



# Fresno to Bakersfield High-Speed Train Project EIR/EIS

## Preliminary Alternatives Analysis (AA) California High-Speed Rail Authority

Board Briefing  
June 3, 2010



# Preliminary Alternatives Analysis

- **Follow-up to Initial AA Briefing of December 3, 2009**
- **Additional studies performed on alternatives**
- **Additional Public Outreach**
- **Review of Heavy Maintenance Facility Sites**
- **Results in recommendations to be carried forward in EIR/EIS**
- **Request Board approval of recommendations**



# Public Outreach Activities

- **Scoping meetings / Report**
- **Technical Working Groups (TWG)**
- **Stakeholder meetings**
  - Resource agencies
  - Local agencies, City Councils
  - Boards of Supervisors
  - Agricultural Groups and Land Owners
- **Public information meetings**
- **Fact Sheets**
- **E-mail alerts**
- **Media outreach**
- **CHSRA website updates**

 **WELCOME**

**Public Information Meeting  
Open House**

**California High-Speed Train Project**

We invite you to review the alternatives developed to bring the High-Speed Train through the South Valley, including a proposed station to serve the region.

Your comments will help us design the best project.



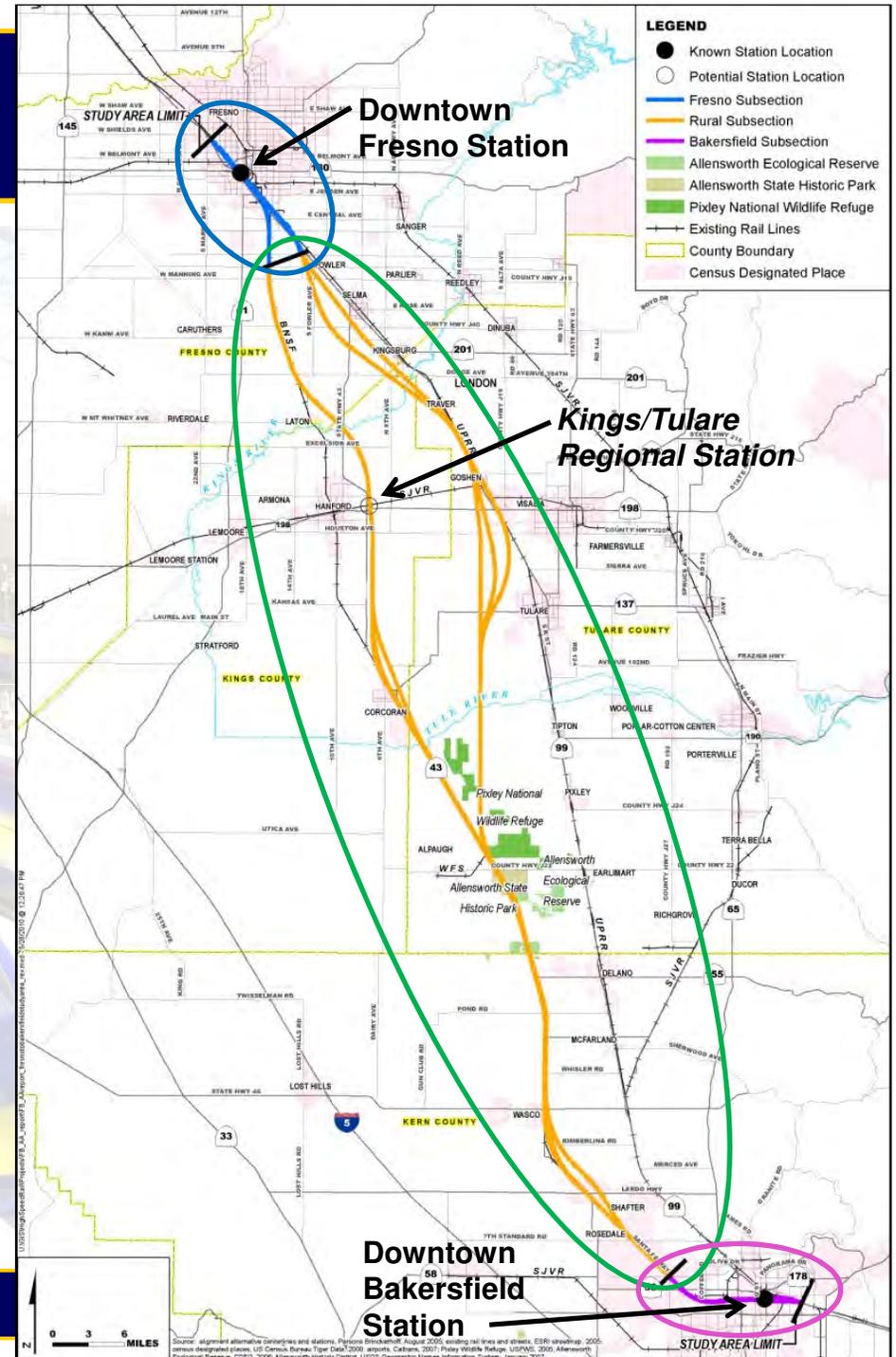
Fresno to Bakersfield Project EIR/EIS California High-Speed Train Project





# Section Description

- **Approximately 119 Miles**
- **Three Subsections**
  - Fresno: 13.5 Miles
  - Rural: 93.8 Miles
  - Bakersfield: 12.0 Miles
- **Three Stations**
  - Downtown Fresno
  - Downtown Bakersfield
  - Potential Kings-Tulare Regional Station (near Hanford)





# Alternatives Development

- **Initial Alternatives**

- Refinement of Statewide Program EIR/EIS Preferred Alignment
- Alternatives from *Visalia-Tulare-Hanford Station Feasibility Study*
- Refinements based on public input

- **Distinguishing Features**

- Horizontal alignment
- Vertical profile
- Relationship to existing transportation corridors
- Connection with adjacent sections/subsections
- Local options

- **Station Sites**





# Alternatives Evaluation

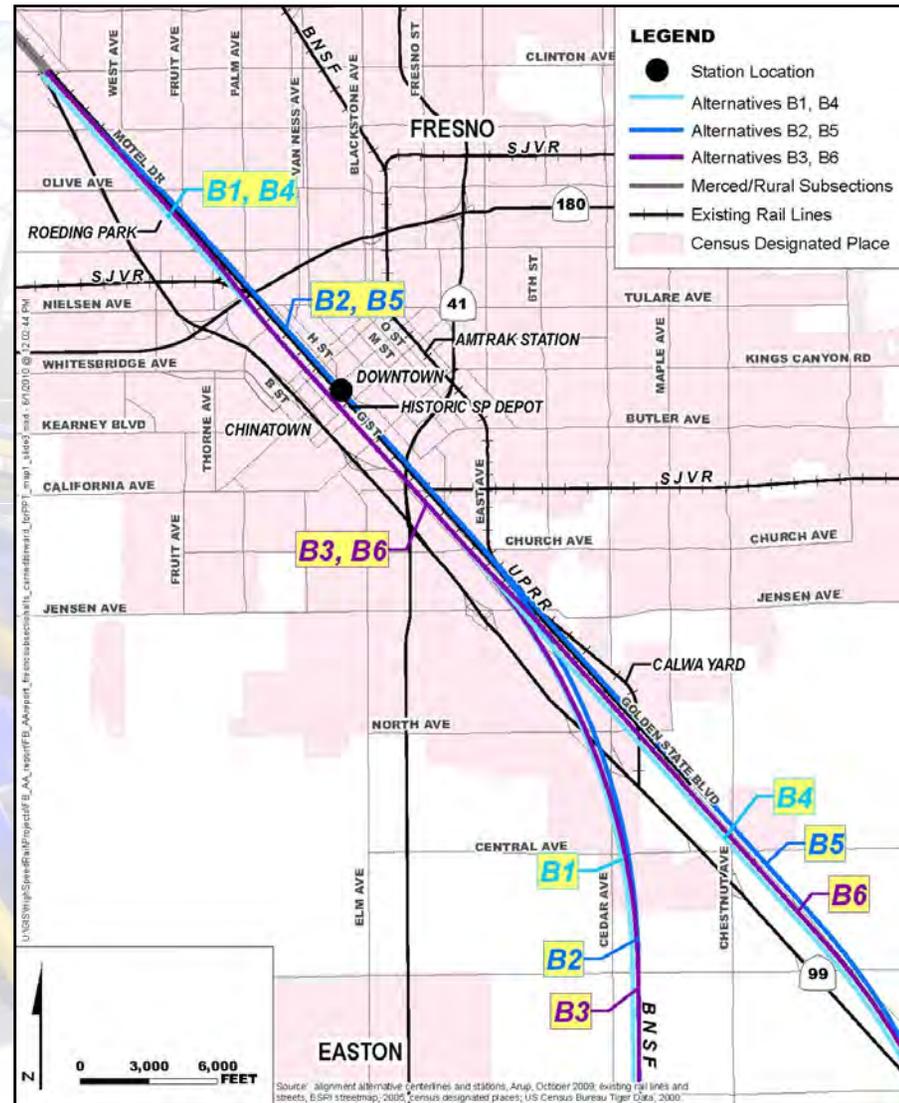
- **Design Objectives**
  - Maximize ridership/revenue potential
  - Maximize connectivity and accessibility
  - Minimize operating and capital costs
- **Comparison Measures**
  - Natural Environment and Resources
  - Community Impacts and Support
  - Land Use
  - Construction Feasibility
- **Result**
  - Identify alignment alternatives (and station sites) for study in EIR/EIS





# Fresno Subsection Alternatives Considered

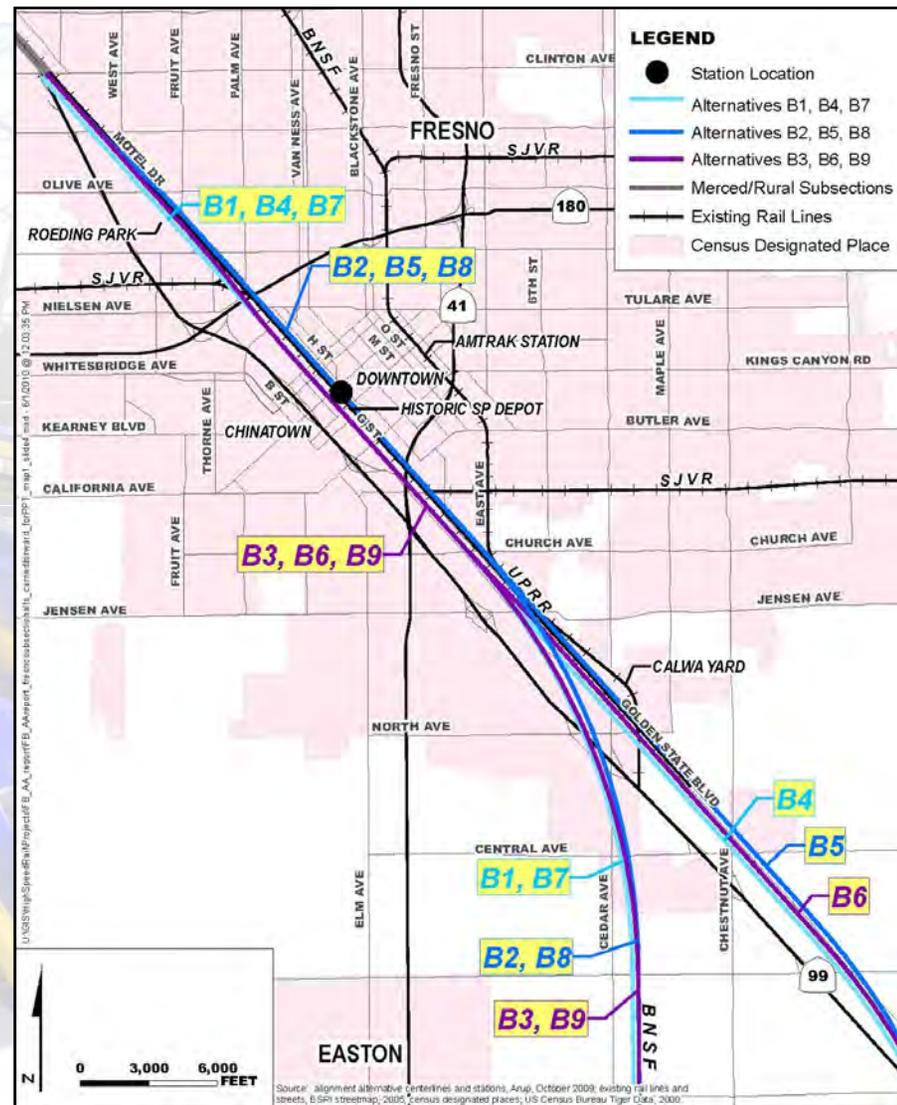
B1	UPRR West / Elevated / BNSF
B2	UPRR East / Elevated / BNSF
B3	Golden State Blvd / Elevated / BNSF
B4	UPRR West / Elevated / UPRR
B5	UPRR East / Elevated / UPRR
B6	Golden State Blvd / Elevated / UPRR





# Fresno Subsection Alternatives Considered

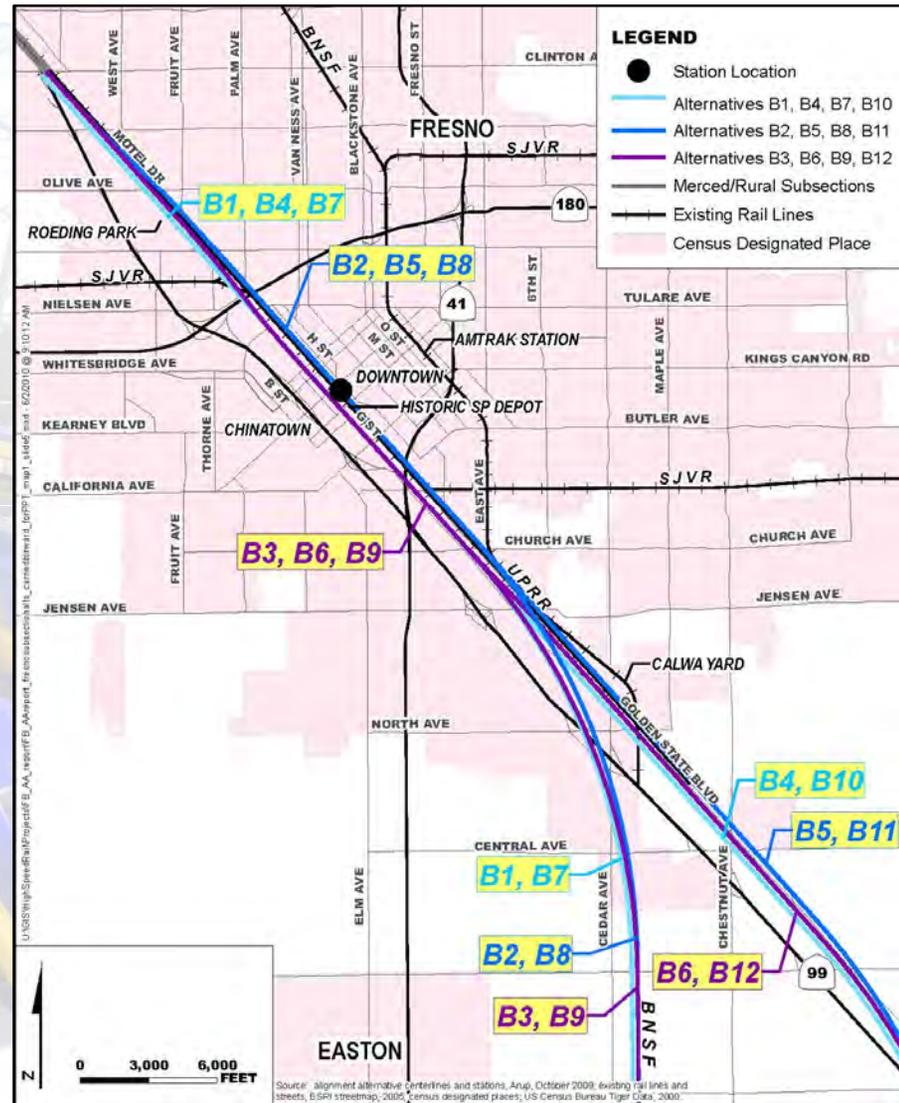
B1	UPRR West / Elevated / BNSF
B2	UPRR East / Elevated / BNSF
B3	Golden State Blvd / Elevated / BNSF
B4	UPRR West / Elevated / UPRR
B5	UPRR East / Elevated / UPRR
B6	Golden State Blvd / Elevated / UPRR
B7	UPRR West / Mixed At-Grade & Elevated / BNSF
B8	UPRR East / Mixed At-Grade & Elevated / BNSF
B9	Golden State Blvd / Mixed At-Grade & Elevated / BNSF





# Fresno Subsection Alternatives Considered

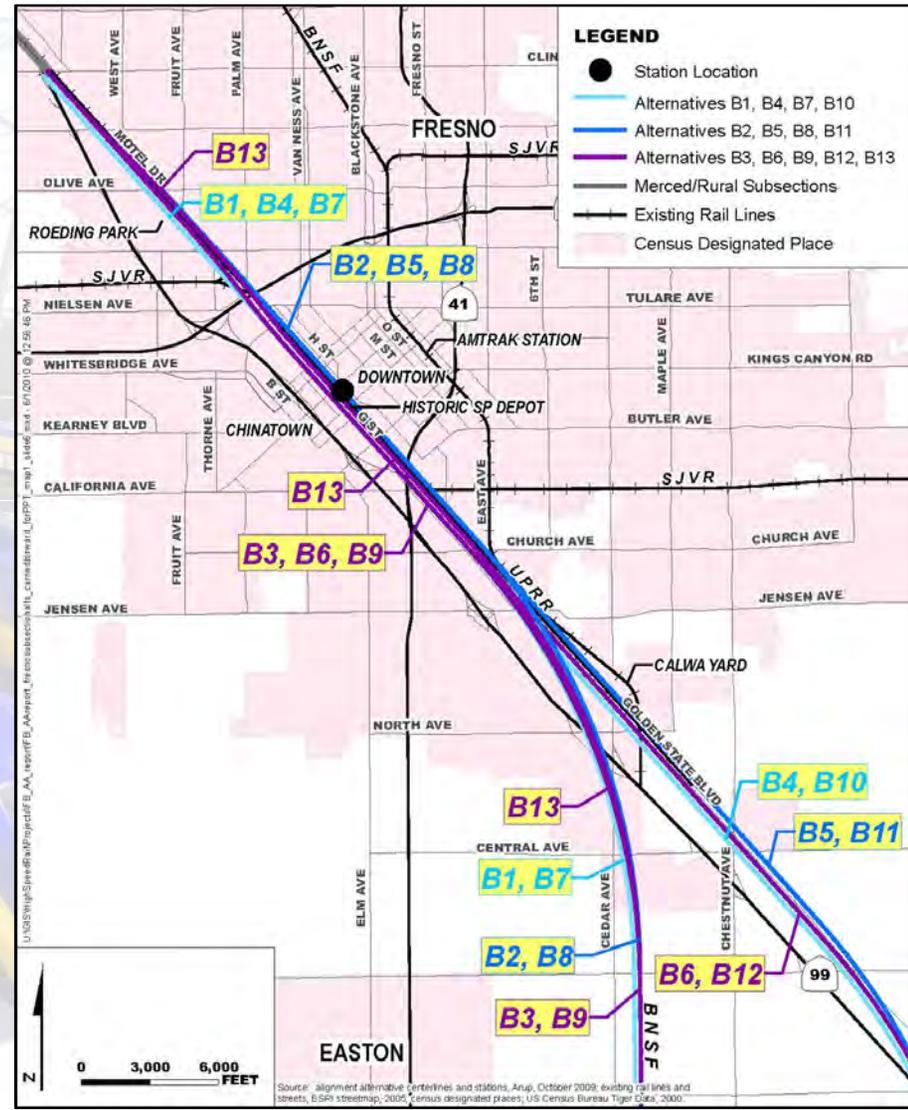
B1	UPRR West / Elevated / BNSF
B2	UPRR East / Elevated / BNSF
B3	Golden State Blvd / Elevated / BNSF
B4	UPRR West / Elevated / UPRR
B5	UPRR East / Elevated / UPRR
B6	Golden State Blvd / Elevated / UPRR
B7	UPRR West / Mixed At-Grade & Elevated / BNSF
B8	UPRR East / Mixed At-Grade & Elevated / BNSF
B9	Golden State Blvd / Mixed At-Grade & Elevated / BNSF
B10	UPRR West / Mixed At-Grade & Elevated / UPRR
B11	UPRR East / Mixed At-Grade & Elevated / UPRR
B12	Golden State Blvd / Mixed At-Grade & Elevated / UPRR





# Fresno Subsection Alternatives Considered

B1	UPRR West / Elevated / BNSF
B2	UPRR East / Elevated / BNSF
B3	Golden State Blvd / Elevated / BNSF
B4	UPRR West / Elevated / UPRR
B5	UPRR East / Elevated / UPRR
B6	Golden State Blvd / Elevated / UPRR
B7	UPRR West / Mixed At-Grade & Elevated / BNSF
B8	UPRR East / Mixed At-Grade & Elevated / BNSF
B9	Golden State Blvd / Mixed At-Grade & Elevated / BNSF
B10	UPRR West / Mixed At-Grade & Elevated / UPRR
B11	UPRR East / Mixed At-Grade & Elevated / UPRR
B12	Golden State Blvd / Mixed At-Grade & Elevated / UPRR
B13	UPRR West/East Crossover





# Fresno Subsection Alternatives Evaluation

## Golden State Blvd Alternatives (withdrawn)

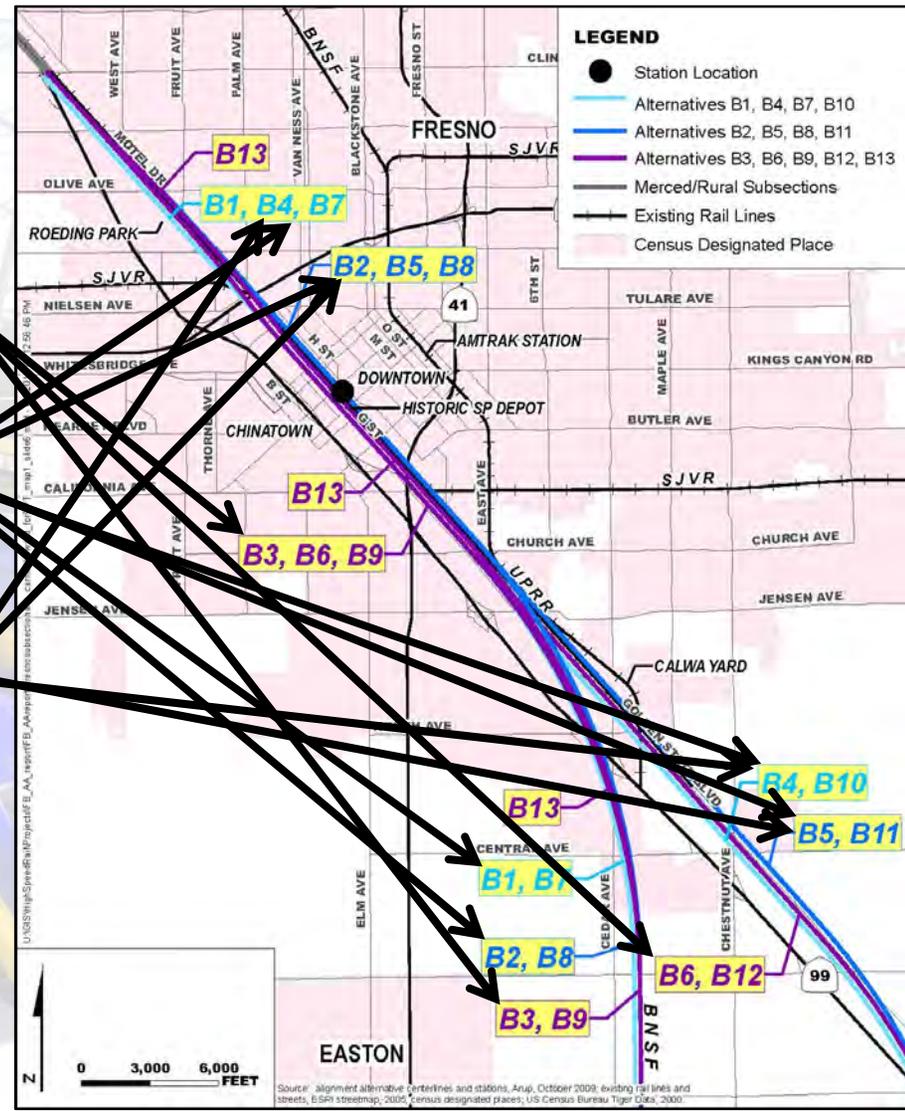
- B3, B6, B9, B12
- Station not in Downtown Core
- Impacts to culturally significant historic neighborhood
- More construction impacts due to property displacements

## At-Grade Alternatives (withdrawn)

- B7, B8, B10, B11
- Residential and Business Displacement
- Construction Impacts

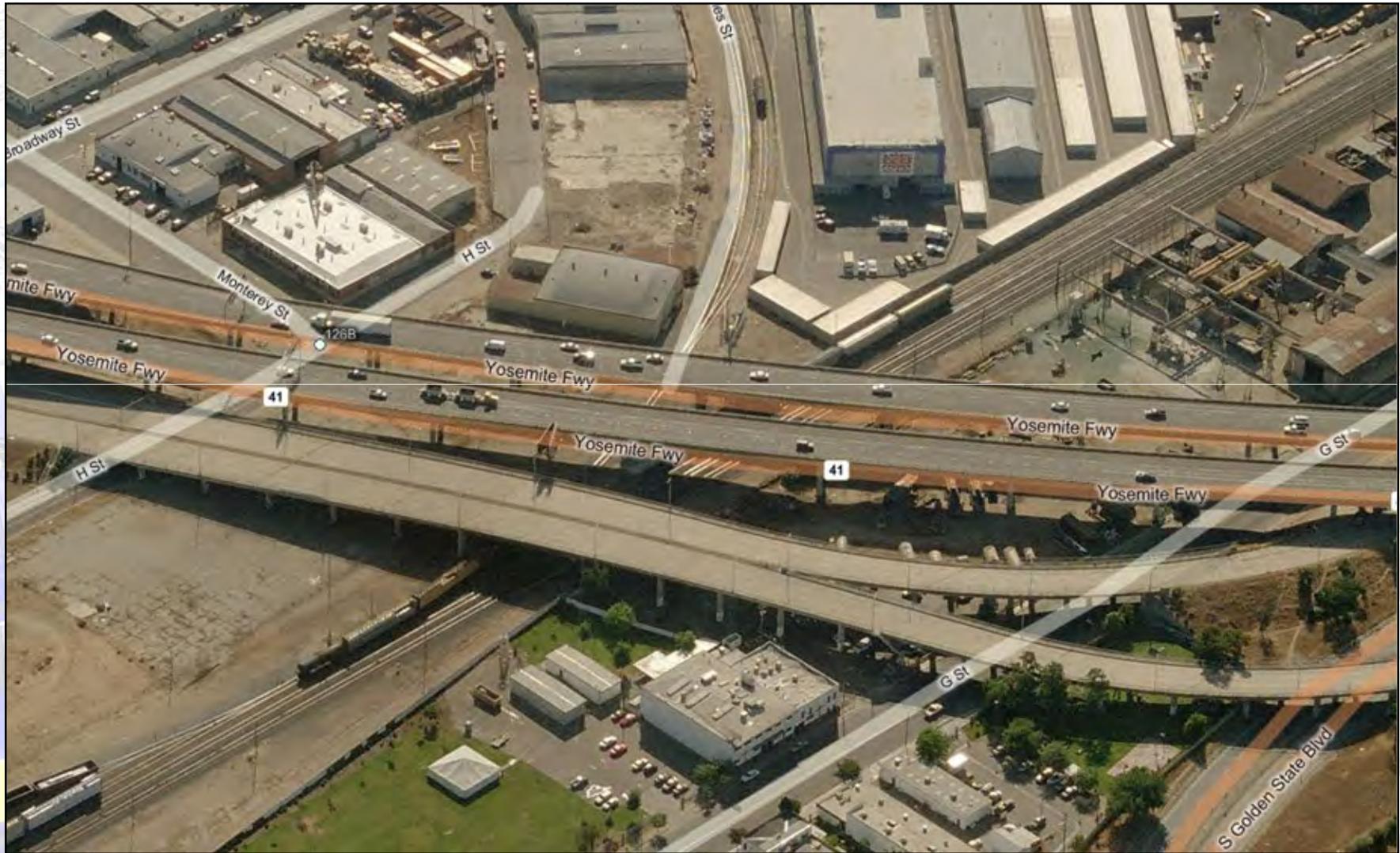
## UPRR Rural Connections (withdrawn)

- B4, B5
- Inconsistent with Recommendations in Rural Subsection





# UPRR Tracks under SR-41





# Fresno Subsection Alternatives Carried Forward

- **Three Alignment Alternatives**
  - B1, UPRR West
  - B2, UPRR East
  - B13, UPRR West/East Crossover
- **All Alternatives are:**
  - Elevated through Fresno
  - Adjacent to UPRR in Fresno
  - Leave Fresno south on BNSF
  - Provide a Downtown Station near Mariposa Street



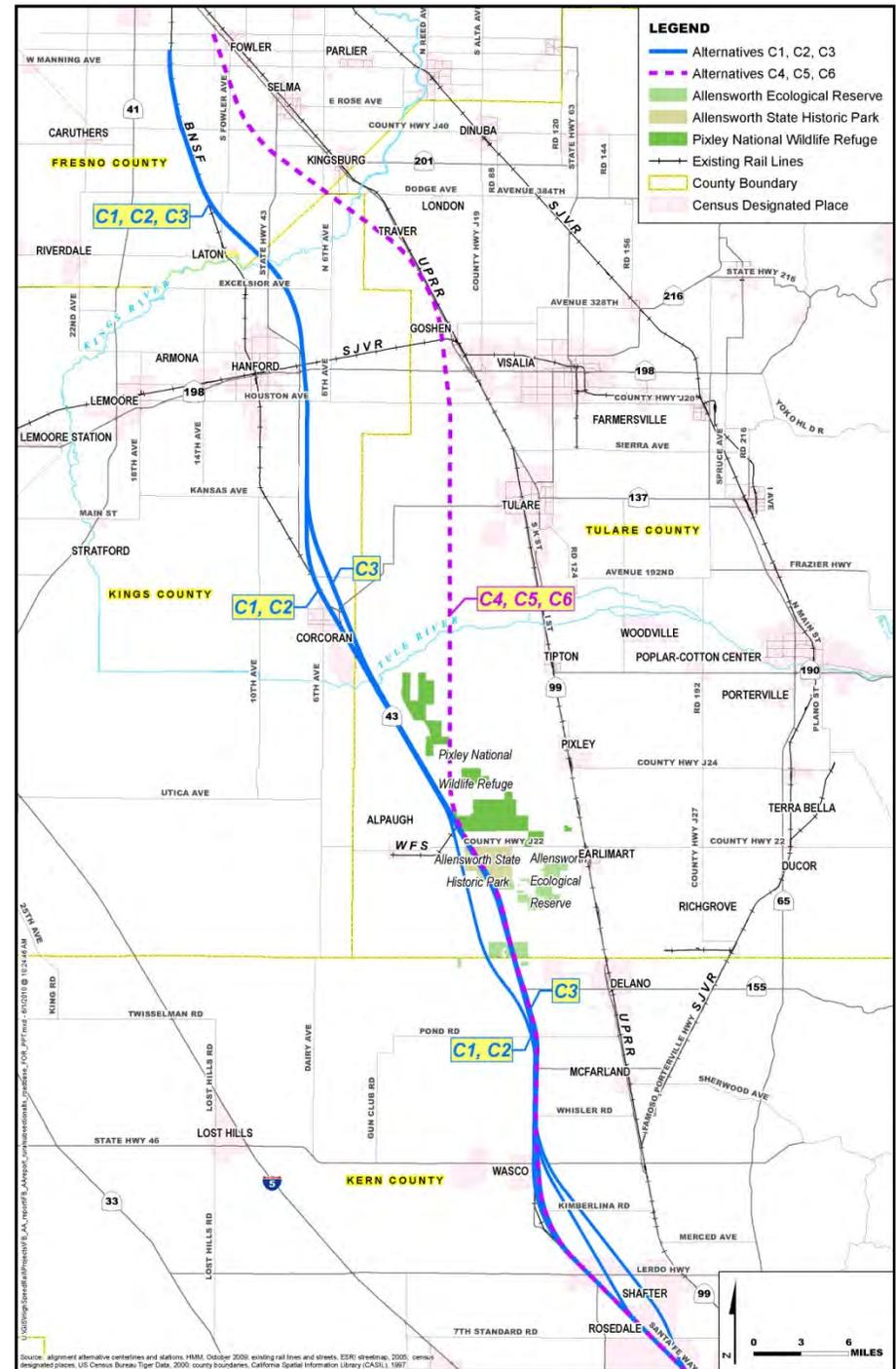


# Rural Subsection Alternatives Considered



# Rural Subsection Alternatives Considered

<b>C1</b>	<b>BNSF-Hanford East Bypass—Shared ROW</b>
<b>C2</b>	<b>BNSF-Hanford East Bypass—West Side</b>
<b>C3</b>	<b>BNSF-Hanford East Bypass—East Side</b>
<b>C4</b>	<b>UPRR to BNSF—Shared</b>
<b>C5</b>	<b>UPRR to BNSF—West Side</b>
<b>C6</b>	<b>UPRR to BNSF—East Side</b>



# Rural Subsection Alternatives Evaluation

## Easterly Alignment (UPRR to BNSF) (withdrawn)

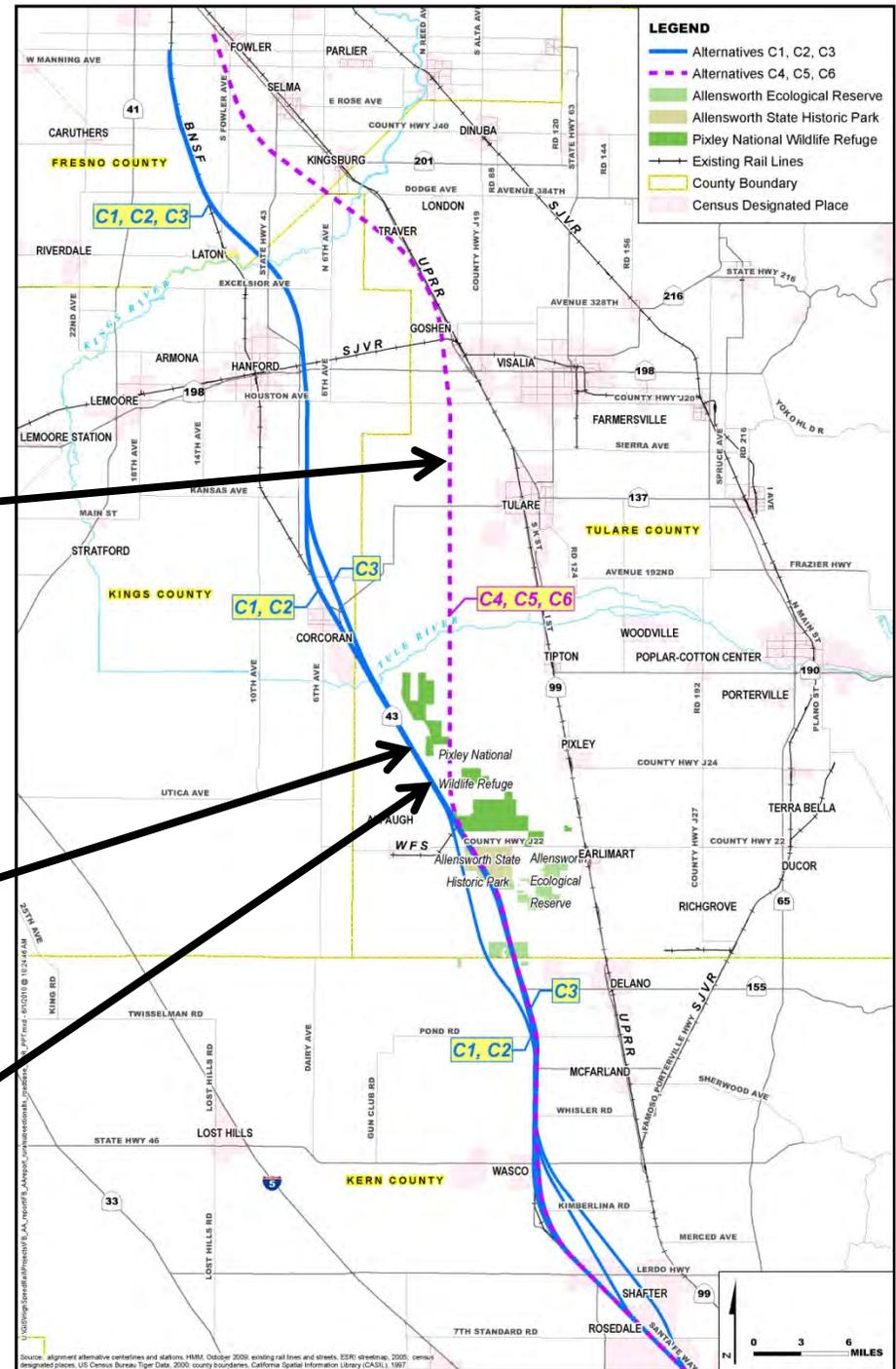
- C4, C5, C6
- Original purpose for potential station sites in Visalia and Tulare
- Deviates from existing transportation corridors
- More impact to farm land and natural resources than the BNSF alignment
- No additional benefit and many more potential impacts.

## BNSF-Hanford East Bypass - Separate ROW (withdrawn)

- C2, C3
- More ROW required
- No advantage over Shared ROW

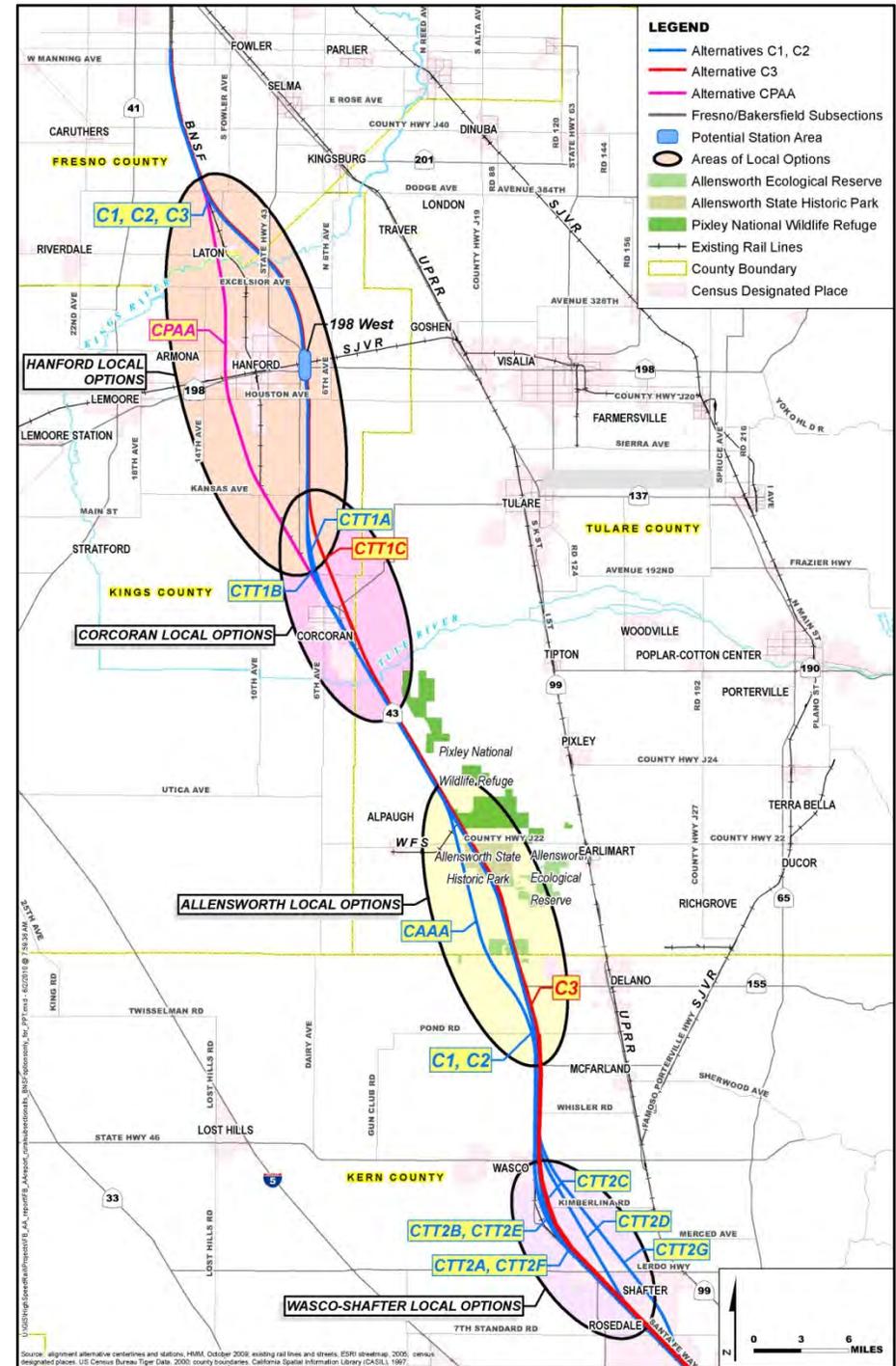
## BNSF-Hanford East Bypass—Shared ROW

- C1
- Closely follows Program Alignment
- Less cost
- Fewer impacts



# Rural Subsection Local Options Considered

<b>CPAA</b>	<b>BNSF Hanford West Bypass (PEIR/EIS Pref)</b>
<b>CTT1A</b>	<b>Corcoran Through Town At-Grade</b>
<b>CTT1B</b>	<b>Corcoran Through Town Elevated</b>
<b>CTT1C</b>	<b>Corcoran Bypass East Side At-Grade</b>
<b>CAAA</b>	<b>Allensworth Avoidance Alternative</b>
<b>CTT2A</b>	<b>Wasco/Shafter Through Town At-Grade</b>
<b>CTT2B</b>	<b>Wasco/Shafter Through Town Elevated</b>
<b>CTT2C</b>	<b>Wasco East Side Bypass, Shafter At-Grade</b>
<b>CTT2D</b>	<b>Wasco/Shafter East Side Bypass At-Grade</b>
<b>CTT2E</b>	<b>Wasco/Shafter Through Town Elevated Wasco</b>
<b>CTT2F</b>	<b>Wasco/Shafter Through Town Elevated Shafter</b>
<b>CTT2G</b>	<b>Wasco/Shafter/7th Standard Road East Bypass</b>

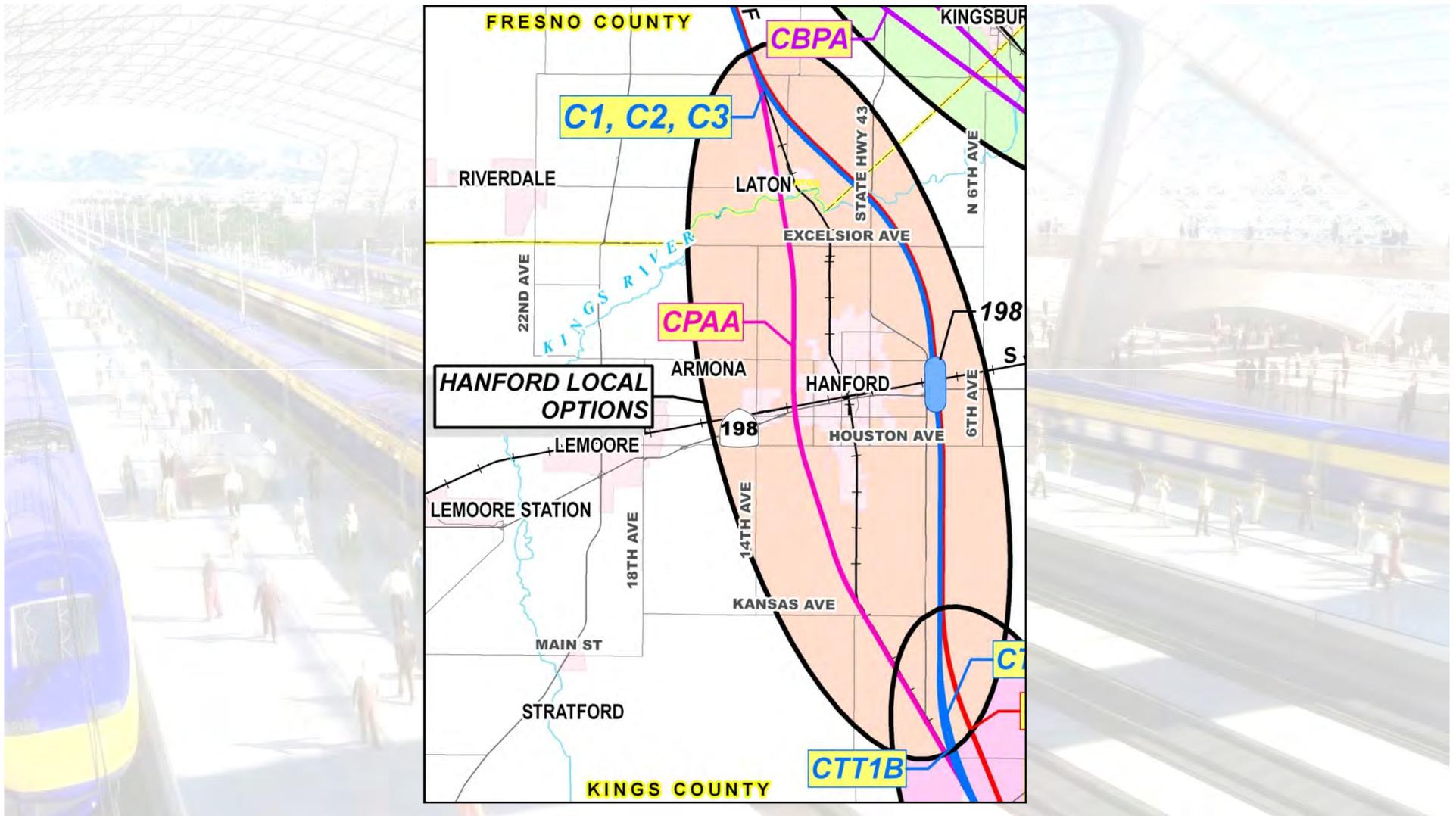


Source: alignment alternative centerlines and stations: HMM, October 2009; existing rail lines and drivers: ESRI streetmap, 2009; census designated places: US Census Bureau Tiger Data, 2000; county boundaries: California Spatial Information Library (CASIL), 1997.



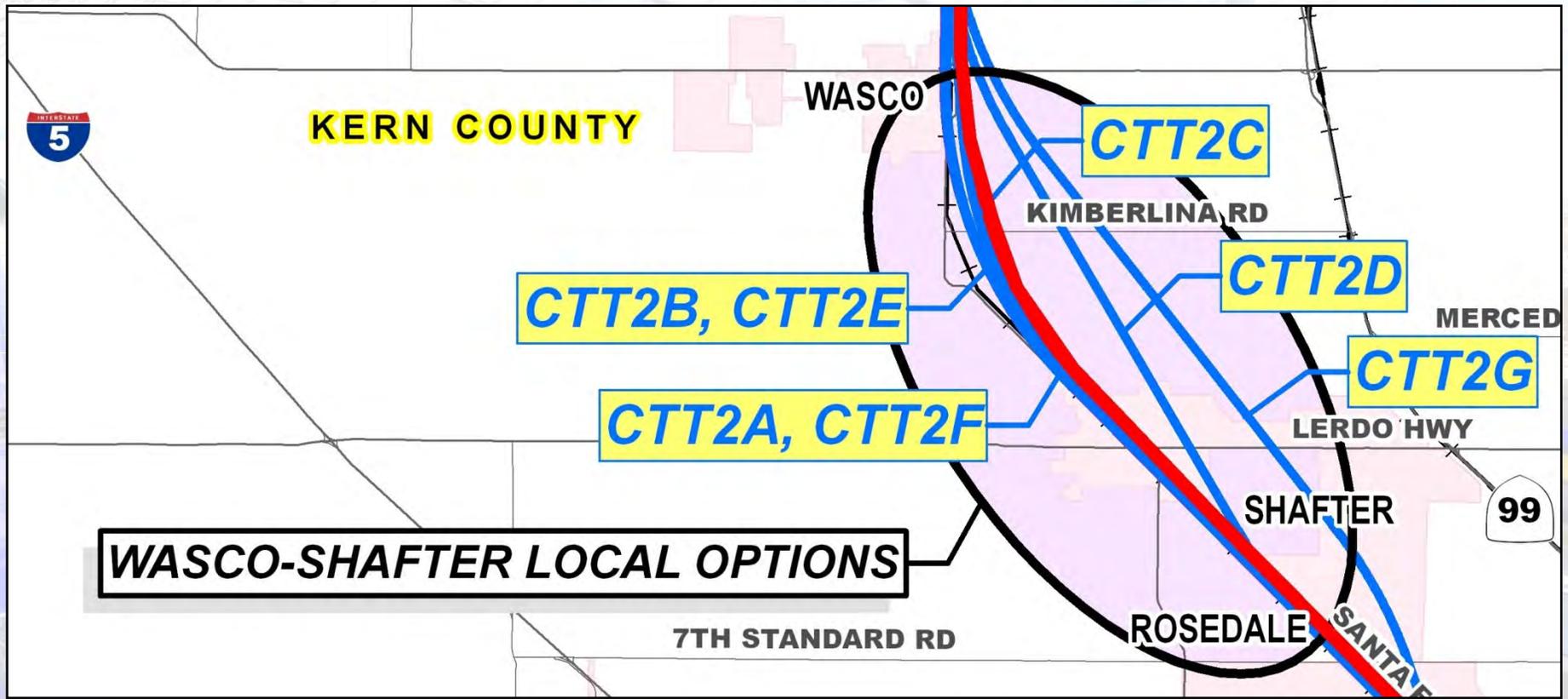


# Hanford Local Options



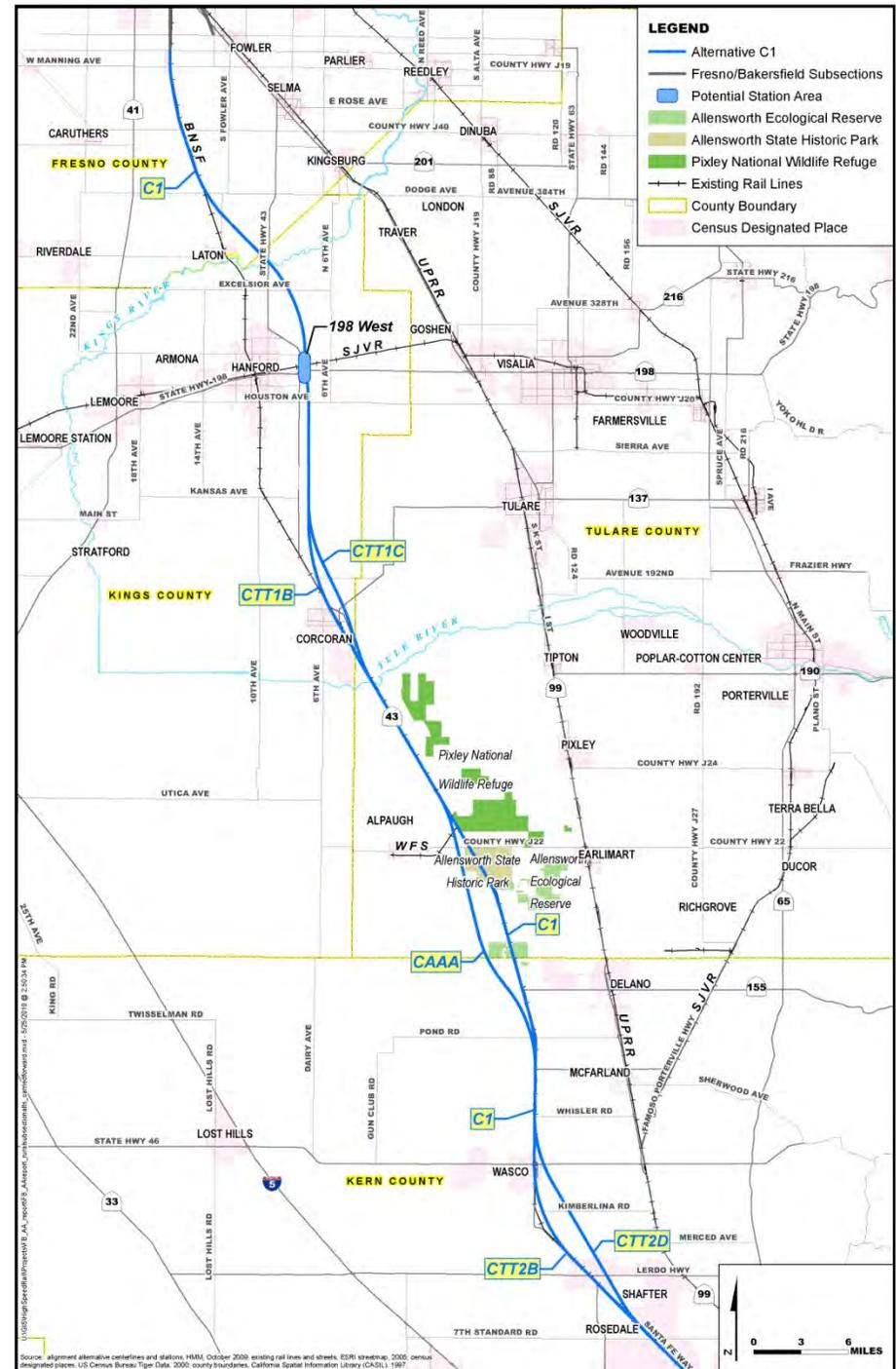


# Wasco-Shafter Local Options



# Rural Subsection Alts Carried Forward

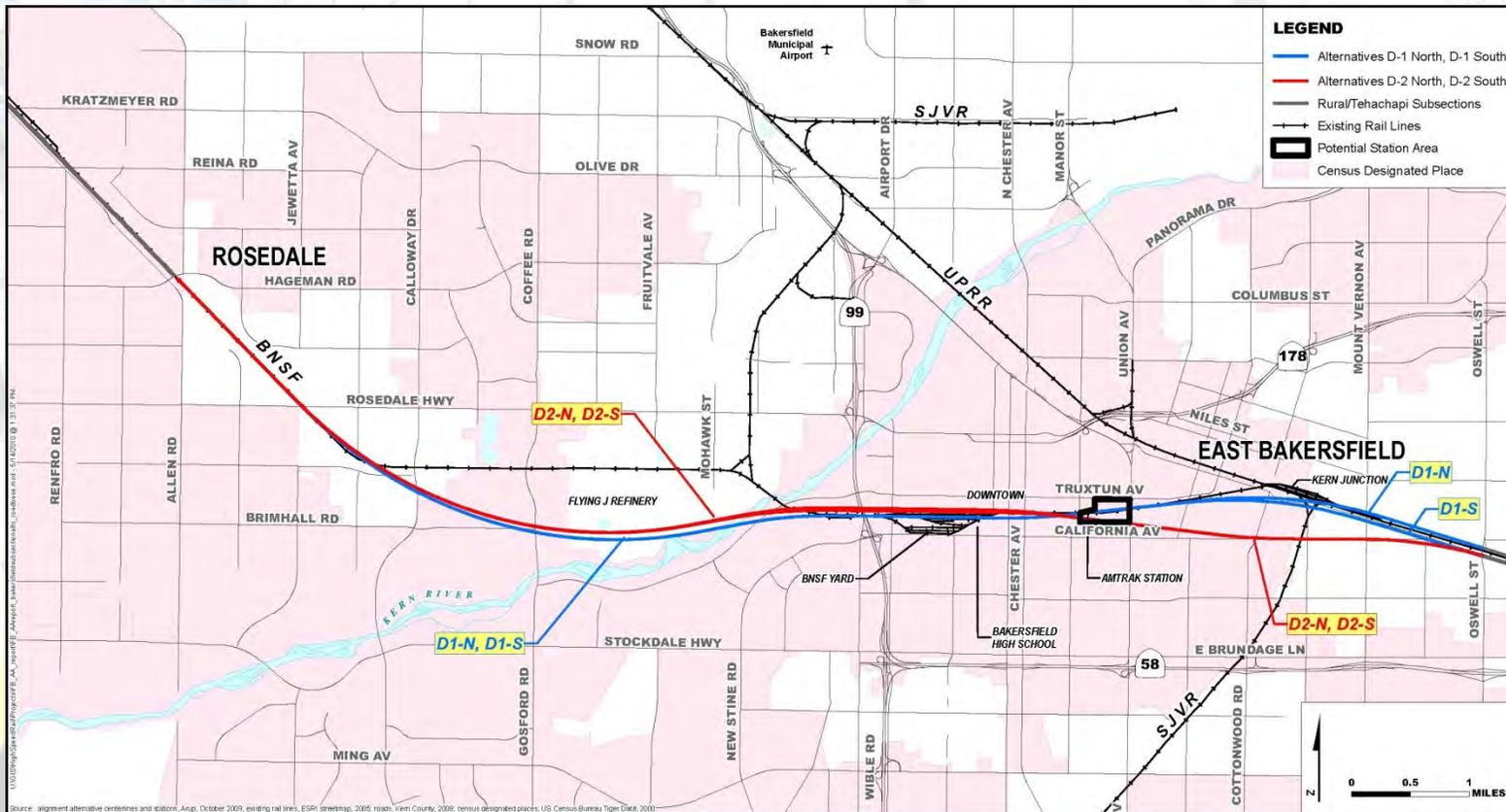
- **C1 Full-Length**
  - Largely at grade and parallel to BNSF
  - Bypass east side of Hanford
- **Five Local Options**
  - Elevated through Corcoran
  - Corcoran at-grade Bypass
  - Allensworth Avoidance
  - Elevated through Wasco and Shafter
  - Wasco and Shafter at-grade Bypass





# Bakersfield Subsection Alternatives Considered

<b>D1-N</b>	<b>Through BNSF Yard / Adjacent to Amtrak Station / North of UPRR</b>
<b>D1-S</b>	<b>Through BNSF Yard / Adjacent to Amtrak Station / South of UPRR</b>
<b>D2-N</b>	<b>North of BNSF Right-of-Way/ One Block South of Amtrak Station / South of UPRR</b>
<b>D2-S</b>	<b>Over BNSF Main Line / One Block South of Amtrak Station / South of UPRR</b>



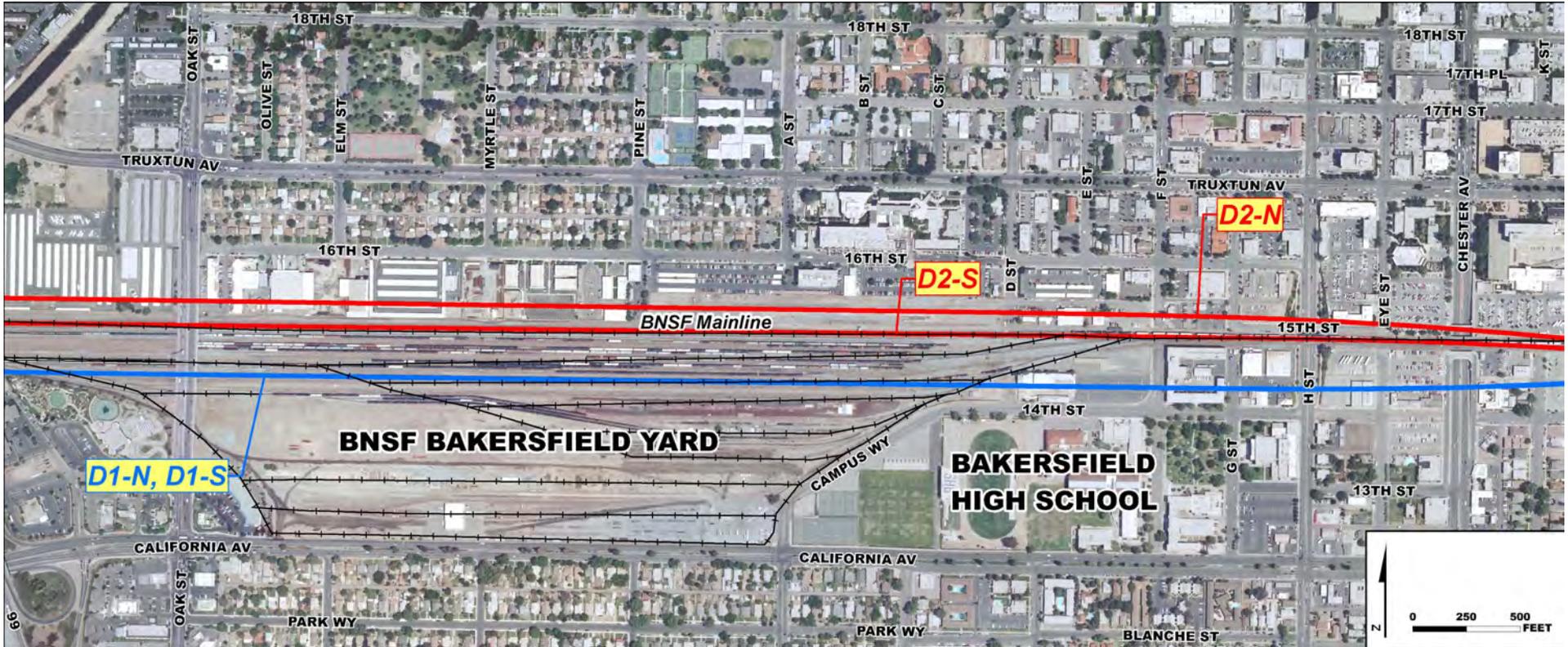


# Bakersfield Subsection Alternatives Considered





# Bakersfield Subsection Alternatives Considered

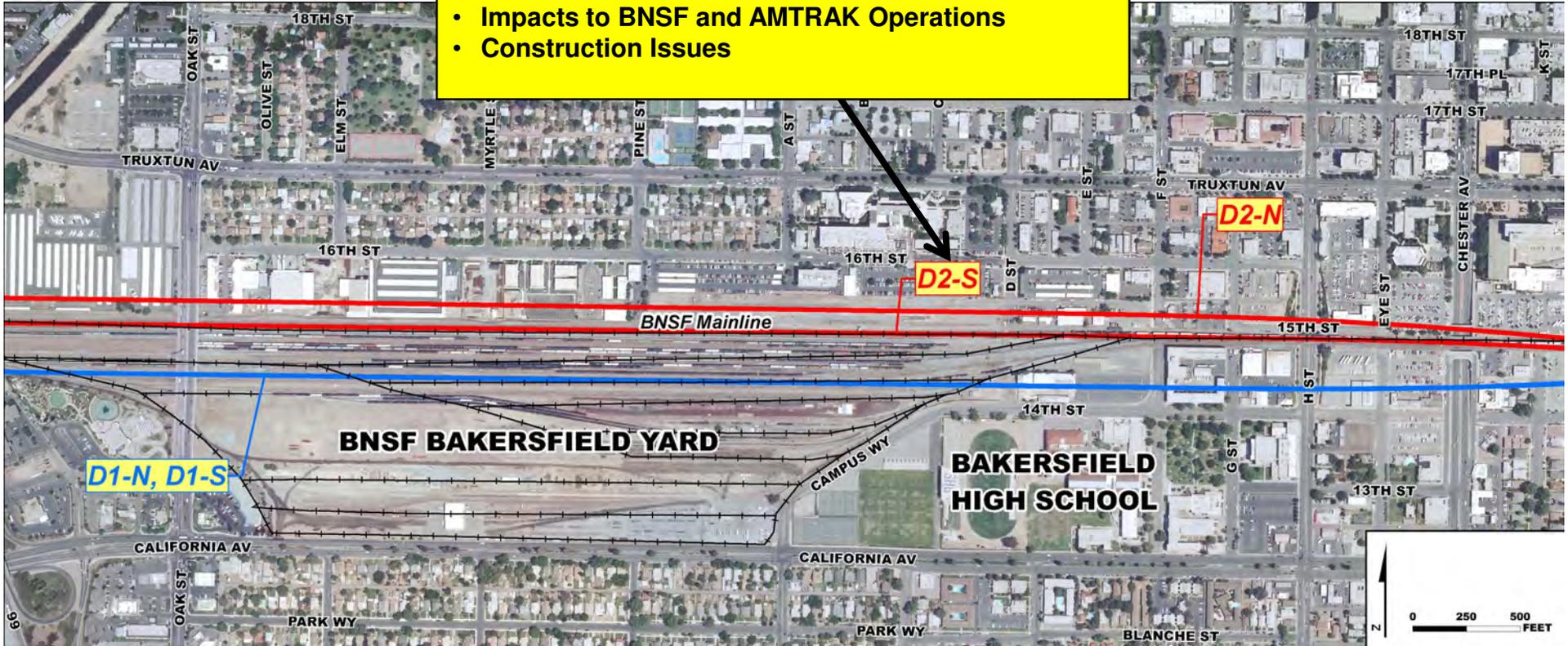




# Bakersfield Subsection Alternatives Evaluation

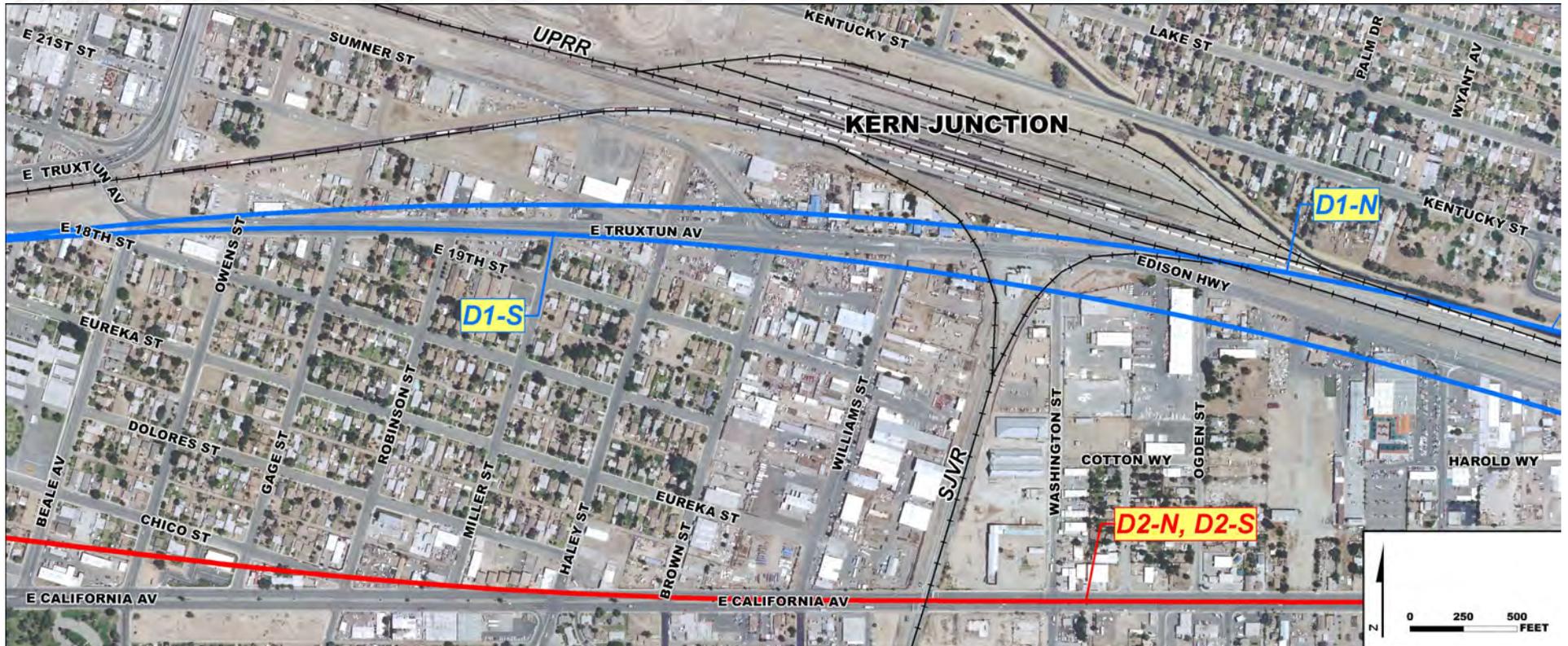
## D2-S (withdrawn)

- Impacts to BNSF and AMTRAK Operations
- Construction Issues





# Bakersfield Subsection Alternatives Considered

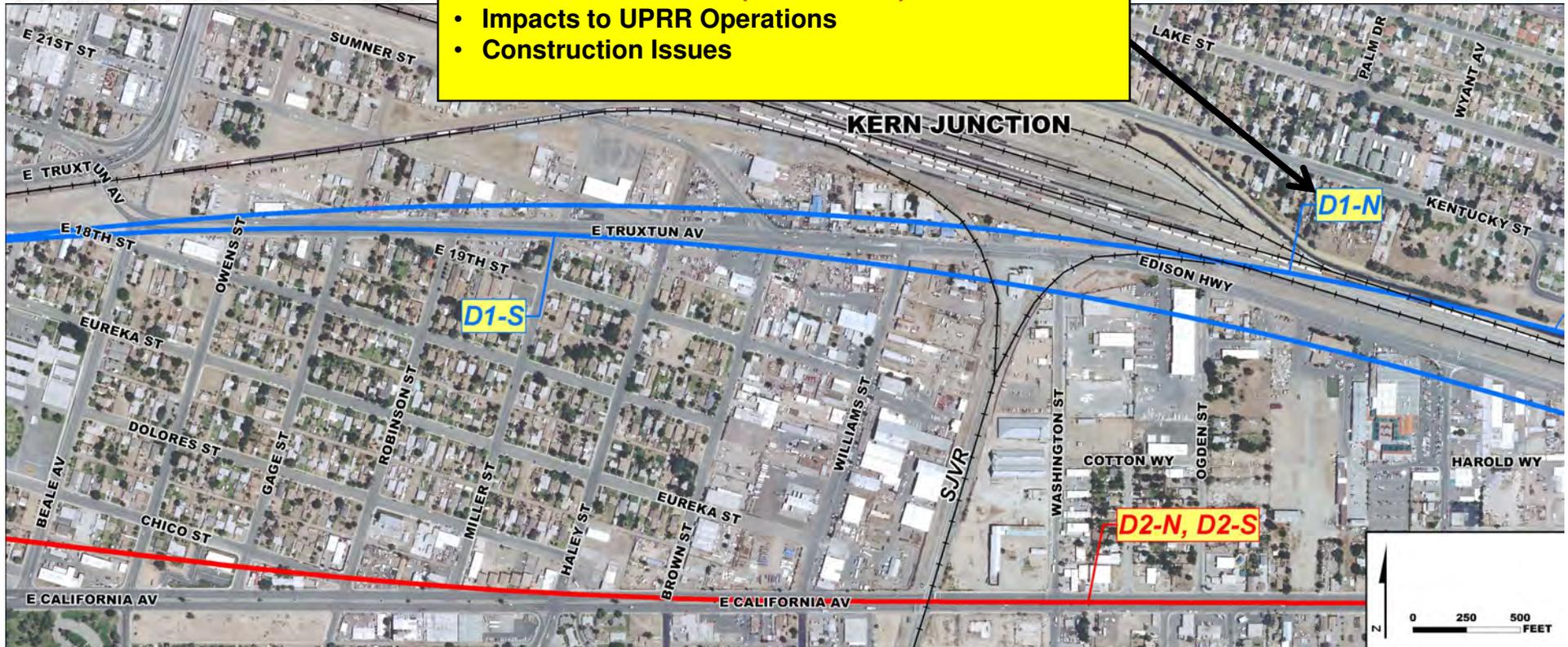




# Bakersfield Subsection Alternatives Evaluation

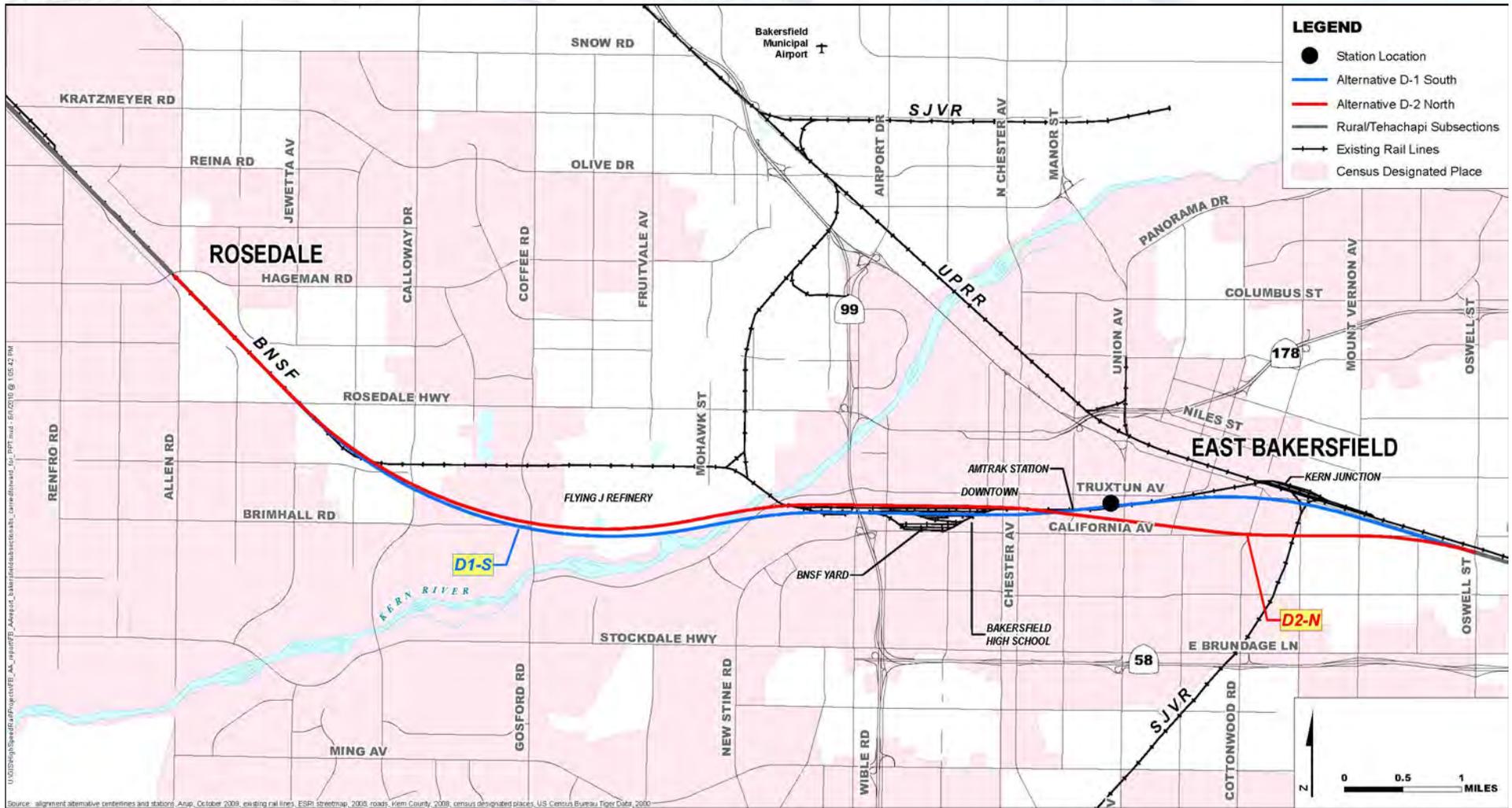
## D1-N (withdrawn)

- Impacts to UPRR Operations
- Construction Issues



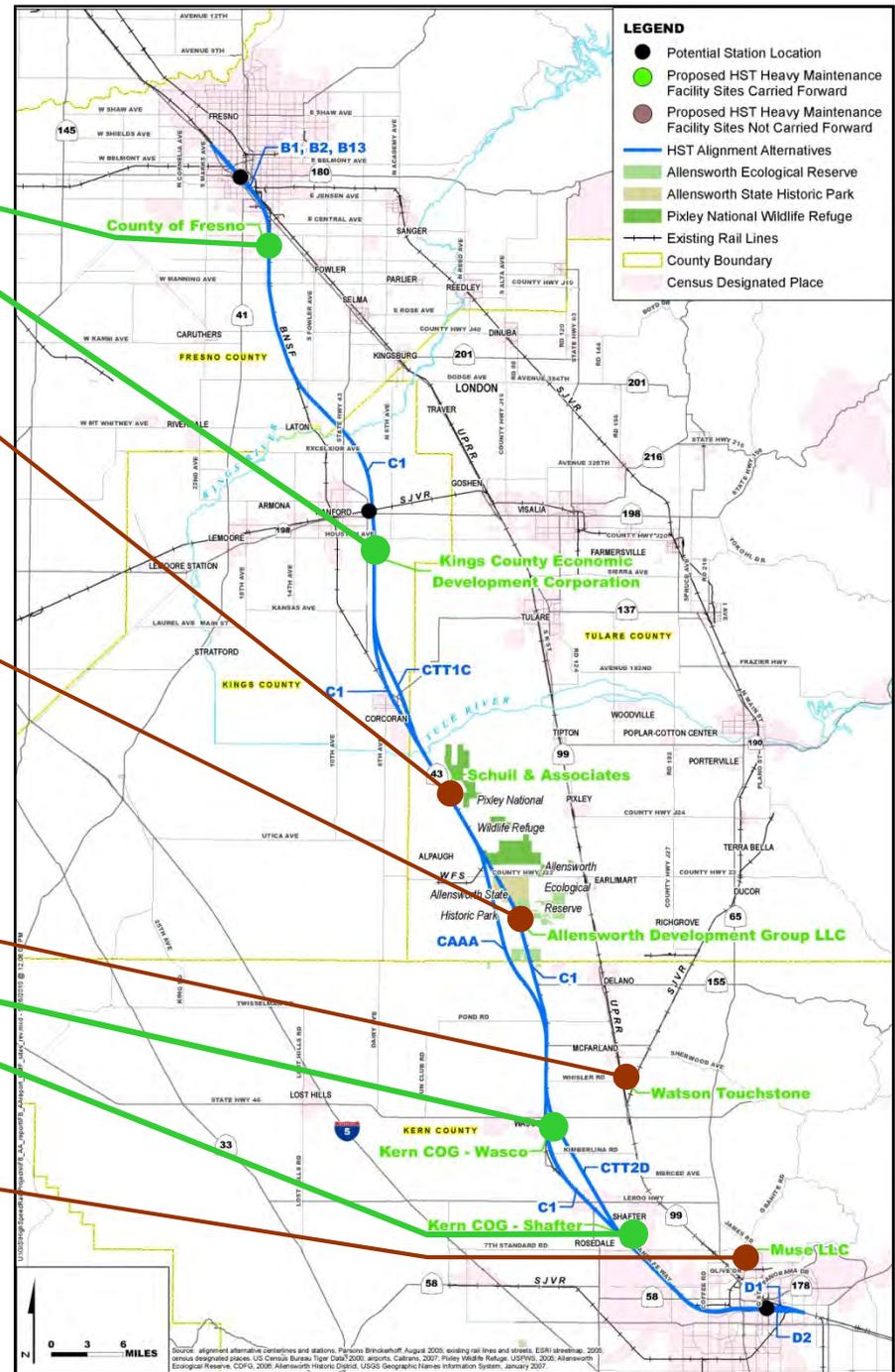


# Bakersfield Subsection Alternatives Carried Forward



# Heavy Maintenance Facility Sites Submitted and Carried Forward

- Fresno Works – South of Fresno
- Kings County Econ Dev Corp – Hanford
- Schuil & Associates – Angiola
  - Insufficient size
  - Near sensitive natural resources
  - Limited access to utilities and workforce
  - Poor soils
- City of Allensworth Development Group – Allensworth
  - Located near sensitive natural and cultural resources
  - Most remote site, with limited access to utilities and workforce
  - Not accessible from Allensworth Bypass alignment
  - Located on curve making connection difficult
  - Poor soils
- Watson Touchstone Comm'l Development – McFarland
  - Located 6.5 miles from nearest HST alignment alternative
  - 65% of site is within 100-year floodplain
- Kern Council of Governments – Wasco
- Kern Council of Governments – Shafter
- MUSE LLC – Bakersfield
  - Located 6 miles from nearest HST alignment
  - Insufficient size
  - Inconsistent with current and planned land use
  - Inconsistent with freeway plans





# Next Steps

- **Board Action to Accept Recommendations**
- **Continue to meet with Stakeholders and the Public**
- **Refine Alignments to better match up with existing transportation corridors**
- **Prepare Supplemental AA Report if needed**
- **Complete Environmental Technical Studies**
- **Draft EIR/EIS – January 2011**
- **Final EIR/EIS – July 2011**