US 550 - NM 313 to NM 528
Super Street and
Continuous Flow Intersection
Agency Jurisdiction

US 550 Corridor Agency Jurisdictions

LEGEND
- Green: State Park
- Purple: Tribal Lands
- Orange: Town of Bernalillo
- Pink: City of Rio Rancho
- Black: Project Area

Bohanannan Huston
Purpose and Need

▲ US 550 must continue to function for local, commuter, and regional traffic.
▲ Improved capacity is needed for the 2035 projected traffic
▲ Improved capacity will enhance the economic development potential for:
  – Town of Bernalillo, Santa Ana Pueblo, Rio Rancho, and the communities in northwest New Mexico
Purpose and Need

▲ Pavement has reached its design life and needs reconstruction.
▲ Facilities are needed for bicycles and pedestrians.
Land Use

▲ Eastside of the river is commercial—fully developed.
▲ Westside of the river is commercial—partially developed.
Proposed Development

- Proposed roads
- Santa Ana Star Casino
- Proposed loop road
- Warrior II Gas Station
- River Pointe Development
Desirable Outcomes

▲ Less congestion
▲ Enhanced safety, less conflicts
▲ Meets State’s criteria for access
▲ Sidewalks
▲ Bike Lanes
US 550 Alternatives Analysis
Initial Analysis of Alternatives

▲ US 550 Alternatives

– No Build
– Six Lane with Median
– Eight Lane with Median
– Six Lane Super Street
– Six Lane with Reversible Lane
– Double Decker Freeway
Detailed Analysis of Alternatives

▲ US 550 Alternatives

- No Build
- Six Lane with Median
- Eight Lane with Median
- Six Lane Super Street
- Six Lane with Reversible Lane
- Double Decker Freeway
Six-Lane Alternative

- Widen from 4 lanes to 6 lanes
- Standard traffic signals at ½ mile spacing
- Intersection level of service at D, E, and F
- PM peak hour simulation showed backup from Jemez Dam Intersection across the Rio Grande
Partial CFL
Super Street Alternative

- Widen from 4 lanes to 6 lanes
- Partial traffic signals at ~\(\frac{1}{4}\) mile spacing
- Intersection level of service at B, C, and D
- PM peak hour simulation congested, but not over capacity
Phase Reduction Concept for Super Street & Continuous Flow
Partial CFL
U-Turn Example
Super Street Conflict Reductions

Crossing conflicts can lead to the most severe crashes

<table>
<thead>
<tr>
<th>Conflict Type</th>
<th>Diverge</th>
<th>Merge</th>
<th>Crossing</th>
<th>Total</th>
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<tbody>
<tr>
<td>Traditional Intersection</td>
<td>8</td>
<td>8</td>
<td>16</td>
<td>32</td>
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<tr>
<td>Super Street</td>
<td>8</td>
<td>8</td>
<td>2</td>
<td>18</td>
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<td>Difference</td>
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<td>0</td>
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<td>-14</td>
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</table>
Initial Analysis of Alternatives

△ NM 528 Options
- No Build
- Eight Lanes, Triple Lefts
- Super Street
- Continuous Flow
- Diamond Interchange
- Flyover
Detailed Analysis of Alternatives

▲ NM 528 Options
- No Build
- Eight Lanes, Triple Lefts
- Super Street
- Continuous Flow
- Diamond Interchange
- Flyover
Continuous Flow Intersection
Travel Time Comparison (AM)

Travel Time Between NM 528 & NM 313 (Seconds)

- **No Build**
  - Westbound: ~350 seconds
  - Eastbound: ~580 seconds

- **Six Lane**
  - Westbound: ~300 seconds
  - Eastbound: ~450 seconds

- **Super Street**
  - Westbound: ~250 seconds
  - Eastbound: ~350 seconds

Legend:
- Black: Westbound
- Light Blue: Eastbound
Travel Time Comparison (PM)

Travel Time Between NM 528 & NM 313 (Seconds)

- No Build
- Six Lane
- Super Street

Westbound vs. Eastbound
<table>
<thead>
<tr>
<th>Location</th>
<th>AM Peak Delay (sec)</th>
<th>AM Peak LOS</th>
<th>PM Peak Delay (sec)</th>
<th>PM Peak LOS</th>
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<tbody>
<tr>
<td>NM 528</td>
<td>34.41</td>
<td>C</td>
<td>44.26</td>
<td>D</td>
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<td>Jemez Dam</td>
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<td>Kuaua / Sheriff’s Posse</td>
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<td>Camino del Pueblo</td>
<td>31.30</td>
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<td>34.93</td>
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</table>
Super Street Advantages

▲ Lower travel times than 6 lane
▲ Lower network delays than 6 lane (PM)
▲ Fewer signal phases
▲ Provides lower conflicts
Super Street Disadvantages

▲ Less familiar to driving public
▲ Some movements less direct
▲ Non traditional pedestrian crossings
Preferred Alternative Simulations
Questions?

JEANETTE WALThER, PE, PTOE
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NM 528 Intersection