California High-Speed Train Project

Merced Public Workshop
Presentation
April 20, 2010
Agenda

1. Introduction and Station Planning Area
2. High Speed Train International Examples
3. Station Area Analysis
4. Merced Station Design Concepts
5. High Speed Train Station Examples
6. Discussion and Comments
Statewide High Speed Train System

Connecting from Merced to:

- San Francisco Bay Area
- Los Angeles
- Orange County
- San Diego
- Inland Empire
- San Jose
- Central Valley Area
- Sacramento
What are High Speed Trains?

- **Intercity passenger trains** operating at speeds up to 220 miles per hour
- **Tracks separated** from roads and highways
- **Proven Technology**-Safe and Reliable
  - Successfully operating throughout Europe and Asia
- **Reduced trip times** to Merced from other train destinations by 35-50% over car trips

<table>
<thead>
<tr>
<th>Travel Times from the Merced Station</th>
<th>By Car</th>
<th>By Train</th>
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<tbody>
<tr>
<td>To San Francisco</td>
<td>146 min.</td>
<td>91 min.</td>
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<tr>
<td>To Sacramento</td>
<td>114 min.</td>
<td>55 min.</td>
</tr>
<tr>
<td>To San Jose</td>
<td>84 min.</td>
<td>51 min.</td>
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<tr>
<td>To Los Angeles</td>
<td>240 min.</td>
<td>139 min.</td>
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California High Speed Train Concept

Tracks will be grade separated above existing streets & development in Merced

HST Example: Intercity Express, Germany
Transit Oriented Development in Merced

What is Transit Oriented Development?

- **Compact, mixed-use development** centered within walking distance of public transit designed to be convenient and affordable for all ages and incomes
  - Housing, jobs, retail, services, and entertainment are in close proximity
  - Located generally within a ¼ mile to ½ mile radius of a transit stop
  - Promotes non-vehicular **travel choices** and **intermodal connections**

Merced Station TOD Context

- Proposed in Downtown, next to the Union Pacific RR & Transportation Center
Existing Downtown Site Context
HST Station Area Walkability Circle

Legend
- Existing Transit Stations
- Proposed HST Line
- Potential Station Entrance
- Potential Station Platform
- 1/4 Mile Radius Planning Area
- 1/2 Mile Radius Planning Area
- 15-minute walk (1/4 mile distance)
- 30-minute walk (1/2 mile distance)
Potential Station Planning Area

Legend
- Existing Transit Stations
- Proposed HST Line
- Station Entrance Potential Site
- Station Platform Potential Site
- Potential 1/4 Mile Planning Area
- Potential 1/2 Mile Planning Area

Station Planning Area Western Limit
Potential Station Planning Areas

Legend

- Existing Transit Stations
- Proposed HST Line
- Station Entrance Potential Site
- Station Platform Potential Site
- Potential 1/4 Mile Planning Area
- Potential 1/2 Mile Planning Area

Station Planning Area Eastern Limit

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Potential Station Planning Area

Range of Station Area Sites

Legend
- Existing Transit Stations
- Proposed HST Line
- Station Entrance Potential Sites
- Station Platform Potential Sites
- Potential 1/4 Mile Planning Areas
- Potential 1/2 Mile Planning Areas

Range of Station Area Sites
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High Speed Train International Examples

*Alta Velocidad Espanola (AVE ) System, Spain*

Lessons:

- Significant increase in commuting for trips 1 hour or less from high speed rail cities
- Public strategies encourage creation of new housing near train stations
- Presence of high speed rail in the city has prevented leakage of local investments outside of the region

High Speed Train International Examples

Train A Grande Vitesse (TGV) System, France

Lessons:

• Captures 90% of air-rail trips between destinations where the rail journey is 2 hours or less

• Station area locations in the city center are more successful

• Planned station area development with rail access command greater premiums to comparable development in other parts of the city

• High speed rail can enhance the local economy if coordinated with other active economic development efforts
High Speed Train International Examples

Shinkansen Network, Japan

Lessons:

- Population growth due to high speed rail access in combination with a major university and strong employment centers in information exchange

- High speed rail access can facilitate regional growth in service sector employment

- Attracting more visitors to Merced can increase demand for accommodations and food/beverage services

- A station in the city center can attract retailers to the station area and away from the outlying retail areas
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Market Demand Analysis

The Market Analysis will determine the highest and best use for TOD around the station

- Looks at existing conditions and trends for the immediate station planning area and the region in:
  - Land Use
  - Population and Household Growth
  - Demographics
  - Employment Conditions by industry sector
  - Public Policy and Financing Variables
- Projects land use demand for:
  - Employment Generating Uses
    - Office
    - Retail/Entertainment
  - High Density Housing Opportunities
  - Other Station Area Land Use Opportunities i.e. innovative parking solutions and TOD incentives
Vacant and Underutilized Parcels

Legend
- Vacant Parcels
- Underutilized Parcels

Source: Assessor’s parcel data
Vehicular Access and Circulation

Adapt & preserve the existing street grid and alley system in Downtown; focus station area traffic on freeways and major roadways.
Enhance the Transportation Center in Downtown Merced with access to high speed rail and convenient connections to and from Merced

- Connect the HST station to UC Merced via shuttle and bus services.

- Connect the HST station to airport facilities at the Merced Airport and Castle Airport.

Legend
- City Limits
- Rivers & Streams
- Freeways
- Roads
- Lakes
- Railroads
- Existing Transit Stations
- Proposed HST Line
- Proposed HST Station
- Airports

Bus Transit Routes
- City Shopper 1
- City Shopper 2
- M Street Shuttle
- G Street Shuttle
- South East Merced-Downtown
- Merced to Turlock Shuttle

- UC Merced Shuttle
- Merced to Winton Shuttle
- Merced to Le Grand Shuttle
- Merced to Los Banos Shuttle
- Merced to Turlock Shuttle

- Crockett Shuttle
- Crockett B Line
- Crockett C Line
- Crockett E Line
- Crockett N Line

- Sierra Gardens-Mall-Walmart
- Sierra Gardens-Mall-Walmart
- Sierra Gardens-Mall-Walmart
Bike & Pedestrian Connections

Refine bike and pedestrian circulation with additional local bikeways and paseo connections through Downtown Merced.
**TOD Design Opportunities**

**Promote Transit Oriented Development in Downtown Merced**

- Maximize the value capture of high speed train service to the community with a high density, mixed use development pattern
- Link economic development opportunities in Downtown Merced to improved regional access
- Support district parking and shared parking strategies to accommodate station area growth
- Provide development and infill incentives

Establish a high density, mixed-use development pattern

Activate and connect the space beneath the train tracks
1. Maintain the Downtown Main Street Development Pattern

- Build commercial buildings to the front property line or back of the sidewalk; but allow setbacks to vary from the sidewalk for displays, seating, and other public activities.
- Allow residential building setbacks to vary between 0 and 15 feet from the sidewalk.
- Maintain, enhance, and establish significant view corridors as a civic and community amenity.

Typical Downtown Residential Setback

The Merced Theater tower is an example of a Downtown landmark.
2. Establish districts, corridors, and centers as unique places, enhancing the existing districts in Downtown Merced
Merced Station TOD Design Elements

3. Provide public realm improvements to the station planning area that support and enhance the Downtown streetscape

- Plan for streetscape improvements associated with station area development
- Include plazas, seating areas, and pedestrian amenities connecting Downtown businesses and destinations
- Provide plenty of trees, parks, open space, and trail connections that provide an urban refuge in the downtown
- Phase parking intensity as needed by station development and expand the Downtown parking district to include the station planning area
Merced Station TOD Design Elements

Promote sustainable design focused on integrating a whole system approach of:

- Using LID techniques such as green streets, parking swales, and permeable paving
- Promoting green building practices and landscaping that optimize building energy performance and operation and reduce potable water demand
- Promoting the use of public realm energy systems such as parking area PV roofs or solar operated parking meters and light fixtures
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| Station as part of the **Community**: | Role 2: Encourage local use of HST and public transit | Role 4: Stimulate and support sustainable urban development |
Merced Station Design Concepts

Center Platform Configuration

- Local trains arrive
- Express trains pass through
- Local trains depart
Merced Station Design Concepts

Side Platform Configuration

- Local trains arrive
- Express trains pass through
- Local trains depart
Typical HST Station “Footprint”

- 1380 feet
- 125 feet (typical width)
- 150 feet (typical minimum right-of-way)
Typical Elements of a Side Platform HST Station

- **EXPRESS TRACKS**
- **WIND SCREEN**
- **PLATFORM CANOPY**
- **STATION TRACK**
- **BOARDING PLATFORM**
- **STATION HOUSE & CONCOURSE**
- **VERTICAL CIRCULATION**
- **ENTRY PLAZA**

125 feet (typical)
Merced Station Design Concepts

Downtown Site Alternative – North

- Future Development
- Entry Plaza
- Station House
- Transit Plaza
- Station Platforms
- Parking
- Station Concourse
- Bridge Over UPRR
- Downtown Transportation Center
- W MAIN
- W 16TH
- UPRR
- W 15TH
- W 14TH
- SR 99 Freeway
Merced Station Design Concepts
Merced Station Design Concepts

Station Cross-Section

- W. 15TH STREET
- MERCED STATION
- UPRR CORRIDOR

Dimensions:
- 60 FT
- 50 FT
- 55 FT
- 90 FT
- 190 FT
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HST Station Examples

Station Entrance

Taiwan High Speed Rail Station
HST Station Examples

Station Platform

Beijing South Railway Station
HST Station Examples

Trainsheds

St. Pancras Train Station

Waterloo Train Station
HST Station Examples

Station Concourse

Berlin Central Station
HST Station Examples

Ticket Machines and Fare Gates
Express Train Separation
HST Station Examples

Commercial Activities Under the Trackway

Berlin Savignyplatz Railway Station
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