New Rail Hubs along High Speed Rail Corridors
The Urban Design Challenge

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Project Scope

This presentation draws from research of high speed rail (HSR) stations around the world to delineate design and planning practices for California HSR station cities.

Research Questions

1. What factors influence the type of urban and economic development impacts that a station city may experience from the introduction of high speed rail?

2. What types of development fit the range of city typologies in California?

3. How can local authorities work to produce desired outcomes around HSR stations?
Statewide Route

Proposed High-Speed Rail Alignment:
Potential Station Cities in Red

Source: California High-Speed Rail Authority

Southern California HSR Alignment
Case studies in purple

Source: California High Speed Rail Authority
What do we know?

Many factors influence the impacts of HSR:
- Type of city (first-tier, second-tier)
- Distance from other major cities on the network
- Condition of local economy and land market
- Station location (central or peripheral)
- Extent of other modal links and transportation networks
- Anticipatory planning and policy interventions

Some cities have seen adverse economic effects

Most growth and benefits accrue to first-tier cities

HSR stations can be catalysts for development in some cities
Catalytic effects or significant new development not seen in all station areas

Lessons Learned
Effects of HSR are not the same for all cities
California Station-City Types

<table>
<thead>
<tr>
<th>Large Metro</th>
<th>Small Metro</th>
<th>Suburban Center</th>
<th>Suburban Dormitory</th>
<th>Exurban Dormitory</th>
<th>Rural</th>
<th>Industrial</th>
</tr>
</thead>
<tbody>
<tr>
<td>Los Angeles</td>
<td>Riverside</td>
<td>Anaheim</td>
<td>Norwalk</td>
<td>Merced</td>
<td></td>
<td>City of Industry</td>
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<tr>
<td>San Jose</td>
<td>Bakersfield</td>
<td>Burbank</td>
<td>Sylmar/San Fernando</td>
<td>Palmdale</td>
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<tr>
<td>San Francisco</td>
<td>Fresno</td>
<td>Ontario</td>
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CaHSRA Urban Design Guidelines for station areas

- Higher density development
- Mix of uses
- Compact, high-quality pedestrian environment
- Active, defined center
- Limited, managed parking

Spatial Diagram of Different Parties’ Responsibilities for HSR Project
Factors affecting urban design strategy
Geographic Context and Station Location

Exterior view, Lille station, France

Factors affecting urban design strategy
• Network (shared or dedicated track)
• Guideway (elevated, surface, tunnel)
• Parking Types (structure or surface; concentrated or distributed)

Parking, Ebbsfleet station, UK
Surface tracks, Liège-Guillemins station, Belgium
Factors affecting urban design strategy
Ridership (origin, destination, both)

Stuttgart Central Station, Germany

<table>
<thead>
<tr>
<th>Factors</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Geographic Context</strong></td>
<td>Large metro center&lt;br&gt;Small metro center&lt;br&gt;Suburban employment center&lt;br&gt;Suburban dormitory&lt;br&gt;Exurban dormitory&lt;br&gt;Rural&lt;br&gt;Airport related</td>
</tr>
<tr>
<td><strong>Type of Station</strong></td>
<td>Origin (e.g. Norwalk, Palmdale)&lt;br&gt;Destination (e.g. Anaheim, Burbank)&lt;br&gt;Both (e.g. Los Angeles, San Francisco)</td>
</tr>
<tr>
<td><strong>Station Location</strong></td>
<td>Central city&lt;br&gt;Peripheral</td>
</tr>
<tr>
<td><strong>Network Type</strong></td>
<td>Shared track&lt;br&gt;Dedicated track</td>
</tr>
<tr>
<td><strong>Guideway Type</strong></td>
<td>Elevated&lt;br&gt;Surface&lt;br&gt;Tunnel</td>
</tr>
<tr>
<td><strong>Type of Parking</strong></td>
<td>Surface&lt;br&gt;Structure&lt;br&gt;Concentrated&lt;br&gt;Distributed</td>
</tr>
</tbody>
</table>
Scenario Planning for HSR Stations

Transfers practices from military and business planning to urban planning

Strategic rather than normative.
  Multiple action plans allow quick response to various opportunities

Engaging, interactive, and open-ended process.

Results in a strategic decision about alternative future opportunities.

Among the best tools for understanding and modeling the transportation-land use relationship

Anaheim
Distributed Disney, Olympic Training Center, Parking Promenade
Anaheim Case Study
Station area: Existing conditions

Anaheim: A destination station
Scenario 1: “Distributed Disneyland”
Scenario 2: Olympic Training Center

California has the most Olympic training facilities in the United States...

...all along the California High-Speed Rail Route

TRAIN TO TRAINING: CIRCUIT TRAIN-ING
Scenario 3: Parking Promenade

[Diagram showing the combination of parking, rail, and shopping elements]
Burbank Case Study
Station area: Existing conditions

Scenario: Aerotropolis
Palmdale
Live, Work, Grow
Palmdale Case Study
Station area: Existing conditions

“Having the HSR station and having more people consider Palmdale as an option to live in, in order to work elsewhere, is going to be very beneficial for the city.”

Palmdale planner
Discussion

Given the increased accessibility afforded by HSR,

1. What should be done to increase the capacity of Southern California communities for strategic land use and transportation planning leveraged towards local economic development?
2. What should be done to move the opportunities for planning for complementarity among Southern California HSR station cities?

Ten Planning and Design Recommendations

1. Consider local assets as well as regional context and local economy

2. Address 4 spatial zones:
   - Immediate station area
   - Station district (1/2 mile)
   - Municipality
   - Region

3. Mitigate the “barrier effect”

4. Parking structures should be scattered and hidden

5. Planning must be a set of phased-goals related to stages of system development
Ten Planning and Design Recommendations

6. Consider complementary planning for neighboring cities

7. Take into account nearby destinations and link station with different transportation modes

8. Value capture as way for public sector to generate desired development effects

9. Stations should be externally-oriented hubs rather than internally focused

10. Regional level complementarity through a Joint Powers Authority

Thank you!