

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



CALIFORNIA
HIGH-SPEED RAIL
AUTHORITY



High Speed Train in Merced

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

Travel Times from the Merced Station

	<u>By Car</u>	<u>By Train</u>
To San Francisco	146 min.	91 min.
To Sacramento	114 min.	55 min.
To San Jose	84 min.	51 min.
To Los Angeles	240 min.	139 min.



California High Speed Train Concept



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



HST Example: Intercity Express, Germany

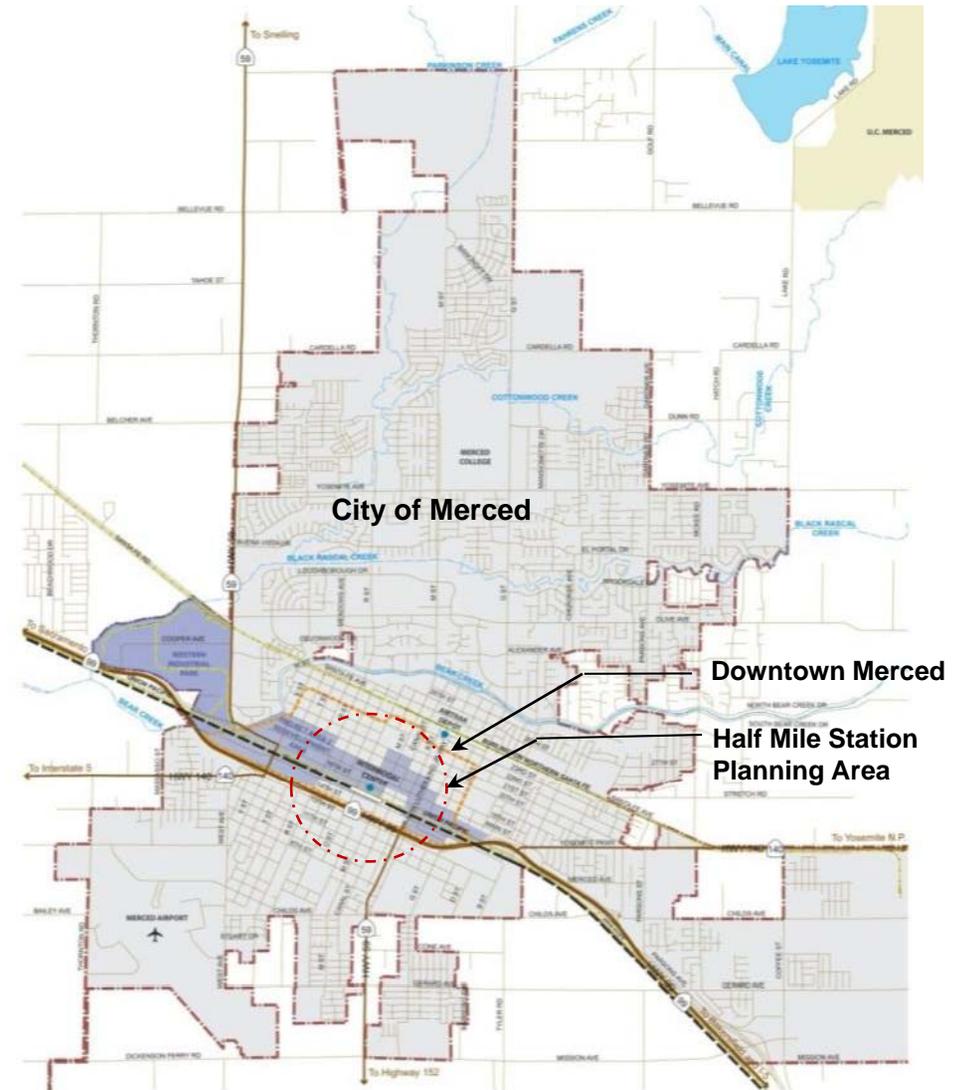
Transit Oriented Development in Merced

What is Transit Oriented Development?

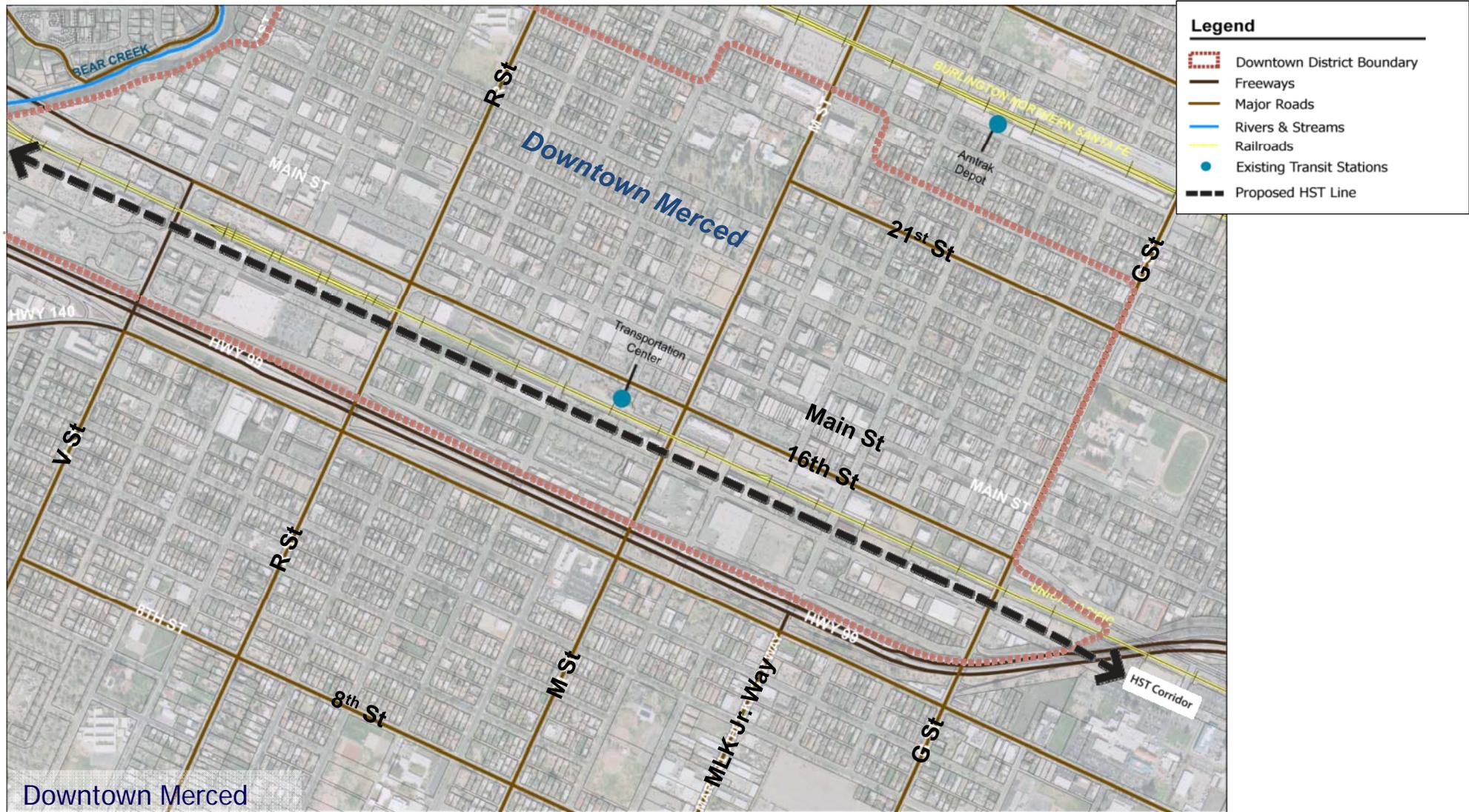
- **Compact, mixed-use development** centered within walking distance of public transit designed to be convenient and affordable for all ages and incomes
 - Housing, jobs, retail, services, and entertainment are in close proximity
- Located generally within a **¼ mile to ½ mile radius** of a transit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

Merced Station TOD Context

- Proposed in Downtown, next to the Union Pacific RR & Transportation Center

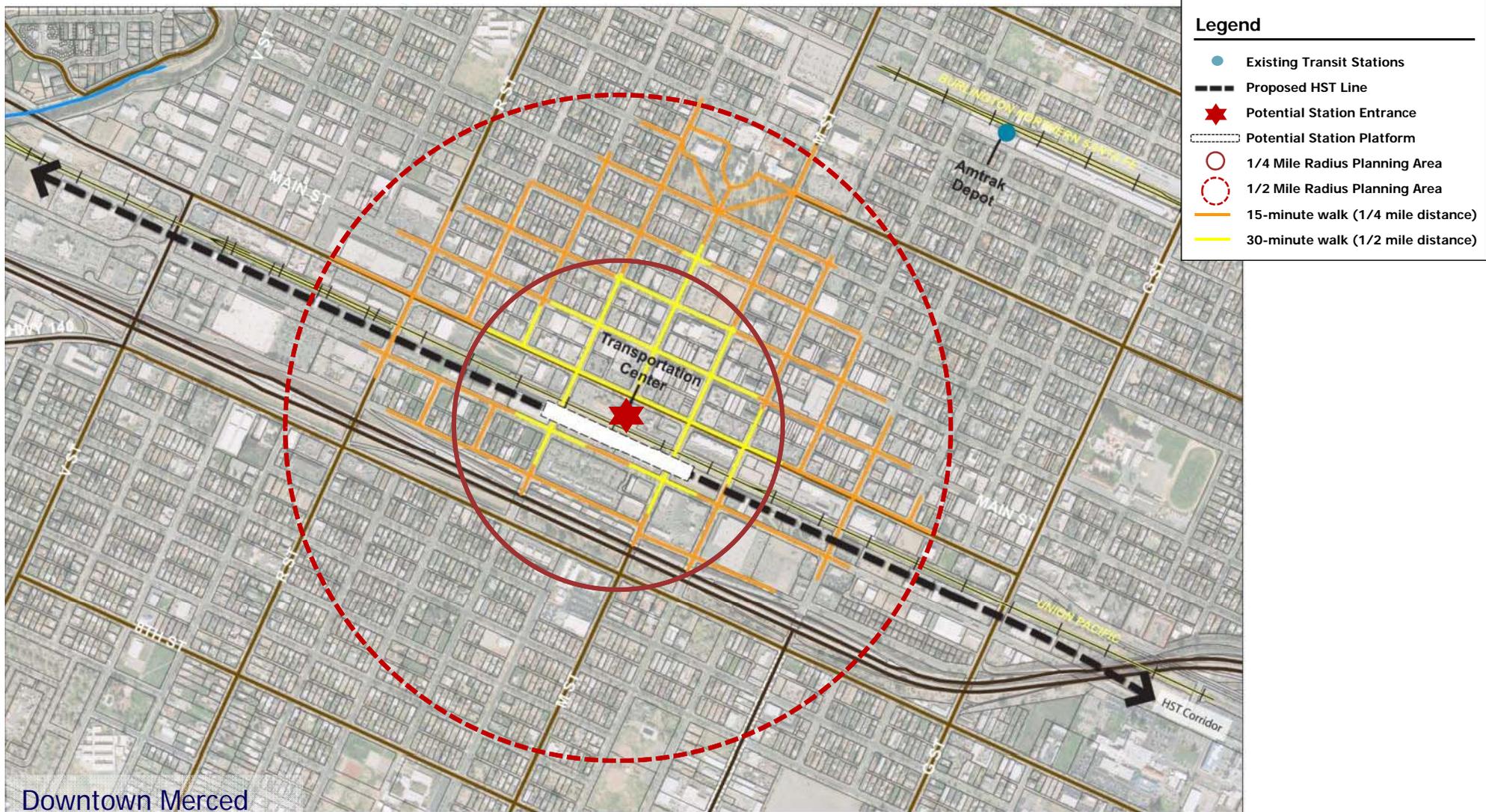


Existing Downtown Site Context

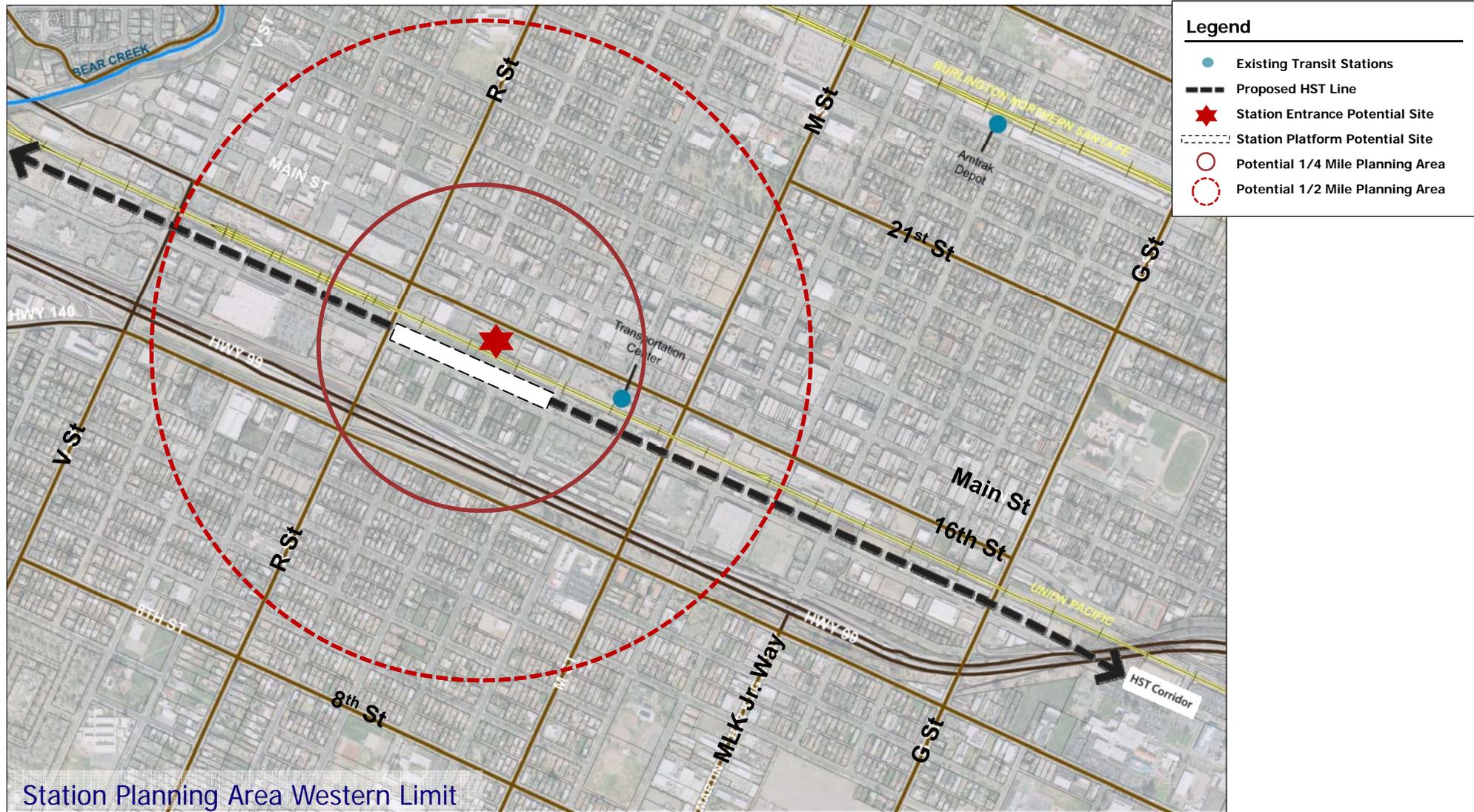


Downtown Merced

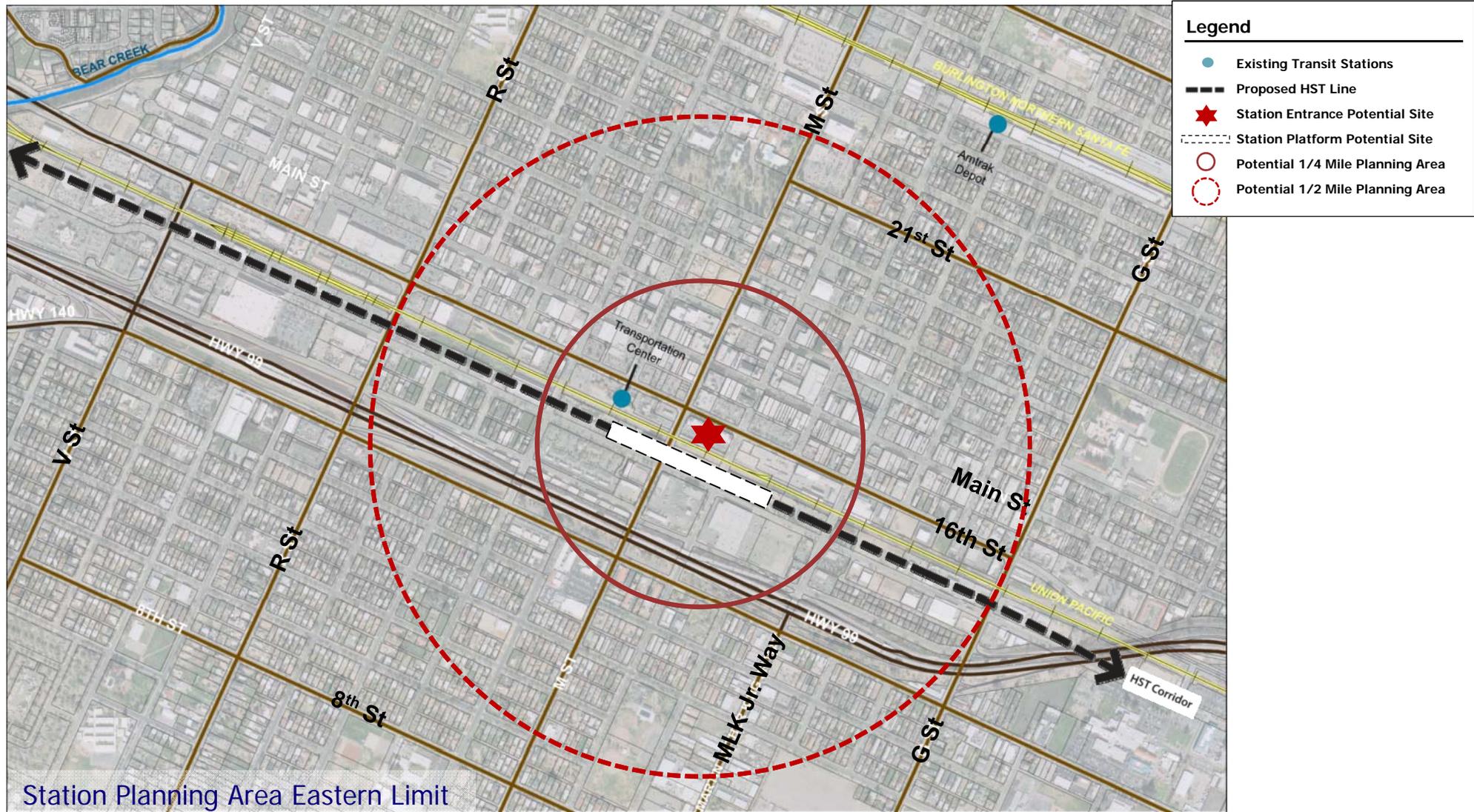
HST Station Area Walkability Circle



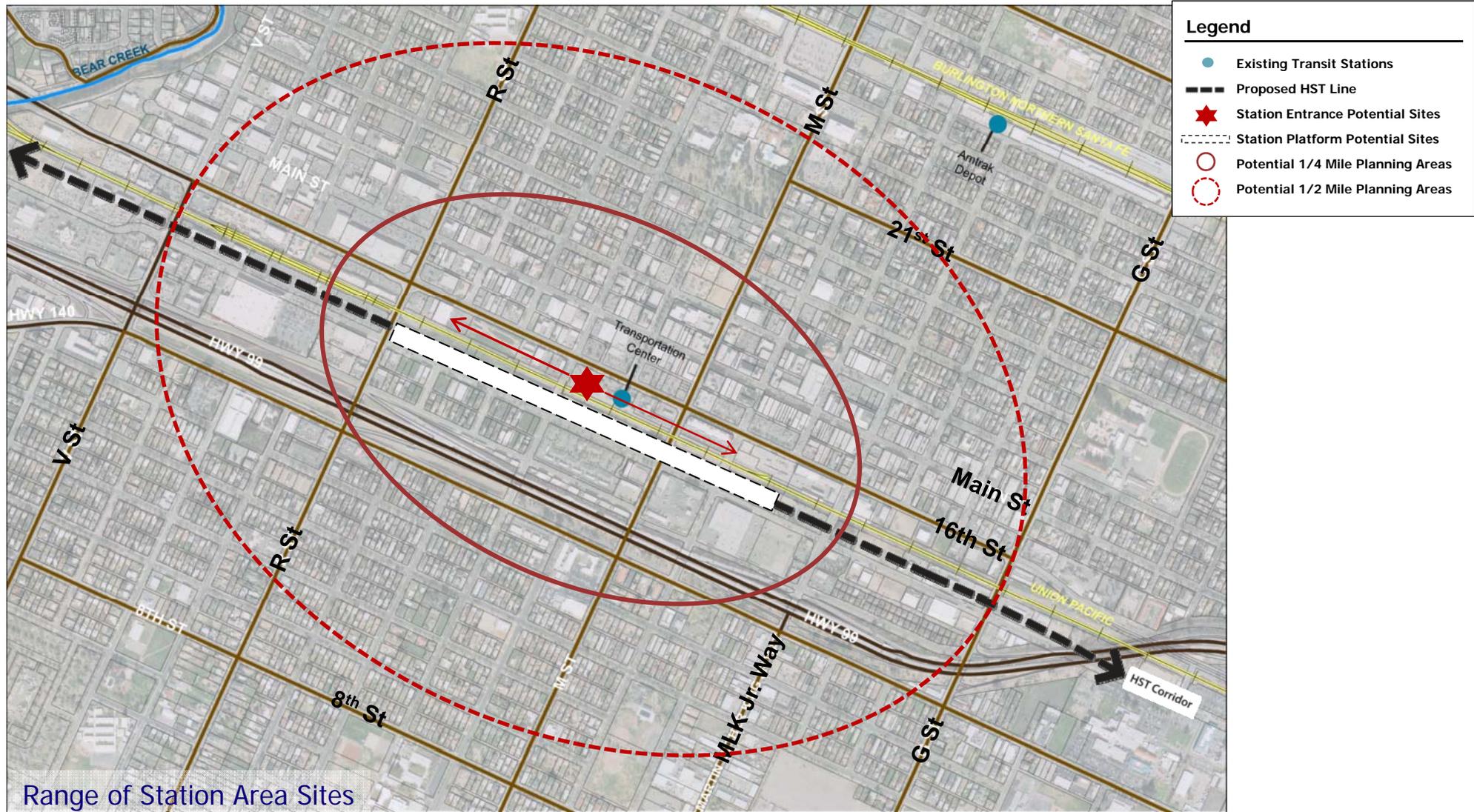
Potential Station Planning Area



Potential Station Planning Areas



Potential Station Planning Area



Range of Station Area Sites

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- 2. High Speed Train International Examples**
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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



Source: Wall Street Journal, April 20, 2009



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

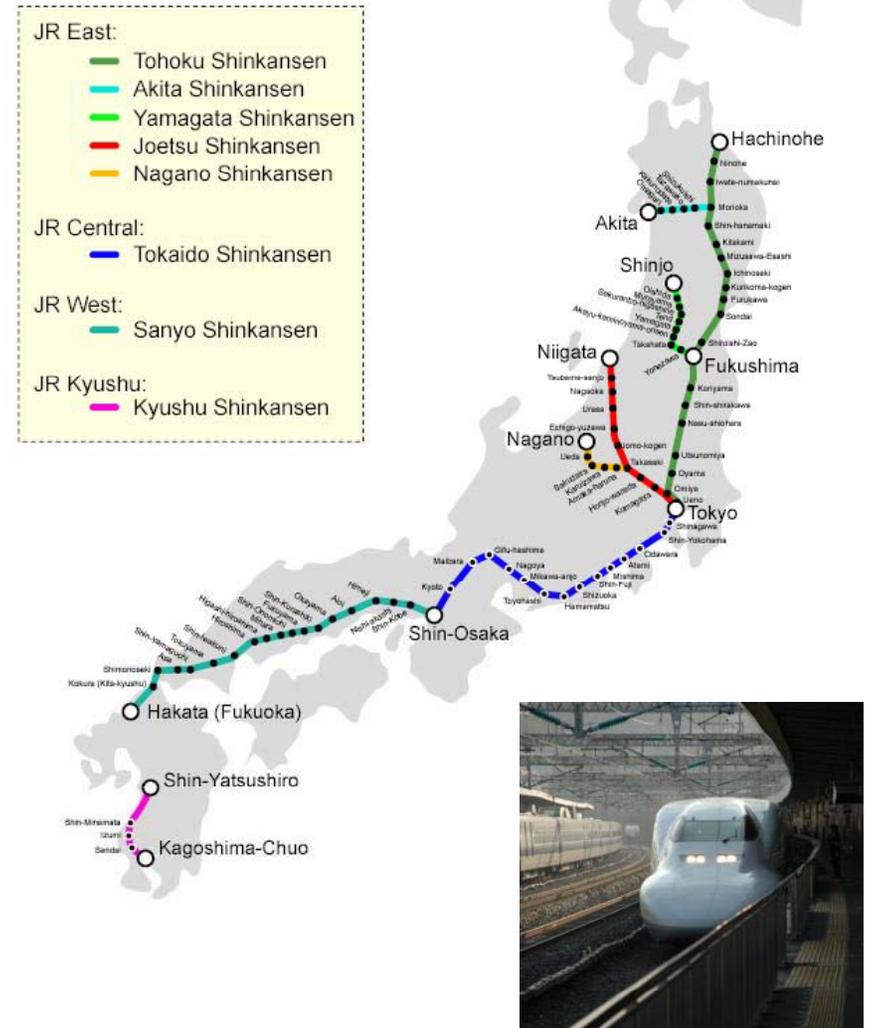


High Speed Train International Examples

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

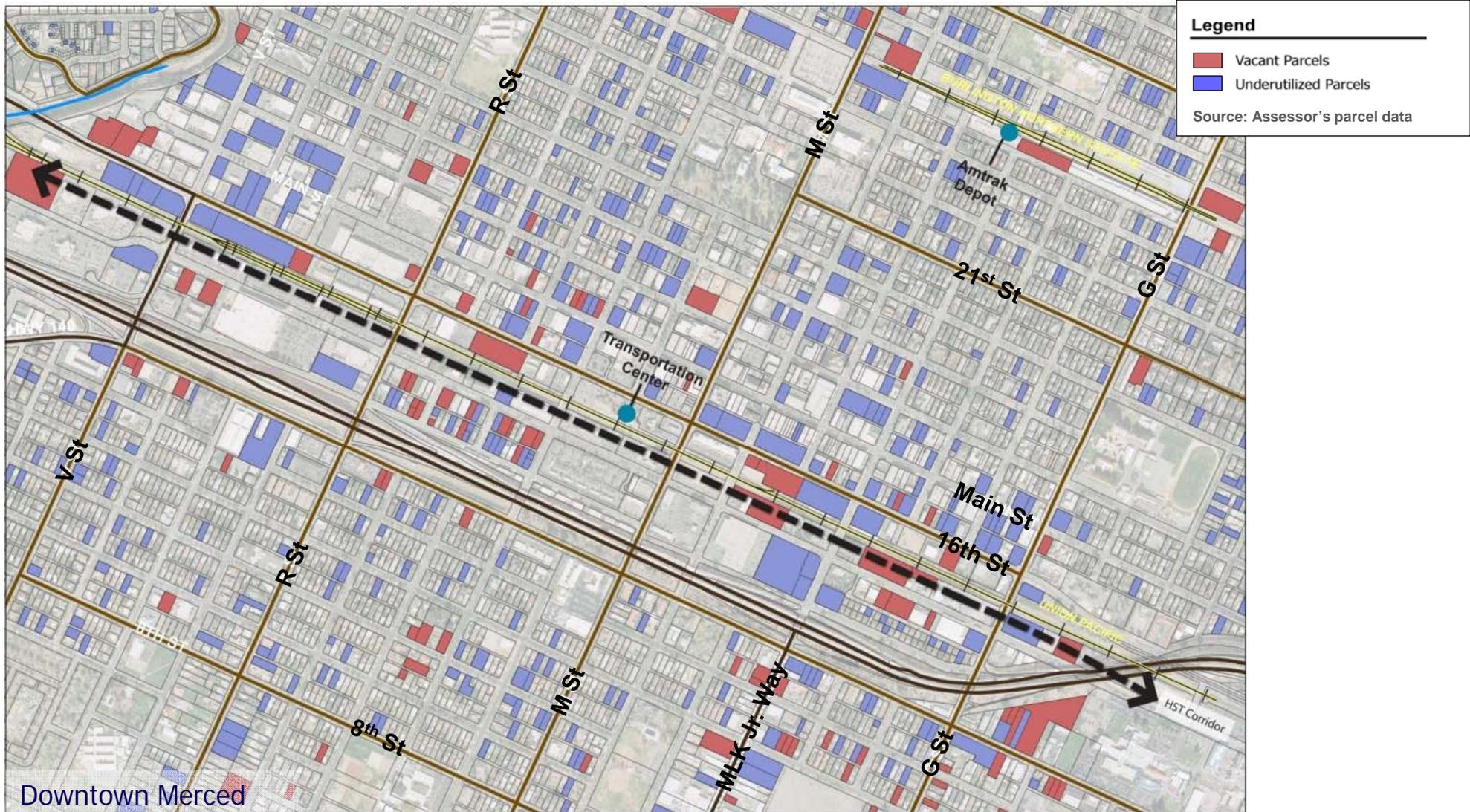


Townhome development fronting the street



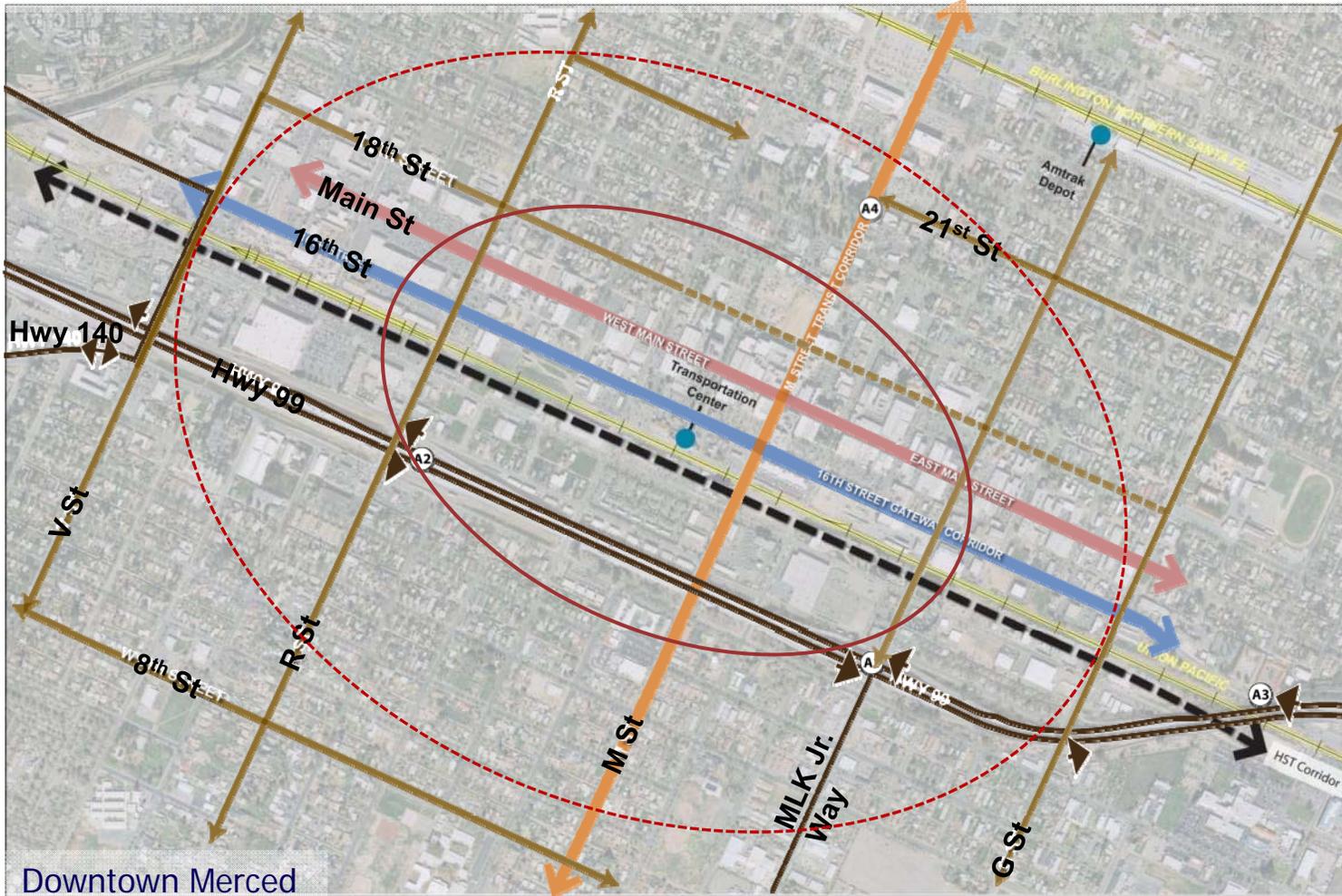
Retail services with wide sidewalks and pedestrian amenities

Vacant and Underutilized Parcels



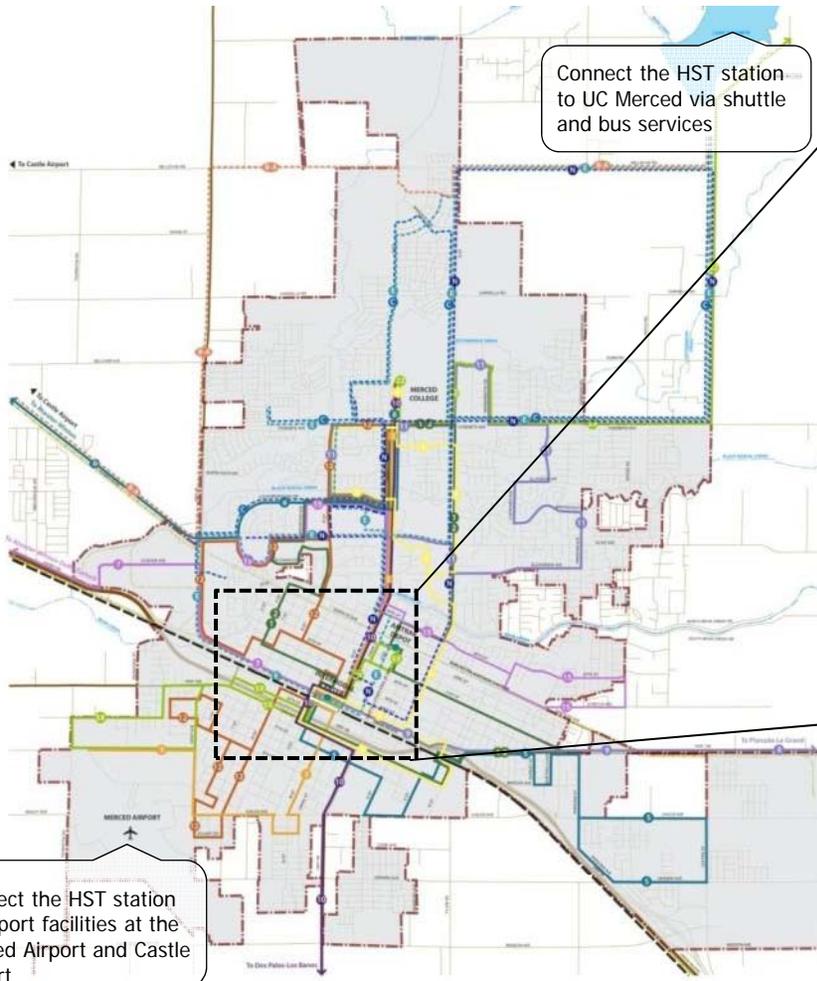
Vehicular Access and Circulation

Adapt & preserve the existing street grid and alley system in Downtown; focus station area traffic on freeways and major roadways

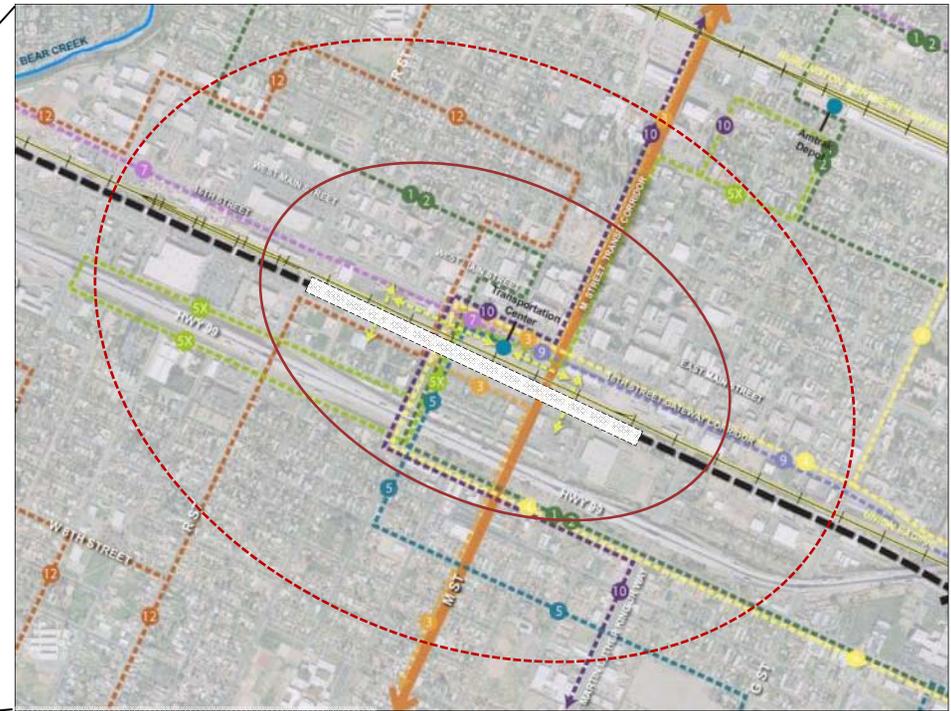


Transit Access and Circulation

Enhance the Transportation Center in Downtown Merced with access to high speed rail and convenient connections to and from Merced



City of Merced

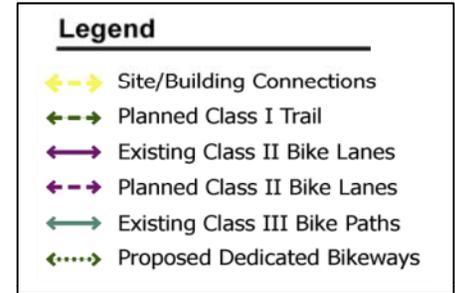
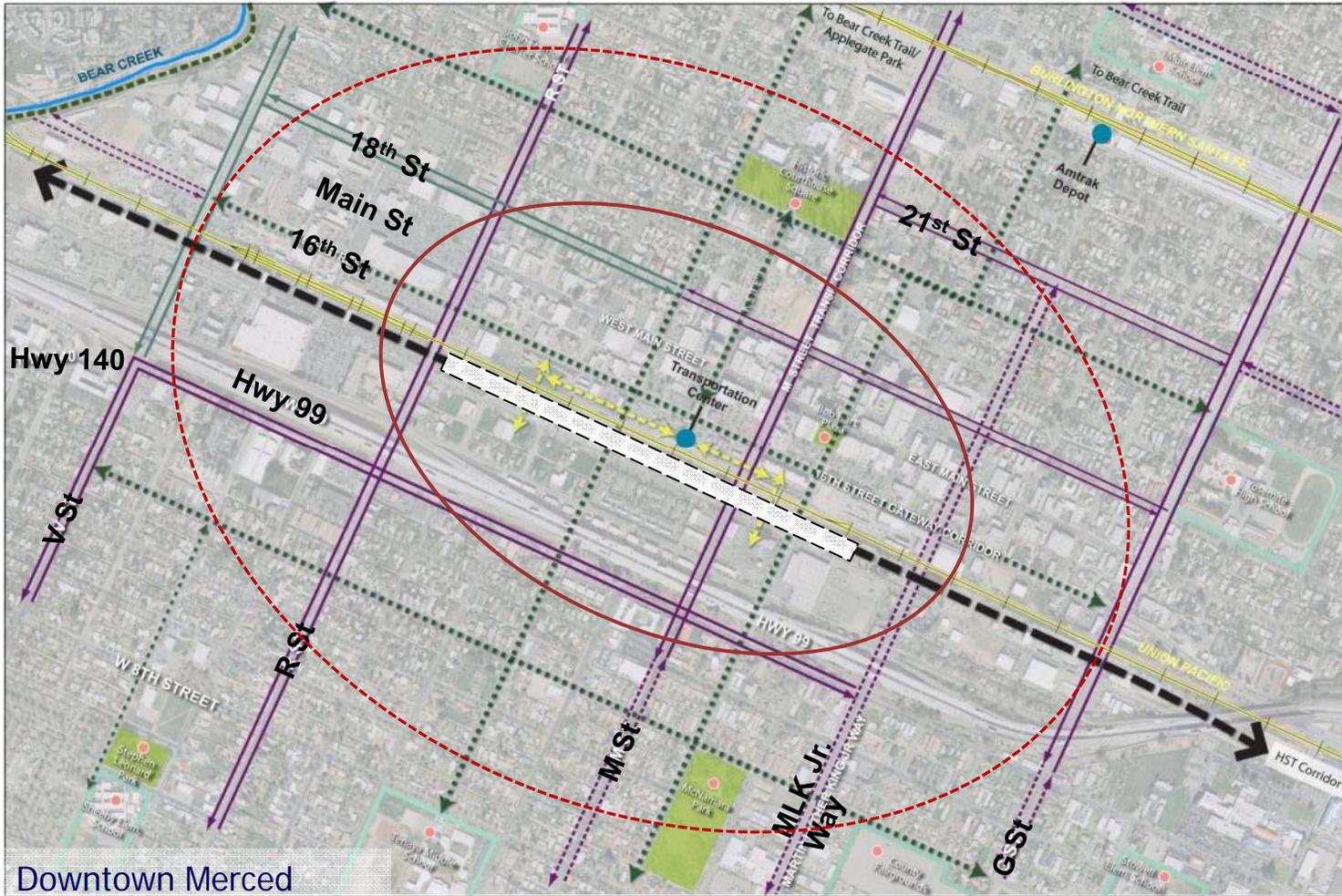


Downtown Merced



Bike & Pedestrian Connections

Refine bike and pedestrian circulation with additional local bikeways and paseo connections through Downtown Merced.

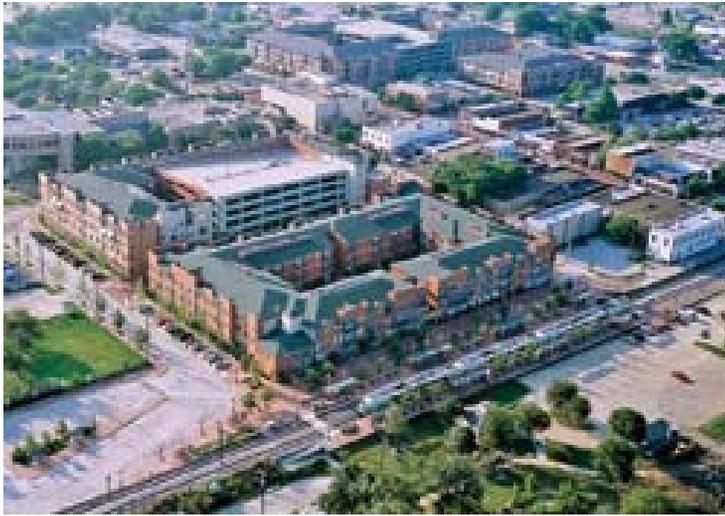


Existing Land Uses



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

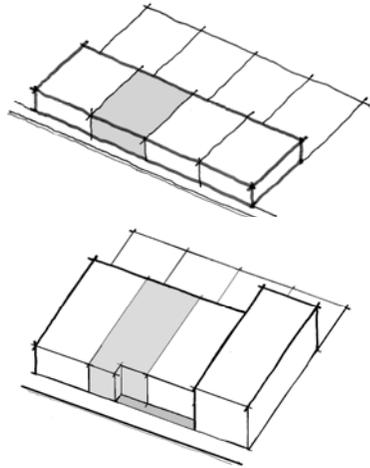


Merced Station TOD Design Elements

1. Maintain the Downtown Main Street Development Pattern



Commercial Building Line with Varying Setbacks



- 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



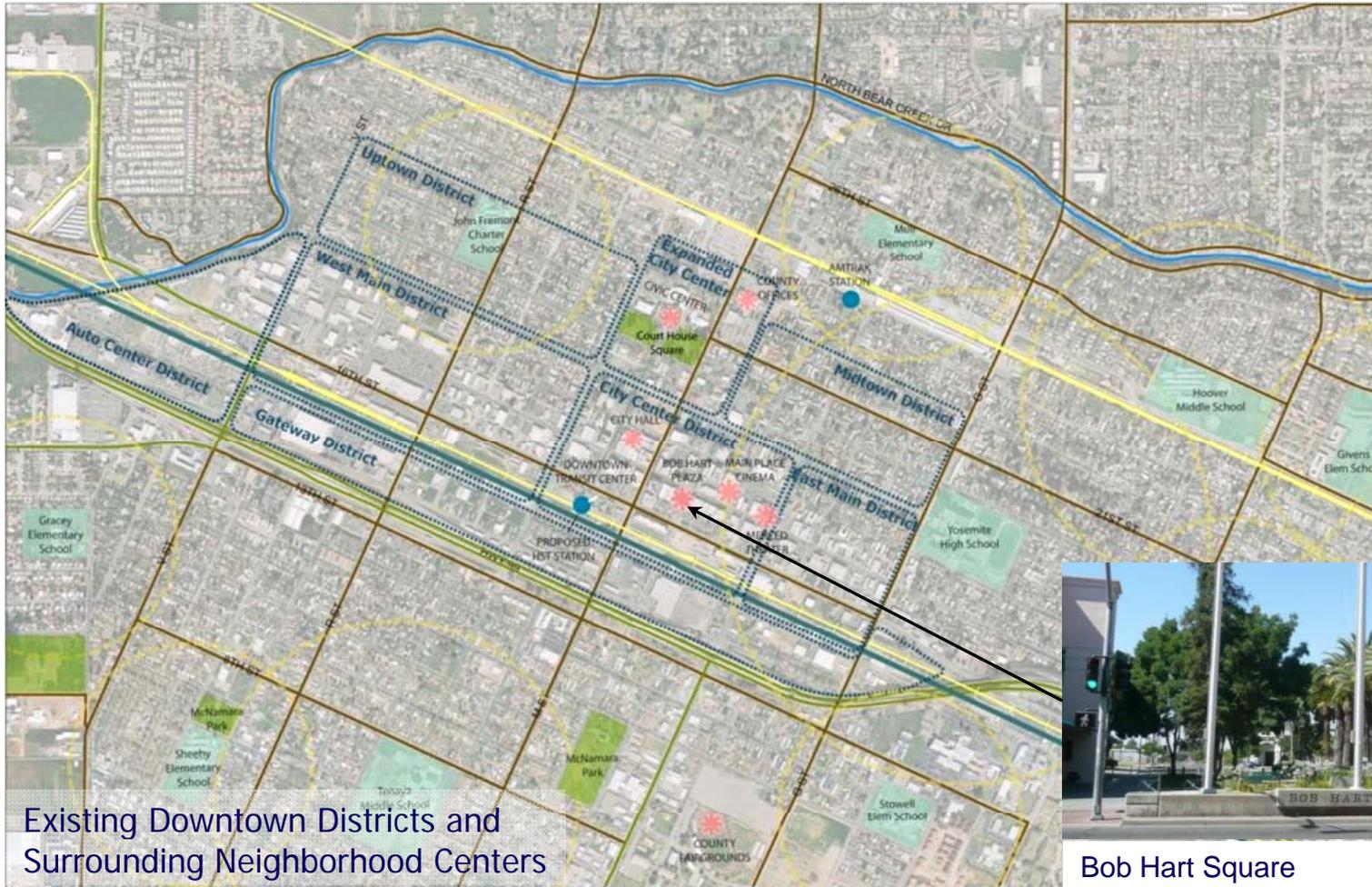
Typical Downtown Residential Setback



The Merced Theater tower is an example of a Downtown landmark

TOD Design Elements

2. Establish districts, corridors, and centers as unique places, enhancing the existing districts in Downtown Merced



Bob Hart Square



Merced Station TOD Design Elements

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



Streetscape improvements on Main St.



Seating area adjacent to the Downtown theaters

- 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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Merced Station Design Concepts

Roles of a High Speed Rail Station

	<i>Transportation:</i>	<i>Land Use:</i>
<i>Station as part of the High Speed Train system:</i>	Role 1: Facilitate access to HST and transfers with alternate modes	Role 2: Provide goods and services tailored to passengers
<i>Station as part of the Community:</i>	Role 3: Encourage local use of HST and public transit	Role 4: Stimulate and support sustainable urban development

Merced Station Design Concepts

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Merced Station Design Concepts

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Merced Station Design Concepts

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Merced Station Design Concepts

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Merced Station Design Concepts

Center Platform Configuration



- Local trains arrive
- Express trains pass through
- Local trains depart

Merced Station Design Concepts

Side Platform Configuration

← Northbound

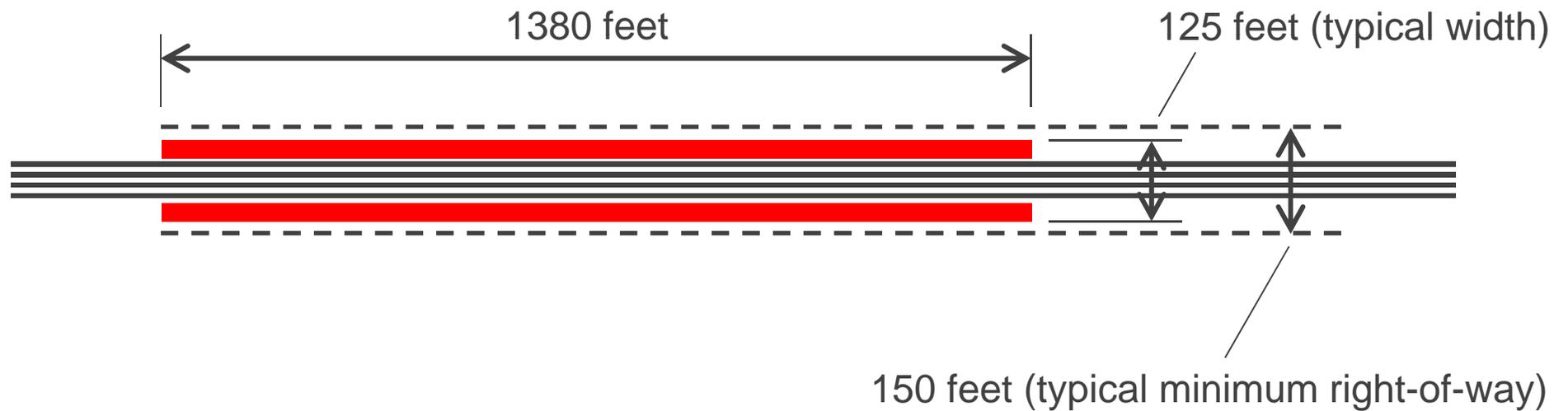


Southbound →

- Local trains arrive
- Express trains pass through
- Local trains depart

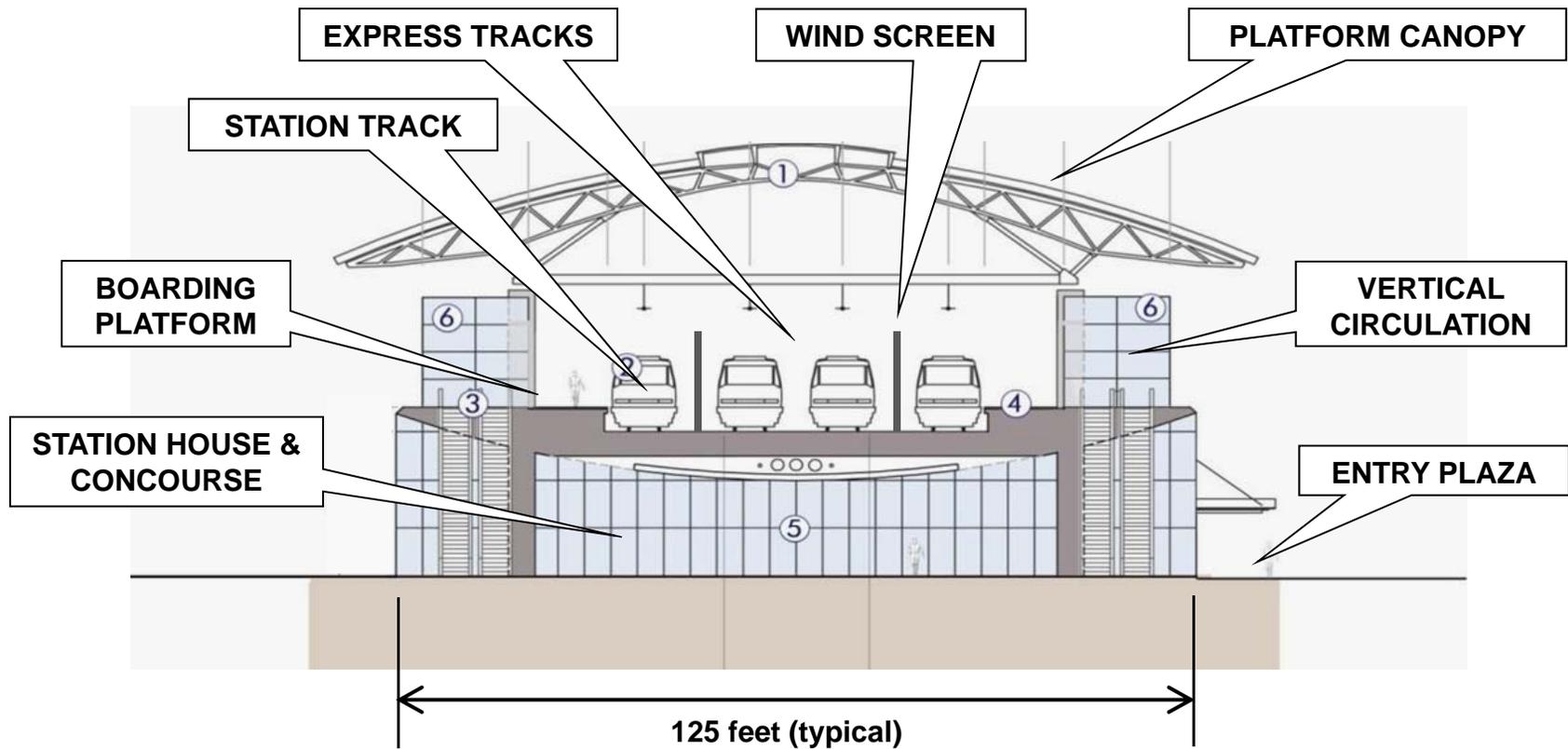
Merced Station Design Concepts

Typical HST Station “Footprint”



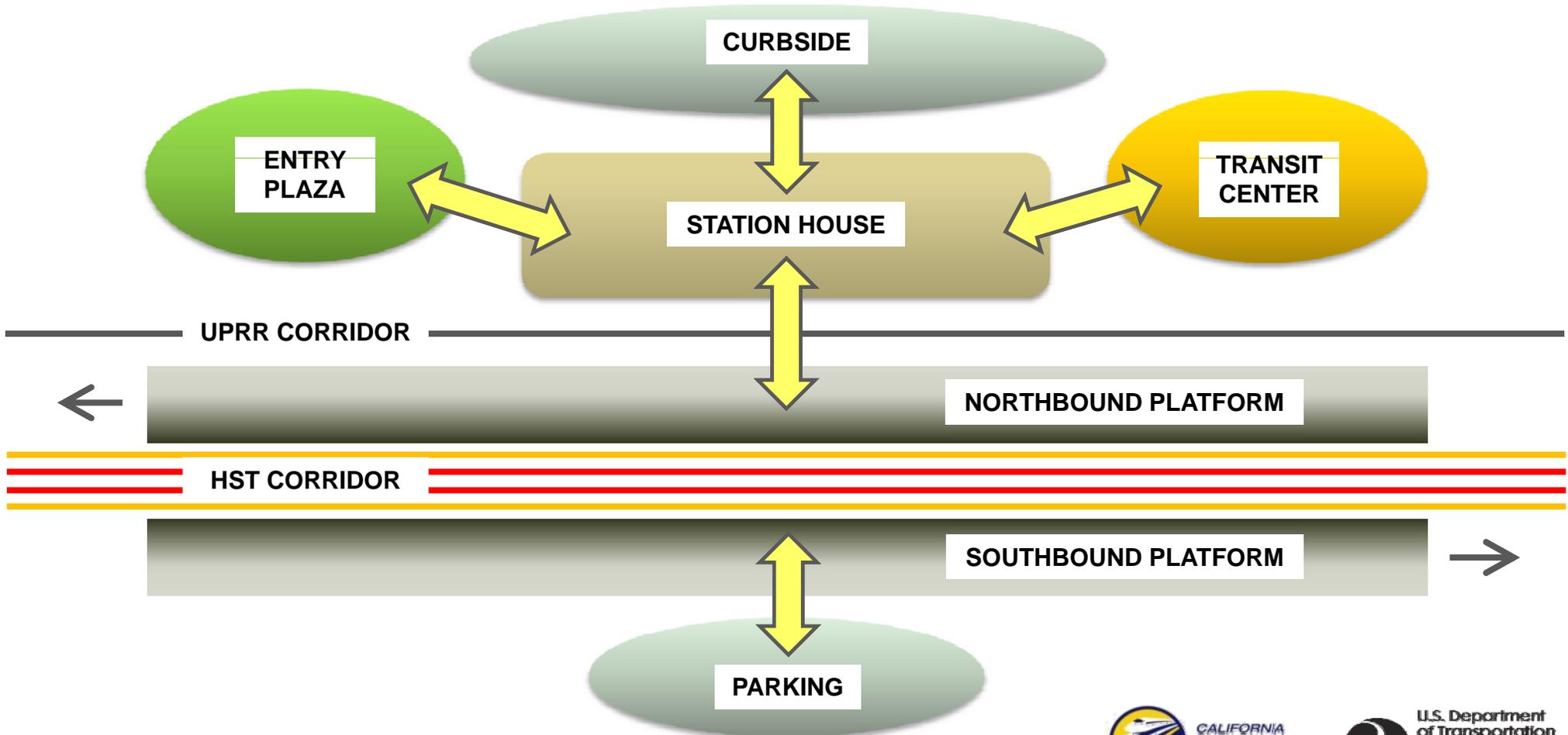
Merced Station Design Concepts

Typical Elements of a Side Platform HST Station

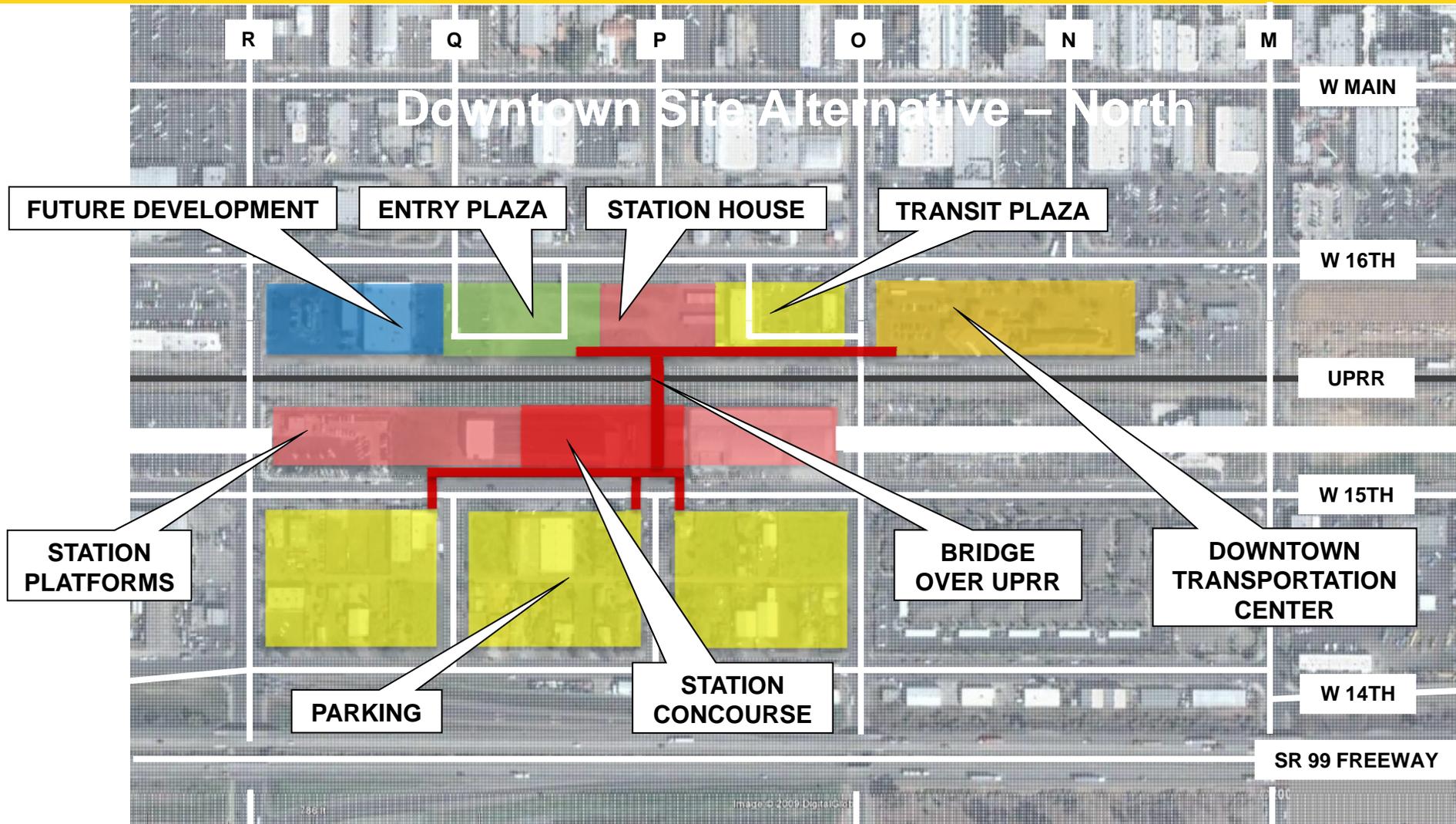


Merced Station Design Concepts

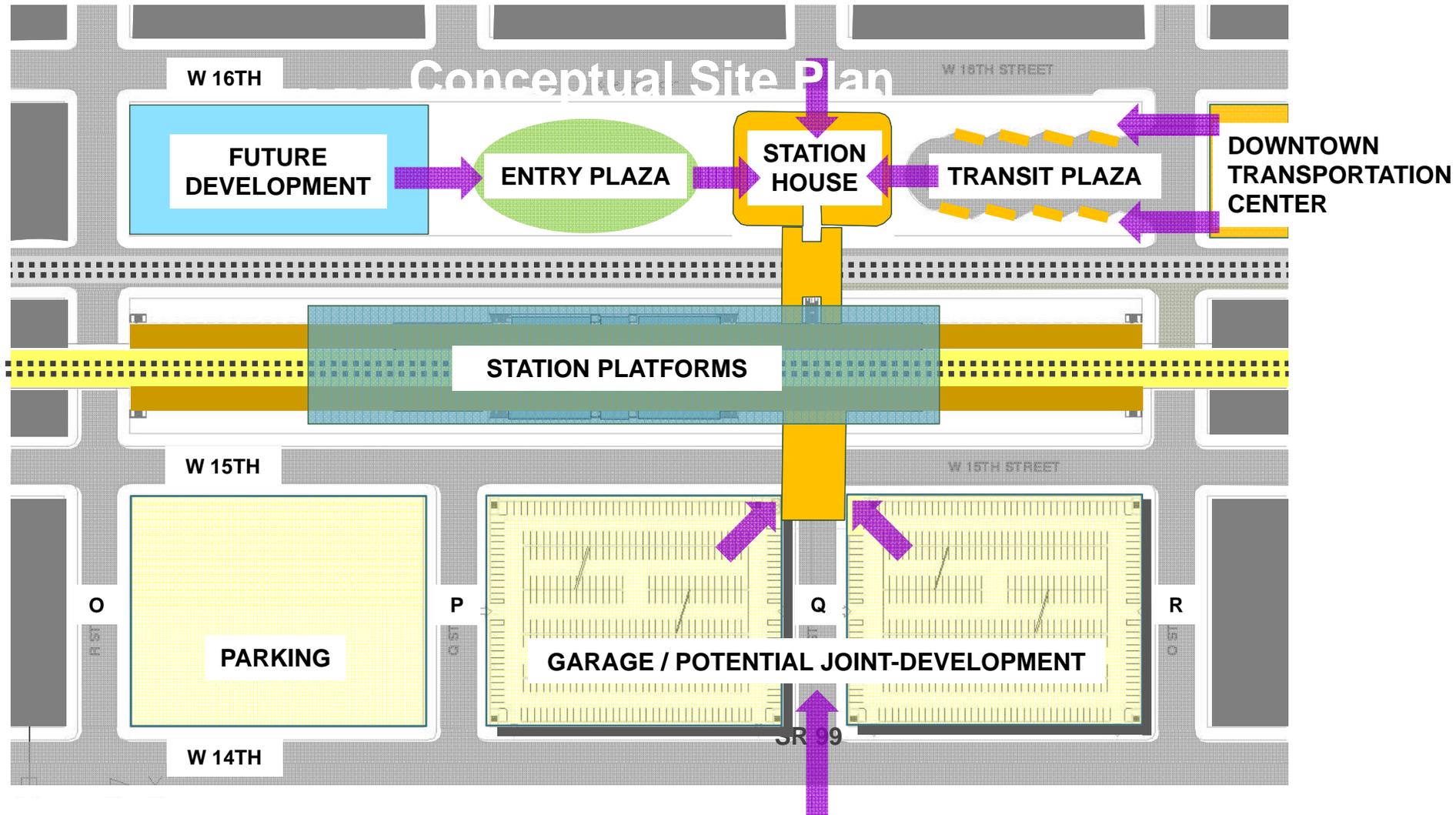
Site Planning Diagram



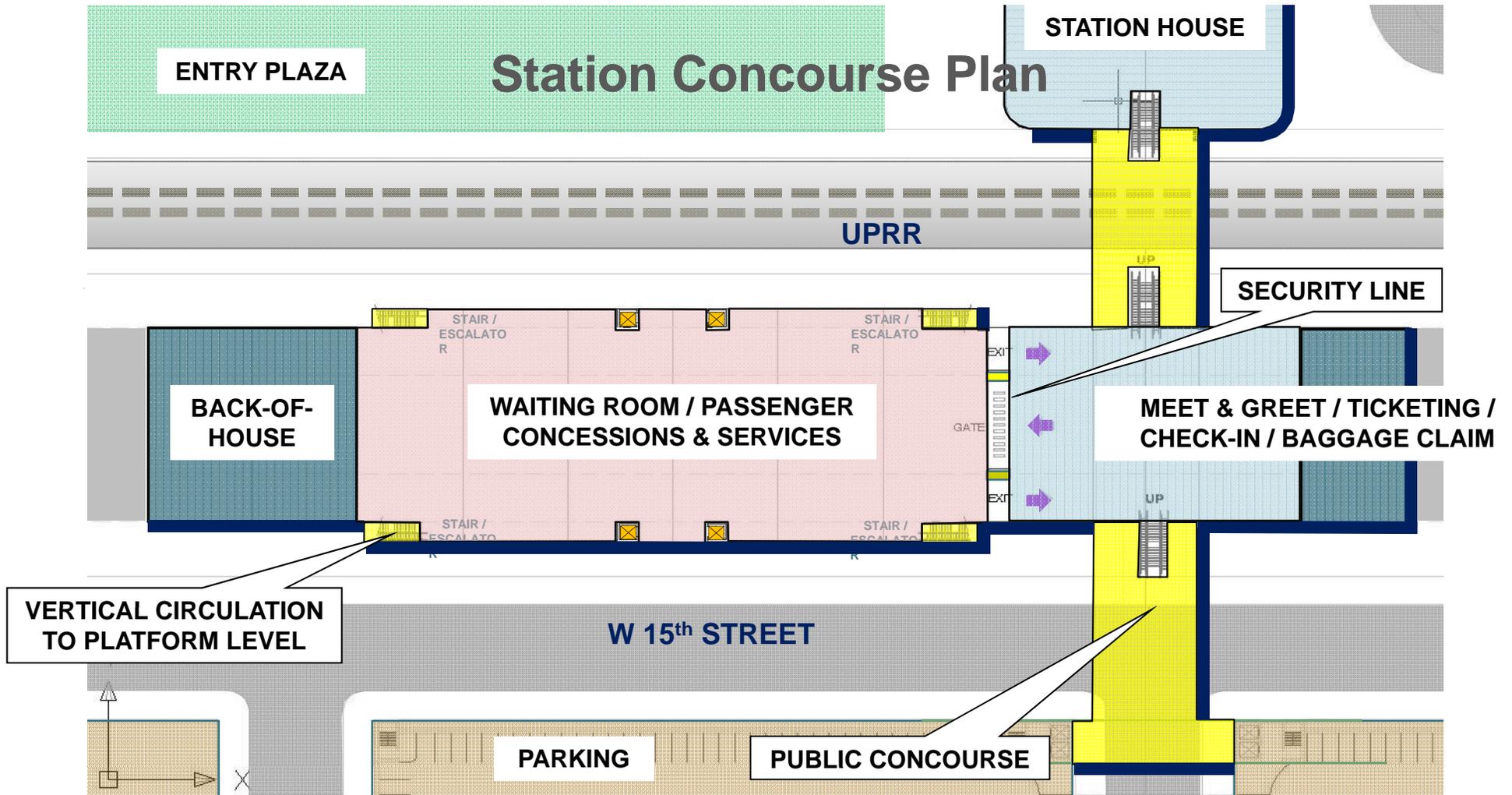
Merced Station Design Concepts



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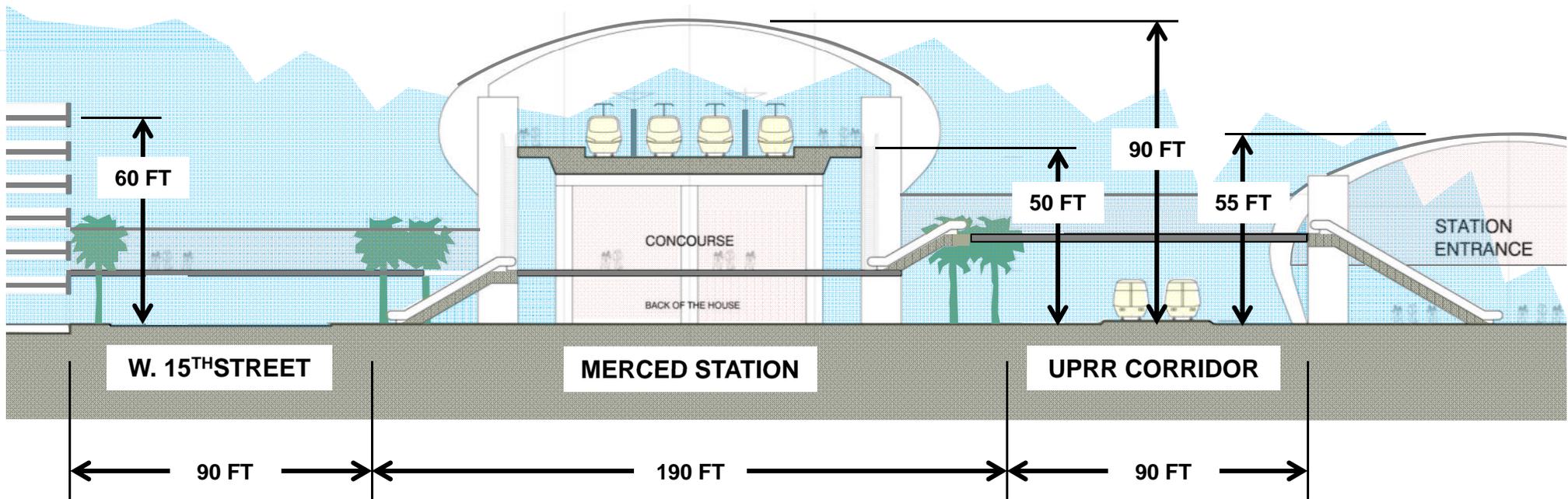


Merced Station Design Concepts



Merced Station Design Concepts

Station Cross-Section



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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 Machine and Fare Gates



HST Station Examples

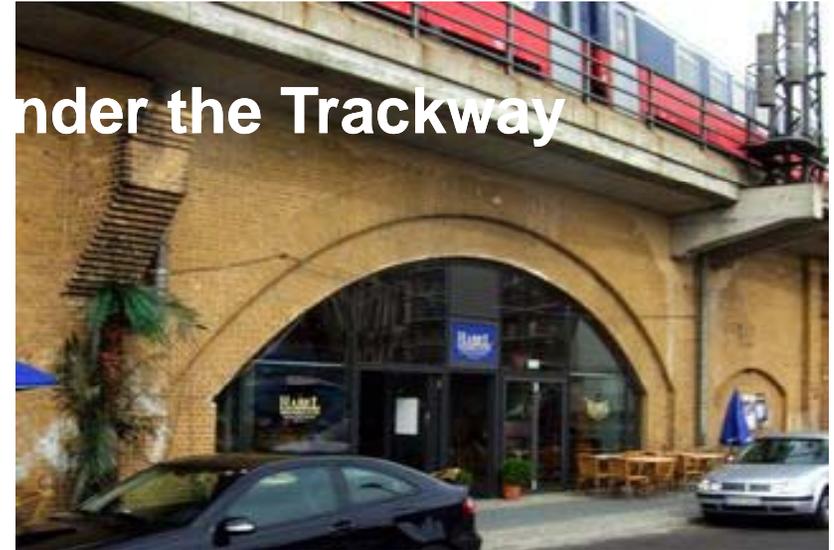
Express Train Separation



HST Station Examples



Berlin Savignyplatz Railway Station



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