Introductions and Welcome

- Recognition of elected officials
- Introduction of stakeholders and agency staff
- Local perspective
- Stantec team
Housekeeping Items

- Please keep your computer or phone on mute until after the presentation
- Please wait to ask questions or provide comments until after the presentation
- Provide written comments by September 2, 2020
Presentation Outline

- Project Area/Overview
- Project Status Summary
- Existing Conditions
- Alternatives Process
- Review of Alternatives
- Environmental
- Schedule
- Question/Comment
Project Study Area

- US 285 – key route in SE New Mexico
- NM 31 provides access to areas east of US 285
- Intersection is a weak link for network traffic flow
- NMDOT Project: US 285 (MP 0 to MP 22)
- NMDOT Project: NM 31 and NM 128 Design Build
- Eddy County Project: SE Loop Relief Route
- NMDOT/Eddy County: US 285/NM 31 (This Project)
Project Need

- Shared lane for turning movements
- Skewed intersection
- Auxiliary lanes, inadequate or absent (a/d)
- Need improved lighting, pavement markings, and signage
- Capacity/congestion needs
- Crash frequency and severity
- Access for industry, potash, salt, agriculture, and WIPP
- System connectivity
- Economic development
Project Background/History

- Initial Traffic Study By NMDOT (2017)
- Two Build Grant Applications (2018/19)
- 13 Initial Alternatives considered and presented at previous public/stakeholder mtg
  - Interchange
  - At-Grade
- Two alternatives are under consideration, both with a traditional T intersection and a High T Intersection Option
- Local Stakeholders, Eddy County and NMDOT combine efforts to move this project toward construction
Where are we in the Process

- Phase I-A Initial Evaluation of Alternatives (Completed)
- **Phase I-B Detailed Evaluation of Alternatives**
- Phase I-C Environmental Documentation
- Phase I-D and II (Design)
- Phase III Construction
## 2019 Traffic Volumes

<table>
<thead>
<tr>
<th>Route</th>
<th>Location</th>
<th>Average Daily Traffic – Vehicles per Day</th>
</tr>
</thead>
<tbody>
<tr>
<td>US 285</td>
<td>North of Carter</td>
<td>14,304</td>
</tr>
<tr>
<td>US 285</td>
<td>South of Carter</td>
<td>15,408</td>
</tr>
<tr>
<td>US 285</td>
<td>North of Brantley</td>
<td>16,328</td>
</tr>
<tr>
<td>US 285</td>
<td>North of NM 31</td>
<td>18,167</td>
</tr>
<tr>
<td>NM 31</td>
<td>East of US 285</td>
<td>6,592</td>
</tr>
<tr>
<td>NM 31</td>
<td>East of Nymeyer</td>
<td>12,664</td>
</tr>
<tr>
<td>Carrasco Road</td>
<td>West of US 285</td>
<td>1,608</td>
</tr>
<tr>
<td>Carrasco Road</td>
<td>West of Roberson</td>
<td>580</td>
</tr>
</tbody>
</table>
2019 Intersection Traffic

- Morning peak hour: 1,612 vehicles per hour
- Proportion trucks: 11.7% to 22.5%
- Morning high volume turning movement: US 285 S to NM 31 E
- Evening high volume turning movement: NM 31 W to US 285 N
- Traffic growth (Annual) rate: 1%
Intersection Crash Frequency

![Line graph showing the trend of crashes from 2012 to 2018. The number of crashes generally increased over time, with a sharp rise starting from 2016.](image-url)
## Crash Analysis

<table>
<thead>
<tr>
<th>Severity</th>
<th>Number of Crashes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fatal crashes</td>
<td>5</td>
</tr>
<tr>
<td>Injury crashes</td>
<td>49</td>
</tr>
<tr>
<td>Property damage</td>
<td>134</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Factor</th>
<th>Number of Crashes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Failure to yield</td>
<td>40</td>
</tr>
<tr>
<td>Driver inattention</td>
<td>35</td>
</tr>
<tr>
<td>Following to closely</td>
<td>24</td>
</tr>
</tbody>
</table>
Hydrology of existing conditions.

**Basin Characteristics**
- Total Drainage Area = 2,394 acres
- 24-hr Precipitation Depth

**Peak Flows**

<table>
<thead>
<tr>
<th>Sub-Basin</th>
<th>50-Year Peak Discharge (cfs)</th>
<th>100-Year Peak Discharge (cfs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1A</td>
<td>997</td>
<td>1210</td>
</tr>
<tr>
<td>1B</td>
<td>274</td>
<td>319</td>
</tr>
<tr>
<td>1C</td>
<td>133</td>
<td>160</td>
</tr>
<tr>
<td>2A</td>
<td>155</td>
<td>188</td>
</tr>
<tr>
<td>2B</td>
<td>193</td>
<td>233</td>
</tr>
</tbody>
</table>

50-year | 100-year
---|---
4.88” | 5.57”
Alternatives Evaluation Process

- Collect and analyze data for existing and future conditions
- Develop factors and evaluate alternatives based upon those factors
- Rank the alternatives based on evaluation
- Carry top alternative forward into Design and Construction
Phase I-A Alternatives Evaluation Criteria

- Meet purpose and need
- Level of service (LOS) improvement
- Traffic and Safety improvement
- Considers Stakeholder Objectives/Input from Public
- Environmental
- Land Requirement/Right-of-Way
- Drainage
- Constructability
- Capital Construction Cost
Screened Alternatives (2)

- Review two Alternatives
  - M. Smelker (NMDOT)
Two Alternatives Evaluated

Traditional “T” Intersection
High “T” Intersection
◊ (AKA “Continuous Green T” Intersection)
Summary of Improvements

- New Railroad Crossing/location (x ft from existing) Coord. With BNSF
- Full deceleration lanes/storage for US 285 SB to EB NM 31; Decel for NB (US 285) to EB (NM 31), (unless stopped for a train)
- WB (NM 31) Exclusive Left turn lane to SB (US 285) with acceleration lane
- WB (NM 31) Exclusive Right Turn lane into free-flow acceleration lane (US 285 NB) (unless stopped for a train)
- New Intersection lighting, Signalized intersection
- Perpendicular tie-in for NM 31 to US 285 (Skew eliminated)
- NM 31 leg designed as four-lane with raised median (16 FT wide) Two WB and Two EB lanes
- Local Access accommodation (e.g. Kelly Rd.)
- Ability to tie into NM 31 Design Build Project
- Ability to easily convert from T intersection to “Four Leg” Intersection in Future
- Improved turning radius for truck accommodation
- County plans to tie Carrasco Rd. into NM 31 Intersection in future
Traditional T Intersection

To turn left from the side street, use the channelized lane to merge onto the major street.

To continue straight on the top of the "T", pass through the intersection.

From the major street, navigate the intersection like a conventional intersection.

From the side street, turn right like at a conventional intersection.
High T Intersection

- To turn left from the side street, use the channelized lane to merge onto the major street.
- To continue straight on the top of the "T", pass through the intersection.
- From the major street, navigate the intersection like a conventional intersection.
- From the side street, turn right like at a conventional intersection.
T-Intersection Comparison

- **Traditional Signalized T**
  - All traffic movements required to pass through the signalized intersection, required to stop for red signal indication
  - All traffic movements have exposure to potential for rear end type crashes
  - Ability to convert to a four-leg intersection rather easily

- **Signalized High “T” Intersection**
  - Major Leg (US 285 Southbound) not subject to red signal indication (always free flowing)
  - Median to separate movements SB Movements
  - SB movement reduced exposure to potential rear end crashes
  - Ability to easily convert to a four-leg intersection
Location 1

RELOCATE CARRASCO REQUIRED

EX- CARRASCO

Aux Lane(s) impact Carrasco here

Kelly Rd.
NM 31

US 285

2830 FT To BNSF Track Switch

900 FT

Kelly Rd.
Location 2

EX-Carraco/NM 31

1560 FT

Kelly Rd.

Four lane

US 285

2150 FT To BNSF Track Switch

Eddy County future Carrasco Tie-in to NM 31

NM 31
# Traffic Analysis (Level of Service)

<table>
<thead>
<tr>
<th></th>
<th>AM TRADITIONAL T</th>
<th>PM TRADITIONAL T</th>
<th>AM HIGH T</th>
<th>PM HIGH T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>C</td>
<td>B</td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>SB THRU</td>
<td>C</td>
<td>B</td>
<td>A</td>
<td>A</td>
</tr>
<tr>
<td>SB TO EB LEFT</td>
<td>C</td>
<td>B</td>
<td>B</td>
<td>B</td>
</tr>
<tr>
<td>NB</td>
<td>B</td>
<td>C</td>
<td>B</td>
<td>B</td>
</tr>
<tr>
<td>WB TO SB LEFT</td>
<td>C</td>
<td>B</td>
<td>C</td>
<td>B</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LOS A</th>
<th>&lt; 10 SEC DELAY</th>
<th>LOS B</th>
<th>10&lt;X&lt;20 SEC DELAY</th>
<th>LOS C</th>
<th>20&lt;X&lt;35 SEC</th>
<th>LOS D</th>
<th>35&lt;X&lt;55 SEC DELAY</th>
<th>LOS E</th>
<th>55&lt;X&lt;80 SEC</th>
<th>LOS F</th>
<th>X&gt;80 SEC</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>LOS D</td>
<td></td>
<td></td>
<td>LOS E</td>
<td></td>
<td>LOS F</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Traffic Simulation

- Simulation 1  Traditional T Intersection
- Simulation 2  High T Intersection
Traditional T Intersection
High T Intersection Simulation
Environmental Process

- National Environmental Policy Act (NEPA)
- NMDOT Location Study Procedures
- Agency consultation
- Public Involvement
Physical Environment

- Geology
- Soils
- Water
- Wetlands
- Air
Biological Environment

- Vegetation
- Noxious weeds
- Wildlife
- Migratory birds
- Threatened and endangered species
Cultural Resources

- Archaeological sites
- Historic properties
- Traditional Cultural Properties
Human Environment

- Land use
- Socioeconomics
- Environmental justice
- Noise
- Visual resources
- Hazardous materials
Next Steps

- Incorporate input from public
- Evaluate alternatives and select preferred alternative
- Conduct environmental field studies
- Prepare environmental reports
- Obtain utility and railroad certifications
- Move forward with design plans
Project Schedule (Estimated)

- Design Completion by Winter/Spring 2021
- Commence Construction Spring/Summer 2021
- Construction complete Summer/Fall 2022
Comments

- Provide spoken comment
- Mail written comments to:
  Eric Johnson,
  NV5
  4374 Alexander Blvd. NE, #K
  Albuquerque, NM 87107
- Email comments to eric.johnson@nv5.com
- Comments due September 2, 2020