that extends through this park is a critical link in the City's off-street trail network. In addition to being presently connected to the trail in Riverside Park, the City also plans to connect to this trail via the Vern McCullough Fresno River Trail extension, which would allow trail users access to recreational destinations on the west side of the UPRR tracks, including Rotary Park and the rest of the Fresno River Trail, as well as to neighborhood destinations on the east side of the tracks.

Riverside Park

Size and Location

Riverside Park, shown in Figure 4-6, is located in the City of Madera and is 3.3 acres in size. The park follows the north side of the Fresno River and connects directly to Sharon Avenue Linear Park at its western terminus.

Ownership

Riverside Park is owned and maintained by the City of Madera.

Usage of Park (Intended; Actual/Current; Planned)

The park is located in a relatively urban setting and is frequently used by pedestrians and bicyclists to connect from adjacent residential areas to nearby commercial areas. The park consists of a paved pathway, benches, and a landscaped turf area along the northern edge of the Fresno River that is used for passive recreation. The City plans to connect the paved pathway to the extension of the Vern McCullough Fresno River Trail.

Unusual Characteristics Reducing or Enhancing Park Value

The park's value is enhanced by its location adjacent to the Fresno River and its role as a vital link in the city's off-street trail network.

Access

The park is accessible via bicycle or foot from all of the neighborhood streets located to its north; it is also accessible via its connection to Sharon Avenue Linear Park (at its western end).

Relationship to Similarly Used Lands in Vicinity

As noted, the trail that extends through this park is a critical link in the City's off-street trail network. In addition to being presently connected to the trail in Sharon Avenue Linear Park, the City also plans to connect to this trail via the planned Vern McCullough Fresno River Trail extension, which would allow trail users access to recreational destinations on the west side of the UPRR tracks, including Rotary Park and the rest of the Fresno River Trail, as well as to neighborhood destinations on the east side of the tracks.

Rotary Park

Size and Location

Rotary Park, shown in Figure 4-6, is located in the City of Madera and is 3.3 acres in size. The park is located between SR 99 (on its west) and N. Gateway Drive (on its east) and its southern boundary is just north of the Fresno River.

Ownership

Rotary Park is owned and maintained by the City of Madera.

Usage of Park (Intended; Actual/Current; Planned)

Rotary Park contains the following amenities: softball field, soccer field, children's play structure area, water play feature, horseshoe pavilion, skate park, dog park, open green space, passive recreation area, volleyball courts, restroom facilities, covered picnic shelter sites, a parking lot, and an exterior walking path that connects to the western segment of the Vern McCullough River Trail.

Unusual Characteristics Reducing or Enhancing Park Value

Rotary Park is centrally located north of downtown in an area of Madera that does not contain many other large parks in close proximity.

Access

Rotary Park is accessible by vehicle from N. Gateway Drive. The park is accessible by bicycle or foot from N. Gateway Drive or the Fresno River Trail.

Relationship to Similarly Used Lands in Vicinity

In addition to having an existing connection to the Fresno River Trail, Rotary Park would be directly connected to the both Sharon Avenue Linear Park and Riverside Park (located on the east side of the UPRR tracks from Rotary Park) via the extended Vern McCullough Fresno River Trail.

Vern McCullough Fresno River Trail

Size and Location

Vern McCullough Fresno River Trail, shown on Figure 4-6, is a planned trail extension of the existing Fresno River Trail that would travel approximately 0.2 mile under SR 99 and the UPRR corridors between Rotary Park (on the west side of the UPRR tracks) and Sharon Avenue Linear Park and Riverside Park (on the east side of the UPRR tracks).

Ownership

The Vern McCullough Fresno River Trail would be owned and maintained by the City of Madera (after its planned construction).

Usage of Park (Intended; Actual/Current; Planned)

The Vern McCullough Fresno River Trail is a planned extension of the existing Fresno River Trail that would travel under SR 99 and the UPRR corridors between Rotary Park (on the west side of the UPRR tracks) and Sharon Avenue Linear Park and Riverside Park (on the east side of the UPRR tracks).

Unusual Characteristics Reducing or Enhancing Park Value

The proposed trail's value is enhanced by its location adjacent to the Fresno River, its extension of an existing trail, and its planned role as a vital link to other existing trails in the city's off-street trail network.

Access

After installation, the trail will be accessible via bicycle or foot from the existing Fresno River Trail (which extends westward from Rotary Park), from Sharon Avenue Linear Park and Riverside Park (at its eastern end), and from Rotary Park. Visitors wishing to use the trail could also arrive by vehicle at Rotary Park and then access the trail by foot or bicycle.

Relationship to Similarly Used Lands in Vicinity

As noted, this planned trail would be a critical link in the City's off-street trail network. In addition to being connected to the Fresno River Trail and Rotary Park on the west side of the UPRR tracks, the trail would provide a pivotal east-west trail connection underneath the tracks, allowing users residing on both sides of the tracks access to recreational and commercial destinations on opposite sides of the tracks.

County Road 27¾ Linear Park

Size and Location

County Road 27¾ Linear Park, shown on Figure 4-7, is located in the southeastern part of the City of Madera and is 2.8 acres in size. The park is located adjacent to the eastern edge of S. Knox Street and extends between Avenue 13½ (at its northern terminus) and Road 28 (at its southern terminus).

Ownership

Riverside Park is owned and maintained by the City of Madera.

Usage of Park (Intended; Actual/Current; Planned)

The park is primarily used for pedestrian and bicycling recreation and consists of a paved pathway and landscaping.

Unusual Characteristics Reducing or Enhancing Park Value

None.

Access

This park/trail is accessible to neighborhood residents via bicycle and foot from S. Knox Street, Avenue 13½, and Road 28.

Relationship to Similarly Used Lands in Vicinity

County Road 27¾ Linear Park does not connect to any other park/recreational facilities.

Camp Pashayan

Size and Location

Camp Pashayan, shown in Figure 4-8, is 31 acres in size and is located in the far northwestern part of the City of Fresno along the southern banks of the San Joaquin River; the park is bordered on its south by the UPRR tracks and SR 99. Camp Pashayan is considered part of the larger San Joaquin River Parkway (which is designated as an ecological preserve).

Ownership

The CDFG owns the park, and the San Joaquin River Parkway and Conservancy Trust manages the site.

Usage of Park (Intended; Actual/Current; Planned)

Camp Pashayan is utilized for various recreational purposes. Park amenities include picnic areas, fishing and boating access, a vehicle parking area, and nature trails.

Unusual Characteristics Reducing or Enhancing Park Value

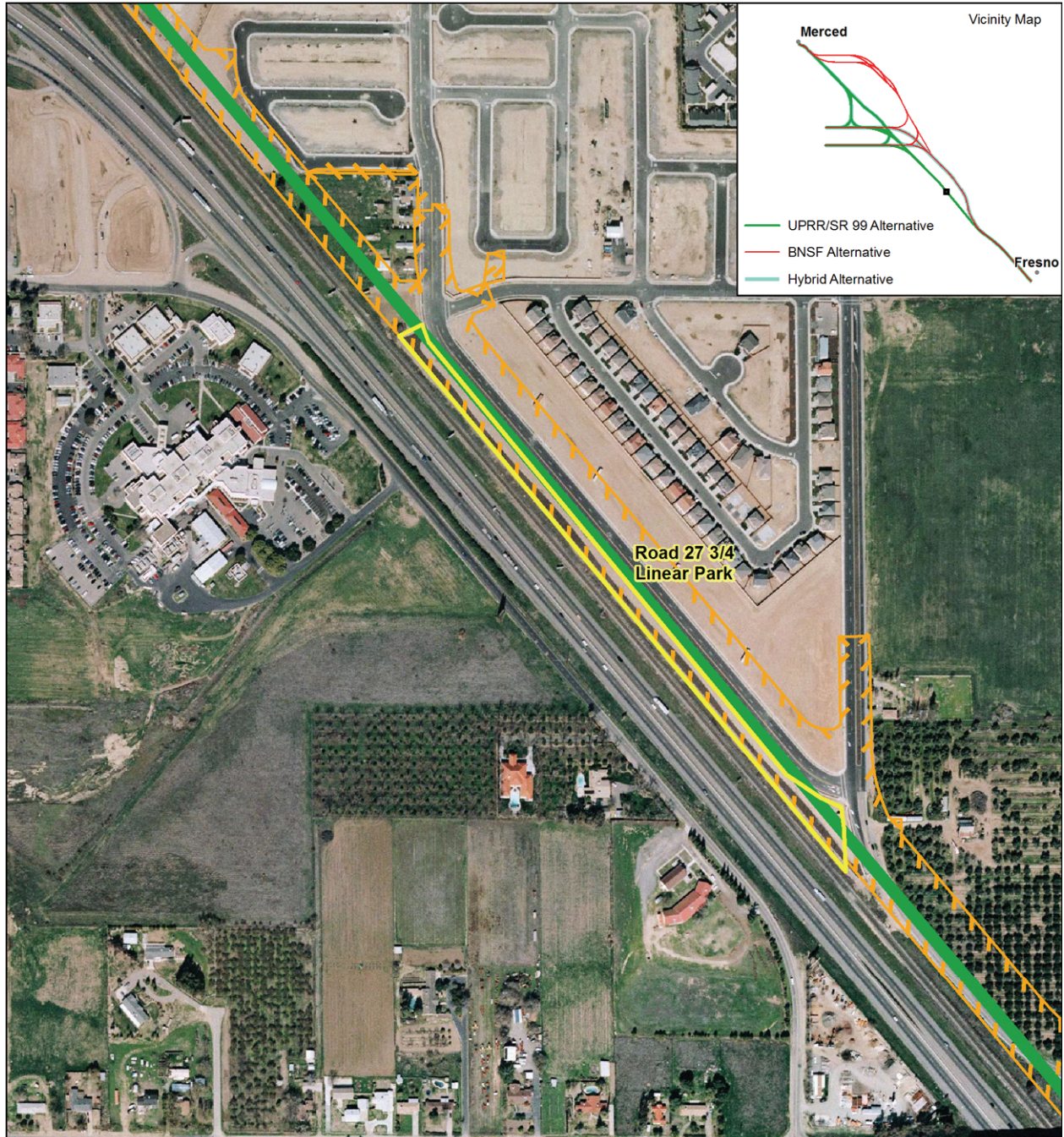
Camp Pashayan's value is enhanced by its role as part of the greater San Joaquin River Parkway ecological preserve.

Access

Camp Pashayan is accessible via vehicle, bicycle, or foot from N. Weber Avenue.

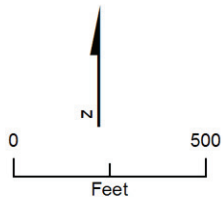
Relationship to Similarly Used Lands in Vicinity

As noted, Camp Pashayan is part of the greater San Joaquin River Parkway ecological preserve—as such, preservation and enhancement of natural habitat is a major objective for the park, as is the continuation of recreational opportunities for visitors.



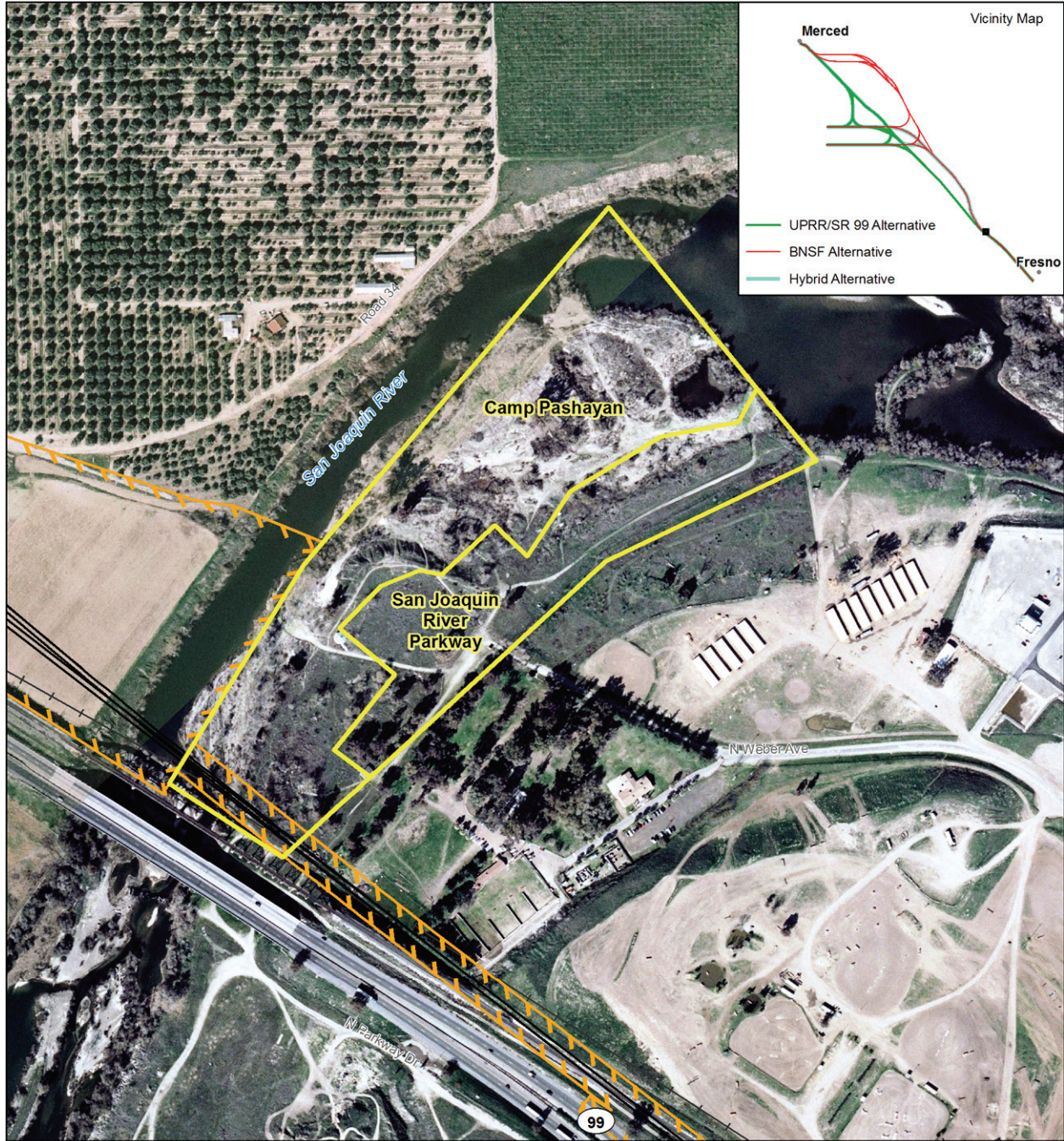
Source: Greer (2010).

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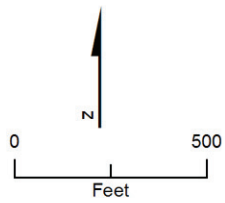
- UPRR/SR 99 Alternative
- Park
- Construction Footprint

Figure 4-7
 County Road 27³/₄ Linear Park,
 City of Madera



Source: Fresno County (2000).

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- UPRR/SR 99, BNSF and Hybrid Alignment
- ▭ Park
- ▨ Construction Footprint

Figure 4-8
 Camp Pashayan and San Joaquin River Parkway,
 City of Fresno

Roeding Park

Size and Location

Roeding Park, shown in Figure 4-9, is located northwest of downtown Fresno and is 159 acres in size. The park is bounded to the north by W. Olive Avenue, to the east by Golden State Boulevard, to the south by W. Belmont Avenue, and to the west by SR 99.

Ownership

Roeding Park is owned and maintained by the City of Fresno.

Usage of Park (Intended; Actual/Current; Planned)

Roeding Park is used for a wide variety of active and passive recreational purposes. The park includes a variety of specimen trees cultivated by the Roeding family. Active recreation facilities include tennis and handball courts, a soccer field, dog park, play equipment, barbecues, and picnic tables and shelters. In addition, the park includes a Japanese-American World War II Memorial, the Fresno Chaffee Zoo, Playland, and Storyland. The City is currently updating the Public Facilities and Open Space/Recreation elements of its General Plan (City of Fresno 2002). Plans for the park include a new park access point from Golden State Boulevard. Additionally, the Chaffee Zoo has plans for expansion.

Unusual Characteristics Reducing or Enhancing Park Value

Roeding Park's value is enhanced by its historical value (the park has been determined eligible for the NRHP) as well as its role as a major recreational destination located in a densely populated area.

Access

The park is currently accessible via vehicle, bicycle, or on foot from W. Olive Avenue (approximately 0.1 mile east of the intersection with N. West Avenue).

Relationship to Similarly Used Lands in Vicinity

Roeding Park is a pivotal recreational facility in the City of Fresno's park system; it is one of four regional city parks in Fresno; the others are Woodward Park, Kearney Park, and the Regional Sports Park. Roeding Park offers a variety of visitor amenities that surpass those available at the other large regional parks.

Joe Stefani Elementary School

The park amenities at Joe Stefani Elementary School include baseball fields, multi-purpose grass ballfields (i.e., football, soccer, and general purpose), basketball courts, and a playground. The property is owned and maintained by the Merced City School District. According to the Merced City School District and Merced County, the park amenities at the school property are considered, and function as, a significant public park and recreation resource.

Size and Location

The Joe Stefani Elementary School property (shown in Figure 4-10) is 14.5 acres in size and is located in unincorporated Merced County, approximately 1 mile west of the city limits of Merced.

Ownership

The property is owned and maintained by the Merced City School District.

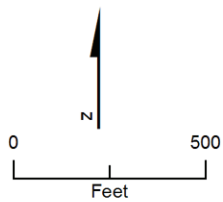
Usage of Park (Intended; Actual/Current; Planned)

According to the Merced City School District and Merced County, the school property is considered, and functions as, a significant public park and recreation resource. Park amenities at the school property include basketball courts, ballfields, and playground equipment. Because the Joe Stefani Elementary School serves significant public recreational purposes and is open to the public for such purposes, the school park amenities qualify for protection under Section 4(f).





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- Potential Heavy Maintenance Facility Trackway
- Park
- Potential Heavy Maintenance Facility
- Construction Footprint

Figure 4-10
 Joe Stefani Elementary School,
 Merced County

Unusual Characteristics Reducing or Enhancing Park Value

None

Access

Joe Stefani Elementary School is accessible via vehicle, bicycle, or on foot from Rancho Lane.

Relationship to Similarly Used Lands in Vicinity

Joe Stefani Elementary School contains one of the few open recreational areas in this residential enclave west of the City of Merced.

4.5.2 Cultural Resources

4.5.2.1 Archaeological Sites

At this time no known sites eligible for the NRHA under Criteria A, B, or C have been identified within the preferred alternative footprint. Those potentially eligible under Criterion D are by definition important chiefly because of what can be learned by data recovery and therefore, as described in Section 4.1.1.5, are not eligible for protection under Section 4(f). Further archaeological deposits could be determined to exist within the preferred alternative footprint through implementation of the Programmatic Agreement for compliance with Section 106 of the NHPA for the California HST System (see Section 3.17, Cultural and Paleontological Resources), including the development of a Memorandum of Agreement to address the resolution of adverse effects. If that were to occur, potential impacts would be assessed and, if necessary, a treatment plan developed.

4.5.2.2 Historical Properties

Table 4-3 lists historic properties in the project area that were identified as being listed in the NRHP or determined eligible for the NRHP as well as the HST alternative potential impact area, in which the property is located. Potential Section 4(f) historic properties were identified through cultural resource analysis performed for the EIR/EIS and presented in Section 3.17, Cultural and Paleontological Resources.

Table 4-3

Properties Listed in, or Determined Eligible for, the National Register of Historic Places

Property Name	Address	County	Year Built	Current Status Code	HST Alternative
Forestiére Underground Gardens	5021 W Shaw Avenue	Fresno	1906	1S	UPRR/SR 99, BNSF, Hybrid
Weber Avenue Overcrossing Bridge (42C0071)	Weber and Belmont Avenues	Fresno	1925	2S2	UPRR/SR 99, BNSF, Hybrid
Southern Pacific Railroad Depot	1033 H Street	Fresno	1889	1S	Fresno Station-Mariposa Street Station Alternative
Bank of America Building	947-951 F Street	Fresno	1908	2S2	UPRR/SR 99, BNSF, Hybrid
PG&E Building	560 W 15th St	Merced	1918-1920	3S	UPRR/SR 99, BNSF, Hybrid
Merced Southern Pacific Company Passenger Station	692 W 16th St	Merced	1926	3S	UPRR/SR 99, BNSF, Hybrid
KAMB (California Highway Patrol) Building	90 E 16th St	Merced	1933	3S	UPRR/SR 99, BNSF, Hybrid

Property Name	Address	County	Year Built	Current Status Code	HST Alternative
Madera Southern Pacific Railroad Station	120 N E St	Madera	1927	3S	UPRR/SR 99
Valley Feed & Fuel Co.	121 Gateway Dr	Madera	Ca. 1920	3S	UPRR/SR 99
Unnamed Residence	24302 Road 15	Madera	Ca. 1880	3S	UPRR/SR 99, BNSF, Hybrid
Robertson Boulevard Tree Row	SR 233	Madera	1912	3S	UPRR/SR 99, BNSF, Hybrid
Roeding Park	890 W Belmont St	Fresno	1903	3D	UPRR/SR 99, BNSF, Hybrid
Belmont Avenue Subway & Traffic Circle	Belmont Ave	Fresno	1932	3S	UPRR/SR 99, BNSF, Hybrid
Hotel Fresno	1257 Broadway	Fresno	1912	3S	UPRR/SR 99, BNSF, Hybrid, Fresno Station-Mariposa Street Station Alternative, Fresno Station-Kern Street Station Alternative
Crest Theater	1160 Broadway Plaza	Fresno	1949	3S	Fresno Station-Mariposa Street Station Alternative
Fresno Fire Department Station	1406-1430 Fresno Street	Fresno	1938	3S	UPRR/SR 99, BNSF, Hybrid, Fresno Station-Mariposa Street Station Alternative, Fresno Station-Kern Street Station Alternative
Basque Hotel/E.A. Walrond Building	1102 F Street	Fresno	1922	3S	UPRR/SR 99, BNSF, Hybrid, Fresno Station-Mariposa Street Station Alternative
Bank of Italy	1015 Fulton Mall	Fresno	1918	3S	UPRR/SR 99, BNSF, Hybrid
First Mexican Baptist Church	1061 E Street	Fresno	1924	3S	Fresno Station-Mariposa Street Station Alternative, Fresno Station-Kern Street Station Alternative
Radin-Kamp Department Store	959 Fulton Mall	Fresno	1925	3S	UPRR/SR 99, BNSF, Hybrid

Code 1S - Individual property listed in the NRHP by the Keeper.

Code 2S2 - Individual property determined eligible for the NRHP by a consensus through Section 106 process.

Code 3D - Appears eligible for the NRHP as a contributor to an NRHP-eligible district through survey evaluation.

Code 3S - Appears eligible for the NRHP as an individual property through survey evaluation.



Below are brief descriptions of the properties in the project that are listed in the NRHP or were determined eligible for listing in the NRHP (and are therefore protected as Section 4(f) properties):

- **Forestiery Underground Gardens** – APN 510-23-303 (5021 W Shaw Avenue, Fresno). The gardens consist of a series of underground passages, rooms, ponds, and gardens that were excavated and constructed by Sicilian immigrant Baldasare Forestiere between 1906 and 1946. The Forestiere Underground Gardens were listed in the NRHP in 1977 (NPS #77000293) and designated a California State Landmark (No. 916) in 1978. Although not specifically stated in the NRHP nomination form or landmark file, the property is likely significant in the areas of environmental design and folk art under Criterion C as a unique complex of underground rooms, passages, ponds, and gardens that unite old and new world construction techniques.
- **Weber Avenue Overcrossing Bridge** – Bridge 42C0071. Near Roeding Park is the NRHP-eligible Weber Avenue Overcrossing Bridge. The bridge is a 1953 pre-stressed concrete girder road bridge with a span of 66 feet. The bridge was determined eligible for listing on the NRHP through the 2004 Caltrans Bridge Survey (Hope 2004). The bridge is significant under Criterion C as the first vehicle bridge in California (and one of the earliest in the United States) to use pre-stressed concrete. This resource falls within the footprint of the proposed alignment.
- **Southern Pacific Railroad Depot** – 467-030-03 (1033 H Street). Fresno's Southern Pacific Railroad Depot is a 1½-story, brick Queen Anne-style building constructed in 1899. The depot, which includes the Pullman Shed, is listed in the NRHP (NRHP Reference No. 78000665, certified on March 21, 1978). It is significant under Criterion A for its association with the development of Fresno, and Criterion C as an important example of the Queen Anne architectural style. Additionally, the building is listed in the CRHR and the Fresno Local Register of Historic Resources (#11).
- **Bank of America** – APN 467-074-01 (947 -951 F Street, Fresno). This 2-story, 2-part commercial building has a stucco exterior and was built in about 1908. It appears to be individually eligible for listing in the NRHP and the CRHR (CHRIS status code 3S). The property is eligible under Criteria A and C (and Criteria 1 and 3), for its association with the local Mexican American community, and as a good local example of this architectural style. The building is listed in the Fresno Local Register of Historic Resources (#64).
- **PG&E Building (560 W 15th Street, Merced)**. This 1918-1920 building consists of the former San Joaquin Light & Power Corporation building. It was previously evaluated (but not concurred with) as meeting the criteria for listing on the NRHP under Criterion C for its architectural merit (as a notable example of "Mission Revival"), at the local level of significance. The period of significance is 1918-1920. This evaluation found that it was also significant under Criterion A.
- **Merced Southern Pacific Company Passenger Station (692 W 16th Street, Merced)**. This 1926 Neoclassical railroad station was previously evaluated (but not concurred with) as meeting the criteria for listing on the NRHP. It appears to meet the criteria for listing on the NRHP at the local level of significance. The building appears to be significant under Criterion A for its historical association with Southern Pacific Railroad history in Merced, as well as Criterion C for its architectural merit. The building remains in good condition and retains integrity from the previous evaluation, and thus formal concurrence with this finding will be sought for the purposes of this undertaking. The period of significance is 1926. The building is located adjacent to the alignment, which runs southwest of the resource. It is located within the APE for all three alternatives.
- **KAMB (California Highway Patrol) Building (KMBR) (90 E 16th Street, Merced)**. This 1933 Spanish Colonial Revival building was previously evaluated (but not concurred with) as meeting the criteria for listing in the NRHP. The building appears to be significant at the local level under Criterion C as a good example of Spanish Colonial Revival-style architecture. The building remains unaltered since the previous evaluation and is still recommended eligible as part of the current study; therefore, formal concurrence with this finding will be sought for the purposes of this undertaking.

- Madera Southern Pacific Railroad (SPRR) Station – APN 007-101-016 (120 N E Street, Madera). This resource is an example of an early twentieth century railroad station, located along the UPRR/SR 99 Alternative in Downtown Madera. It appears to meet the criteria for listing on the NRHP at the local level of significance. The building appears to be significant under Criterion A for its historical association with transportation history in Madera, as well as Criterion C for its architectural merit as a good example of early twentieth century railroad station design. The building remains in good condition and retains integrity, and thus formal concurrence with this finding will be sought for the purposes of this undertaking. The period of significance is 1927. This building is located only in the UPRR/SR 99 Alternative.
- Valley Feed & Fuel Co. – APN 007-101-020 (121 S Gateway Drive, Madera). This resource consists of an early twentieth century grain mill, grain storage, and distribution facility, which retains integrity. The property appears to meet Criteria A and C of the NRHP. The boundary includes the property parcel limits.
- 24302 Road 15 – APN 026-233-011 (Chowchilla). This resource is a good example of an early twentieth century Colonial Revival-style rural residence. Significant at the local level, this particular example exhibits simple Colonial Revival detailing in its hipped roof; rectangular shaped, double-hung, paired windows; symmetrical façade; pediment above the entrance; and wood clapboard siding. The resource appears to meet Criterion C for listing in the NRHP. This property is adjacent to proposed roadway improvements.
- Robertson Boulevard Tree Row – No APN (Chowchilla). This resource extends 11 miles south from Downtown Chowchilla along SR 233 Southwest. The tree row consists of Canary Island palm and ornamental shade trees, which Orlando Robertson, founder of Chowchilla, planted in 1912 as part of the development of the Chowchilla town center. The tree row was designated a California Point of Historical Interest in 1989. This resource appears to meet Criterion A in the area of community development and under NRHP Criterion C in the area of landscape architecture. The north and south ends of this resource fall within the footprint of the proposed wyes.
- Roeding Park – APN 450-02-008 (890 W Belmont Street, Fresno). Roeding Park is a historic recreational facility in the City of Fresno dating to the early twentieth century. The resource appears to meet Criterion A for its association with important development patterns in Fresno and Criterion C for its architectural and landscape design merit. The park was recommended eligible (but not concurred with) as a historic district for the NRHP and the California Register of Historical Resources (CRHR) as a significant example of an early twentieth century municipal park. The park is recommended eligible as a district in the Fresno Local Register of Historic Resources for its design and association with George C. Roeding and the Roeding family, who made significant contributions to the development of Fresno in the early twentieth century. This resource is located adjacent to the proposed alignment. See Section 3.15, Parks, Recreation, and Open Space, for additional information on Roeding Park. Roeding Park Historic District was recommended eligible by Page & Turnbull as part of the Roeding Park and Fresno Chaffee Zoo Facility Master Plans (SCH No. 2008031002, City of Fresno 2011). The Authority reevaluated this document as part of the current HST Project and concurs with this recommendation. The FRA and State Historic Preservation Officer (SHPO) reviewed the status of Roeding Park and concur that the park is eligible under Section 106 of the NHPA.
- Belmont Avenue Subway and Traffic Circle – Fresno. Near Roeding Park is the Belmont Avenue Subway and Traffic Circle. The subway is a 1932 reinforced concrete and steel girder railroad bridge with a span of 42 feet. The structure was rated a category 4 (“Historical Significance Not Determined”) through the 2004 Caltrans Bridge Survey (Hope 2004). The subway and its associated 200-foot-radius traffic circle roadway approach is the first configuration of this type in California to address a key railroad grade-separation along former Highway 99, and is one of the earliest examples of traffic circles in the West. Designed by noted City of Fresno Engineer Jean L. Vincenz, this resource (which includes the subway and traffic circle) appears eligible for Criterion C of the NRHP (and Criterion 3 of the CRHR) at a local level for being one of the earliest examples of this type

of traffic feature in the West, as well as for its designer. The Belmont Avenue Subway and Traffic Circle falls within the footprint of the proposed alignment.

- **Hotel Fresno – APN 466-214-01 (1257 Broadway, Fresno).** The Hotel Fresno is a 7-story, steel-frame and concrete-block building constructed in 1912. The building is eligible for listing in the NRHP under Criterion C as the first high-rise building in Fresno and as an early and representative example of the Central Valley work of prominent California architect Edward T. Foulkes. Additionally, the building is listed in the CRHR and the Fresno Local Register of Historic Resources (#166).
- **Crest Theater – APN 466-212-12 (1160 Broadway Plaza, Fresno).** The Crest Theater is a tall 2-story, reinforced concrete building constructed in 1948. The building is eligible for listing in the NRHP under Criterion C, at the local level, for its Moderne style and neon marquee (and CRHR Criterion 3). The building was listed in the Fresno Local Register of Historic Resources in February 2011 and is not yet numbered.
- **Fresno Fire Department Station – APN 467-065-08T (1406-1430 Fresno Street, Fresno).** This 4-story reinforced concrete building has brick exterior facing and terracotta Beaux Arts details at the frieze and cornice. It appears to be individually eligible for listing in the NRHP and the CRHR (CHRIS status code 3S). The property is eligible under Criteria A and C (and Criteria 1 and 3) as a good local example of a Works Progress Administration project, and for its Streamline Moderne architectural style. The building is listed in the Fresno Local Register of Historic Resources (#213).
- **Basque Hotel/E.A. Walrond Building – 467-062-08 (1102 F Street).** The Basque Hotel is a 2-story, L-shaped brick building constructed in 1922. The building is eligible for the NRHR under Criterion A, for its significant role in the Basque community as a place for Basque immigrants to congregate and maintain their cultural tradition. The building also is eligible for the CRHR.
- **Bank of Italy – APN 468-284-42 (1015 Fulton Mall, Fresno).** The Bank of Italy building is an 8-story Italian Renaissance Revival building with an ornate terracotta and brick exterior. This property is listed in the NRHP (NRHP Reference No. 82000963, certified in January 1982) and is therefore also included in the CRHR. The building was listed under Criterion C as “one of the two most significant commercial buildings in the downtown area,” and is an example of the Italian Renaissance Revival and early skyscraper development. The building is also listed in the Fresno Local Register of Historic Resources (#123).
- **First Mexican Baptist Church – APN 467-103-01 (1061 E Street, Fresno).** This 2-story brick building was built between 1924 and 1929, and later reinforced in the 1960s. It has a restrained Mission Revival design that features a stepped parapet and 3-story bell tower. It appears to be individually eligible for listing in the NRHP and the CRHR, (CHRIS status code 3S). The property is eligible under Criteria A and C (and Criteria 1 and 3), for its association with the local Mexican American community, and as a good local example of this architectural style. The building is listed in the Fresno Local Register of Historic Resources (#23).
- **Radin-Kamp Department Store – APN 468-281-01 (959 Fulton Mall, Fresno).** This 4-story reinforced concrete building has brick exterior facing and terracotta Beaux Arts details at the frieze and cornice. It appears to be individually eligible for listing in the NRHP and the CRHR, (CHRIS status code 3S). The property is eligible under Criterion C and Criterion 3, as a good local example of early twentieth century commercial architecture. The building is listed in the Fresno Local Register of Historic Resources (#124).

4.6 Section 4(f) Use Assessment and Determination

4.6.1 Park/Recreation Resources

The following park, recreation areas, and open space resources have been identified as both being located in the project area and as eligible for protection under Section 4(f). The following is an analysis of the potential use of these resources as a result of selecting one or more of the project alternatives.

Sharon Avenue Linear Park Use Assessment:

The UPRR/SR 99 Alternative would not permanently acquire land from Sharon Avenue Linear Park (Figure 4-7). However, the project would require temporary construction easements and necessitate the temporary occupancy of approximately 0.7 acre of parkland during construction. The entire park would be temporarily occupied and closed to the public during construction. Because the construction easements would necessitate closing Sharon Avenue Linear Park during construction, the activities, features, and attributes qualifying the resource for protection under Section 4(f) are adversely affected during this time, and would constitute a "temporary use" under Section 4(f). The UPRR/SR 99 Alternative would not be able to satisfy all of the Section 4(f) Temporary Occupancy Exception Criteria because it could not meet the third criterion as described in Section 4.1.1.2, which states that "[T]here are no anticipated permanent adverse physical impacts, nor will there be interference with the protected activities, features, or attributes of the property, on either a temporary or permanent basis". Because the park would be closed during construction, the UPRR/SR 99 Alternative would be interfering with the activities of the park on a temporary basis, therefore the criterion cannot be met and as such the UPRR/SR 99 Alternative would result in a temporary use.

Neither the BNSF nor the Hybrid Alternative would result in a Section 4(f) use of Sharon Avenue Linear Park because both alignment alternatives travel adjacent to the existing BNSF rail infrastructure, which is located well northeast of the park. Therefore, neither has the potential to cause impacts to the park and will have no corresponding Section 4(f) use.

Riverside Park Use Assessment:

The UPRR/SR 99 Alternative would result in the permanent acquisition of approximately 0.4 acre of Riverside Park (Figure 4-7) for column placement and overhead easement for the elevated HST guideway. The area of parkland to be purchased represents approximately 3% of the park's total area.

Although construction activities would necessitate temporarily occupying parkland for brief periods during project construction, this impact, and associated construction impacts such as noise and dust in adjacent areas of Riverside Park would not adversely impair the protected activities, features, or attributes that qualify the resource for protection under Section 4(f). The area of parkland under the elevated guideway could provide a shaded area during the hot summer months.

In the 0.4 acres acquires as a result of the UPRR/SR 99 Alternative would require the removal of trees at the western edge of Riverside Park north of the Fresno River, reducing the visual buffer between the park and the adjacent UPRR right-of-way and proposed HST facility. Although the guideway would add an elevated visual feature, the alignment would be adjacent to the existing UPRR corridor and consistent with the urban nature of the area and the corridor's transportation function. Removing homes along Sharon Avenue would also constitute a visual change, but the area beyond would remain residential in character. Proposed mitigation for these effects could include the installation of landscaping and lighting. The park land underneath the elevated guideway would remain available for park use, in accordance with the policies of the FRA Office of Security and the Department of Homeland Security.

FRA's preliminary findings concluded that the effects on Riverside Park would be *de minimis*, as documented in the Draft EIR/EIS. However, the City of Madera did not agree with the *de minimis* findings, indicating that the UPRR/SR 99 Alternative would preclude the planned extension of the Vern McCullough Fresno River Trail to connect to the paved pathway in Riverside Park and the incorporation of

land from Riverside Park would affect the use, attributes, and features of this recreational resource. Therefore, the impacts of the UPRR/SR 99 Alternative would result in a Section 4(f) use of Riverside Park.

Neither the BNSF Alternative nor the Hybrid Alternative would result in a Section 4(f) use of Riverside Park because both alignment alternatives travel adjacent to the existing BNSF rail infrastructure, which is located well northeast of the park. Therefore, neither has the potential to cause impacts to the park and will have no corresponding Section 4(f) use.

Rotary Park Use Assessment:

The UPRR/SR 99 Alternative would not result in permanent acquisition of land from Rotary Park or necessitate the temporary occupancy of land at Rotary Park.

While this alternative would increase noise impacts on Rotary Park (Figure 4-7), based on the analysis for the *Merced to Fresno Section Noise and Vibration Technical Report* (Authority and FRA 2012b), after proposed mitigation measures, which were identified after taking measurements at the park location, there would be no noise impacts of moderate or severe intensity at Rotary Park.

Based on the analysis for the *Merced to Fresno Section Aesthetics and Visual Quality Technical Report* (Authority and FRA 2012c), the elevated HST guideway (as seen in the view corridor where Rotary Park is located) would occupy the upper portion of the view to the northeast, but the entire structure would appear within and above the relatively wide transportation corridor. To the northeast, the elevated guideway would partially obscure views of the horizon. Trees along the eastern edge of the park would partially obstruct views of the elevated guideway and piers. Visual quality in this view would remain moderately low with the HST Project. Despite the assumed importance of views from the park, the presence of the HST within the transportation corridor would not substantially alter the visual character in the area.

Therefore, because the UPRR/SR 99 Alternative would not require either permanent or temporary occupancy and would not substantially impair the protected activities, features, or attributes of the park, it would not result in a Section 4(f) use of Rotary Park.

Neither the BNSF nor the Hybrid alternative would result in a Section 4(f) use of Rotary Park because both alignment alternatives travel adjacent to the existing BNSF rail infrastructure, which is located well northeast of the park. Therefore, neither has the potential to cause impacts to the park and will have no corresponding Section 4(f) use.

County Road 27¾ Linear Park Use Assessment:

The UPRR/SR 99 Alternative would necessitate the acquisition and conversion of approximately 1 acre of parkland to transportation use to allow for the construction of elevated guideway (Figure 4-8). The area of parkland to be purchased represents approximately 70% of the park's total area. In addition, construction of the project would necessitate the temporary occupancy of land at County Road 27¾ Linear Park and would require temporary closure of the park, for sporadic periods, during the construction period. However, detours would be provided to maintain connectivity for users during construction. The parkland under the guideway would be restored after construction and would once again be available for park use consistent with Authority policy and after consultation with FRA and the Department of Homeland Security if necessary. The paved pathway is used by pedestrians and bicyclists and provides a connection between adjacent residential areas and nearby commercial

Because the UPRR/SR 99 Alternative would require the permanent acquisition of a substantial portion of County Road 27¾ Linear Park, it would result in a Section 4(f) use.

Neither the BNSF Alternative nor the Hybrid Alternative would result in a Section 4(f) use of Riverside Park because both alignment alternatives travel adjacent to existing BNSF rail infrastructure, which is located well northeast of the park. Therefore, neither has the potential to cause impacts to the park and will have no corresponding Section 4(f) use.



Vern McCullough Fresno River Trail

The City of Madera's Parks and Community Services Department plans to construct a paved pathway that would extend the existing Vern McCullough Fresno River Trail from its current terminus at the trail-head at Rotary Park underneath Gateway Avenue and the UPRR to the intersection of Riverside and the Sharon Avenue Linear Parks (see Figure 4-7). The pathway extension would be funded with approximately \$500,000 from the Congestion Mitigation and Air Quality (CMAQ), Bicycle Transportation Account (BTA), and Local Transportation Fund (LTF) programs. This proposed trail expansion identified in the *City of Madera General Plan Update* as Policy PR-19: "Priority shall be given to the expansion of the Vern McCullough Fresno River Trail and the Cottonwood Creek Trail" (City of Madera, 2009. p. PR-20).

Use Assessment: It is not anticipated that the UPRR/SR 99 Alternative would result in the conversion of any property from the extended trail, nor would it disrupt the continuity or use of the extended trail post-installation of the elevated guideway. Therefore, a permanent Section 4(f) use would not take place.

There is the potential for a temporary Section 4(f) use—if the extended trail were built *before* the UPRR/SR 99 Alternative; then the trail may need to be closed during HST Project construction for safety purposes (due to overhead work) and this could result in the temporary occupancy of the recreational resource. However, at this time, is not certain whether the trail extension or the HST guideway would be constructed first, because attempts to contact the city regarding the timing of construction of this planned extension have been unsuccessful.

Neither the BNSF Alternative nor the Hybrid Alternative would result in a Section 4(f) use of the planned Vern McCullough Fresno River Trail extension because both alignment alternatives travel adjacent to existing BNSF rail infrastructure, which is located well northeast of the trail. Therefore, neither has the potential to cause impacts to the trail and will have no corresponding Section 4(f) use.

Camp Pashayan Use Assessment:

All three HST alternatives would require approximately 0.6 acre of parkland at Camp Pashayan (see Figure 4-9) in Fresno to install piers for elevating the guideway. The area of parkland to be purchased represents approximately 2% of the park's total area.

The HST alternatives would result in a visual change to Camp Pashayan due to the removal of vegetation within the 0.6 acre acquired, which would decrease the visual buffer from the adjacent UPRR right-of-way (until replanted vegetation matures). The alignment would run approximately 60 feet above the park in this area and has been designed to be as close to the UPRR corridor as possible within the constraints of curve radii standards. The elevated guideway would constitute a visual change that would create additional shading due to the 50-foot width of the guideway. However, the guideway would be consistent in height and appearance with the existing bridges that cross the San Joaquin River, although it would be separated from the UPRR corridor by approximately 125 feet. The HST would result in a noise effect with moderate intensity on Camp Pashayan. The area between the HST and the UPRR elevated tracks does not contain active recreation facilities and would be returned to park use after construction and landscaped with compatible plantings.

There would be no permanent or temporary closures of existing paved vehicular/bicycle/pedestrian access entry points to the park; access points will remain open during construction because project construction would only take place along the southern boundary of the park. The paved access entry points for vehicles, bicycles, and pedestrians are north of the construction zone. Therefore, visitors would continue to be able to access the park as they do currently. Only the southern end of the park in the construction zone (the area that would be beneath the HST structure) would be access-restricted to hikers and other recreational users during construction for safety purposes (due to overhead work).

Based on this assessment and conversations to date with CDFG staff, FRA has determined the project would have a *de minimis* impact on Camp Pashayan. FRA will continue to work with CDFG regarding the effects to this resource, and the final determination will be included in FRA's Section 303 finding.

Camp Pashayan is owned by the State of California and is under the control and possession of the CDFG. Because the Authority is also a state agency, the Authority can enter into an agreement with the CDFG regarding the use, control, and possession of any portion of the property. In order to operate and maintain the HST facility (which would be an elevated structure crossing the property and supported by columns), the Authority may need to obtain easement rights in the property to construct the columns and the bridge structure (both air rights and surface rights) and to guarantee permanent access to the property to operate and maintain the facility. Any easement rights would be obtained through negotiation between the two agencies. The extent of the easement rights needed would be determined by Authority engineers.

Roeding Park Use Assessment

None of the alignment alternatives would permanently acquire land from Roeding Park (Figure 4-9), and therefore no Section 4(f) permanent use would occur. In addition, none would necessitate the temporary occupancy of land at Roeding Park, and therefore no Section 4(f) temporary use would occur. The HST Project would not affect either the existing or planned pond locations in the park.

All three of the HST alignments would be constructed at-grade adjacent to the eastern boundary of Roeding Park. Along the southern portion of Roeding Park, the tracks would descend below ground into a retained cut to cross under SR 180. The proximity of the project to the park warrants a discussion of potential proximity impacts:

- *Access.* Access to the park via the existing access points would remain, so there would not be a use in this regard.
- *Visual.* As viewed from Roeding Park, trees along the eastern boundary of the park would partially block views of the HST at-grade guideway. Because the changes would potentially be blocked by existing trees, the character of the east part of the park would not change as a result of the guideway being located adjacent to the park. No impacts on the Fresno Chaffee Zoo or the Rotary Storyland and Playland, which are located inside Roeding Park approximately 1,000 feet from the HST alignment, are anticipated. However, due to potential noise impacts to the resource, a sound barrier may be employed as mitigation and would result in visual effects that could be reduced with aesthetic treatment. The sound barrier with aesthetic treatment would improve the visual quality and park's setting by blocking views of the transportation facilities outside the park that detract from its setting. Aesthetic treatment of the sound barrier would be selected with input from the community. Based upon the rating system used for the visual quality analysis in Section 3.16, Aesthetic and Visual Quality, the existing visual quality category of moderate would not change.
- *Noise Effects and Secondary Visual Impacts.* Section 3.3, Noise and Vibration, identifies a noise effect with severe intensity on Roeding Park. Section 3.15, Parks, Recreation, and Open Space and addresses mitigation for this effect, including the construction of a sound barrier. Section 3.15 provides a detailed discussion of the noise effects and potential visual effects of the sound barrier. After installation of the noise barrier mitigation, HST Project-related noise will not impair the functions, features, or attributes of the park.
- *Noise/Vibration Effects on Zoo Animals.* As one of the recreational attributes in Roeding Park is the zoo. The EIR/EIS addresses potential impacts on wildlife (all mammals and birds) and domestic animals. The FRA *High Speed Ground Transportation Noise and Vibration Impact Assessment Manual* (2005) considers a sound exposure level (SEL) (the cumulative noise exposure from an event and the total A-weighted sound experienced by a receiver during that event, normalized to a 1-second interval) of 100 dBA to be the most appropriate threshold for disturbance effects, such as startling, on wildlife and livestock of all types. The criteria adopted by FRA to determine animal impacts are based on the limited available research for noise effects on animals. Noise exposure limits for wildlife and livestock are an SEL of 100 dBA from passing trains, which is the threshold value used for all animal impacts. This noise descriptor is used to assess effects on all wildlife and domestic animals.

A screening assessment determined typical and maximum distances from the HST tracks at which this limit may be exceeded. Project analysts computed train pass-by SELs for two conditions: at-grade and on a 60-foot-high elevated guideway. To provide a conservative estimate, in each case the HST maximum operating speed of 220 mph was used, and no shielding from intervening structures or terrain was assumed. Analysis indicated that along at-grade sections, the screening distance for a single-train pass-by SEL of 100 dBA would be approximately 100 feet from the track centerline. This assumes the presence of a safety barrier on the edge of the guideways, 3 feet above the top of rail height, as detailed in typical cross sections. In the case of the HST segment near Roeding Park, there would be the installation of intervening structures (a noise wall), and therefore the distance at which an SEL of 100 dBA would emanate would be significantly less. As noted in Section 3.15.5.3, at 20 feet from the edge of the park, the HST would increase from 12 dBA to 72 dBA, and at 250 feet from the edge of the park, the HST would increase from 14 dBA to 69 dBA. These levels are below the noise threshold levels for animals, so no negative impacts to zoo animals from the HST would be anticipated.

There would be no vibration impacts under the UPRR/SR 99 or Hybrid alternatives because of the limited propagation of vibration through the soils in the project corridor, the low vehicle input force, and the presence of elevated structures, which substantially attenuate vibration levels in heavily populated areas where vibration-sensitive receivers are primarily located. Projected vibration levels are lower than the impact threshold at the closest receivers for these HST alternatives and all proposed HMF sites. Additionally, at this time, there is no conclusive evidence of vibration decreasing production in livestock or affecting animal breeding habits.

Based on the above discussion, it is determined that the project would not result in a constructive use of Roeding Park as the potential proximity impacts will not substantially impair the protected activities, features, or attributes that qualify the park for protection under Section 4(f).

Castle Commerce Center HMF Site, Joe Stefani Elementary School Use Assessment

The construction of the access tracks to the Castle Commerce Center HMF site would result in the use of one Section 4(f) park resource: the Joe Stefani Elementary School (Figure 4-10). The construction of the access tracks to the Castle Commerce Center HMF site would necessitate the acquisition of the entire Joe Stefani Elementary School, resulting in a permanent Section 4(f) use.

4.6.2 Cultural Resources

Section 106 of the NHPA of 1966 requires federal agencies to consider a project's effect on cultural resources in much the same way as Section 4(f). The most important connection between the two statutes is that the Section 106 process is generally the method by which a cultural resource's significance is determined under Section 4(f).

The results of the Section 106 process determine whether Section 4(f) applies to historic properties. The results of the Section 106 analysis are critical in determining the applicability and outcome of the Section 4(f) evaluation. The most important difference between the two statutes is the way each of them measures impacts on cultural resources. Whereas Section 106 is concerned with "adverse effects," Section 4(f) is concerned with "use" of protected properties.

4.6.2.1 Archaeological Sites

As part of the Section 106 process and to identify potential impacts under NEPA and CEQA, FRA and the Authority attempted to identify resources potentially eligible for listing on the NRHP. The results of this analysis can be found in Section 3.17, which includes NRHP determinations for many of the resources in the project area. For purposes of Section 4(f), the analysis in Section 3.17 is sufficient for FRA to identify resources potentially protected by Section 4(f) and to understand the impacts and determine any 4(f) uses resulting from the project. Consistent with the Programmatic Agreement for compliance with Section 106 of the NHPA for the California HST System regarding unanticipated finds, the Authority will evaluate

design modifications to avoid ground disturbance at the location of any areas not previously known and found to be archaeologically sensitive. If the areas cannot be avoided, the Authority will conduct archaeological data recovery for the purposes of site identification and significance evaluation to determine if the sites are eligible for the NRHP. If they are determined eligible for the NRHP, the Authority will mitigate impacts through archaeological data recovery as described in Section 3.17, Cultural and Paleontological Resources.

4.6.2.2 Historic Properties

4(f) Use Determinations at Historic Properties with Direct Adverse Effects under Section 106

Based on the analysis conducted for cultural and paleontological resources (see Section 3.17), the following NRHP-listed or eligible historic properties would be directly adversely affected under Section 106 by one or more HST alternative and have also been determined to incur Section 4(f) uses because these sites would be permanently incorporated as part of the project.

The UPRR/SR 99, BNSF, and Hybrid alternatives would have Section 4(f) uses of the following historic properties:

- Because a portion of the Robertson Boulevard Tree Row (NRHP-eligible) is in the direct path of both the Ave 24 and Ave 21 wyes for all three HST alternatives, construction of the project would result in the physical demolition, destruction, damage, or substantial alteration of this linear historic property between the two wyes. This would be a permanent use under Section 4(f).
- The Weber Avenue Overcrossing Bridge (NRHP-eligible) in Fresno is in the direct path of all HST alternatives, which share a common alignment in this location. Their construction would result in the physical destruction, damage, or alteration of this historic property. This would be a permanent use under Section 4(f).
- The Belmont Avenue Subway and Traffic Circle (recommended as NRHP eligible) in Fresno, which is located just southeast of Roeding Park, is in the direct path of all three HST alternatives and associated roadway improvements, and the construction of the project would result in the elimination of this historic property. This would be a permanent use under Section 4(f).

Only the UPRR/SR 99 Alternative would result in a Section 4(f) use of the Southern Pacific Railroad Station (120 N E Street, Madera) which is eligible for listing on the NRHP. This historic station is in the direct path of this alternative, and its construction would result in the physical destruction, damage, or alteration of this historic property. This would be a permanent use under Section 4(f).

4(f) Use Determinations at Historic Properties with Indirect Adverse Effects under Section 106

One or more of the project alternatives may have indirect adverse effects on the historic properties listed below. Section 4(f) use determinations are based on analyzing the potential proximity impacts to the properties, taking into account the activities, features, or attributes that qualify the property for protection under Section 4(f).

Southern Pacific Railroad Depot (Fresno)

No HST alternative would result in a permanent Section 4(f) use of property from the NRHP listed SPRR Depot site in Fresno. However, based on Section 106 analysis done for Cultural and Paleontological Resources (see Section 3.17), all HST alternatives and the Mariposa Street Station Alternative would result in a Section 106 indirect adverse effect on the SPRR Depot because the new station would change the character of the SPRR Depot's use. The property's setting, feeling, and association that contribute to its historic significance and the operation would introduce a visual impact that reduces the integrity of the property's significant historic features and historical use.

With respect to a Section 4(f) use, none of the HST alternatives (and the Mariposa Street Station Alternative) would result in a use of the SPRR Depot. The intent of the HST Project is that the new HST station would be built in front of the historic SPRR Depot station and would be designed not to detract from the historic depot's architectural style. Moreover, by locating a railroad station at this location, the site's significance with respect to railroad transportation could be bolstered because, as a rail hub, it contributed to Fresno's growth. Because the noise levels associated with the HST Project would not result in a substantial impairment to the site's use or aesthetic features and there would be no restrictions in access, it is concluded that there would be no Section 4(f) use of the SPRR Depot in Fresno associated with the HST alternatives or the Mariposa Street Station Alternative.

Bank of America (Fresno)

No HST alternative would result in a permanent Section 4(f) use of property from the Bank of America site in Fresno. However, based on Section 106 analysis done for Cultural and Paleontological Resources (see Section 3.17), all HST alternatives and the Mariposa Street Station Alternative would result in a Section 106 indirect adverse effect on the Bank of America site because it is located adjacent to roadway changes associated with the project.

With respect to a Section 4(f) use, none of the HST alternatives would result in a use of the Bank of America site. Because the noise levels associated with the HST Project would not increase substantially to interfere with the site's use, the aesthetic features would not be diminished, and there would be no restrictions in access, it is concluded that there would be no Section 4(f) use of the Bank of America site associated with the HST alternatives or the Mariposa Street Station Alternative.

Roeding Park (Historic)

The UPRR/SR 99 Alternative would not permanently acquire property from the Roeding Park site, and therefore no Section 4(f) permanent use would occur. In addition, the UPRR/SR 99 Alternative would not necessitate the temporary occupancy of property from the Roeding Park site, and therefore no Section 4(f) temporary use would occur.

The UPRR/SR 99 Alternative alignment would be constructed at-grade adjacent to the eastern boundary of Roeding Park. Along the southern portion of Roeding Park, the tracks would descend below ground into a retained cut to cross under SR180. The proximity of the project to this historic property warrants a discussion of potential proximity impacts based on the preliminary Section 106 findings; this discussion follows.

Visual Quality. As viewed from Roeding Park, trees along the eastern boundary of the park would partially block views of the HST at-grade guideway. Because the changes would not be easy to see, the character of the east part of the park would not change as a result of the guideway being located adjacent to the park. No impacts on the Fresno Chaffee Zoo or the Rotary Storyland and Playland, which are located inside Roeding Park approximately 1,000 feet from the HST alignment, are anticipated.

Noise Effects and Secondary Impacts on Visual Quality. As discussed in Section 3.3, Noise and Vibration, pre-mitigation noise levels from the HST would be severe and an adverse effect would occur because of "the introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant historic features." Section 3.15, Parks, Recreation and Open Space, provides a detailed discussion of the noise effects and potential visual effects of the sound barrier. A sound barrier with aesthetic treatment would improve the visual quality and park's setting by blocking views of the existing transportation facilities outside the park that detract from its setting. Aesthetic treatment of the sound barrier would be selected with input from the community. Based upon the rating system used for the visual quality analysis in Section 3.16, Aesthetic and Visual Quality, the existing visual quality category of moderate would not change.

Based on the above discussion, it is determined that the UPRR/SR 99 Alternative would not result in a use of the Roeding Park site. Neither the BNSF Alternative nor the Hybrid Alternative is located near the park and therefore neither has the potential to cause impacts to the park.



Summary of Section 4(f) Use Determinations of Historic Properties

A summary of Section 4(f) uses of NRHP-listed or eligible historic properties, by alternative, is provided in Table 4-4.

Table 4-4
 Summary of Section 4(f) Uses of NRHP-Listed or Eligible Properties

Alternative	No. of Historic Property Uses	Historic Property Uses
UPRR/SR 99	4	<ul style="list-style-type: none"> Robertson Boulevard Tree Row (#18), Madera Madera SPRR Station, Madera Weber Avenue Overcrossing Bridge, Fresno Belmont Avenue Subway and Traffic Circle, Fresno
BNSF	3	<ul style="list-style-type: none"> Robertson Boulevard Tree Row (#18), Madera Weber Avenue Overcrossing Bridge, Fresno Belmont Avenue Subway and Traffic Circle, Fresno
Hybrid	3	<ul style="list-style-type: none"> Robertson Boulevard Tree Row (#18), Madera Weber Avenue Overcrossing Bridge, Fresno Belmont Avenue Subway and Traffic Circle, Fresno

UPRR/SR 99 Alternative

The following NRHP-listed or eligible historic resources would incur a Section 4(f) use under the UPRR/SR 99 Alternative:

- Robertson Boulevard Tree Row (#18), Madera
- Madera SPRR Station, Madera
- Weber Avenue Overcrossing Bridge, Fresno
- Belmont Avenue Subway and Traffic Circle, Fresno

BNSF Alternative

The following NRHP-listed or eligible historic resources would incur a Section 4(f) use under the BNSF Alternative:

- Robertson Boulevard Tree Row (#18), Madera
- Weber Avenue Overcrossing Bridge, Fresno
- Belmont Avenue Subway and Traffic Circle, Fresno

Hybrid Alternative

The following NRHP-listed or eligible historic resources would incur a Section 4(f) use under the Hybrid Alternative:

- Robertson Boulevard Tree Row (#18), Madera
- Weber Avenue Overcrossing Bridge, Fresno
- Belmont Avenue Subway and Traffic Circle, Fresno

4.7 Section 4(f) de minimis Findings

The FRA has determined that project impacts on Camp Pashayan in Fresno would be a *de minimis* use as defined in 49 U.S.C. 303(d). The *de minimis* impact determination includes measures to minimize harm, mitigation, or enhancement (49 U.S.C. 303(d)(1)(C)). These measures, listed in Table 4-5, would be incorporated into the project design. With these measures, the Authority and FRA have preliminarily determined that the project would not adversely affect the activities, features, or attributes of the resource. Regarding this determination, the Authority and FRA will continue to coordinate with CDFG. The

Authority would prepare and issue a Resolution of Necessity and submit it to the Public Works Board as part of the right-of-way process for Camp Pashayan, which is protected as an ecological preserve under Title 14 of the California Code of Regulations.

Table 4-5
 Measures to Minimize Harm

Impact	Measures to Minimize Harm
Sharon Avenue Linear Park – UPRR/SR 99 Alternative	
<p>Construction: temporary closure, visual change from construction.</p>	<p>Implement the following:</p> <ul style="list-style-type: none"> • Use construction best management practices (BMPs) to control dust and noise (see Section 3.3, Air Quality and Global Climate Change; Section 3.4, Noise and Vibration). • Screen stockpiled material and construction excavations through the use of temporary construction barriers and other screens, where they are exposed to park users. Restore areas affected by construction to preconstruction conditions with landscaping immediately after construction. Use native plant materials for revegetation where appropriate. • Work with the City of Madera to keep the park open to bicycle and pedestrian traffic during construction by providing detours to maintain connectivity if construction requires temporary closures. Coordinate construction activities to avoid scheduled weekend activities when appropriate, provide clear signage and direction for alternative access routes and access points, and coordinate with local groups and jurisdictions using a variety of media to communicate the construction schedule. • Extend Sharon Avenue Linear Park to the east under the elevated guideway to the relocated Sharon Avenue and install landscaping and lighting in consultation with the City of Madera, and design columns consistent with Crime Prevention through Environmental Design principles where appropriate to improve safety of park area under the guideway. • Work with the City of Madera to prepare final design documents that minimize the visual impacts of the proposed HST alignment. This could include decorative barriers, landscaping, architectural lighting, or other acceptable design features.
County Road 27¾ Linear Park – UPRR/SR 99 Alternative	
<p>Construction: temporary acquisition, park would be closed during construction.</p> <p>Project: permanent acquisition, alignment would be over the linear park with columns in the park.</p> <p>Property acquisition footprint: 1 acre</p>	<p>Implement the following:</p> <ul style="list-style-type: none"> • Use construction BMPs to control dust and noise (see Section 3.3, Air Quality and Global Climate Change; Section 3.4, Noise and Vibration). • Where exposed to park users, screen stockpiled material and construction excavations through the use of temporary construction barriers and other screens. Restore areas affected by construction to preconstruction conditions with landscaping immediately after construction. Use native plant materials for revegetation where appropriate. • Work with the City of Madera to keep the park open to bicycle and pedestrian traffic during construction by providing detours to maintain connectivity if construction requires temporary closures. Coordinate construction activities to avoid scheduled weekend activities when appropriate, provide clear signage and direction for alternative access routes and access points, and coordinate with local groups and jurisdictions using a variety of media to communicate the construction schedule. • Coordinate with the City of Madera regarding compensation for acquisition of property through direct purchase, purchase and development of replacement

Impact	Measures to Minimize Harm
	<p>park property, or enhancement of the existing facility.</p> <ul style="list-style-type: none"> • Coordinate with the City of Madera to plan for using the area under the elevated tracks as available parkland • Work with the City of Madera to prepare final design documents that minimize the visual impacts of the proposed HST alignment. This could include decorative barriers, landscaping, architectural lighting, or other acceptable design features.
Riverside Park – UPRR/SR 99 Alternative	
<p>Project: permanent acquisition, alignment would be over the linear park with columns in the park. Property acquisition footprint: 0.4 acre</p>	<p>Implement the following:</p> <ul style="list-style-type: none"> • During final design, attempt to minimize the number of columns in the park. • Use sound-attenuating measures along the guideway to minimize noise. • Make the area under the guideway available for recreational use. • Use construction BMPs to control dust and noise (see Section 3.3, Air Quality and Global Climate Change, and Section 3.4, Noise and Vibration). • Screen stockpiled material and construction excavations through the use of temporary construction barriers and other screens, where they are exposed to park users. Restore areas affected by construction to preconstruction conditions with landscaping immediately after construction. Use native plant materials for revegetation where appropriate. • Work with the City of Madera to keep the park open to bicycle, pedestrian, and automotive traffic during construction by providing detours to maintain connectivity if construction requires temporary closures. Coordinate construction activities to avoid scheduled weekend activities when appropriate, provide clear signage and direction for alternative access routes and access points, and coordinate with local groups and jurisdictions using a variety of media to communicate the construction schedule. • Coordinate with the City of Madera regarding compensation for acquisition of property through direct purchase, purchase and development of replacement park property, or enhancement of existing facility. • Coordinate with the City of Madera to plan for using the area under the elevated tracks as available parkland. • Work with the City of Madera to prepare final design documents that minimize the visual impacts of the proposed HST alignment and stations. This could include decorative barriers, landscaping, architectural lighting, or other acceptable design features.
Camp Pashayan – All HST Alternatives (<i>de minimis</i> impacts determination)	
<p>Construction: temporary acquisition, visual change from construction equipment and the removal of vegetation, temporary access restrictions between the existing UPRR corridor and HST construction area; noise and dust. Project: Permanent acquisition, distance between UPRR and HST may effectively separate the area</p>	<p>Implement the following:</p> <ul style="list-style-type: none"> • Screen stockpiled material and construction excavations through the use of temporary construction barriers and other screens, where they are exposed to park users. • Restore impacted portions of the property after construction. Use native plant materials for revegetation where appropriate. • Use construction BMPs to control dust, visual change, and noise (see Section 3.3, Air Quality and Global Climate Change; Section 3.4, Noise and Vibration; and Section 3.16, Aesthetics and Visual Quality). • Coordinate construction activities to avoid scheduled weekend activities when appropriate.

Impact	Measures to Minimize Harm
<p>from remainder of property. Property acquisition footprint: All HST alternatives, 0.60 acre</p>	<ul style="list-style-type: none"> Coordinate with the CDFG regarding compensation for acquisition of property through direct purchase, purchase and development of replacement park property, or enhancement of existing facility. Coordinate with the CDFG to plan for using the area under the elevated tracks as available parkland with compatible landscaping.
Roeding Park – All HST Alternatives	
<p>Project: operational noise and visual impacts.</p>	<p>The Authority will work with the City of Fresno as the resource owner to address potential noise and/or visual impacts.</p> <p>Construct a sound barrier approximately 2,800 feet in length. The sound barrier would be 10 to 14 feet tall and have aesthetic treatment. A 10-foot-high sound barrier would reduce noise to 64 dBA at 250 feet inside the park and residual noise effects would occur. A 14-foot-high sound barrier would reduce noise effects to within 1 decibel of no impact. The sound barrier with aesthetic treatment would improve the park’s visual quality and setting by blocking views of the existing transportation facilities outside the park that detract from its setting. Aesthetic treatment of the sound barrier will be selected with input from the community.</p>
All Section 4(f) Historic Architectural Properties	
<p>Hist-MM#1: Avoid adverse vibration effects.</p>	<p>The HST Project will develop construction methods to avoid indirect adverse effects or indirect adverse impact to any historic properties (Section 106) from vibration caused by construction activities. Vibration from impact pile-driving during construction is anticipated to reach up to 0.12 peak particle velocity of one inch per second (PPV in/sec) at 135 feet from the project centerline, a level that would could cause the physical destruction, damage, or alteration of historic properties if the pile-driving were within 80 to 140 feet of the building. Because this impact pile-driving could cause adverse effects or substantial adverse changes, alternative construction methods causing less than 0.12 PPV in/sec measured at the receptor will be developed for construction activities near historic properties if they are determined to be extremely susceptible to vibration damage (Authority and FRA 2012d). The development of alternative construction methods at these locations would avoid indirect adverse vibration effects on historic properties (Section 106).</p> <p>A Built Environment Treatment Plan (BETP) is being developed that will provide additional detail on the methodology for the avoidance of adverse vibration effects and how that will be implemented during the project. The BETP is being developed in coordination with the project’s consulting parties to ensure that all parties are part of the generation of this plan.</p> <p>Performance tracking of this mitigation measure is based upon successful implementation and the approval of the documentation by the SHPO and appropriate consulting parties.</p>
<p>Hist-MM#2: Develop Protection and Stabilization Measures</p>	<p>The BETP identifies historic properties that will require protection and/or stabilization prior to the start of construction of the project. Properties subject to this mitigation activity include any that are physically affected, and/or relocated, and/or in close enough proximity to require protection. This mitigation ensures that adverse effects on historic properties will be either avoided entirely, or minimized to the extent possible. This mitigation will be developed in consultation with the landowner, or the land-owning agencies, as well as SHPO and the Memorandum of Agreement signatories, as required by the Programmatic Agreement. Such measures will include, but are not necessarily limited to, vibration monitoring of construction in the vicinity of historic properties; cordoning off properties from construction activities such as traffic, equipment storage, and personnel; shielding properties from dust or debris; and stabilization of buildings adjacent to construction. For buildings that are to be moved, such</p>

Impact	Measures to Minimize Harm
	<p>measures will include stabilization of buildings and structures before, during, and after relocation; protection of buildings and structures during temporary storage; and relocation at a new site and during subsequent rehabilitation. Moving buildings could result in minor impacts on air emissions from equipment and vehicles and minor effects on developed or undeveloped sites.</p> <p>Protection and stabilization measures proposed for affected properties are presented in more detail in the BETP, a plan that was developed with critical input from all of the project’s consulting parties. Performance tracking of this mitigation measure is based upon successful implementation and the approval of the documentation by the SHPO and appropriate consulting parties.</p>
<p>Hist-MM#3: Minimize Adverse Effects through Relocation of Historic Structures</p>	<p>The BETP identifies historic properties that will be relocated to help avoid destruction and minimize the direct adverse effect of their physical damage or alteration. The plan for relocation and implementation of relocation will take place prior to construction. The relocation of the historic properties will take into account the historic site and layout (i.e., the orientation of the buildings to the cardinal directions), as well as their potential re-use. All structures will be thoroughly recorded in a Historic Structure Report (HSR) (see Hist-MM#8), and the relocation plan will provide for stabilization of the structures before, during, and after the move.</p> <p>The relocation of historic structures section of the BETP was developed with significant input from all of the project’s consulting parties, to ensure that a comprehensive and thorough approach was developed that would meet the needs of the parties as well as the historic properties. Performance tracking of this mitigation measure is based upon successful relocation of properties and the approval of the process by the SHPO and appropriate consulting parties.</p>
<p>Hist-MM#4: Minimize Adverse Noise Effects.</p>	<p>The BETP identifies historic properties that will be subject to treatment to help minimize indirect adverse effects caused by operational noise of the HST Project. Properties subject to this mitigation are identified in the BETP and will be treated in consultation with the landowner or land-owning agencies, FTA and Authority. Preliminary project design options have been developed to help reduce noise impacts and follow FRA methodologies for noise abatement. These options will be further developed during project design and will be implemented during construction. Historic properties subject to this mitigation measure will be thoroughly recorded in the appropriate format of the Historic American Building Survey (HABS)/Historic American Engineering Record (HAER)/Historic American Landscape Survey (HALS) programs (see Hist-MM#7) prior to construction of the HST Project.</p> <p>The measures proposed to help minimize adverse effects caused by operational noise are presented in more detail in the BETP, a plan that was developed with critical input from all the project’s consulting parties. Performance tracking of this mitigation measure is based upon successful implementation and the approval of the documentation by the SHPO and appropriate consulting parties.</p>
<p>Hist-MM#5: Prepare and Submit NRHP Nominations.</p>	<p>The BETP identifies specific historic properties for nomination to the NRHP program of the NPS. Properties subject to this mitigation will be treated in consultation with the landowner, or land-owning agencies, FTA, and the Authority. Current photographs of the property used in the nomination(s) will be taken prior to the start of project construction. The nomination document may also use other current and/or historic images prepared as part of other mitigation activities.</p> <p>Performance tracking of this mitigation measure is based upon successful implementation and the approval of the documentation by the SHPO and appropriate consulting parties.</p>

Impact	Measures to Minimize Harm
<p>Hist-MM#6: Prepare and Submit CRHR Nominations</p>	<p>The BETP identifies specific historical properties for nomination to the CRHR Program at the California Office of Historic Preservation (OHP). Current photographs of the property used in the nomination(s) will be taken prior to the start of project construction. The nomination document may also use current and/or historic images prepared as part of other mitigation activities. Properties subject to this mitigation will be treated in consultation with the landowner, or land-owning agencies, FTA, and the Authority.</p> <p>Performance tracking of this mitigation measure is based upon successful implementation and the approval of the documentation by the SHPO and appropriate consulting parties.</p>
<p>Hist-MM#7: Prepare and Submit HABS/ HAER/ HALS Documentation</p>	<p>The BETP identifies specific historical properties that would be physically altered, damaged, relocated, or destroyed by the project and that may be documented in compliance with the HABS/HAER/HALS programs. Consultation with the SHPO, NPS, and the consulting parties will be required if any of the historic properties must be documented to these standards.</p> <p>Prior to the start of construction, in consultation with the Western Regional Office of the NPS, Oakland, California, large-format (4- x 5-inch, or larger, negative-size) black and white photographs will be taken of these historic properties, showing them in context as well as showing details of character-defining features. The photographs will be processed for archival permanence in accordance with HABS/HAER/HALS photographic specifications. Each view will be fully captioned, and if necessary, perspective corrected. Oblique aerial photography would be considered as a photographic recordation option in these coordination efforts.</p> <p>The recordation will follow the NPS HABS/HAER/HALS guidelines; the report format, views, and other documentation details will be coordinated with the NPS. It is anticipated that the recordation of historic properties will be completed to Level II HABS written data standards, and will include archival and digital reproduction of historic images, plans, and drawings, if available. Copies of the documentation will be offered to the appropriate local governments, historical societies and agencies, and libraries. The documentation will also be offered in printed and electronic form to any repository or organization upon which SHPO, the Authority, and local agency with jurisdiction over the property, through consultation, may agree. The electronic copy of the report may also be placed on an agency or organization’s web site.</p> <p>Performance tracking of this mitigation measure is based upon successful implementation and the approval of the documentation by the SHPO and appropriate consulting parties</p>
<p>Hist-MM#8: Prepare Historic Structure Reports</p>	<p>The BETP identifies historic properties that would be physically altered, damaged, or relocated that would be subject to an HSR. The HSR will be prepared prior to the start of construction. The HSR will follow the general guidelines for such reports as described in the California OHP publication, “Historic Structure Report Format” (OHP n.d.). The scope of each HSR will be developed in consultation with the land-owning agencies, the SHPO, and appropriate consulting parties. The HSR will include, if appropriate, documentation of existing landscaping. The HSRs may be used in the ongoing planning process and re-use of the properties, and may be coordinated with the other mitigation documentation activities, such as HABS/HAER records.</p> <p>Performance tracking of this mitigation measure is based upon successful implementation and the approval of the documentation by the SHPO and appropriate consulting parties.</p>

Impact	Measures to Minimize Harm
<p>Hist-MM#9: Prepare Interpretive Exhibits</p>	<p>Some historic properties may be identified in the BETP for historic interpretation. Interpretive exhibits will provide information regarding the specific historic property. The interpretive exhibits will use images, narrative history, drawings, or other material produced for the mitigation described above, including the HABS/HAER reports, NRHP and CRHR nominations, or other archival sources. The interpretive exhibits may be in the form of, but are not necessarily limited to, interpretive display panels and/or printed material for dissemination to the public. The interpretive exhibits may be installed at local libraries, historical societies, or public buildings.</p> <p>All historic properties demolished by the project will be the subject of informative permanent metal plaques that will be installed at the site of the demolished historic property, or at nearby public locations. The plaques will provide a brief history of the property, its engineering/architectural features and characteristics, and the reasons for and date of its demolition.</p> <p>Performance tracking of this mitigation measure is based upon successful implementation and the approval of the documentation by the SHPO and appropriate consulting parties.</p>
<p>Hist-MM#10: Plan Repair of Inadvertent Damage</p>	<p>The BETP provides a plan for the repair of inadvertent damage to historic properties. The plan has been developed prior to project construction, and states that damage resulting from the project to any of the historic properties near construction activities will be repaired in accordance with the Secretary of the Interior's Standards for Rehabilitation. The HSR and/or HABS/HAER recordation will photographically document the condition of historic properties prior to the start of construction to establish the baseline condition for assessing damage. A copy of this photographic documentation will be provided to the landowner or land-owning agencies. Prior to implementation, provide the plans for any repairs to historic properties for SHPO review and comment to ensure conformance with the Secretary of the Interior's Standards for Rehabilitation.</p> <p>Performance tracking of this mitigation measure is based upon successful repair of any damage to historic properties and the approval of that work by the SHPO and appropriate consulting parties.</p>

4.8 Avoidance Alternatives

Section 4(f) requires the selection of an alternative that avoids the use of Section 4(f) property if that alternative is deemed feasible and prudent. The purpose and need statement of the HST Merced to Fresno Section EIR/EIS tiers off the approved program EIR/EIS documents. The alternatives evaluation process conducted as part of the HST Project for the Merced to Fresno Section concluded that there was no feasible and prudent HST alternative within the study area that did not result in a use of a Section 4(f) resource. Although the alternatives analysis process considered multiple criteria, the screening emphasized the project objective to maximize the use of existing transportation corridors and available rights-of-way, to the extent feasible; the result of this was the carrying forward of the north-south alignment alternatives that follow the two existing freight corridors of the UPRR and the BNSF. The alternatives evaluation process resulted in the conclusion that, in accordance with 49 U.S.C. 303(c), there was no feasible and prudent HST alternative within the study area that, based on multiple factors which are individually not severe, would cumulatively result in conditions rendering the alternative not prudent.

The reason for this finding is as follows:

- All HST alternatives were designed to follow existing railroad corridors to the extent allowed by design speeds. Locating the HST alignment along these corridors is an objective of the project intended to minimize impacts on the natural and human environment. Any alternative that did not follow these or other transportation corridors would substantially increase the number of

displacements, overall community disruption, adverse impacts on natural environment resources, and adverse social and economic impacts.

- Any alternative that did not follow these or other transportation corridors would not meet the purpose and need of the Merced-Fresno HST Project because such an alternative would fail to link the major metropolitan areas of the state, deliver predictable and consistent travel times, and relieve capacity constraints of the existing transportation system as increases in intercity travel demand in California occur, in a manner sensitive to and protective of California's unique natural resources:
 - Scoping comments brought up alternatives that were already considered in the 2005 Final Statewide Program EIR/EIS, such as the Sierra Foothills (located 8 miles east of SR 99) and an alignment along the I-5 corridor. The Sierra Foothills Alternative was already eliminated in the Program EIR/EIS due to lack of connectivity with urban centers, inability to generate adequate revenue, and high environmental impacts.
 - The potential for an I-5 alignment was considered and rejected for further study in decisions by the Authority and the FRA in the 2005 Final Statewide Program EIR/EIS. While the I-5 corridor could possibly provide better end-to-end travel times compared with alignment alternatives that generally follow the rail corridors or the SR 99 corridor, it would not meet project objectives and would not satisfy the project's purpose and need as well as the BNSF/UPRR/SR 99 corridors would. Because it is not where the bulk of the Central Valley population resides, the I-5 corridor would result in lower ridership and would not meet the current and future intercity travel demand generated by the Central Valley communities. The I-5 corridor would not provide transit connections in this area, and thus would not meet the purpose and need and basic objectives of maximizing intermodal transportation opportunities and improving the intercity travel experience in the Central Valley area of California. Use of the I-5 corridor would also encourage sprawl development, which is the opposite of what the HST system is intended to achieve, and which was opposed by numerous agencies, including EPA.
 - In contrast to the lower population along the I-5 corridor, almost 5 million residents are projected to live between Merced and Bakersfield along the BNSF/UPRR/SR 99 corridors by 2035. Residents along the BNSF/UPRR/SR 99 corridors lack a competitive transportation alternative to the automobile, and the detailed ridership analysis showed that they would be ideal candidates to use an HST system (Authority and FRA 2011b). In addition, the I-5 corridor would not be compatible with current land use planning in the Central Valley, which focuses and accommodates growth in the communities along the BNSF/UPRR/SR 99 corridors. The concept of linking the I-5 corridor to Fresno and Bakersfield with spur lines was also considered at the program level, but dismissed because it would add considerably to the I-5 corridor capital costs and would still have the same lower ridership figures when compared to the SR 99 corridor.

The No Project Alternative would not include the construction of the HST or any associated facilities, and would thus have no impact on any Section 4(f) or Section 6(f) resources. However, it would not address the state's purpose and need for the project. This alternative is insufficient to meet existing and future travel demand; current and projected future congestion of the transportation system would continue to result in deteriorating air quality, reduced reliability, and increased travel times. Because the No Project Alternative does not meet the project purpose and need, it is neither feasible nor prudent, and is not discussed further as an avoidance alternative for any Section 4(f) or Section 6(f) resources.

Greater detail on alternatives considered but dismissed is provided in Section 2.3, as well as in the *Preliminary Alternatives Analysis Report*, the *Merced to Fresno Section High-Speed Train Project EIR/EIS*, the *Supplemental Alternatives Analysis Report*, the *Merced to Fresno Section High-Speed Train Project EIR/EIS* (Authority and FRA 2010a,b), and the *Checkpoint B Summary Report* and attachments (Authority and FRA 2011), available at www.cahighspeedrail.ca.gov.

4.8.1 Individual Resource Avoidance Assessments

To estimate the effects of relocating alternatives to avoid impacts on 4(f) resources, an area approximately 1 mile on each side of the resource would be affected to allow for the gradual transition in alignment needed to maintain design speeds.

All HST alternatives would result in a Section 4(f) use of the Robertson Boulevard Tree Row, the Belmont Avenue Subway and Circle, and the Weber Avenue Overcrossing Bridge (impacts on Camp Pashayan have been determined to be *de minimis* pending written concurrence from CDFG). The UPRR/SR 99 Alternative would have a Section 4(f) use of Sharon Avenue Linear Park and County Road 27³/₄ Linear Park. FRA preliminarily determined that the UPRR/SR 99 Alternative would have a *de minimis* impact on Riverside Park; however, the agency with jurisdiction over the resource did not agree with that finding. The construction of the access tracks to the Castle Commerce Center HMF site would result in a Section 4(f) use of Joe Stefani Elementary School. The UPRR/SR 99 Alternative would have a Section 4(f) use of the Madera SPRR Station.

4.8.1.1 Sharon Avenue Linear Park

The UPRR/SR 99 Alternative alignment would result in a Section 4(f) use of Sharon Avenue Linear Park. Both the BNSF and Hybrid alternatives are feasible and prudent avoidance alternatives to this Section 4(f) use.

4.8.1.2 County Road 27³/₄ Linear Park

The UPRR/SR99 Alternative alignment would result in a Section 4(f) use of County Road 27³/₄ Park. Both the BNSF and Hybrid alternatives are feasible and prudent avoidance alternatives to this Section 4(f) use.

4.8.1.3 Riverside Park

While FRA preliminarily determined the UPRR/SR 99 Alternative would have a *de minimis* impact on Riverside park, the City of Madera did not concur with this finding. Therefore, the UPRR/SR 99 Alternative alignment would result in a Section 4(f) use of Riverside Park. Both the BNSF and Hybrid alternatives are feasible and prudent avoidance alternatives to this Section 4(f) use.

4.8.1.4 Camp Pashayan

FRA has preliminarily determined the effects of all the HST alternatives on Camp Pashayan would be *de minimis* and continues to work with CDFG staff to obtain written concurrence with this finding. However, concepts to avoid any effect on Camp Pashayan are further explored in this section. Avoidance of Camp Pashayan would require redesign of one of the HST alternatives or design of a new alternative. The HST alternatives have been designed to follow existing railroad rights-of-way as much as possible, while maintaining design speeds to minimize the number of roadway impacts and impacts on adjacent properties. As the alternatives approach Camp Pashayan, they turn southwest to rejoin the UPRR corridor and continue south to the Downtown Fresno Station. Two potential alternatives have been evaluated that would avoid use of Camp Pashayan while still meeting the Authority's objective to follow existing transportation corridors (Figure 4-11).

An alternative that would cross the UPRR and SR 99 north of the San Joaquin River (see Avoidance Alternative 1 in Figure 4-11) would avoid the Camp Pashayan property by crossing to the west side of the UPRR and SR 99 north of Camp Pashayan, continuing south to cross back over SR 99 at N Parkway Drive, and continuing between N Golden State Boulevard and SR 99 to the west side of SR 99. However, this alternative would require two new crossings of SR 99 with straddle bents, which would substantially increase visual effects and cost. Moreover, this alternative also would bisect commercial and industrial properties along Golden State Boulevard and affect newly developed motel sites. Per 49 U.S.C. 303(c), this would not be a prudent alternative because it would substantially increase the number of displacements, overall community disruption, and adverse social and economic impacts.

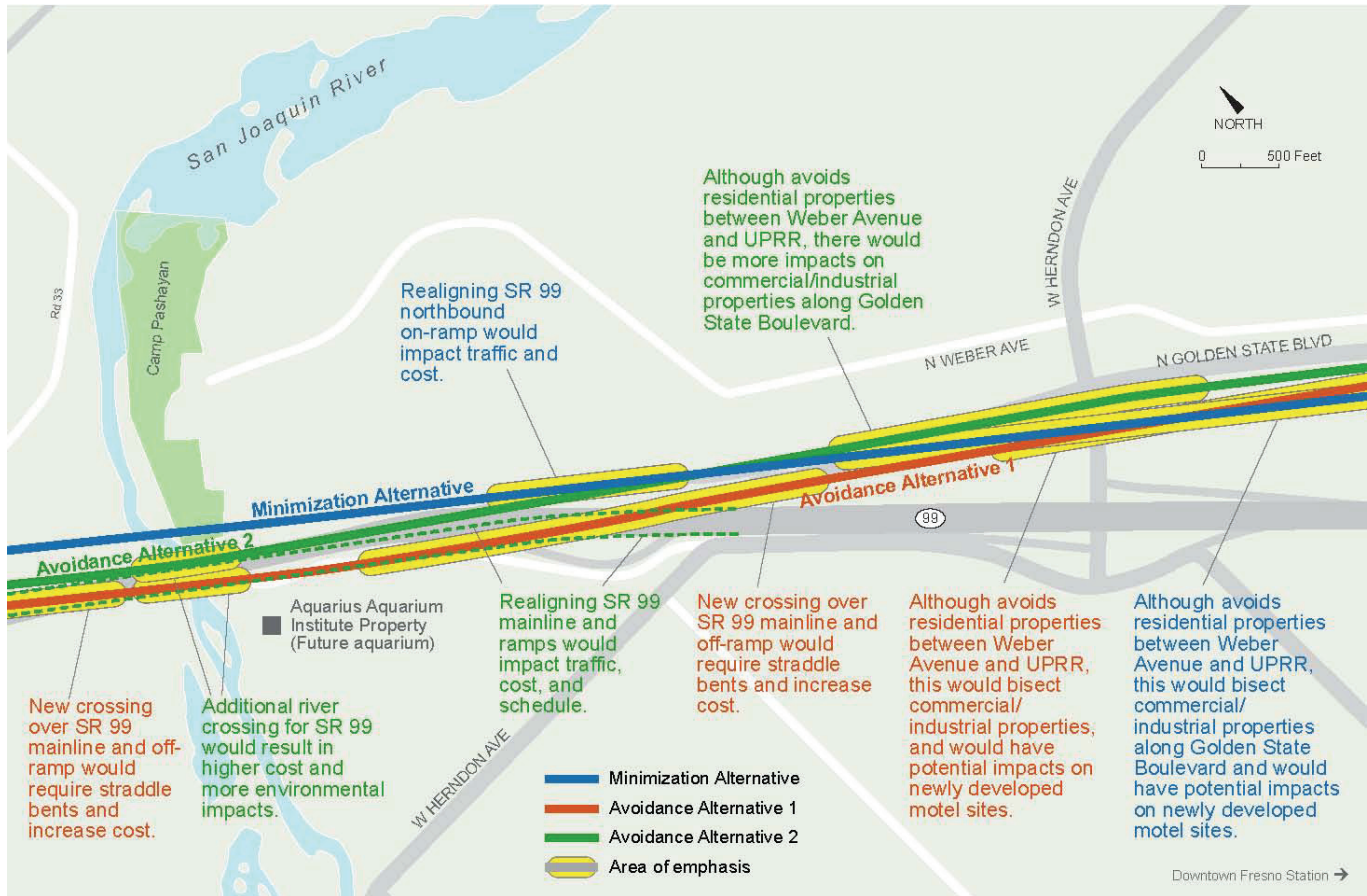


Figure 4-11
 Camp Pashayan Avoidance Alternatives, City of Fresno

Avoidance Alternative 2, shown in Figure 4-11, would cross the UPRR north of the San Joaquin River and continue south between the UPRR and SR 99, requiring the realignment of SR 99 to the west. This alternative would add a river crossing, thereby substantially increasing environmental impact. This avoidance alternative would require realigning the SR 99 mainline and ramps, thus increasing traffic impacts and cost, as well as affecting the project implementation schedule. This alternative would increase impacts on commercial and industrial properties along Golden State Boulevard (although these properties would not be bisected as with Avoidance Alternative 1). Both of the avoidance alternatives would affect the Aquarius Aquarium Institute property, which is a planned, partially funded educational aquarium and research facility adjacent to the west side of SR 99 just south of the San Joaquin River. Locating the alignments farther to the east to avoid Camp Pashayan would result in consequences to other portions of the San Joaquin River Parkway. Per 49 U.S.C. 303(c), this would not be a prudent alternative because it would substantially increase the number of displacements, overall community disruption, and adverse social and economic impacts.

4.8.1.5 Joe Stefani Elementary School

Joe Stefani Elementary School, which would be subject to a permanent Section 4(f) use associated with the construction of the Castle Commerce Center HMF site alternative, could feasibly and prudently be avoided by selecting a different HMF site alternative rather than the Castle Commerce Center HMF site. (If the Castle Commerce Center HMF site alternative is not selected as part of the HST Project, there

would be no need to build the access tracks and, subsequently, no impact on the school property. This decision is being deferred until the California High-Speed Train San Jose to Merced EIR/EIS is completed.)

Another means of avoiding the school property would be to realign the guideway between the Downtown Merced Station and the Castle Commerce Center HMF site to avoid impacting the school (the existing proposed access track alignment was designed to provide the most efficient connection from the Downtown Merced Station to the HMF site). However, realigning the access tracks either east or west to avoid the school would likely not be prudent because it would result in substantial displacements of residences that are located in the neighborhoods both east and west of the school site (the current alignment of the access tracks was designed to avoid such residential impacts).

4.8.1.6 Madera Southern Pacific Railroad Station

The UPRR/SR 99 Alternative alignment would result in a Section 4(f) use of the Madera Southern Pacific Railroad Station. Both the BNSF and Hybrid alternatives are feasible and prudent avoidance alternatives to this Section 4(f) use.

4.8.1.7 Robertson Boulevard Tree Row

All HST alternatives would result in a Section 4(f) use of the Robertson Boulevard Tree Row because of both the Avenue 21 Wye and Avenue 24 Wye must cross this resource perpendicularly to reach the eastern portions of the alignment in order to avoid traversing the City of Chowchilla. The Authority and FRA have not identified a preferred alternative for the wye option at this time. This will be determined as part of the San Jose to Merced Section EIR/EIS document, but all previous Wyes that would have avoided alternatives were found to not be prudent because they would add length of track resulting in impacts to sensitive wildlife habitat and additional travel time and cost. Greater detail on alternatives considered but dismissed is provided in Section 2.3, as well as in the *Preliminary Alternatives Analysis Report, Merced to Fresno Section High-Speed Train Project EIR/EIS*, the *Supplemental Alternatives Analysis Report, Merced to Fresno Section High-Speed Train Project EIR/EIS* (Authority and FRA 2010b,c), and the *Checkpoint B Summary Report* and attachments (Authority and FRA 2011b), available at www.cahighspeedrail.ca.gov

4.8.1.8 Belmont Avenue Subway and Traffic Circle

All HST alternatives would result in a Section 4(f) use of the Belmont Avenue Subway and Traffic Circle. This use could be avoided by moving the HST alignment to the east or west to avoid incorporating impacting the resource. However, if the HST alignment were shifted west, it would result in a property impact and Section 4(f) use to Roeding Park, which currently does not incur a Section 4(f) use. It would also impact many light industrial businesses in the area immediately west of the existing rail tracks. If the HST alignment were moved to the east, it would significantly increase residential impacts in the neighborhood immediately east of the tracks. Therefore, neither of these alternatives (shifting the HST alignment either west or east) would be prudent per 49 U.S.C. 303(c) because both would substantially increase the number of displacements, overall community disruption, and adverse social and economic impacts.

4.8.1.9 Weber Avenue Overcrossing Bridge

All HST alternatives would result in a Section 4(f) use of the Weber Avenue Overcrossing Bridge. As with the Belmont Avenue Subway and Traffic Circle (because of the immediate proximity of the bridge and the Belmont Avenue Subway and Traffic Circle), this use could be avoided by moving the HST alignment to the east or west to avoid incorporating impacting the resource. However, if the HST alignment were shifted west, it would result in a property impact and Section 4(f) use to Roeding Park, which currently does not incur a Section 4(f) use. It would also impact many light industrial businesses in the area immediately west of the existing tracks. If the HST alignment were moved to the east, it would significantly increase residential impacts in the neighborhood immediately east of the tracks. Therefore, neither of these alternatives (shifting the HST alignment either west or east) would be prudent per 49

U.S.C. 303(c) because both would substantially increase the number of displacements, overall community disruption, and adverse social and economic impacts.

4.9 Measures to Minimize Harm

In applying Section 4(f), "All possible planning" to minimize harm can be defined as: all reasonable measures identified in the Section 4(f) Evaluation to minimize harm or mitigate for adverse impacts and effects...". Therefore, measures to minimize harm include measures that were taken during project planning to avoid or minimize impact as well as mitigation and enhancement measures to compensate for unavoidable project impacts. For effects on historic properties protected under Section 4(f), the Programmatic Agreement among the SHPO, ACHP, the Authority, and FRA outlines an approach for compliance with Section 106 of the NHPA. A Memorandum of Agreement is under development that will address the treatment of adverse effects on the built environment and archaeological resources from the proposed HST alignment. These agreements provide a mechanism for affected parties to agree on the measures that would minimize harm or treat adverse effects to historic resources. Table 4-5 lists proposed measures to minimize harm, as required by 49 U.S.C. 303(c)(2), that could be incorporated into the HST Project to address potential HST impacts on Section 4(f) resources. No measures to minimize harm are discussed for Joe Stefani Elementary School, because construction of the Castle Commerce Center HMF site alternative would necessitate the acquisition of the entire school property; however, this use could be feasibly and prudently avoided, as described in Section 4.8.1.3. (If the Castle Commerce Center HMF site is not selected as part of the HST Project, there would be no need to build the access tracks and, subsequently, no impact on the school property. This decision is being deferred until the San Jose to Merced Section EIR/EIS is completed.)

The above measures to minimize harm for Section 4(f) park/recreation resources and historic properties are consistent with mitigation measures for similar scale transportation projects and have proven to be effective in minimizing impacts noted above.

4.10 Section 4(f) Least Harm Analysis

As there is no feasible and prudent avoidance alternative that avoids a use of all Section 4(f) resources, the only alternative that can be approved is the one that causes the least overall harm based on an assessment of the seven "least harm analysis factors" listed below:

1. The ability of the alternative to mitigate adverse impacts to each Section 4(f) property (including any measures that result in benefits to the property)
2. The relative severity of the remaining harm, after mitigation, to the protected activities, attributes, or features that qualify each Section 4(f) property for protection
3. The relative significance of each Section 4(f) property
4. The views of the official(s) with jurisdiction over each Section 4(f) property
5. The degree to which each alternative meets the purpose and need for the project
6. After reasonable mitigation, the magnitude of any adverse impacts to resources not protected by Section 4(f)
7. Substantial differences in costs among the alternatives

Table 4-6 provides a comparative assessment of the three HST alternatives in terms of the least harm analysis factors listed above.

Table 4-6
 Least Harm Analysis^a

Least Harm Factor	Alternatives		
	UPRR/SR 99	BNSF	Hybrid
<p>Factor 1: The ability to mitigate adverse impacts to each Section 4(f) property (including any measures that result in benefits to the property)</p>	<p>The UPRR/SR 99 Alternative would result in the use of seven Section 4(f) resources.</p> <p>There is no differentiation among the three HST alternatives with regard to Factor 1 for the following Section 4(f) resources:</p> <ul style="list-style-type: none"> • Robertson Blvd Tree Row (historic) [permanent use] • Belmont Avenue Subway and Circle (historic) [permanent use] • Weber Avenue Overcrossing Bridge (historic) [permanent use] <p>For all HST alternatives, the UPRR/SR 99 Alternative would have a Section 4(f) use at three parks: Sharon Avenue Linear Park [temporary use]; County Road 27³/₄ Linear Park [permanent use]; and Riverside Park.</p> <p>In addition to the historic properties noted above for all HST alternatives, the UPRR/SR 99 Alternative would result in a Section 4(f) use at one additional historic property – the SPRR Station in Madera [permanent use].</p> <p><i>Note: A Section 4(f) de minimis determination</i></p>	<p>The BNSF Alternative would result in the use of three Section 4(f) resources.</p> <p>There is no differentiation among the three HST alternatives with regard to Factor 1 for the following Section 4(f) resources:</p> <ul style="list-style-type: none"> • Robertson Blvd Tree Row (historic) [permanent use] • Belmont Avenue Subway and Circle (historic) [permanent use] • Weber Avenue Overcrossing Bridge (historic) [permanent use] <p><i>Note: A Section 4(f) de minimis determination has been made with regard to impacts at Camp Pashayan associated with BNSF Alternative impacts.</i></p> <p><i>Note: A Section 4(f) permanent use would occur at Joe Stefani Elementary School if the Castle Commerce Center HMF site is selected; this impact is not directly associated with a particular HST alternative.</i></p> <p>For each resource where there is use under all three build alternatives, the impact is the same, as is the mitigation proposed for each; therefore, “ability</p>	<p>The Hybrid Alternative would result in the use of three Section 4(f) resources.</p> <p>There is no differentiation among the three HST alternatives with regard to Factor 1 for the following Section 4(f) resources:</p> <ul style="list-style-type: none"> • Robertson Blvd Tree Row (historic) [permanent use] • Belmont Avenue Subway and Circle (historic) [permanent use] • Weber Avenue Overcrossing Bridge (historic) [permanent use] <p><i>Note: A Section 4(f) de minimis determination has been made with regard to impacts at Camp Pashayan associated with Hybrid Alternative impacts.</i></p> <p><i>Note: A Section 4(f) permanent use would occur at Joe Stefani Elementary School if the Castle Commerce Center HMF site is selected; this impact is not directly associated with a particular HST alternative.</i></p> <p>For each resource where there is use under all three build alternatives, the impact is the same, as is the mitigation proposed for each; therefore, “ability</p>

Least Harm Factor	Alternatives		
	UPRR/SR 99	BNSF	Hybrid
	<p><i>has been made with regard to impacts at Camp Pashayan associated with UPRR/SR 99 Alternative impacts.</i></p> <p>Note: A Section 4(f) permanent use would occur at Joe Stefani Elementary School if the Castle Commerce Center HMF site is selected; this impact is not directly associated with a particular HST alternative.</p> <p>For each resource where there is use under all three build alternatives, the impact is the same, as is the mitigation proposed for each; therefore, "ability to mitigate" becomes an irrelevant differentiator. As such, only the total number of Section 4(f) uses becomes the relevant differentiator.</p> <p>By virtue of having the most Section 4(f) uses, the UPRR/SR99 Alternative causes the most harm under Factor 1.</p>	<p>to mitigate" becomes an irrelevant differentiator. As such, only the total number of Section 4(f) uses becomes the relevant differentiator.</p> <p>By virtue of having the same number of Section 4(f) uses (that is less than the UPRR/SR99 Alternative) the BNSF and Hybrid alternatives would equally cause the least harm under Factor 1.</p>	<p>to mitigate" becomes an irrelevant differentiator. As such, only the total number of Section 4(f) uses becomes the relevant differentiator.</p> <p>By virtue of having the same number of Section 4(f) uses (that is less than the UPRR/SR99 Alternative) the BNSF and Hybrid alternatives would equally cause the least harm under Factor 1.</p>
<p>Factor 2: The relative severity of the remaining harm, after mitigation, to the protected activities, attributes, or features that qualify each Section 4(f) property for protection</p>	<p>For each resource where there is use under all three build alternatives, the impact is the same, as is the mitigation proposed for each; therefore, "severity" becomes an irrelevant differentiator.</p> <p>As such, only the total number of Section 4(f) uses becomes the relevant differentiator.</p>	<p>For each resource where there is use under all three build alternatives, the impact is the same, as is the mitigation proposed for each; therefore, "severity" becomes an irrelevant differentiator.</p> <p>As such, only the total number of Section 4(f) uses becomes the relevant differentiator.</p>	<p>For each resource where there is use under all three build alternatives, the impact is the same, as is the mitigation proposed for each; therefore, "severity" becomes an irrelevant differentiator.</p> <p>As such, only the total number of Section 4(f) uses becomes the relevant differentiator.</p>

Least Harm Factor	Alternatives		
	UPRR/SR 99	BNSF	Hybrid
	By virtue of having the most Section 4(f) uses, the UPRR/SR 99 Alternative causes the most harm under Factor 2.	By virtue of having the same number of Section 4(f) uses (that is less than the UPRR/SR 99 Alternative) the BNSF and Hybrid alternatives would equally cause the least harm under Factor 2.	By virtue of having the same number of Section 4(f) uses (that is less than the UPRR/SR 99 Alternative) the BNSF and Hybrid alternatives would equally cause the least harm under Factor 2.
<p>Factor 3: The relative significance of each Section 4(f) property</p> <p>AND</p> <p>Factor 4: The views of the official(s) with jurisdiction over each Section 4(f) property</p>	<p>Each public Section 4(f) resource discussed in this Section 4(f) Evaluation is considered "significant" to its jurisdictional owner; these resources would not be protected under Section 4(f) if a jurisdiction did not consider a particular resource "significant."</p> <p>Of the public Section 4(f) resources incurring uses as a result of the HST alternatives, there are only three where a least harm differentiation comparison can be made (Sharon Avenue Linear Park, Riverside Park, and County Road 27¾ Linear Park), and these resources only incur Section 4(f) uses under the UPRR/SR 99 Alternative. Each of the other public Section 4(f) resources incurs similar Section 4(f) uses under all HST alternatives.</p> <p>Based on the above discussion, the UPRR/SR 99 Alternative would have the greatest relative net harm under Factors 3 and 4.</p>	<p>Each public Section 4(f) resource discussed in this Section 4(f) Evaluation is considered "significant" to its jurisdictional owner; these resources would not be protected under Section 4(f) if a jurisdiction did not consider a particular resource "significant."</p> <p>Of the public Section 4(f) resources incurring uses as a result of the HST alternatives, there are only three where a least harm differentiation comparison can be made (Sharon Avenue Linear Park, Riverside Park, and County Road 27¾ Linear Park), and these resources only incur Section 4(f) uses under the UPRR/SR 99 Alternative. Each of the other public Section 4(f) resources incurs similar Section 4(f) uses under all HST alternatives.</p> <p>Based on the above discussion, the BNSF and Hybrid alternatives would equally cause the least harm under Factors 3 and 4.</p>	<p>Each public Section 4(f) resource discussed in this Section 4(f) Evaluation is considered "significant" to its jurisdictional owner; these resources would not be protected under Section 4(f) if a jurisdiction did not consider a particular resource "significant."</p> <p>Of the public Section 4(f) resources incurring uses as a result of the HST alternatives, there are only three where a least harm differentiation comparison can be made (Sharon Avenue Linear Park, Riverside Park, and County Road 27¾ Linear Park), and these resources only incur Section 4(f) uses under the UPRR/SR 99 Alternative. Each of the other public Section 4(f) resources incurs similar Section 4(f) uses under all HST alternatives.</p> <p>Based on the above discussion, the BNSF and Hybrid alternatives would equally cause the least harm under Factors 3 and 4.</p>
Factor 5: The degree to which each	All of the alternatives evaluated in detail in	All of the alternatives evaluated in detail in	All of the alternatives evaluated in detail in

Least Harm Factor	Alternatives		
	UPRR/SR 99	BNSF	Hybrid
alternative meets the purpose and need for the project	<p>this EIR/EIS meet the project purpose and need.</p> <p>Therefore, there is no least harm alternative per Factor 5.</p>	<p>this EIR/EIS meet the project purpose and need.</p> <p>Therefore, there is no least harm alternative per Factor 5.</p>	<p>this EIR/EIS meet the project purpose and need.</p> <p>Therefore, there is no least harm alternative per Factor 5.</p>
<p>Factor 6: After reasonable mitigation, the magnitude of any adverse impacts to resources not protected by Section 4(f).</p>	<p>A response to address the "magnitude of any adverse impacts to resources not protected by Section 4(f)" ultimately requires a totality of impacts consideration that takes into account the entire spectrum of natural and human resources addressed in this EIR/EIS. This consideration is the task of decision-makers examining the various technical reports contained in this EIR/EIS.</p> <p>Based on a summary review of the EIR/EIS, the UPRR/SR 99 and Hybrid alternatives would equally cause the least harm with respect to Factor 6 because, of the three HST alternatives, they would have the least adverse impacts with respect to non-Section 4(f) resources, including noise, biological resources, and agricultural operations.</p>	<p>A response to address the "magnitude of any adverse impacts to resources not protected by Section 4(f)" ultimately requires a totality of impacts consideration that takes into account the entire spectrum of natural and human resources addressed in this EIR/EIS. This consideration is the task of decision-makers examining the various technical reports contained in this EIR/EIS.</p> <p>Based on a summary review of the EIR/EIS, the BNSF Alternative would cause the most harm with respect to Factor 6 because it would have the most acres of residential impact and the most acres of impact on sensitive habitat areas that may support threatened and endangered species, is the longest, and would involve the most crossings of SR 99 and UPRR.</p>	<p>A response to address the "magnitude of any adverse impacts to resources not protected by Section 4(f)" ultimately requires a totality of impacts consideration that takes into account the entire spectrum of natural and human resources addressed in this EIR/EIS. This consideration is the task of decision-makers examining the various technical reports contained in this EIR/EIS.</p> <p>Based on a summary review of the EIR/EIS, the UPRR/SR 99 and Hybrid alternatives would equally cause the least harm with respect to Factor 6 because, of the three HST alternatives, they would have the least adverse impacts with respect to non-Section 4(f) resources, including noise, biological resources, and agricultural operations.</p>

Least Harm Factor	Alternatives		
	UPRR/SR 99	BNSF	Hybrid
Factor 7: Substantial differences in costs among the alternatives	\$4,732,000 – \$6,044,000 The UPRR/SR 99 Alternative would cause the most harm with respect to Factor 7.	\$4,194,000 – \$4,732,000	\$3,120,000 The Hybrid Alternative would cause the least harm with respect to Factor 7.

Based on the least harm analysis contained in Table 4-6, the Hybrid Alternative would likely have the least harm and the UPRR/SR 99 Alternative would likely have the greatest harm when considering the seven comparative evaluation factors.

4.11 Section 6(f)

The purpose of the LWCF Act is to assist in preserving, developing, and ensuring accessibility to outdoor recreation resources and to strengthen the health and vitality of the citizens of the United States by providing funds, planning, acquisition, and development of facilities. Recreation facilities awarded such funds are subject to the provisions of this Act. The LWCF's most important tool for ensuring long-term stewardship is its "conversion protection" requirement. Section 6(f)(3) strongly discourages conversions of state and local park and recreation facilities to other uses. Conversion of property acquired or developed with assistance under the program requires approval of NPS and substitution of other recreation properties of at least equal fair market value and of reasonably equivalent usefulness and location.

Section 6(f)(3) of the LWCF Act requires that no property acquired or developed with LWCF assistance be converted to other than public outdoor recreation uses without the approval of the Secretary of the Interior, only if the Secretary finds it to be in accord with the then existing Statewide Comprehensive Outdoor Recreation Plan, and only upon such conditions as the Secretary deems necessary to ensure the substitution of other recreation properties of at least equal fair market value and of reasonably equivalent usefulness and location (pursuant to 36 CFR 59). Section 6(f) conversion requires additional coordination with the agency of jurisdiction and California State Parks, which oversees the LWCF program for the NPS, and the NPS regarding the project effects and conversion area and replacement property.

The LWCF *Detailed Listing of Grants with County Totals* datasets website (<http://waso-lwcf.nrcr.nps.gov/public/index.cfm>) was investigated for each of the counties in the Merced to Fresno Section study area. Roeding Park was the only park/recreation resource in the study area that had received LWCF funds (and to which Section 6(f) therefore applied). However, the HST Project would not convert any parkland from Roeding Park, so there are no Section 6(f) impacts associated with the HST Project.