Final Results and Evaluation Summary
Traffic Analysis Approach

- **Future Mainlane Volumes**
  How much can I-10 carry?

- **Future Mainlane LOS**
  How congested will I-10 be?

- **Volume/Capacity Ratio Comparison**
  Will congested conditions be improved?

- **Intersection Delay Reduction**
  Will added capacity improve Gateway intersection conditions?

- **Other Measures**

What is Level of Service (LOS)?

- A measure of congestion from A (good flow) to F (gridlock) based on a calculated volume to capacity ratio.
## Mobility Goal

Provide Efficient Transportation Facilities That Improve Mobility and Circulation

<table>
<thead>
<tr>
<th></th>
<th>Mainlanes</th>
<th>Gateway Intersections</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>No Build</strong></td>
<td><img src="#" alt="Red" /></td>
<td><img src="#" alt="Red" /></td>
</tr>
<tr>
<td><strong>TSM</strong></td>
<td><img src="#" alt="Red" /></td>
<td><img src="#" alt="Yellow" /></td>
</tr>
<tr>
<td><strong>Access Mgmnt.</strong></td>
<td><img src="#" alt="Red" /></td>
<td><img src="#" alt="Yellow" /></td>
</tr>
<tr>
<td><strong>General Purpose</strong></td>
<td><img src="#" alt="Yellow" /></td>
<td><img src="#" alt="Green" /></td>
</tr>
<tr>
<td><strong>Express</strong></td>
<td><img src="#" alt="Green" /></td>
<td><img src="#" alt="Green" /></td>
</tr>
<tr>
<td><strong>HOV</strong></td>
<td><img src="#" alt="Red" /></td>
<td><img src="#" alt="Green" /></td>
</tr>
</tbody>
</table>

**Goal Achievement**

- **Low**
- **High**
Environmental Analysis

• Social, Economic & Environmental Effects
  – Land Use
  – Relocation/Displacements
  – Environmental Justice
  – Potential Historic Properties
  – Potential 4(f) Issues

• Natural Environmental Effects
  – Air Quality (CO concentration)
  – Traffic Noise
  – Wetlands
  – Hazardous Material Sites
  – Threatened and Endangered Species
  – Visual Quality and Aesthetics
Community and Environment Goal

Identify and address social, economic, and environmental impacts and benefits.

<table>
<thead>
<tr>
<th>Effects to Elements</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>No Build</td>
<td></td>
</tr>
<tr>
<td>TSM</td>
<td></td>
</tr>
<tr>
<td>Access Management</td>
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<tr>
<td>Express</td>
<td></td>
</tr>
<tr>
<td>HOV</td>
<td></td>
</tr>
</tbody>
</table>

Goal Achievement

Low  

High
Multimodal Goal Analysis

• Potential secondary effects consistent with city comprehensive plan
  – No Build Strategy – No Effect
  – TSM Strategy – Minimal Effect
  – Access Management, General Purpose Lanes, Express Lanes, and HOV Lanes Strategies - Consistent

• Encouragement of transit- and/or pedestrian-oriented development (consistency with land use patterns encouraging transit & pedestrian travel)
  – No Build, TSM, Access Management, and General Purpose Lanes Strategies – No
  – Express Lanes and HOV Lanes Strategies – Yes

• General improvement for trucks
  – No Build Strategy – No
  – TSM, Access Management, and HOV Lanes Strategies – Minimal Effect
  – General Purpose Lanes – Improved Mobility
  – Express Lanes Strategy – Opportunity for Designated Truck Lanes
Multimodal Travel Goal

Provide a balance of transportation improvements that support identified multimodal and intermodal needs.

<table>
<thead>
<tr>
<th></th>
<th>Multimodal Needs</th>
<th>General Improvement for Trucks</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Build</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TSM</td>
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<td></td>
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<tr>
<td>HOV</td>
<td></td>
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</tr>
</tbody>
</table>

Goal Achievement

- Low
- High
Design Criteria Goal Analysis (1)

- Conformity to highway geometric standards
  - No Build Strategy
    - Horizontal minimums (4 curves)
    - Less than desirable superelevation transitions from Paisano to UPRR
    - Clearance minimum and less on 14 of the 17 cross-street underpasses
  - TSM and Access Management Strategies – Address underpass clearance for 7 cross-streets
  - General Purpose Lanes Strategy – Addresses horizontal minimums for 3 of the 4 curves and underpass clearance for 14 cross-streets
  - Express Lanes and HOV Lanes Strategies – Address horizontal minimums for the 4 curves and underpass clearance for 14 cross-streets
Design Criteria Goal Analysis (2)

• Improve ramp design
  – No Build & TSM Strategies – No
  – Access Management Strategy – Low
  – General Purpose Lanes, Express Lanes, and HOV Lanes Strategies – High

• Improve interchange design
  – No Build Strategy – No
  – TSM Strategy – Moderate
  – Access Management, General Purpose Lanes, Express Lanes, and HOV Lanes Strategies – High

• Construction impacts to traffic
  – No Build Strategy – None
  – TSM & Access Management Strategies – Moderate
  – General Purpose Lanes, Express Lanes, and HOV Lanes Strategies – High
Design Goal

Provide future transportation facilities that comply with current TxDOT and nationally recognized transportation standards.

<table>
<thead>
<tr>
<th>Improvement Level</th>
<th>No Build</th>
<th>TSM</th>
<th>Access Management</th>
<th>General Purpose</th>
<th>Express</th>
<th>HOV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goal Achievement</td>
<td>Low</td>
<td></td>
<td>High</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
I-10 Strategies – Cost Estimates

- ROW
- Utility Relocation
- ITS
- Structures
- Roadway
- Includes Other Routes
- Includes Major Interchanges

Highway - Total Strategies Cost

- TSM
- Acc. Mgmt.
- Gen. Purp.
- Express
- HOV

Highway - Total Strategies Cost

- ROW
- Utility Relocation
- ITS
- Structures
- Roadway
# Transit Component

<table>
<thead>
<tr>
<th>I-10 Strategy</th>
<th>Transit Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Build</td>
<td>2025 Planned Service</td>
</tr>
<tr>
<td>TSM</td>
<td>Service Increase</td>
</tr>
<tr>
<td>Access Management</td>
<td></td>
</tr>
<tr>
<td>General Purpose Lanes</td>
<td></td>
</tr>
<tr>
<td>Express Lanes</td>
<td>Enhanced Express</td>
</tr>
<tr>
<td>HOV Lanes</td>
<td></td>
</tr>
</tbody>
</table>

- **2025 Planned Service**
  - Based on the “Bus Only” Scenario from the MPO Transit Corridor Study

- **Service Increase**
  - Reduce Headways on Planned Routes
  - Extend Routes 50, 60, 63, and 66
  - Add Horizon City Express - 1
  - Add Lower Valley Express - 1
  - Add Yarbrough PNR Express - 1

- **Enhanced Express**
  - Service Increase
  - Add Horizon City Express - 2
  - Add Lower Valley Express - 2
# Transit Component – Cost Estimates

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<th>I-10 Strategy</th>
<th>Transit Option</th>
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<td>Enhanced Express</td>
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<tr>
<td>HOV Lanes</td>
<td></td>
</tr>
</tbody>
</table>

## Transit Capital, Operating & Maintenance Cost Through 2025 (East Side Routes Only)

<table>
<thead>
<tr>
<th>Cost Category</th>
<th>2025 Planned Service</th>
<th>Service Increase</th>
<th>Enhanced Express</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capital Cost</td>
<td>$665</td>
<td>$1,100</td>
<td>$1,200</td>
</tr>
<tr>
<td>Op &amp; Maint Cost</td>
<td>$66</td>
<td>$133</td>
<td>$150</td>
</tr>
</tbody>
</table>

- **Capital Cost**
- **Op & Maint Cost**
Cost Effectiveness Goal

Provide future transportation improvements that balance cost, benefits, and impacts.

<table>
<thead>
<tr>
<th>No Build</th>
<th>Construction Affordability</th>
<th>Bang for $Buck</th>
</tr>
</thead>
<tbody>
<tr>
<td>TSM</td>
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</table>

Goal Achievement

- Low
- High
Evaluation Summaries:
I-10 East Corridor
SH 20
FM 76
FM 1110
## Evaluation Summary

<table>
<thead>
<tr>
<th>No Build</th>
<th>TSM</th>
<th>Acc. Mgmt.</th>
<th>Gen. Purp.</th>
<th>Express</th>
<th>HOV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobility</td>
<td>Community &amp; Environment</td>
<td>Multimodal Travel</td>
<td>Design</td>
<td>Cost Effectiveness</td>
<td></td>
</tr>
<tr>
<td>ML</td>
<td>Int</td>
<td>Other</td>
<td>Modes</td>
<td>Trucks</td>
<td>Affordability</td>
</tr>
</tbody>
</table>

- **No Build**:
  - Mobility: Low
  - Community & Environment: High
  - Multimodal Travel: Other
  - Design: High
  - Cost Effectiveness: Bang for $$

- **TSM**:
  - Mobility: Low
  - Community & Environment: Int
  - Multimodal Travel: Modes
  - Design: Trucks
  - Cost Effectiveness: Affordability

- **Acc. Mgmt.**:
  - Mobility: Low
  - Community & Environment: Int
  - Multimodal Travel: Modes
  - Design: Trucks
  - Cost Effectiveness: Affordability

- **Gen. Purp.**:
  - Mobility: Low
  - Community & Environment: Int
  - Multimodal Travel: Modes
  - Design: Trucks
  - Cost Effectiveness: Affordability

- **Express**:
  - Mobility: Low
  - Community & Environment: Int
  - Multimodal Travel: Modes
  - Design: Trucks
  - Cost Effectiveness: Affordability

- **HOV**:
  - Mobility: Low
  - Community & Environment: Int
  - Multimodal Travel: Modes
  - Design: Trucks
  - Cost Effectiveness: Affordability
# Evaluation Summary

<table>
<thead>
<tr>
<th>Current Plan (No Build)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Does not adequately address identified needs in the I-10 East Corridor</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TSM</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Low investment with minimal effects on corridor objectives</td>
<td></td>
</tr>
<tr>
<td>• Does not adequately address identified needs in the I-10 East Corridor</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Access Management</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Relatively low investment with minimal effects on corridor objectives</td>
<td></td>
</tr>
<tr>
<td>• Does not adequately address identified needs in the I-10 East Corridor</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>General Purpose *</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Significant added-capacity investment with major effects on corridor objectives</td>
<td></td>
</tr>
<tr>
<td>• Substantial mobility improvements</td>
<td></td>
</tr>
<tr>
<td>• Fifty (50) foot median allows for future expansion (general purpose, express, or HOV)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Express *</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Significant added-capacity investment with major effects on corridor objectives</td>
<td></td>
</tr>
<tr>
<td>• Substantial mobility improvements</td>
<td></td>
</tr>
<tr>
<td>• Option for separating some truck traffic</td>
<td></td>
</tr>
<tr>
<td>• Possibility of using tolls to cover a portion of the improvement costs</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HOV</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Significant added capacity (HOV) investment with major effects on corridor objectives</td>
<td></td>
</tr>
<tr>
<td>• Notable mobility improvements</td>
<td></td>
</tr>
<tr>
<td>• Full commitment within the next 25 years by all transportation stakeholders and users appears unlikely</td>
<td></td>
</tr>
</tbody>
</table>

* Progression into the next steps of the project development process is needed to further evaluate these two strategies and develop a program of projects to meet the corridor goals
SH 20

- **No Build**
  - Four-lane undivided section with partially paved shoulders
  - Overall 2025 LOS is “B”

- **Transportation System Management**
  - Intersection Improvements: Add eastbound right turn lane at
    ‣ Rafael Septien
    ‣ Nevarez
    ‣ Moon
    ‣ Rio Vista
    ‣ Buford
    ‣ Place
  - Overall 2025 LOS “B”

- **Build**
  - Four-lane divided urban section
  - 14-foot median to be developed as a raised median with left-turn bays or a two-way left-turn flush median
  - 2-foot inside shoulders and 10-foot outside shoulders
  - Curb and gutter, with a 25-foot border width including a sidewalk
  - Overall 2025 LOS “B”
  - Includes safety and drainage improvements
FM 76

• No Build
  – Two-lane undivided section with unpaved to partially paved shoulders
  – 2025 LOS is “E” east of FM 1110, “D” west of FM 1110

• Transportation System Management
  – Intersection Improvements:
    ‣ Add traffic signal at Bauman Road
    ‣ Add eastbound right-turn lane at Welletka Drive
    ‣ Add eastbound right-turn lane at FM 1110
    ‣ Add eastbound right-turn lane and center left-turn lane for the westbound direction at Celum Road
    ‣ Add traffic signal and have two southbound approach lanes (one left-turn and one right-turn only) at FM 1110
  – 2025 LOS is “E” east of FM 1110, “D” west of FM 1110

• Build
  – Four-lane divided urban section
  – 14-foot median to be developed as a raised median with left-turn bays or a two-way left-turn flush median
  – 2-foot inside shoulders and 10-foot outside shoulders
  – Curb and gutter, with a 25-foot border width including a sidewalk
  – Overall 2025 LOS “A”
  – Includes safety and drainage improvements
FM 1110

Two sections were considered:
- between I-10 and FM 76
- between FM 76 and SH 20

Expanding the section in Clint between FM 76 and SH 20 will not be considered due to constrained ROW and existing development.

For FM 1110 between I-10 and FM 76:

- **No Build**
  - Two-lane undivided section with partially paved shoulders
  - 2025 LOS is “E”
- **Transportation System Management**
  - Add a left-turn lane for northbound traffic at the Lower Valley Water District
  - 2025 LOS is “E”
- **Build**
  - Four-lane divided rural section
  - 14-foot median to be developed as a two-way left-turn flush median
  - 10-foot outside shoulders
  - 25-foot border width including an open ditch and sidewalk
  - 2025 LOS “B”
  - Includes safety and drainage improvements