

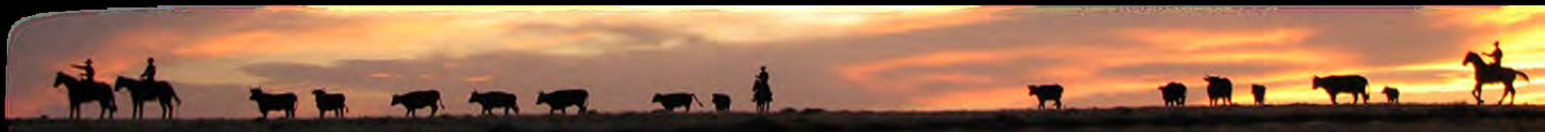
City of Jal

NM 128-Jal Relief Route - Initial Evaluation of Alternatives
Public Information Meeting; July 14, 2020



SMALL TOWN ● BIG HEART

"The Enchantment Starts Here!"



Introduction and Welcome

- Introduction of any Special Guests
- Welcome
- Local Perspective



Introduction and Meeting Format

- Virtual Meeting
- Following/Requiring compliance with Public Health order (Masks/Social Distancing/Limited capacity)
- Presentation followed by question and comment
- Comment methods
 - At the end of the meeting Live or virtual
 - Written questions after the meeting
 - Website
- Project Website
- Meeting Materials
- Introduce the Stantec Team, Wood, and SWCA



Outline

- Project Study Area
- Project Development Process
- Project Purpose and Need
- Existing Traffic and Safety
- Current Economic Conditions
- Introduction of Alternatives
- NEPA Overview and Environmental Considerations
- Geotechnical Considerations



Outline

Travel Demand Model
Cross Section Concepts
Preliminary Evaluation Factors
Project Website Overview
Next Steps
Questions, Comments

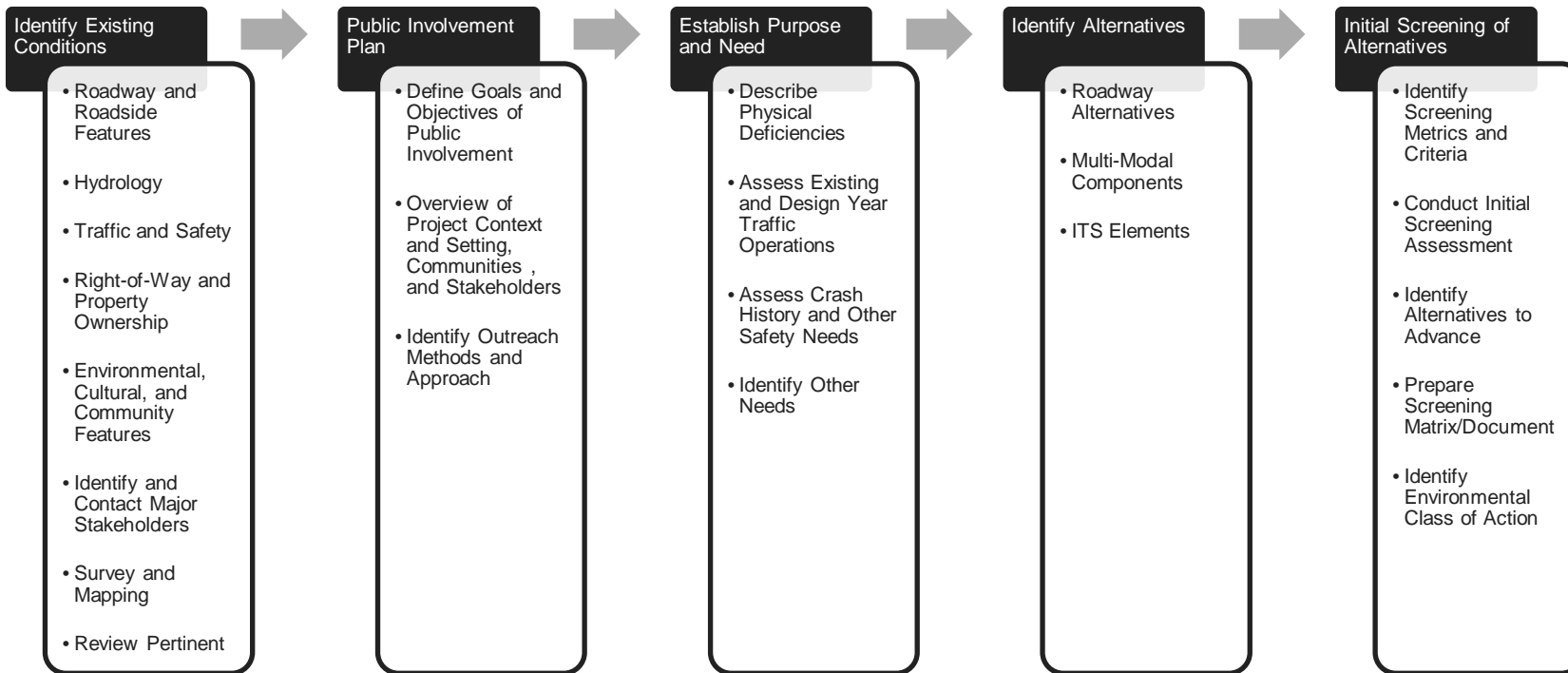
Study Area



Project Development Process

- Initial Evaluation of Alternatives
- Detailed Evaluation of Alternatives
- Environmental Documentation
- Preliminary Design
- Final Design
- Construction

PHASE I-A: INITIAL EVALUATION OF ALTERNATIVES



**PHASE I-B: DETAILED EVALUATION OF
ALTERNATIVES****DETAILED
EVALUATION OF
ALTERNATIVES**

- Prepare Conceptual Roadway and Structure Plans
- Traffic Safety Analysis
- Access Analysis
- Preliminary Drainage Analysis
- Constructability Analysis
- Preliminary Right-of-Way Analysis
- Geotech Investigation
- Utility Investigation
- Updated Cost Estimate
- Natural Resource Surveys
- Cultural Resource Surveys
- Evaluation Metrics and Summarize Detailed Evaluation
- Identify Preferred Alternative(s)

**ENGINEERING
REFINEMENTS OF
PREFERRED
ALTERNATIVES**

- Complete Drainage Analysis and Report
- Establish Bridge/Structure Types and Criteria
- Prepare Preliminary Plan and Profile Sheets and Cross Sections
- Prepare Preliminary Engineer's Estimate

**ALTERNATIVES
ANALYSIS REPORT**

- Prepare Report
- FHWA Concurrence Review

**PHASE C: ENVIRONMENTAL
DOCUMENTATION****ENVIRONMENTAL
DOCUMENTATION
AND
CONSULTATION**

- Complete Investigations and Analysis
- Prepare Resource Reports and Complete Agency Consultations
- Prepare Environmental Document

**PHASE D:
PRELIMINARY
DESIGN**

Project Need

- Deterioration of Pavement (failure) on NM 128 thru Jal
- Heavy congestion, large travel times during peak periods, delay (Trucks)
- Accommodate design year traffic (Capacity)
- High crash frequency
- Access (for Industry), WIPP
- Upgrade and restore pavement infrastructure
- System Connectivity (NM 128/NM 18 Regional traffic origins and destinations)
- Needed to support Agriculture, Potash, O&G and other key Economic Engines

Project Purpose

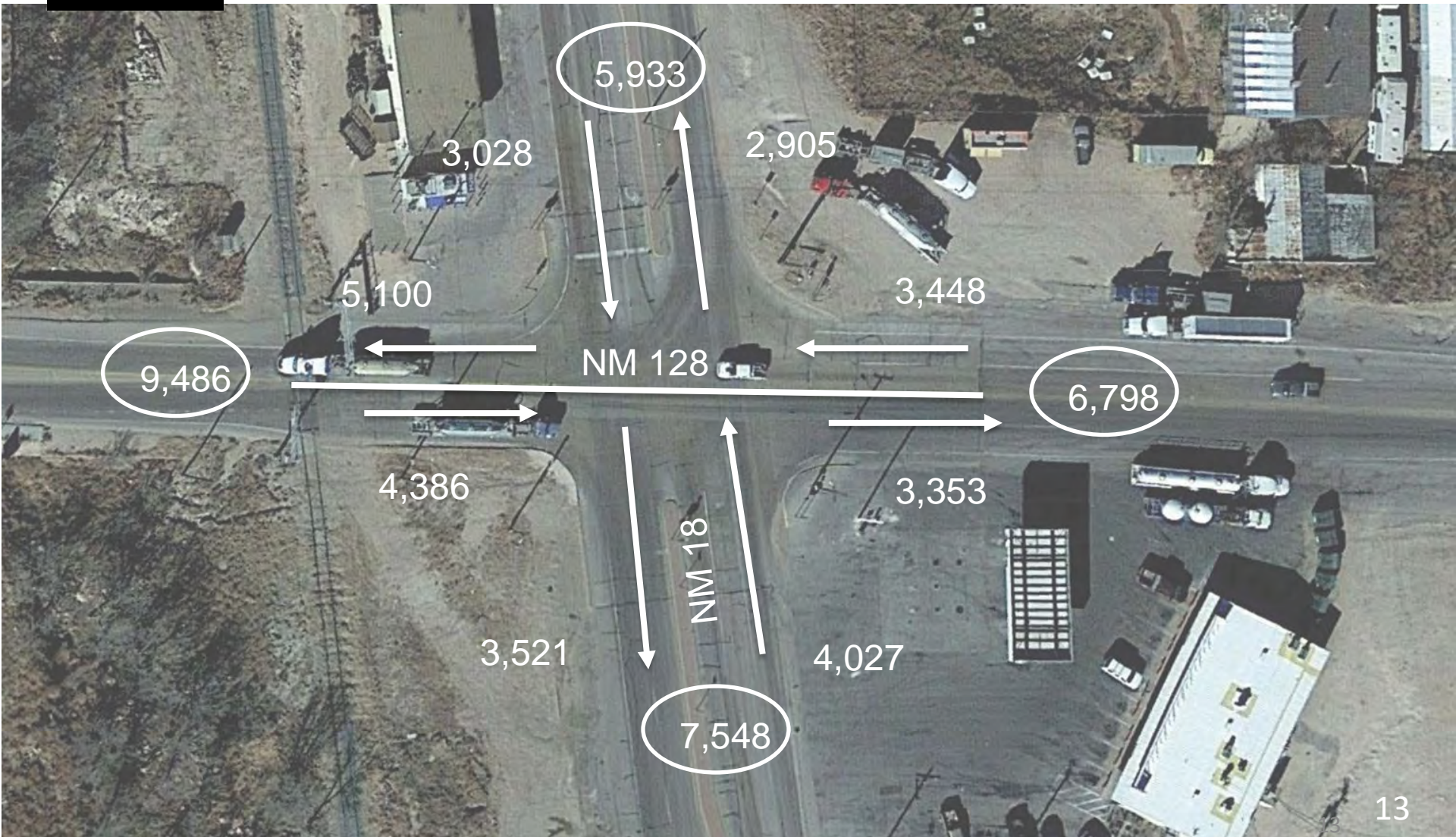
- Reduce (Improve) Congestion, delay, travel time
- Stop and Go Traffic
- Improve Safety
- Support Economic Development of Jal and Lea County, region and state
- Improve multi-modal (Truck/Passenger vehicle mix)

Traffic Summary

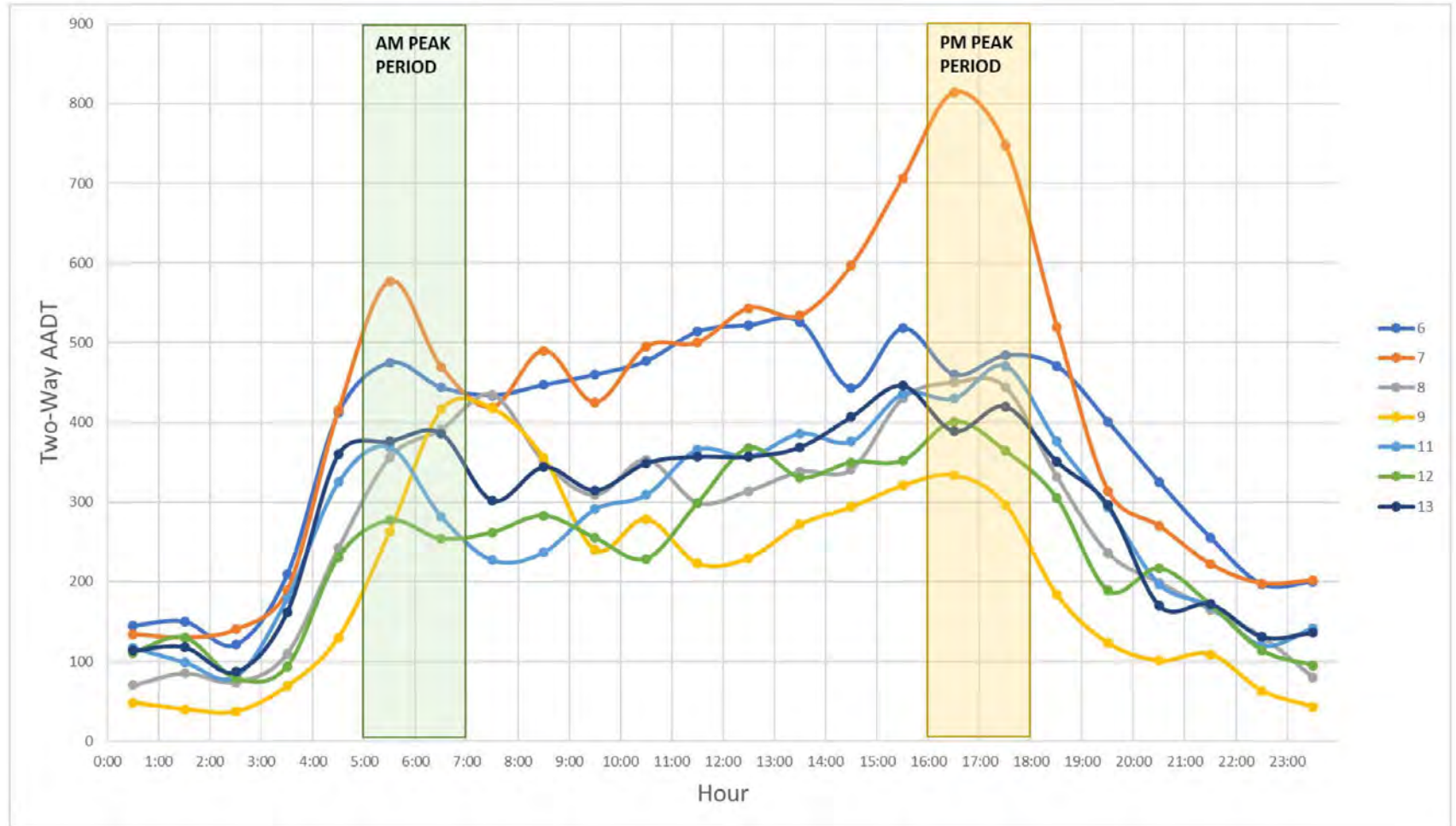
Location	Traffic
NM 128 East of Jal Access Road	10,082
NM 18 South of NM 128	7,567
NM 18 North of NM 128	4,948
Schooley Road North of NM 128	51
NM 128 West of Schooley Rd.	5,845
NM 128 West of Willis Road	5,815
NM 128 East of Willis Road	6,966
Willis Road North of NM 128	188
Sid Richardson Road, East of NM 18	258

Percentage of Trucks on NM 128 and NM 18 range from 20.4% and 32.7%

NM 128/NM 18 Daily Traffic



Daily Traffic Distribution



Crash Summary

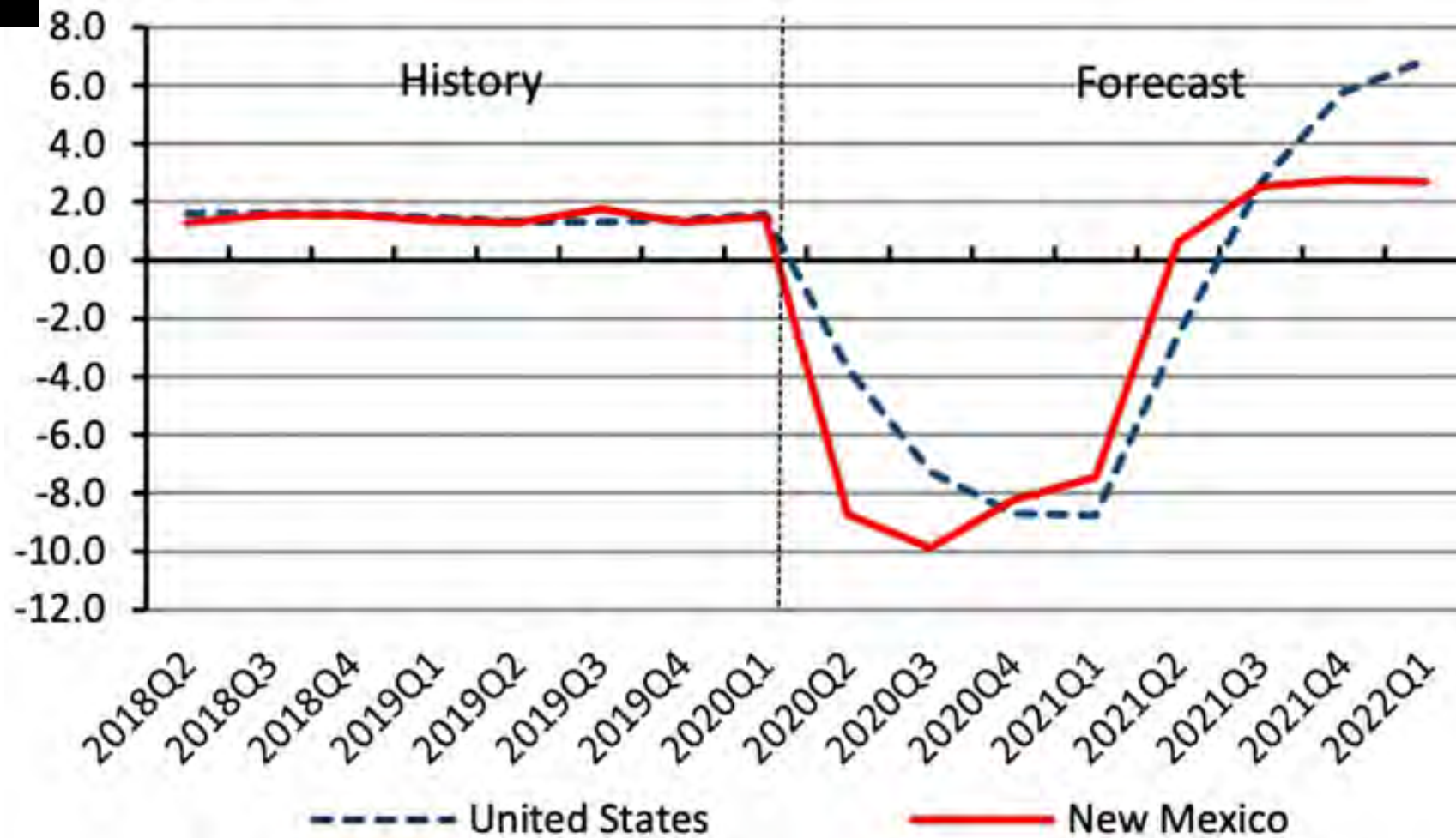
- Heavy trucks were involved in 17 (40%) of the 42 reported crashes in the study area between 2012 and 2016.

Crash Severity	2017	2016	2015	2014	2013	2012
Fatal Crashes	1*	1	0	0	0	0
Injury Crashes	N/A yet	0	2	2	2	2
Property Damage Only Crashes	N/A yet	9	7	8	3	6
Total	N/A Yet	10	9	10	5	8

25 Crashes in the study area from 2017 to 2018, 2 fatal crashes, 11 injury crashes

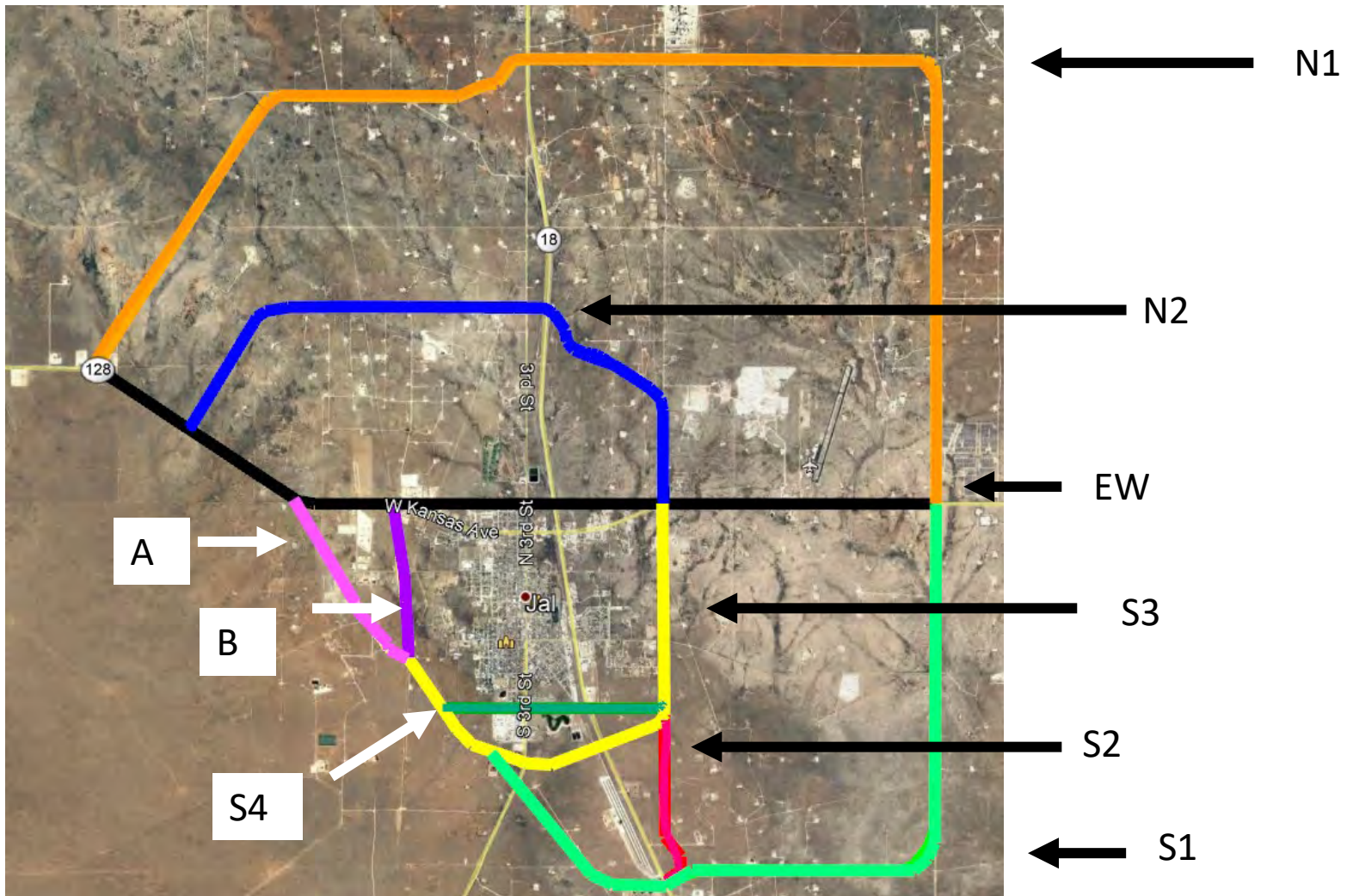
Employment Growth - U.S. and New Mexico

Percent Change, Y/Y

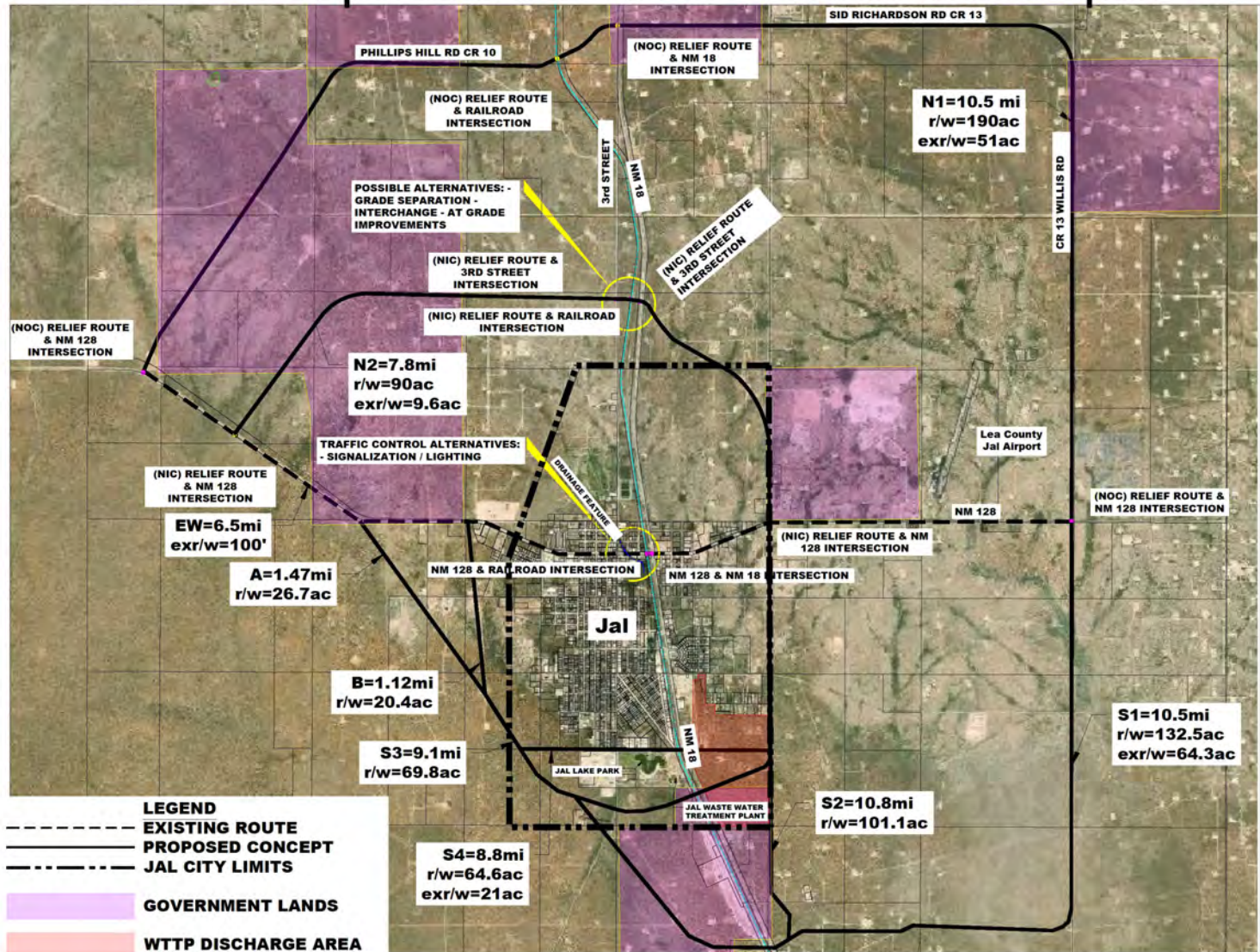


Source: IHS Markit & BBER

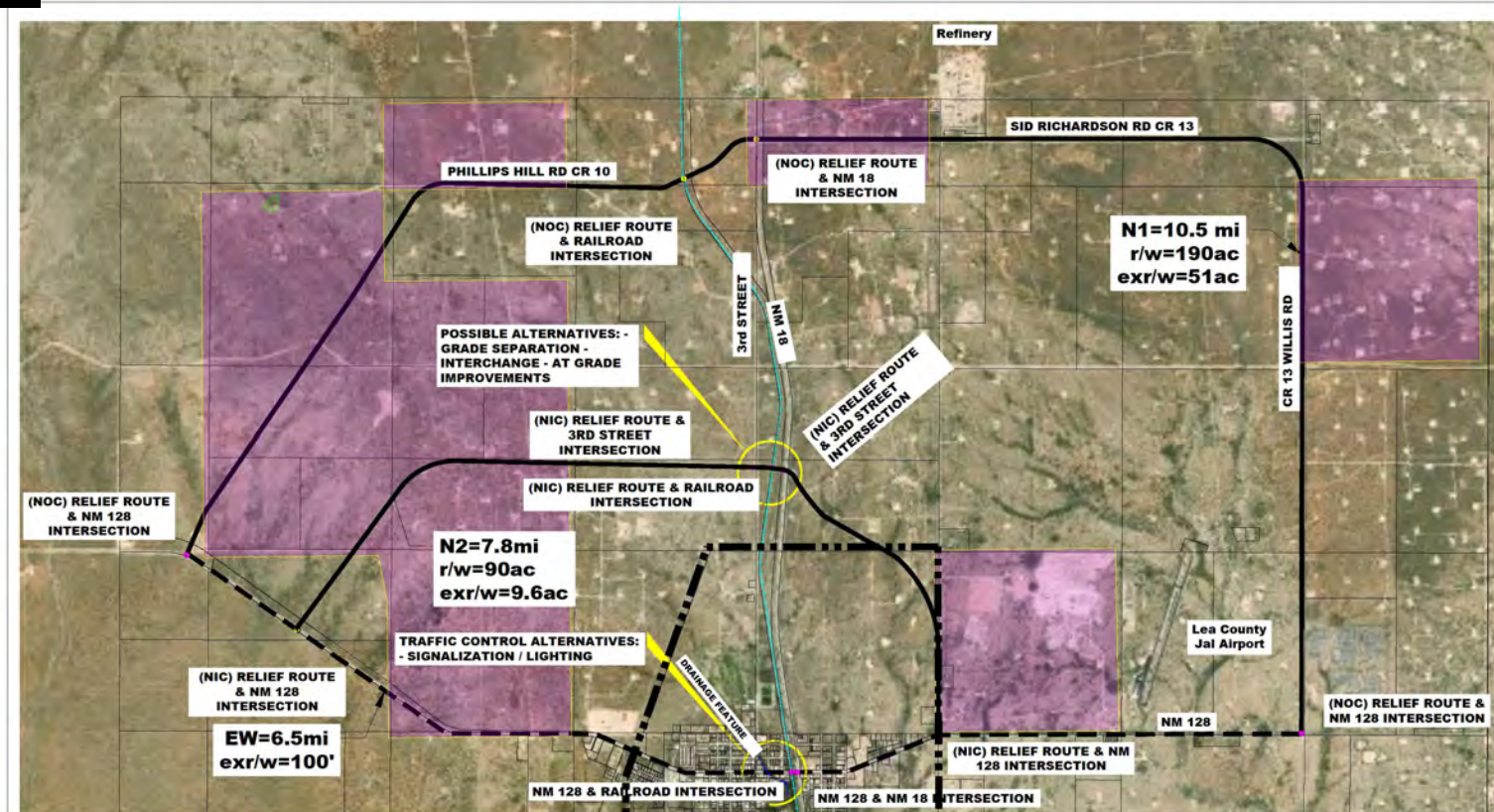
Overview of the Alternatives



Proposed Jal Relief Route Concepts



Proposed Jal Relief Route Concepts North Alternatives

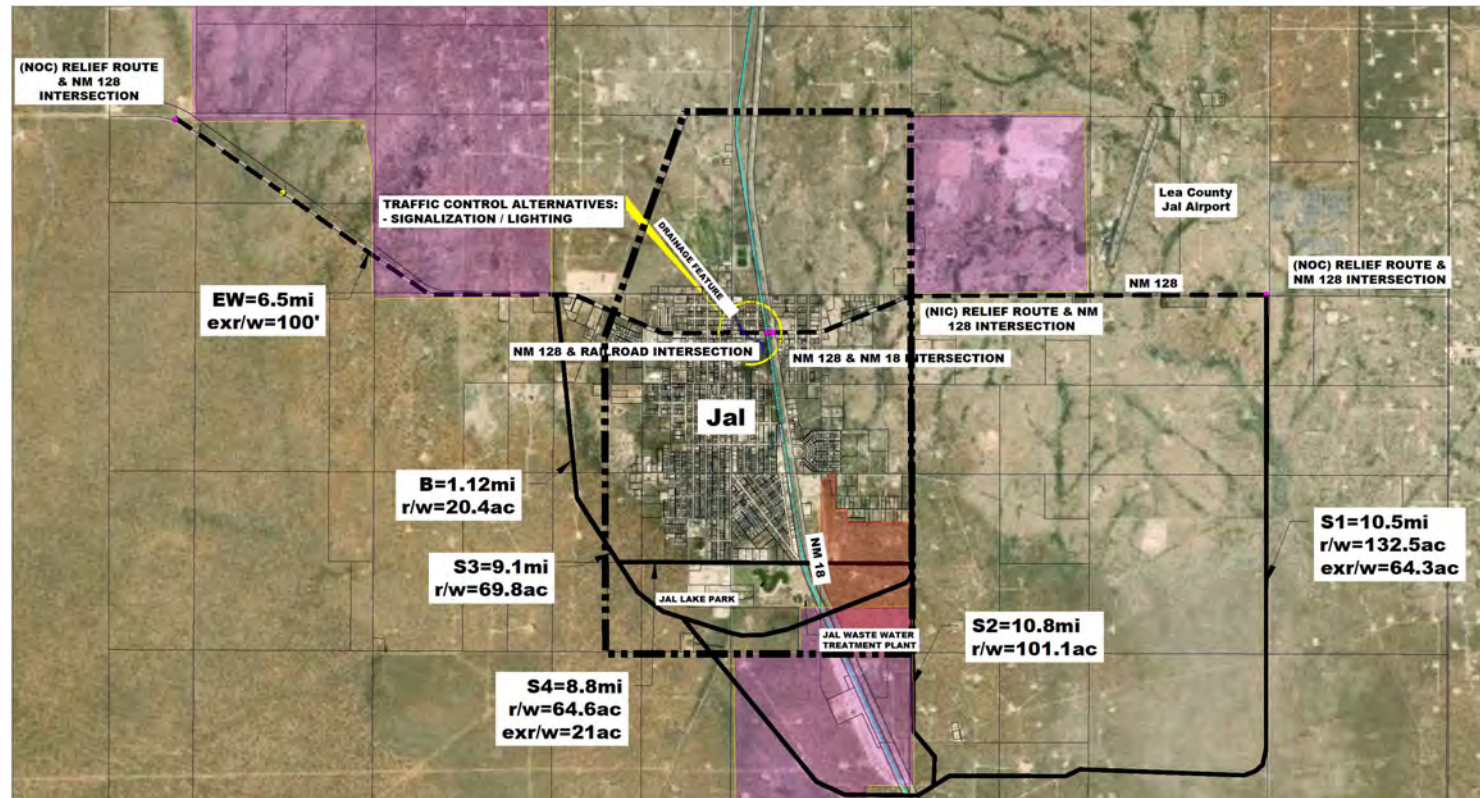


LEGEND

- EXISTING ROUTE
- ===== PROPOSED CONCEPT
- JAL CITY LIMITS

- GOVERNMENT LANDS
- WTPP DISCHARGE AREA

Proposed Jal Relief Route Concepts South Alternatives



- LEGEND**
- EXISTING ROUTE
 - ===== PROPOSED CONCEPT
 - JAL CITY LIMITS
 - GOVERNMENT LANDS
 - WTPP DISCHARGE AREA

Environmental

Project Purpose: Why Is A Relief Route Needed?

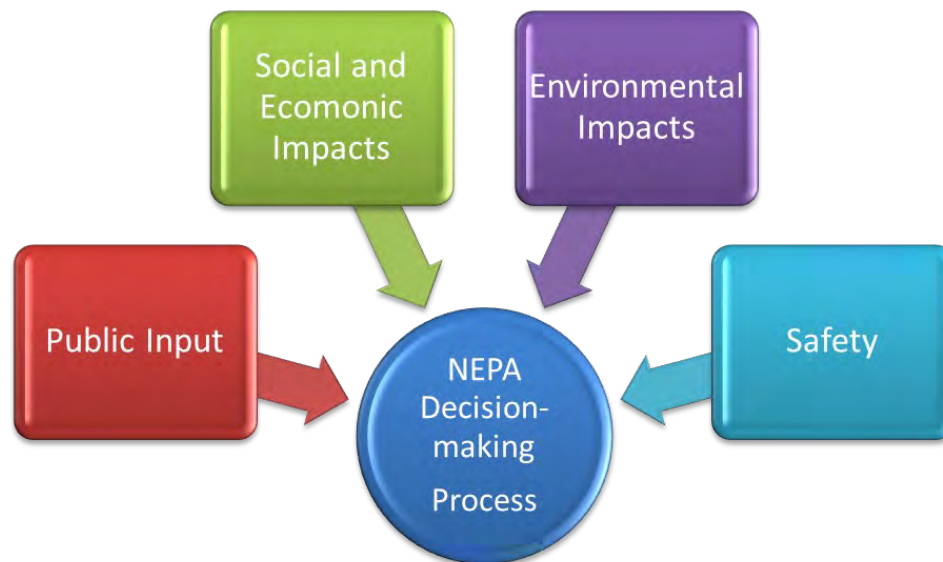
1. Reduce congestion
2. Reduce travel times and delays
3. Improve access and signage
4. Protect Jal businesses and residents from adverse economic impacts
 - *Ensure continued access to local and downtown businesses*

Environmental Compliance Process: NMDOT Location Study Procedures

- Phase A-D Summary
 - Scoping the project and alternatives
 - Involving the public
 - Analyzing alternatives and refining design
 - Resource investigations of preferred alternative and NEPA documentation
 - Preliminary design

Environmental Compliance: What Is Being Assessed?

- NMDOT and other state agency regulations and guidance
- Multi-modal transportation (ex. commercial trucks, personal vehicles)
- Cultural Resources (ex. National Historic Preservation Act compliance)
- Water Resources (ex. Clean Water Act compliance)
- Air Quality, Socioeconomics, Hazardous Materials, Noise (ex. National Environmental Policy Act compliance)
- Threatened and Endangered Species (ex. Endangered Species Act compliance)



Existing Environmental Conditions: How Are They Assessed?

Conduct Resource Surveys → Identify Potential Impacts → Run Impact Analyses

Natural Resources

What are the potential impacts to plants, animals and water resources for each alternative?

Cultural Resources

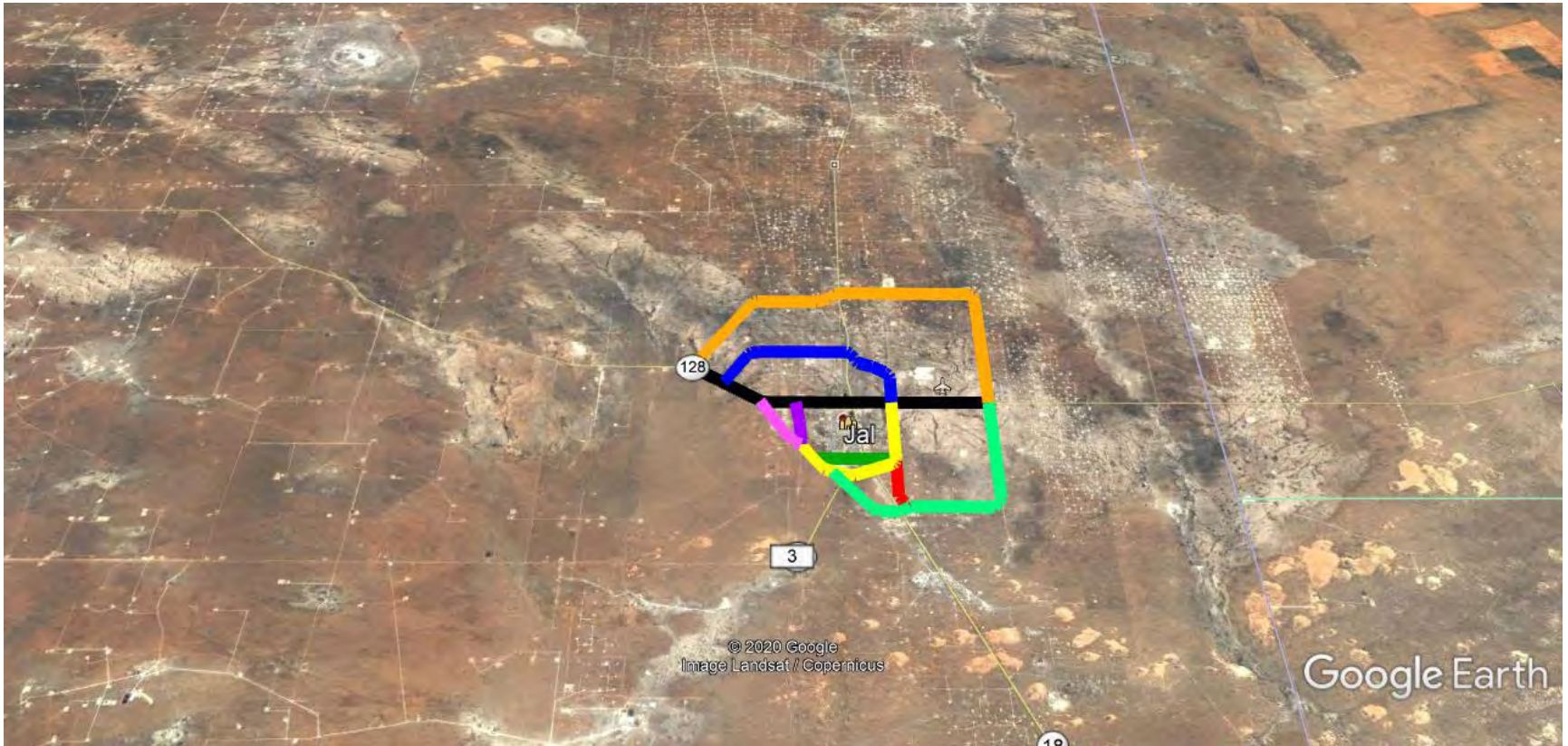
What are the potential impacts to archaeological sites, historic buildings or structures for each alternative?

Geotechnical

Paving Subgrade Soil Considerations

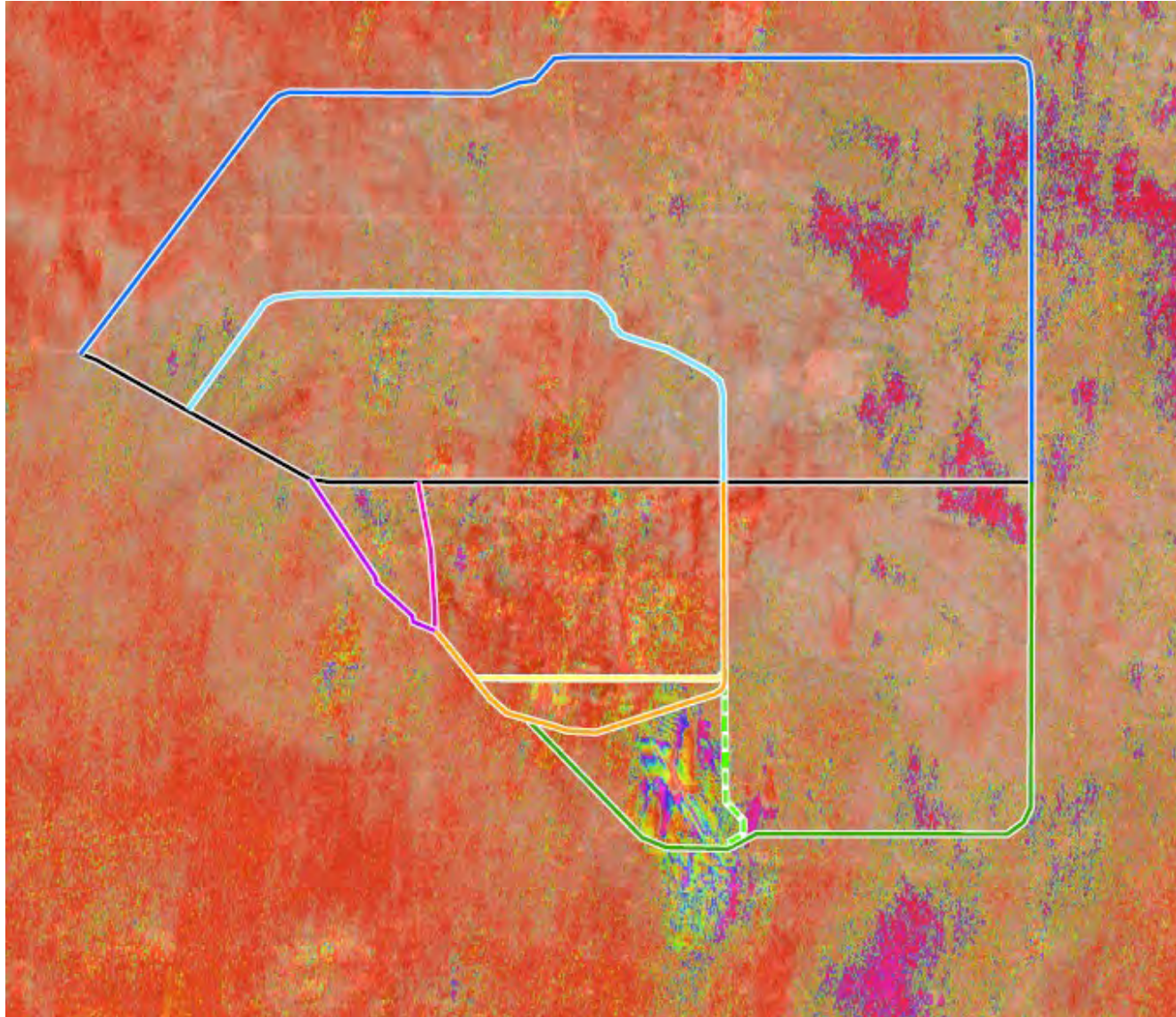
- Soft paving subgrade soils cause premature failure of pavement.
- Clayey soils are often a cause of soft subgrades.
- Clayey subgrades require strengthening:
 - lime, cement or geogrids (plastic grids)
 - Chemical testing of soils required
- Ground surface subsidence has been caused by human activities. Avoiding subsidence areas helps maintain drainage of paving subgrade soils. InSar satellite images are used to map subsidence areas.

Paving Subgrade Soil Considerations



- Dune Sand
- Surface Silty Sand
- Clayey Sand and Clayey Silt under surface sands
- 40% to 50% calcium carbonate, 1% gypsum

Paving Subgrade Soil Considerations



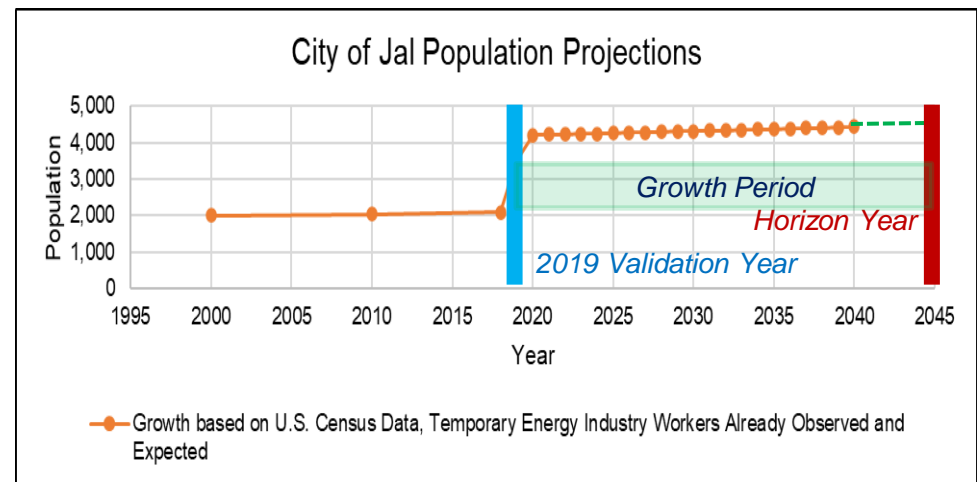
Travel Demand Model

Traffic Model Key Elements

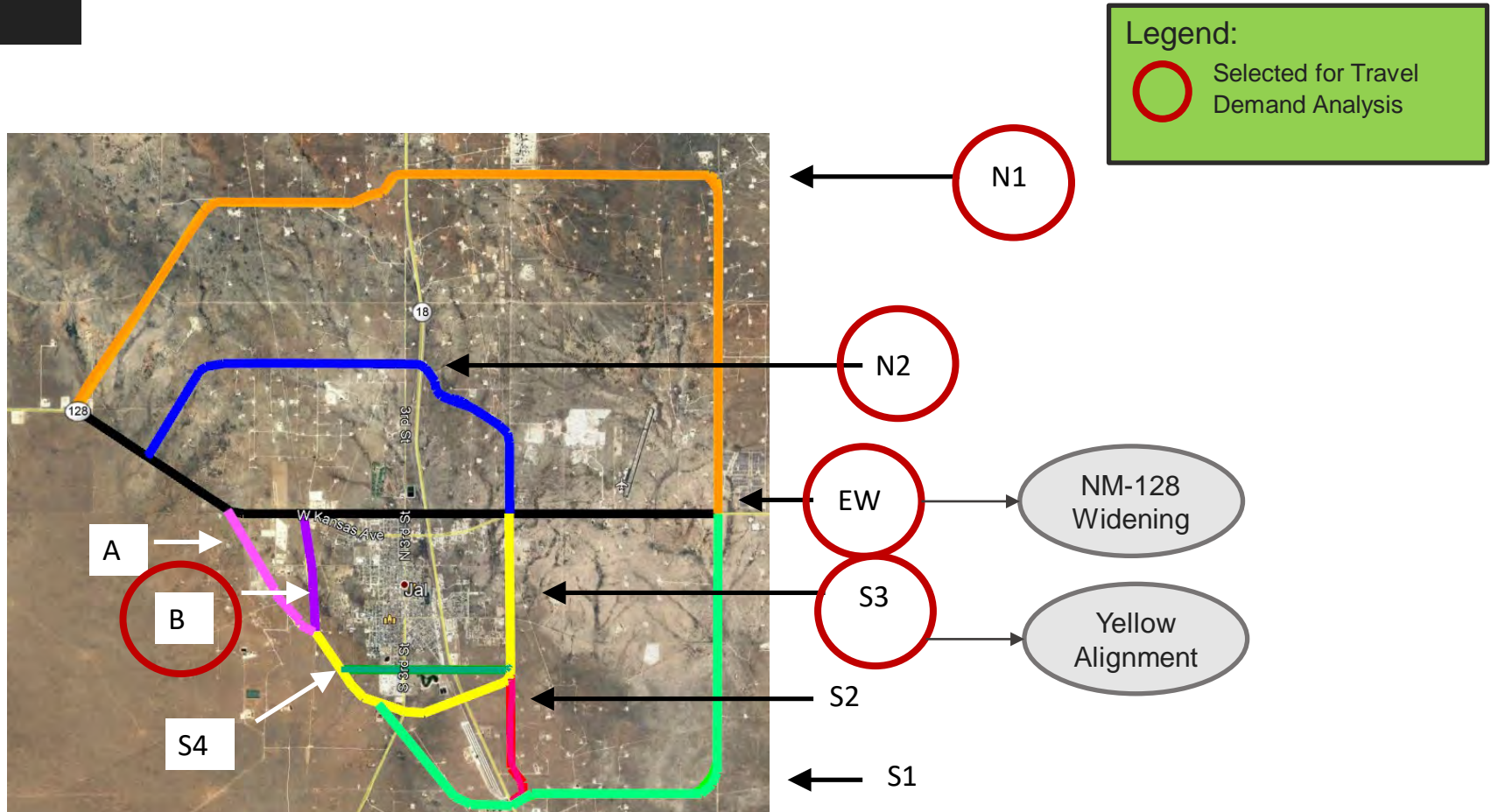
- Analysis was performed for the two time-of-day periods: AM Peak and PM Peak.
- Developed from the hourly count data in the vicinity of City of Jal
- AM Peak is between 5 AM and 7 AM
- PM Peak is between 4 PM and 6 PM
- Peak Direction: AM-WB and PM-EB

Growth Factor Assumptions:

- Assumed growth rate consistent with the population growth from Stantec's Study in October, 2019 – *Population Projection for City of Jal WWTP PER for Planning Period 2020-2040.*
- 2045 Population is 128% of 2019 population.
- Assumed the same percentage ratio for the travel demand growth.



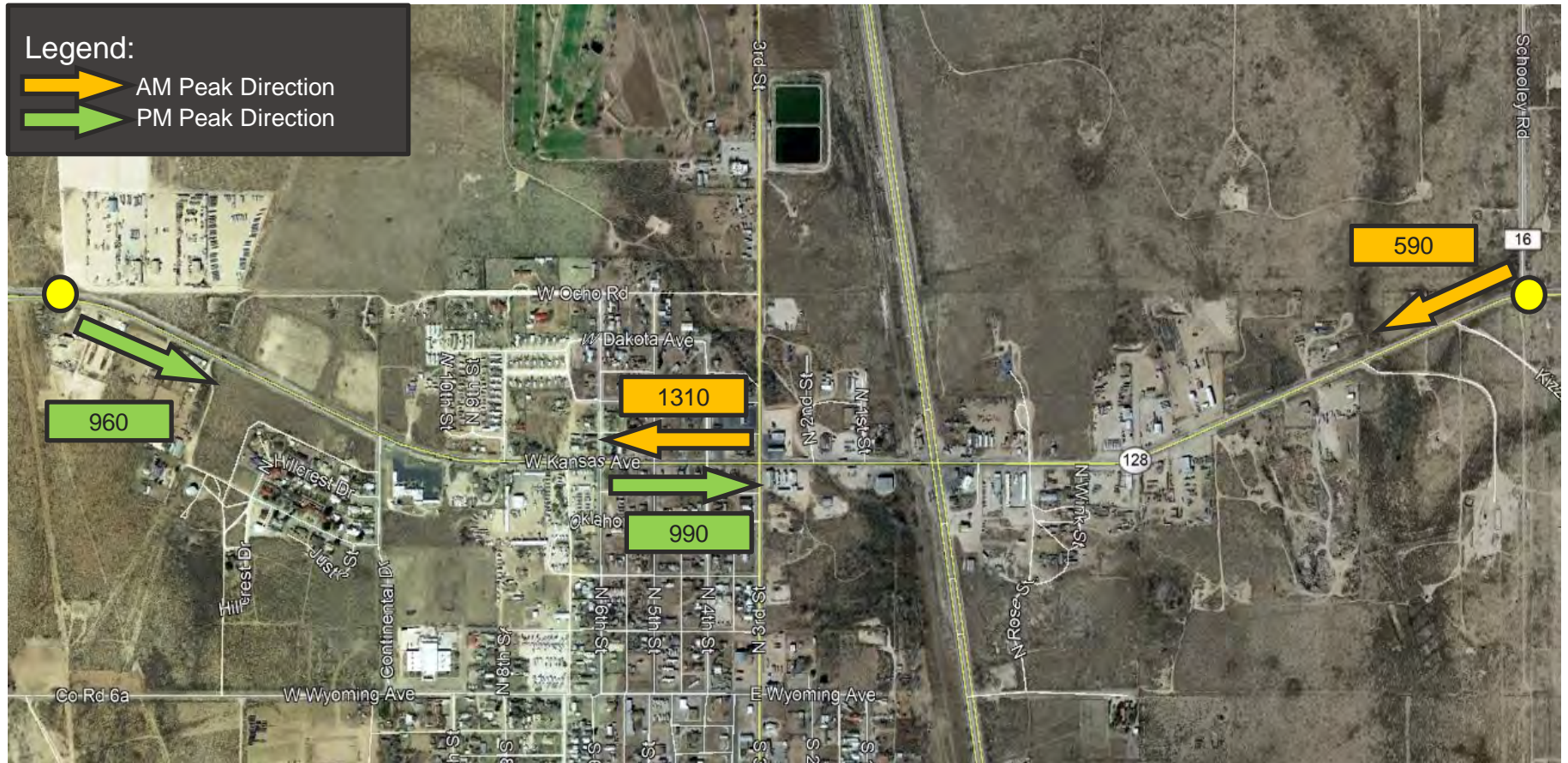
Modeling of Alternatives



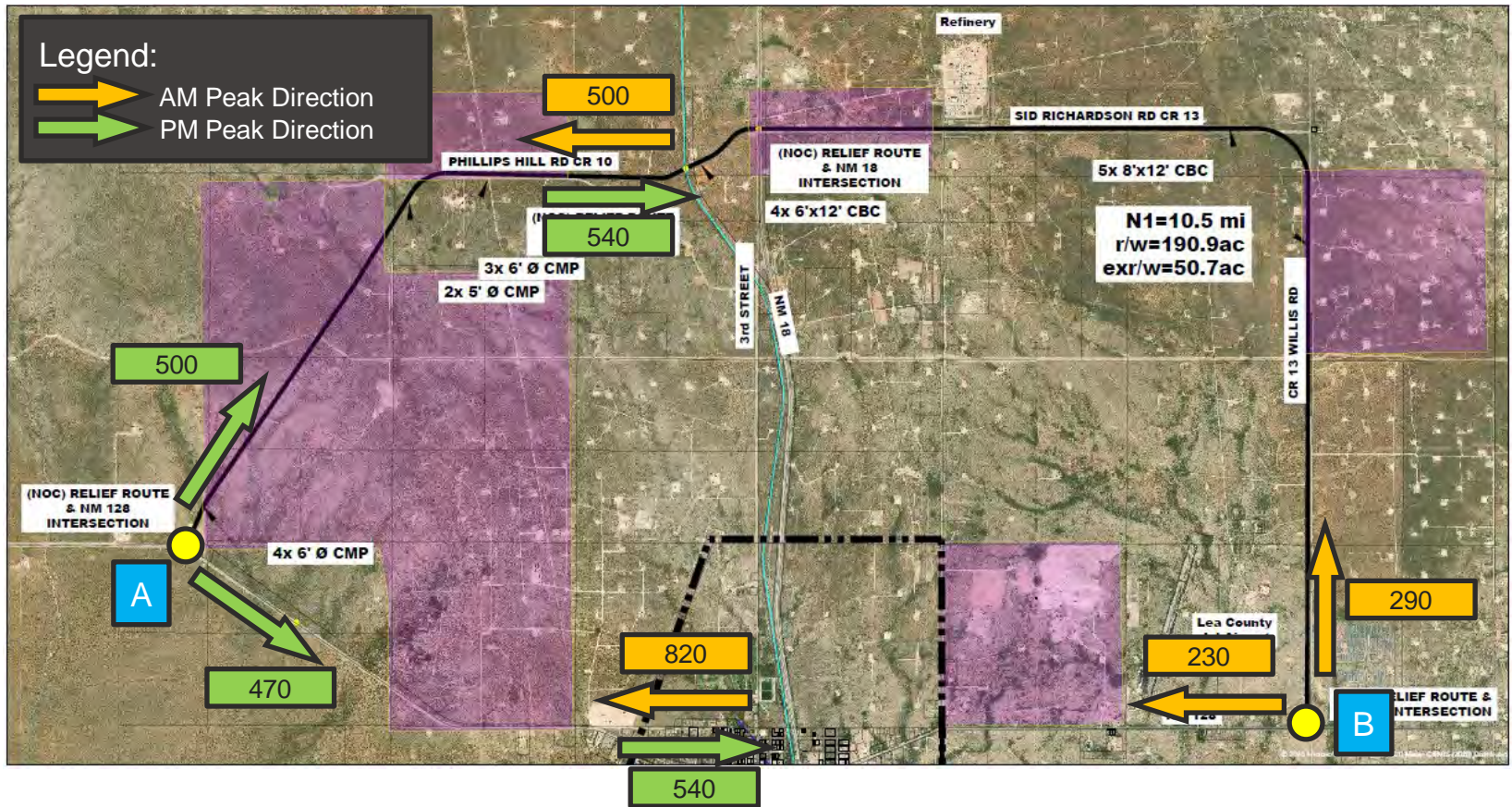
No-Build Alternative



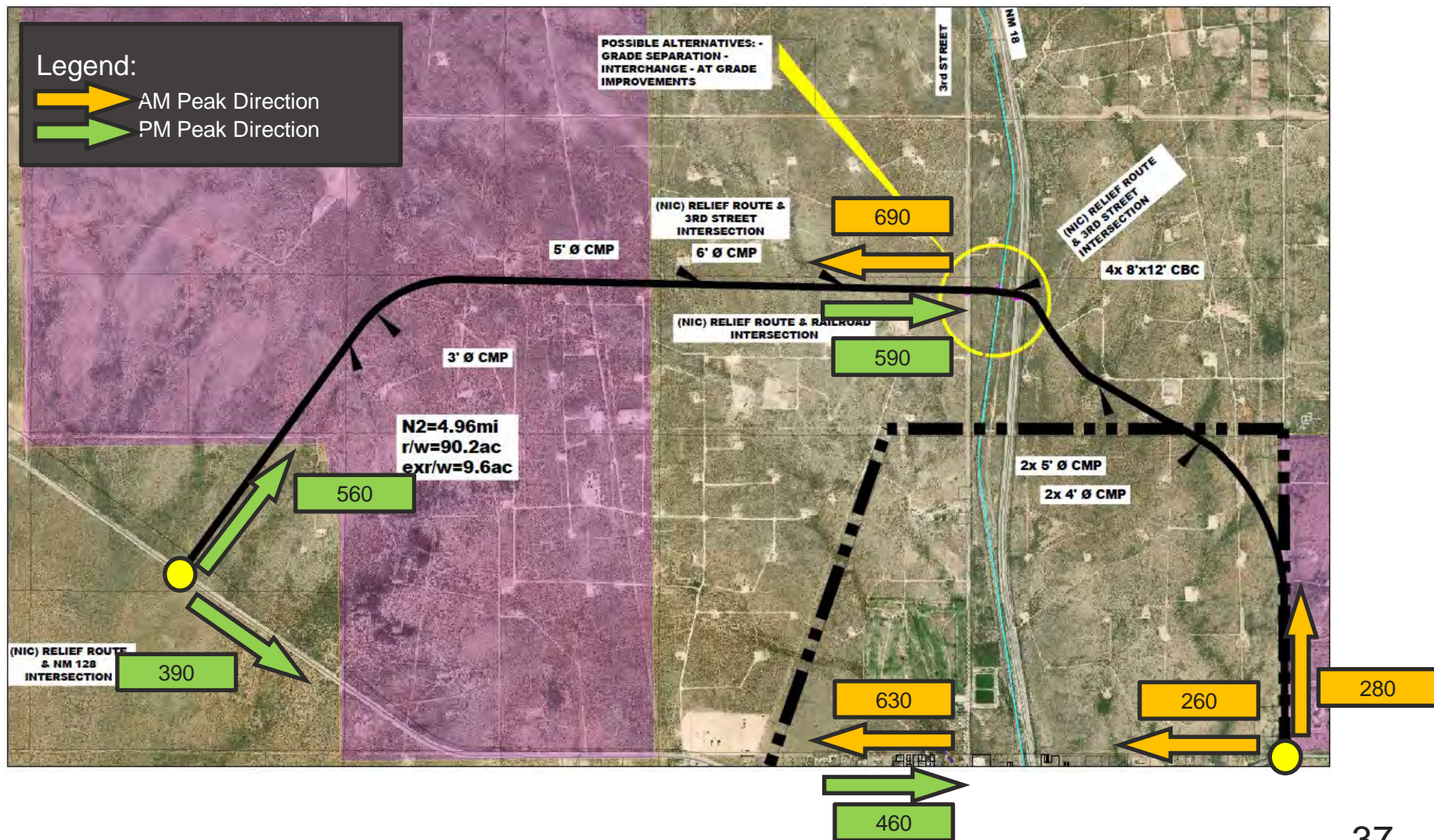
EW Alternative



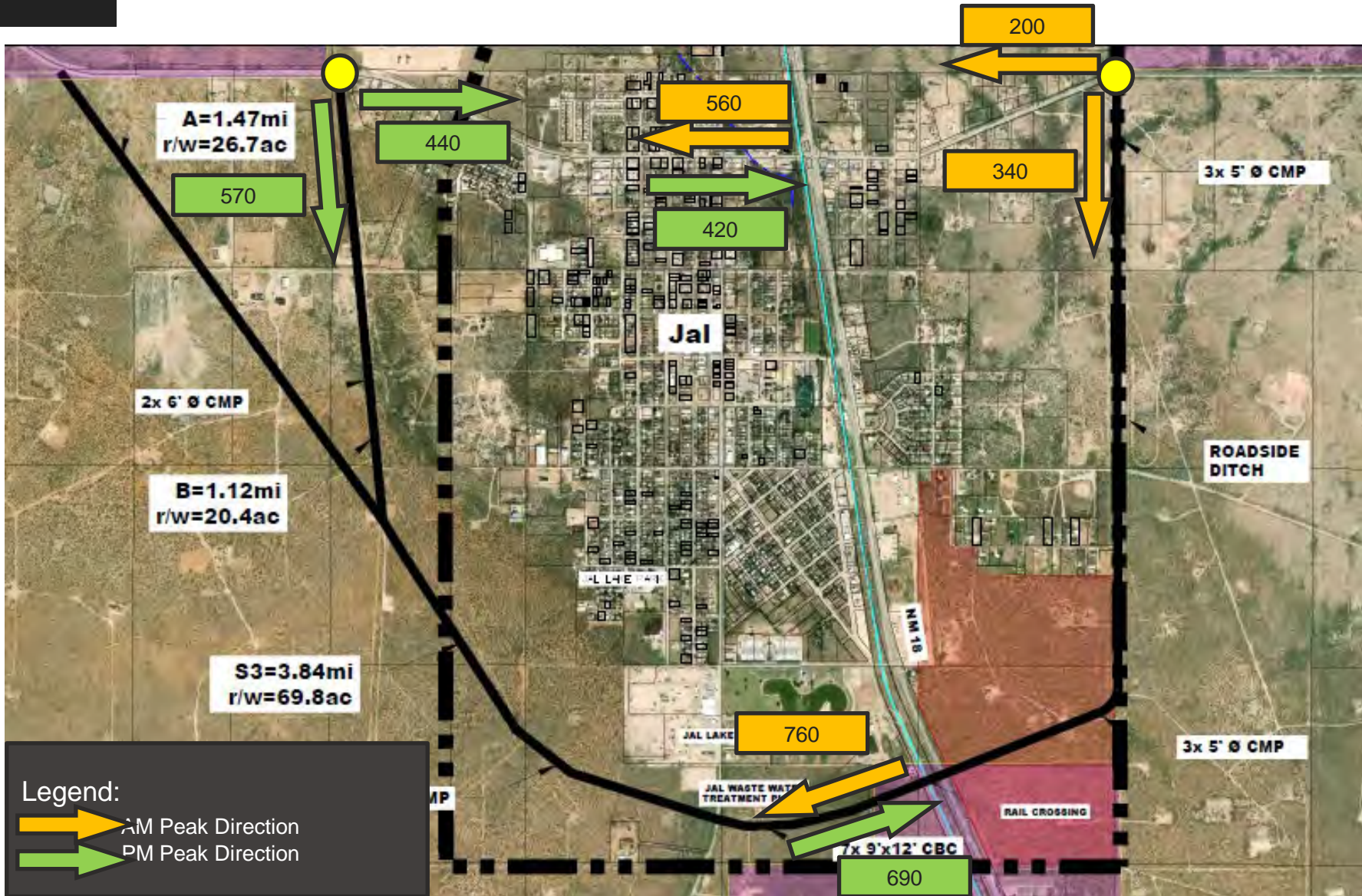
N1 Alternative



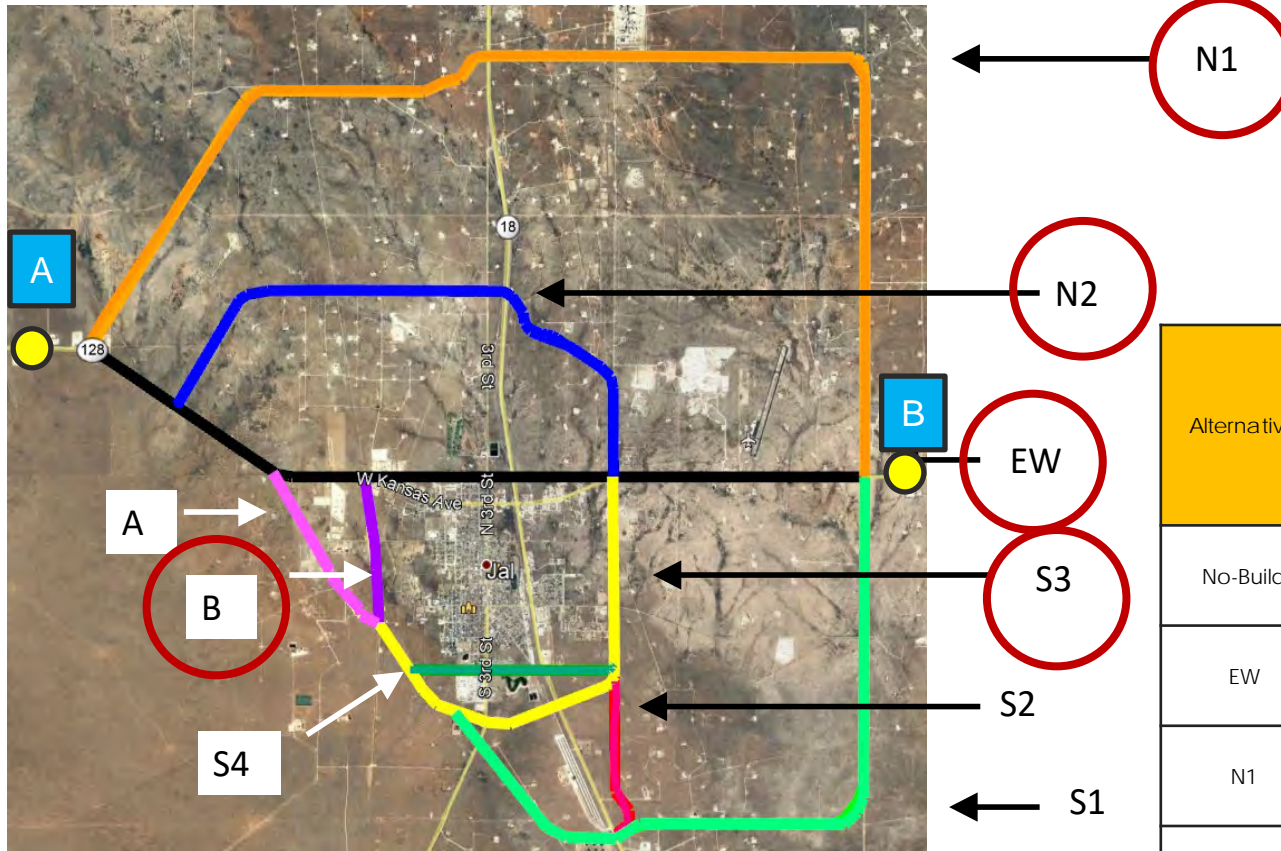
N2 Alternative



S3 Alternative



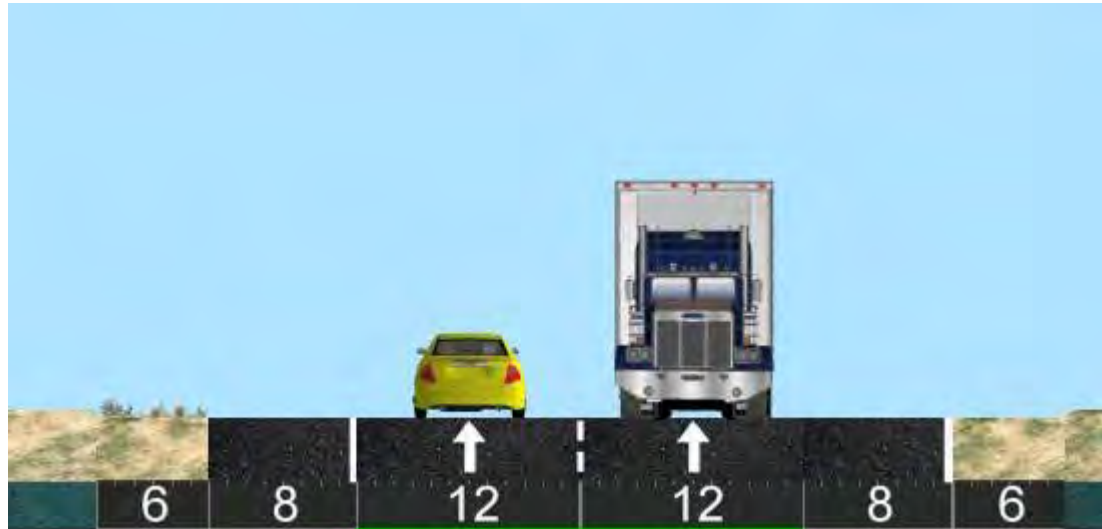
Travel Time Comparison



Alternative	Route Length (mile)	Peak Period Travel Time (min)	
		AM WB	PM EB
No-Build	7.6	26	25
EW	7.6	11	12
N1	11.5	18	22
N2	8.8	15	19
B+S3	10.5	17	20

Rural and Urban Typical Section Concept.

- Rural
- Urban



Preliminary Evaluation Factors

- How well does the alternative respond to Purpose and Need?
- Stakeholder objective
- Alternative Length
- Projected use (demand) if constructed (Traffic model)
- Projected travel time
- Constructability
- R/w footprint
- Adjacent Land Ownership

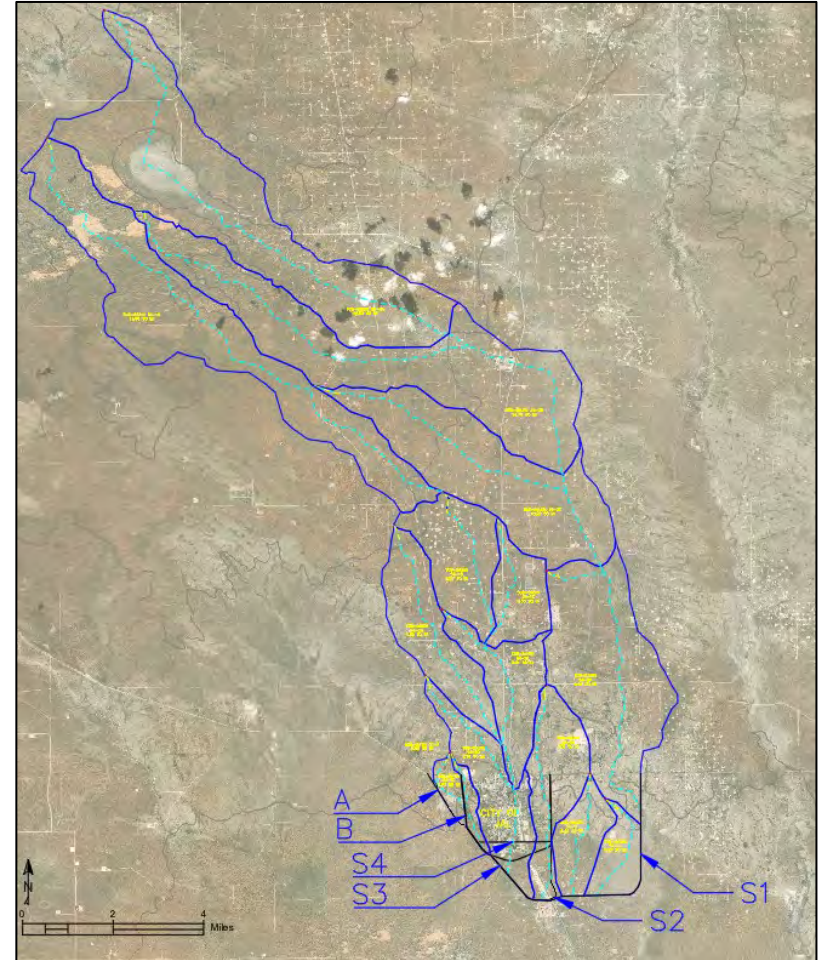
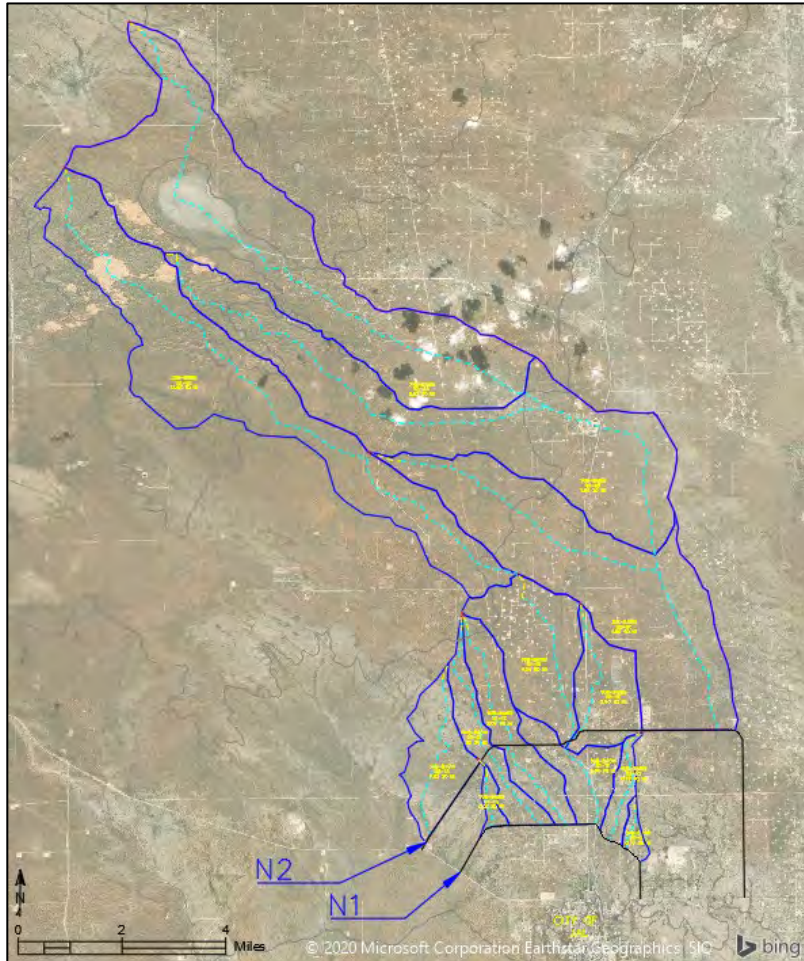
Evaluation Factors (Cont.)

- Existing constraints
- Ability (ease) to incorporate access control
- Right-of-way needs
- Utilities
- Environmental
 - Cultural Resources
 - Surface disturbance required to construct Alt
 - Grazing land removed
- Utilities
- Geotechnical
- Drainage
- Railroad impacts
- Conflict points such as Intersections, driveways, railroad crossings etc.

Hydrology Summary

Alternatives Basin Delineation

South Alternatives Basin Delineation



Brief Introduction to the Project Website

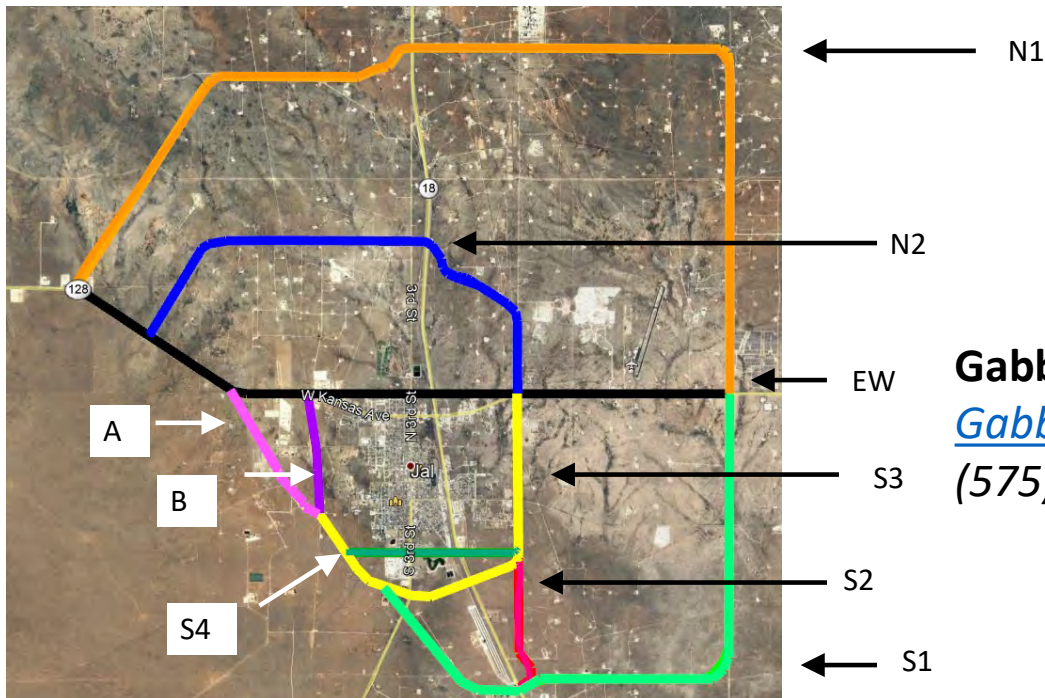
- Link to access from City website
- Purpose
- Major tabs
 - Home, About, Contact, FAQs, Meetings, Resources, Project Development Phases
- Place for comment and questions and responses

Next Steps

- Receive public input and incorporate into the process
- Complete the evaluation process and conduct evaluation
- Screen and select alternatives to carry forward/eliminate from further consideration
- Conduct Detailed Evaluation
- Conduct and complete environmental documentation

Questions and Comment

Comments kindly requested with two
(2) weeks (July 28, 2020)



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