WELCOME

Public Meeting For
I-35 Over Waterloo Road
Interchange
In Oklahoma & Logan Counties

January 28, 2016

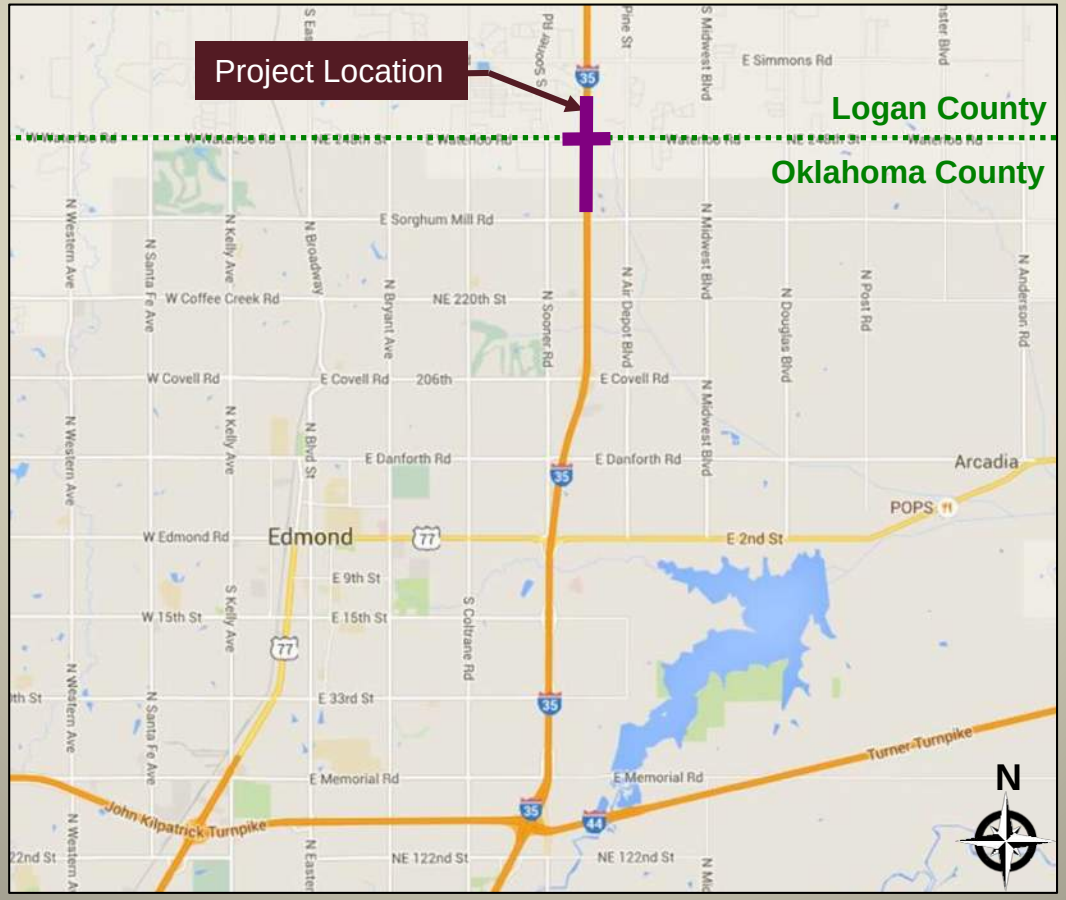
TEAM INTRODUCTIONS

- **ODOT**
  - Brian Taylor - Division 4 Engineer
  - Joe Echelle - Division 4 Construction Engineer
  - Siv Sundaram - Environmental Programs
  - Tim Vermillion - Environmental Project Manager
  - Daniel Nguyen - Project Management
  - Caleb Austin - Roadway
  - Eduardo Elder - Roadway
  - Steve Jacobi - Bridge
  - Teresa Stowe - Right-of-Way & Utilities
  - Frank Roesler III - Public Involvement Officer

- **GARVER**
  - Jenny Sallee - Project Manager
  - Kirsten McCullough - Environmental Lead
  - Mike Spayd - Traffic Lead
  - Lacee Stanley - Environmental Specialist
  - Andrew Snyder - Roadway Lead

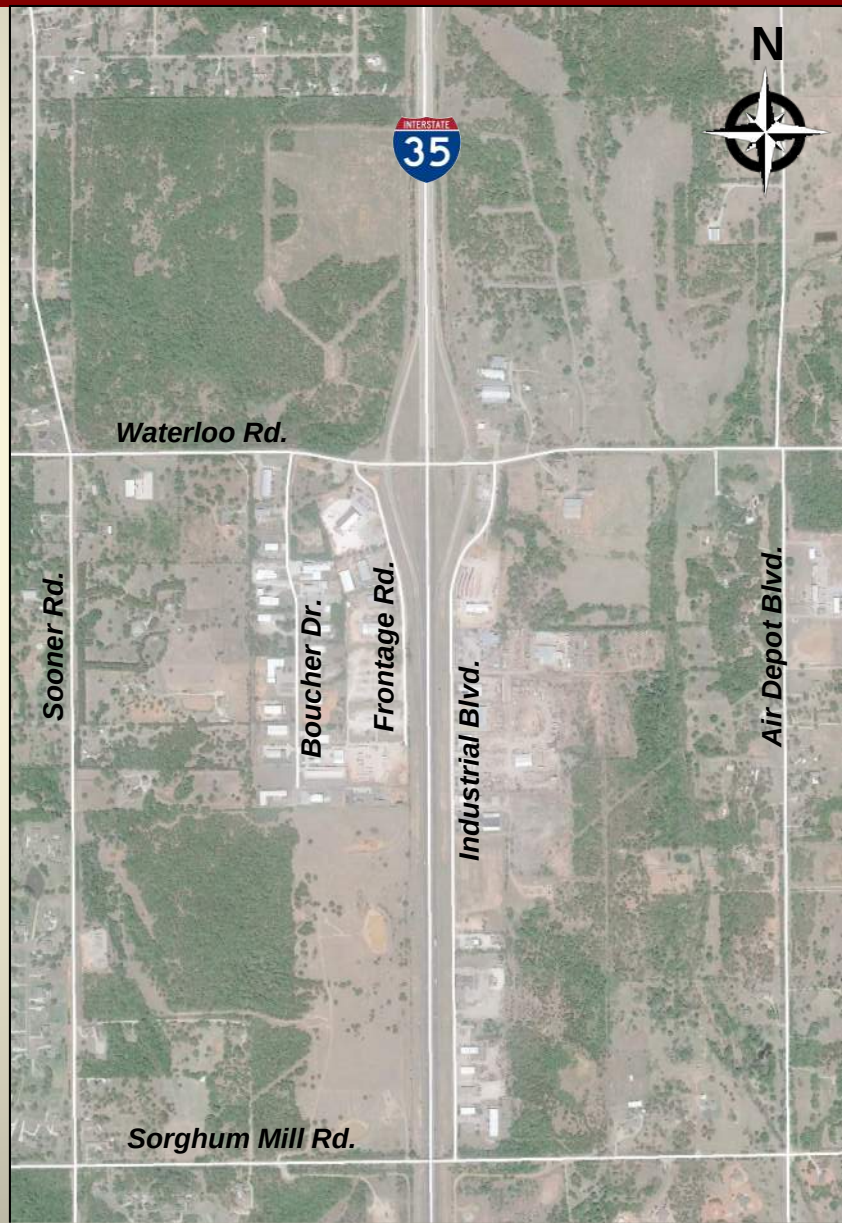
PURPOSE OF THIS MEETING

…is to Inform the Public and Solicit Comments About the Proposed Improvements to I-35 Over Waterloo Road Interchange in Oklahoma and Logan Counties

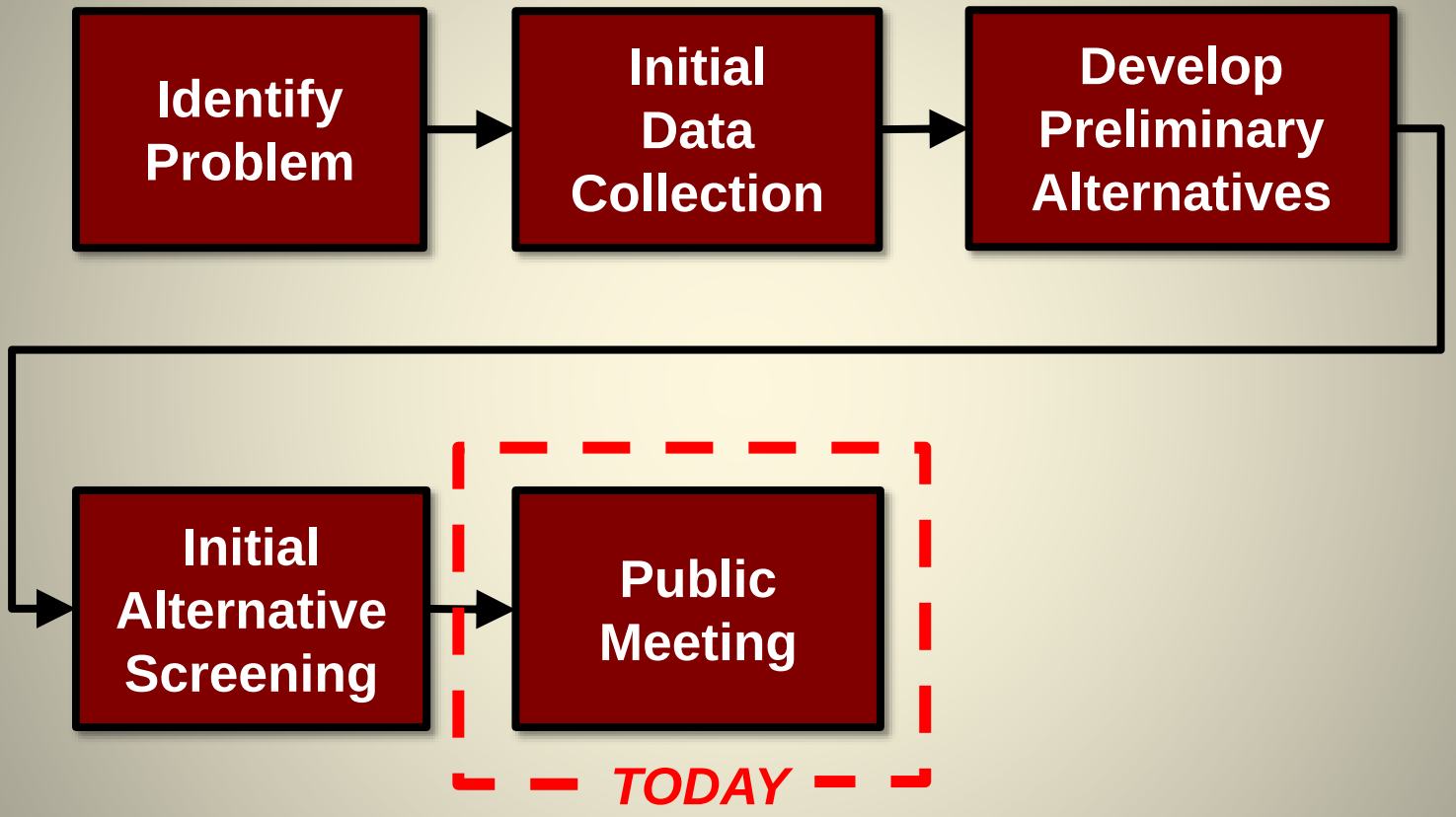


PURPOSE OF THE PROJECT

…is to Improve Safety and Accommodate Existing and Future Traffic Demand at the I-35 and Waterloo Road Interchange and Improve the Vertical Clearance Under the Existing Bridge



PROJECT DEVELOPMENT PROCESS



PROJECT AREA INFORMATION

- **General Data**
  - I-35
    - 4-Lane Divided Highway With 10-ft Outside Shoulders and 4-ft Inside Shoulders
    - Speed Limit is 70 mph
    - Twin Bridges Over Waterloo Road
    - Projected Traffic (2040): **81,200** Vehicles/Day (**16%** Trucks)
  - Waterloo Road
    - 2-Lane Roadway Without Shoulders
    - Speed Limit is 45 mph
    - Projected Traffic (2040): **33,100** Vehicles/Day (**12%** Trucks)
  - Diamond Interchange With 4 Ramps

Identify Problem → Initial Data Collection → Preliminary Alternatives → Alternative Screening

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EXISTING TRAFFIC

- **Two Lane Threshold: 10,000 veh/day**
  - Existing Traffic (2014): 11,500 veh/day
  - Diverted Traffic
- **Heavy Traffic Movements**
  - AM Peak – Southbound On Ramp ⇨
  - PM Peak – Northbound Off Ramp
- **Signals Warranted Today**

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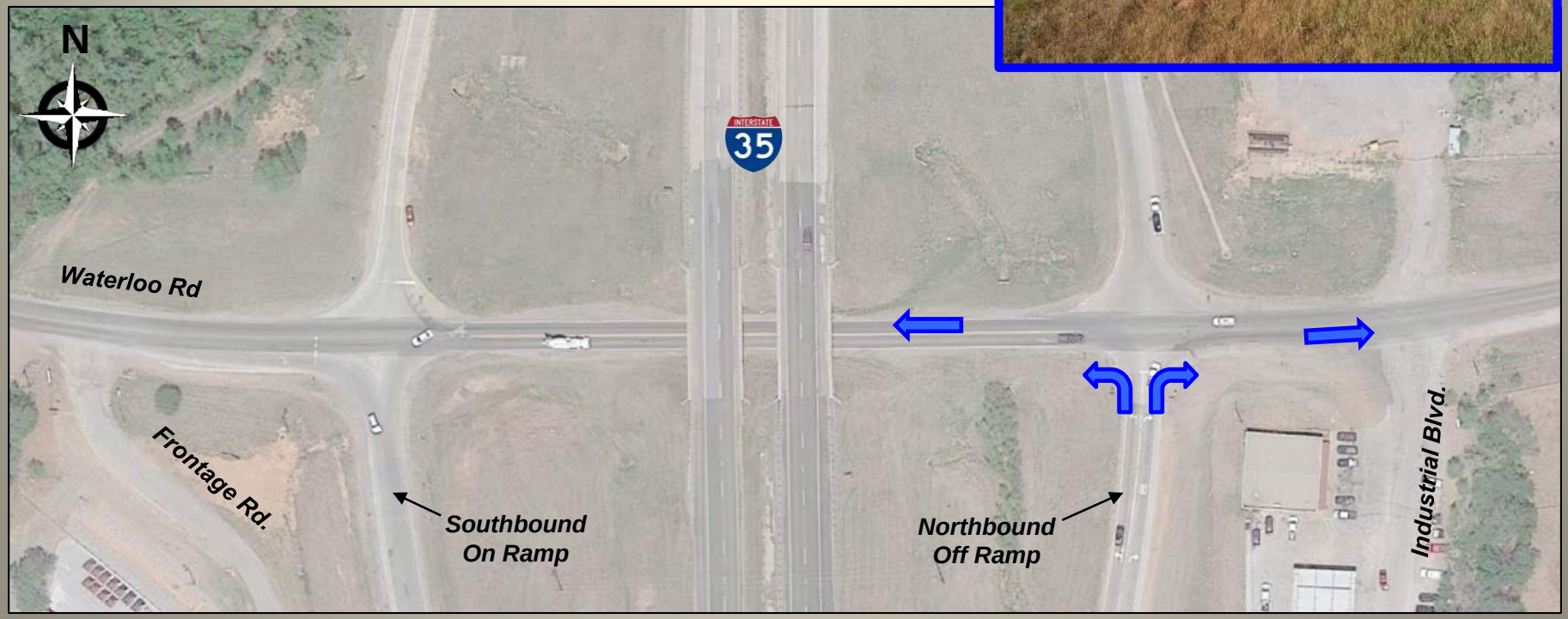
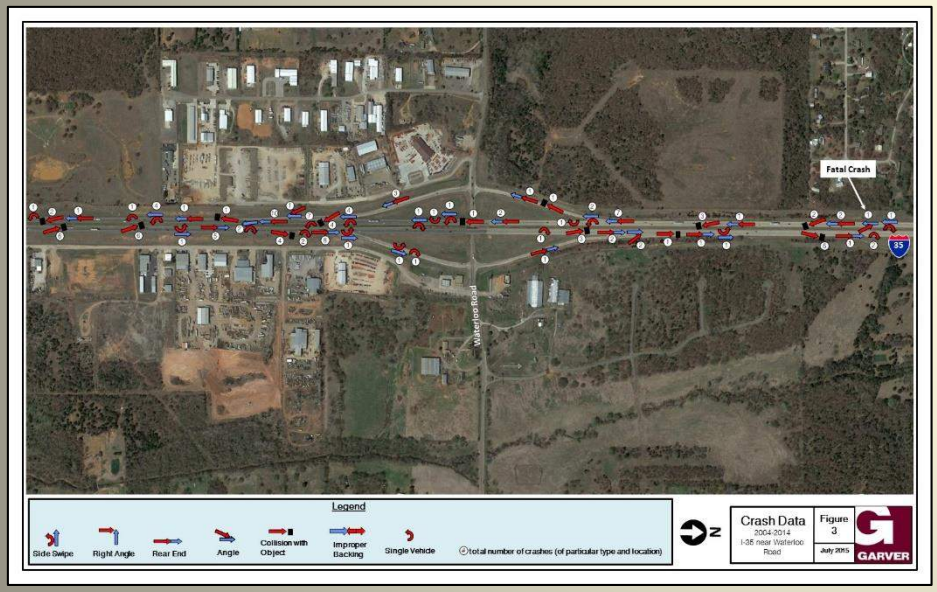
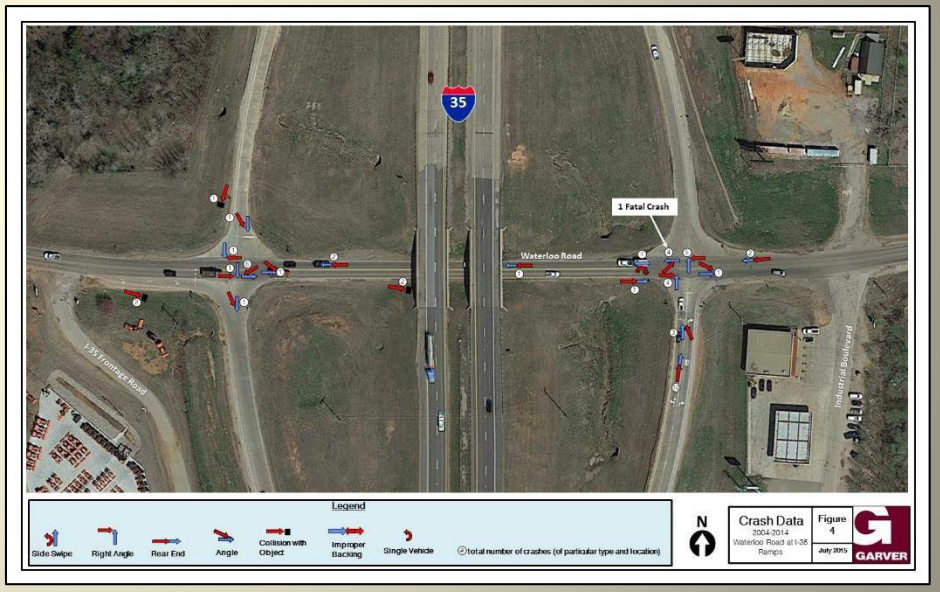


COLLISION DATA

- **Collision Data**
  - Total: 172 Documented Accidents (2004-2014)
    - 126 Personal Property Damage
    - 46 Injury (With 2 Fatal Accidents)
  - Over 44% Rear End or Turning Collisions





Identify Problem | Initial Data Collection | Preliminary Alternatives | Alternative Screening

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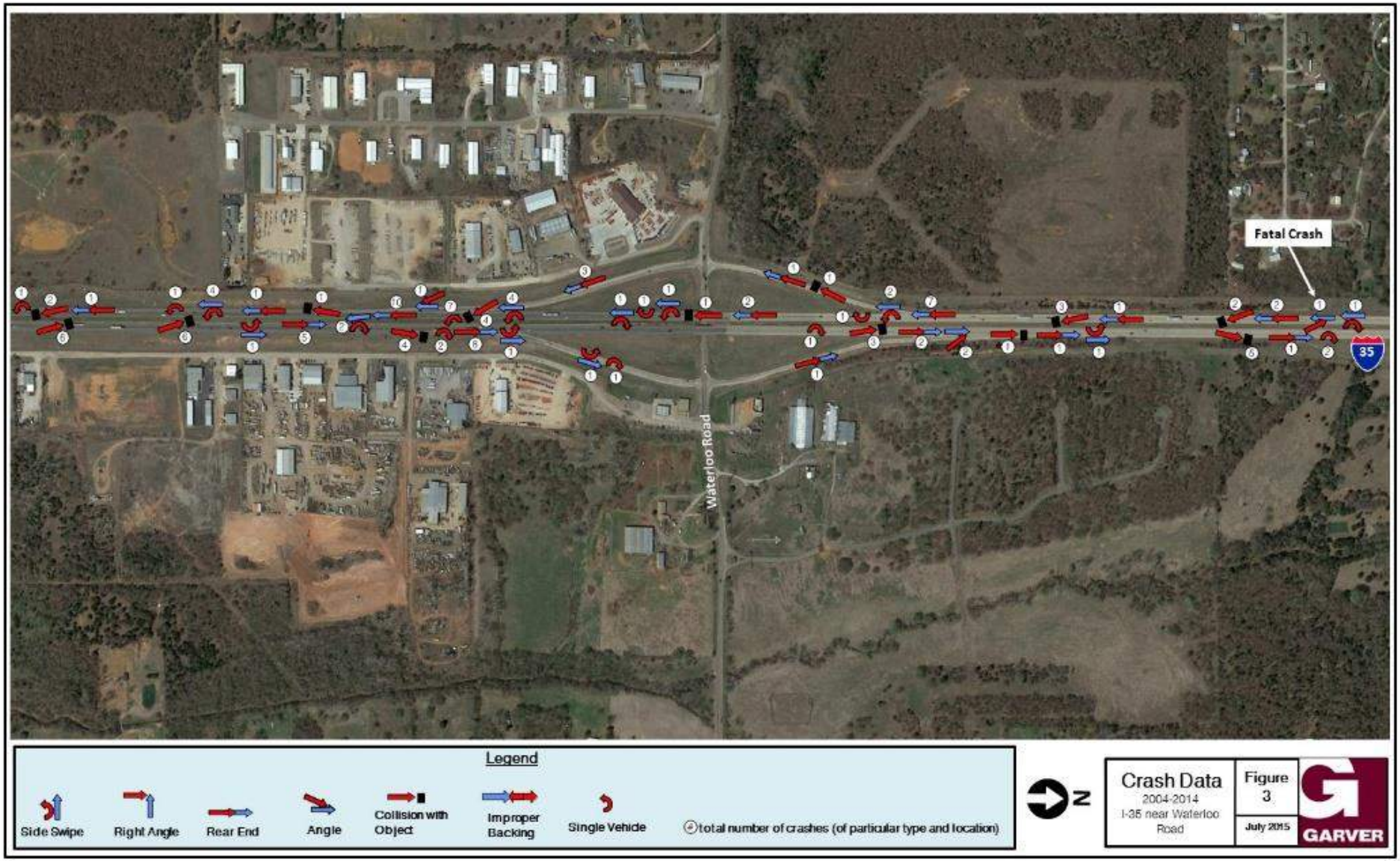

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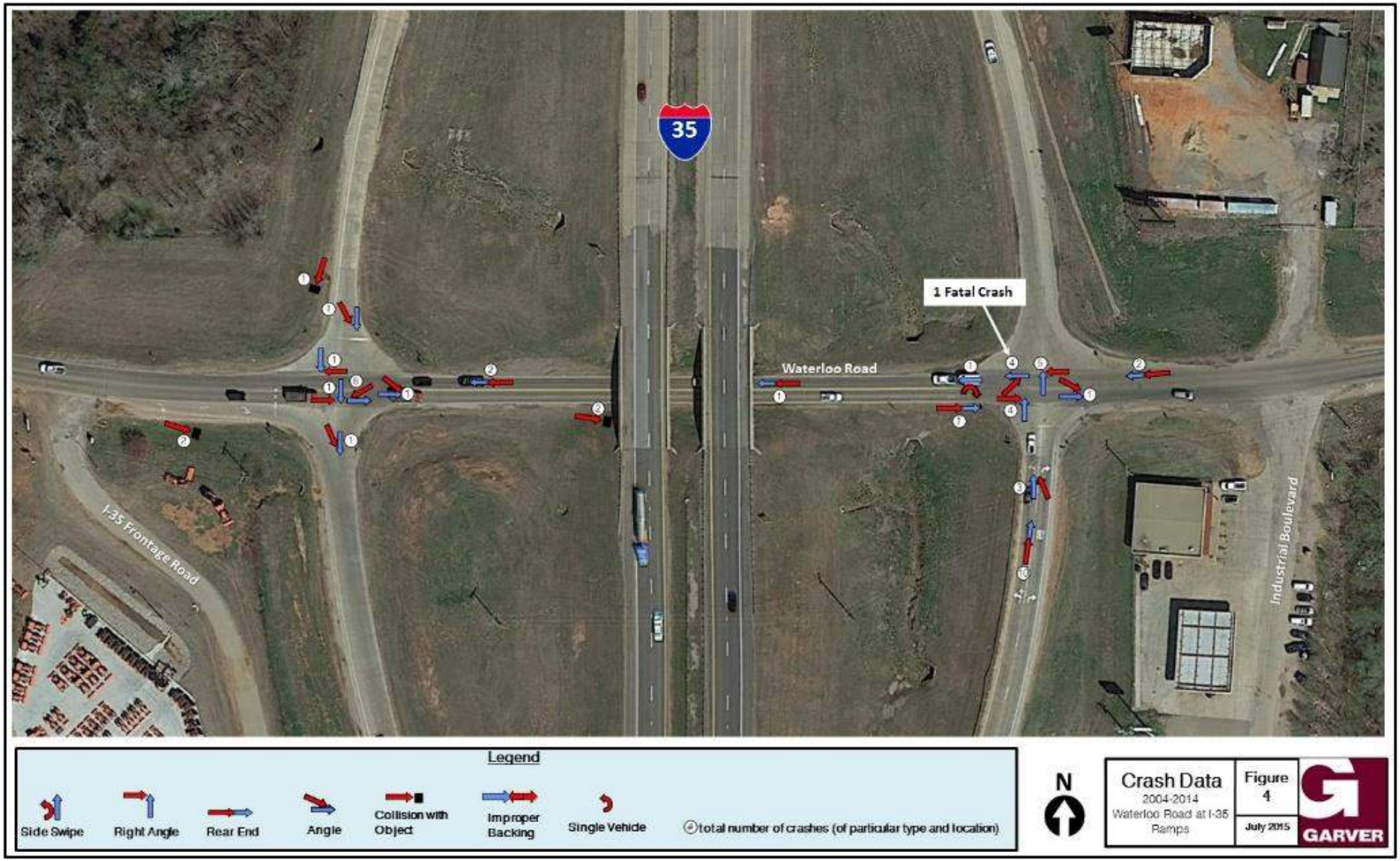

EXISTING CONDITIONS WARRANT IMPROVEMENT

- **Roadway Deficiencies**
  - Capacity
    - I-35
    - Waterloo Rd. – Turn & Thru Lanes
  - Narrow Shoulders
  - Vertical Curves
    - Under Bridge
    - East of Industrial Boulevard
  - Proximity of Side Roads
  - Sight Distance

Identify Problem → Initial Data Collection → Preliminary Alternatives → Alternative Screening

EXISTING CONDITIONS WARRANT IMPROVEMENT

- **Existing Bridge Conditions**
  - Twin Structures Built in 1958 (57 Years)
  - Structural Condition - Fair
  - Functionally Obsolete
    - Vertical Clearance = 13’-11”
    - Horizontal Clearance = 38’
    - Clear Roadway Width = 38’

Identify Problem | Initial Data Collection | Preliminary Alternatives | Alternative Screening


PROJECT CONSTRAINTS

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- **Data Collection Area**
  - Encompassed all Alternatives
  - Database Research and Field Reconnaissance

PROJECT CONSTRAINTS

- **Identified Project Constraints**
  - Intersections
  - Residences/Businesses
    - Driveways
    - Local Access
  - Utilities – Centurion Pipeline
  - Proposed Trinity Development
  - Environmental Considerations

Identify Problem → **Initial Data Collection** → Preliminary Alternatives → Alternative Screening

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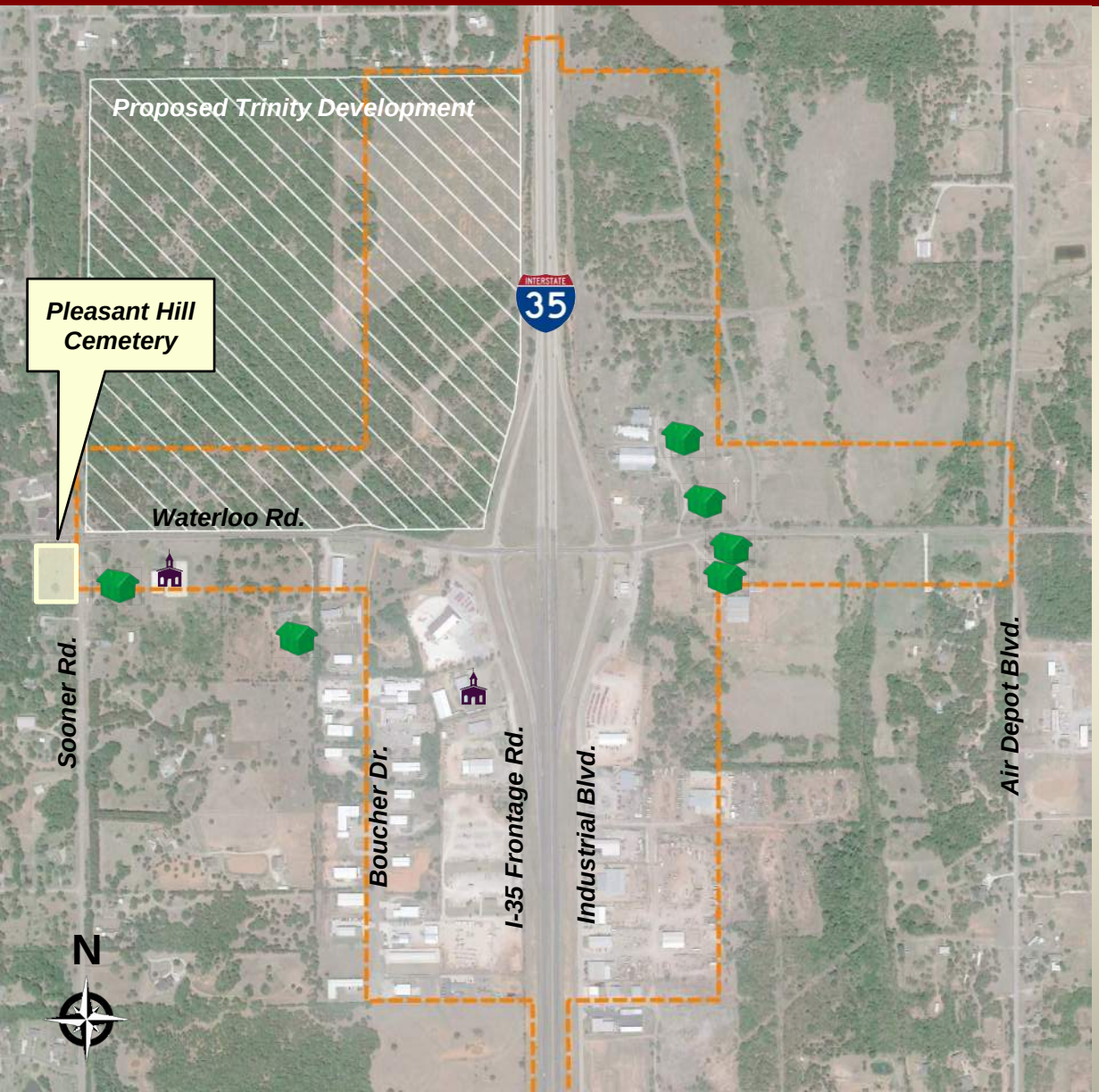
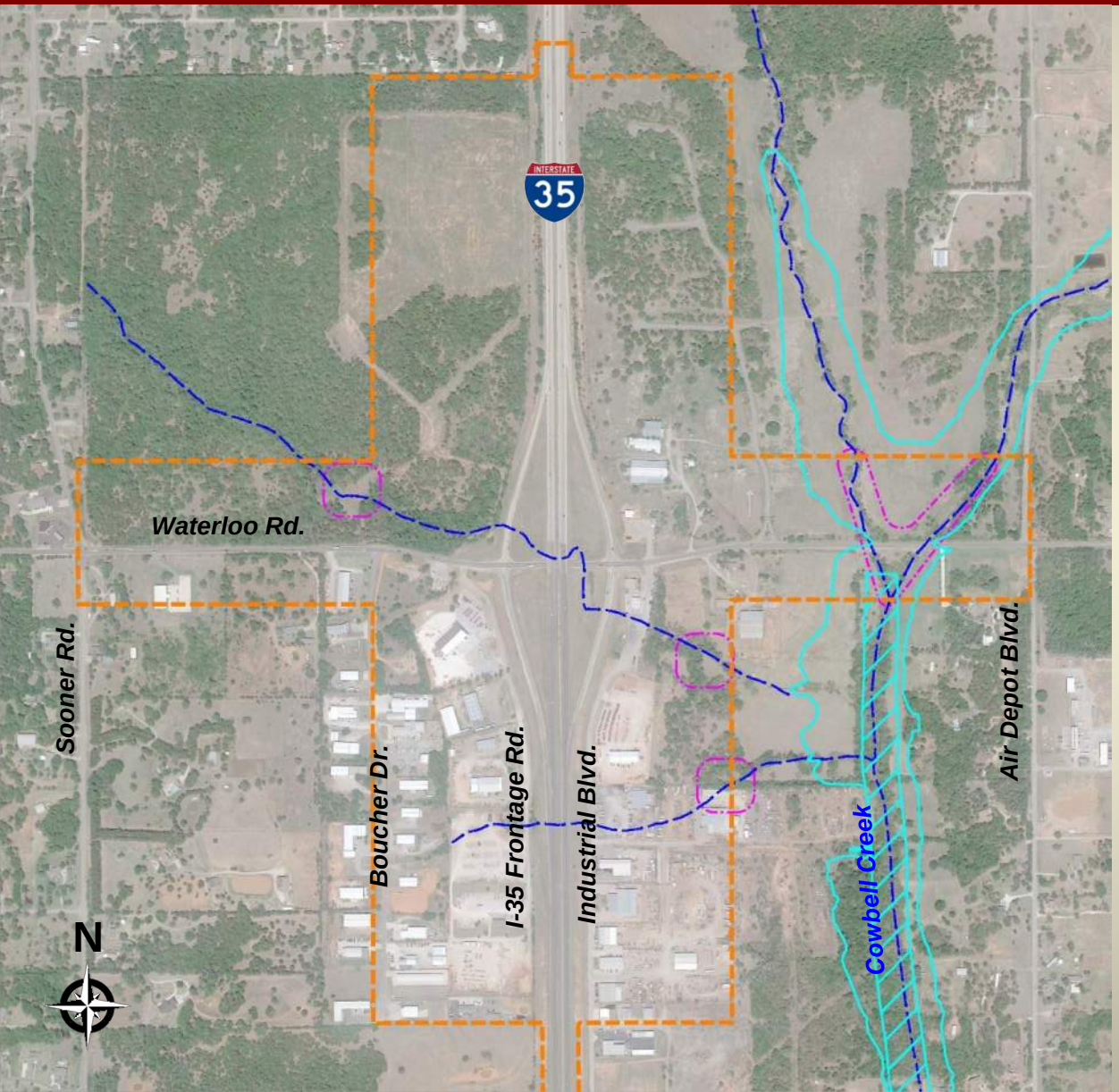


- **Homes and Businesses**
  - A Few Scattered Homes With Access off Waterloo Road
  - Primarily Commercial & Industrial
  - Access is Provided off of Boucher Drive and Frontage Rd./Industrial Blvd.
  - Proposed Trinity Development (Mixed Use)
- **Churches and Cemetery**

ENVIRONMENTAL CONDITIONS



- **Streams and Wetlands**
  - Cowbell Creek Flows South Parallel to I-35
  - Several Tributaries Cross Through the Study Area
  - FEMA Floodplain Associated With Cowbell Creek

ENVIRONMENTAL CONDITIONS

- **Oil/Gas Wells and Hazardous Materials Sites**
  - Gas Station With History of Leaking Underground Storage Tanks
  - Several Sites That May Store Hazardous Materials
  - Oil & Gas Wells and Centurion Pipelines (Active and Abandoned)


DEVELOPMENT
OF
ALTERNATIVES

DEVELOPMENT OF ALTERNATIVES

- **Proposed Design Criteria**
  - Waterloo Road
    - 5-Lane With Two-Way Left Turn Lane
    - Design Speed – 45 mph
  - I-35
    - 6-Lane With 12-ft Shoulders & Median Barrier
    - Design Speed – 75 mph
  - Minimum Bridge Clearance for Traffic - 16’-9”
  - Accommodate 2040 Traffic
    Includes Trinity Development with 28,000 external trips per day

Identify Problem → Initial Data Collection → **Preliminary Alternatives** → Alternative Screening

DEVELOPMENT OF ALTERNATIVES

- **Alternatives Overview**
  - Similarities
    - I-35
      - ✓ 6 Lanes With Auxiliary Lane
      - ✓ 4 Lanes

      (Traffic Drop – 12,000 Vehicles/Day in 2014)

      (Traffic Drop – 23,000 Vehicles/Day in 2040)
      - ✓ Vertical Profile
    - Side Roads – Re-align/Widen
    - Project Extents
    - Signalized Intersections
  - Differences
    - Waterloo Road Improvements to Accommodate Future Traffic Patterns

Identify Problem → Initial Data Collection → **Preliminary Alternatives** → Alternative Screening

PROPOSED BRIDGE STRUCTURE

- **Proposed Bridge Structures**
  - I-35 Over Waterloo Road *(for all Alternatives)*
  - Minimum Vertical Clearance = 16’-9”
  - Three Spans
  - Raise I-35 Approximately 6’
  - Bridge Will Accommodate Future Lanes for I-35

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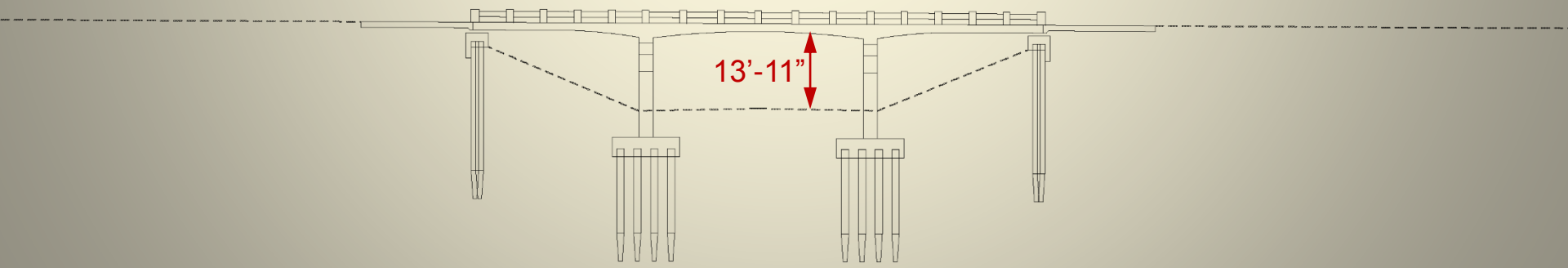

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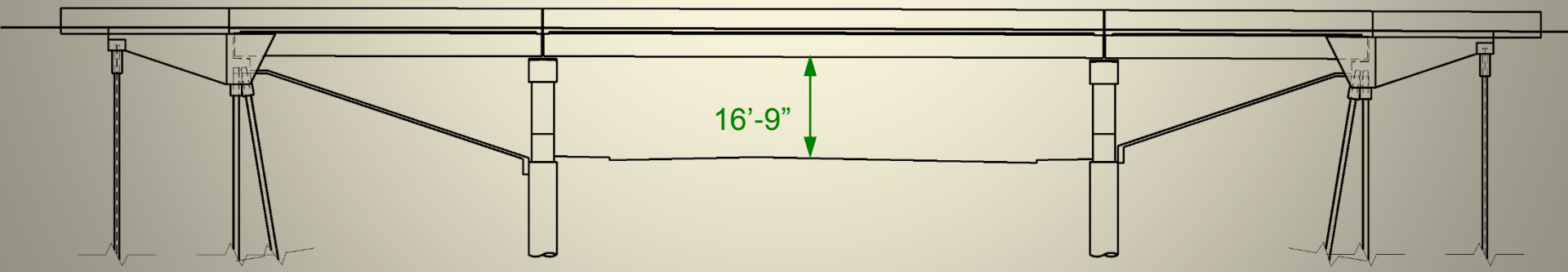

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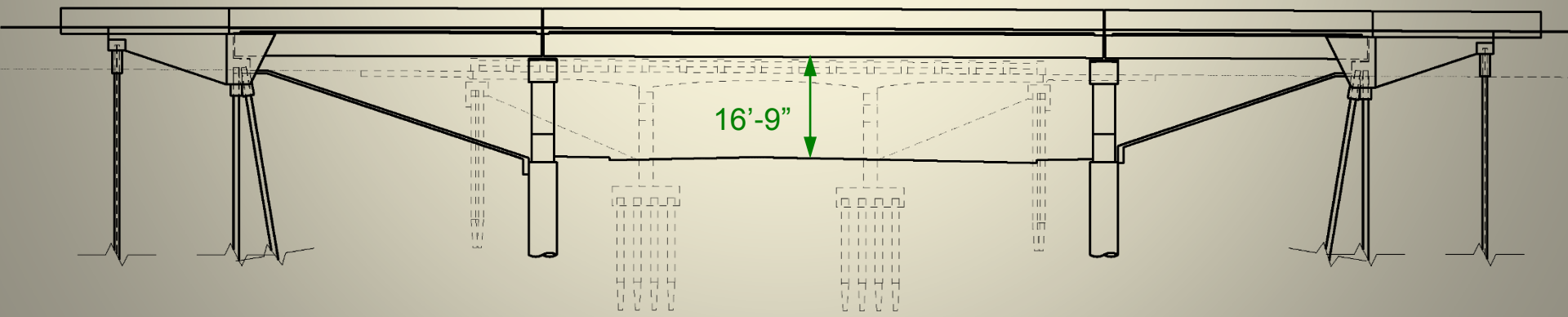
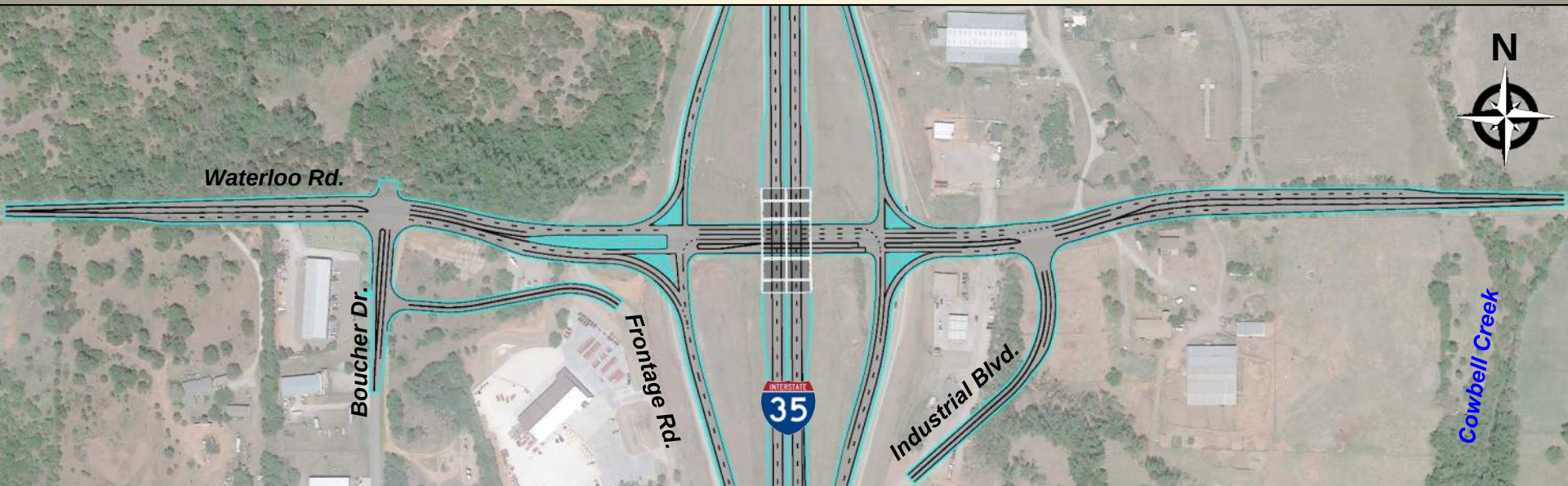


DEVELOPMENT OF ALTERNATIVES

- **Alternative 1**
  - Diamond Interchange – Similar to Existing
  - Waterloo Road
    - Multiple Turn Lanes at Intersections
    - Thru Traffic has to Switch Lanes
    - Local Access Changes

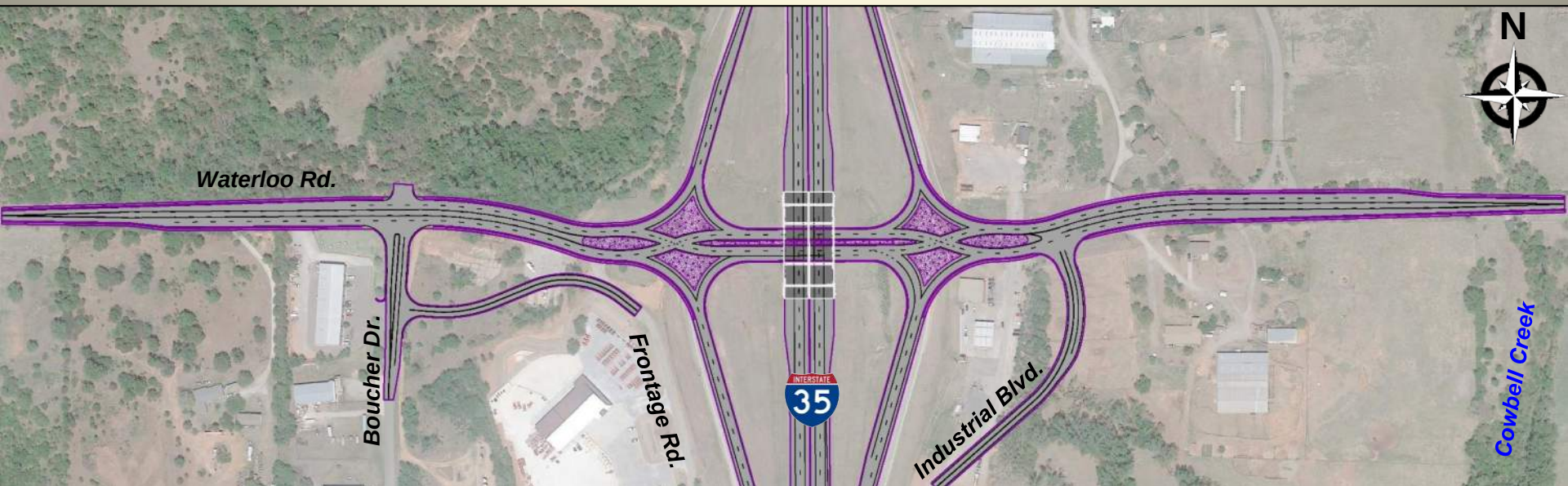


DEVELOPMENT OF ALTERNATIVES

- **Alternative 2**
  - Diamond Interchange With Loop
  - Waterloo Road
    - Dual Right on to Loop
    - Multiple Turn Lanes
    - Local Access Changes

DEVELOPMENT OF ALTERNATIVES

- **Alternative 3**
  - Diverging Diamond Interchange (DDI)
  - Waterloo Road
    - Thru Traffic Stays in the Same Lane
    - Fewer Turn Lanes
    - Local Access Changes



DEVELOPMENT OF ALTERNATIVES

- **Evaluation Criteria**
  - Traffic Operations
  - Impacts to Private Property
  - Impacts to Environmental Resources
  - Constructability and Maintenance of Traffic During Construction
    - I-35 – Maintain 2 Lanes Each Direction
    - Waterloo Rd. – Maintain 1 Lane Each Direction

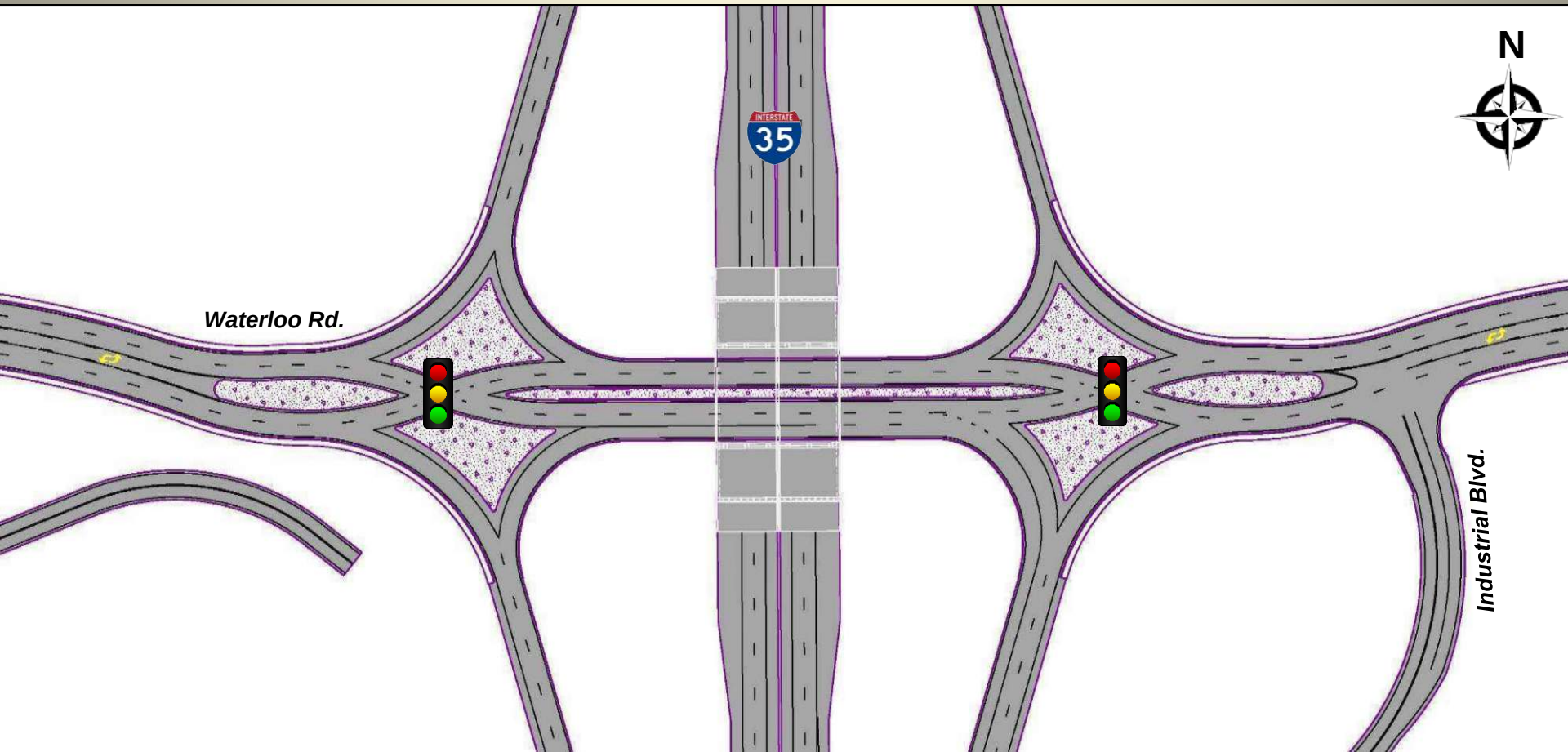
    (During Peak Traffic Periods)
  - Cost – Construction, Right-of-Way, Utilities

- **Alternative 3 DDI – Rose to the Top**
  - Provides Best Solution for Specific Issues at I-35 & Waterloo Road

Identify Problem → Initial Data Collection → Preliminary Alternatives → **Alternative Screening**

ALTERNATIVE 3 - DDI

- **Diverging Diamond Interchange**
  - Left Turns and Right Turns Not Across Traffic
  - Turning Movements for On Ramps Bypass Signals
  - Signals at Crossovers – 2 Phases (No Left Turn Arrows)
  - Fewer Turn Lanes



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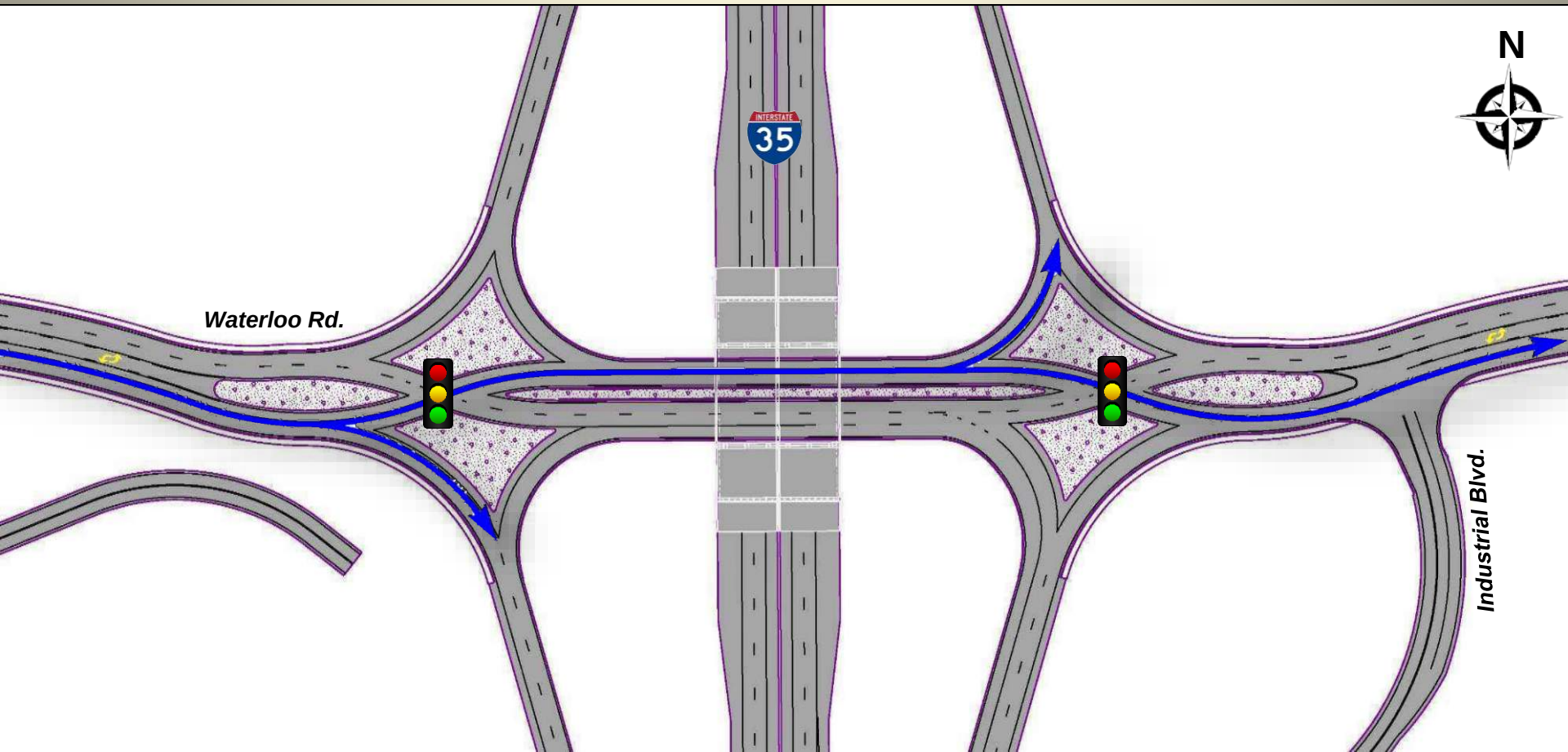

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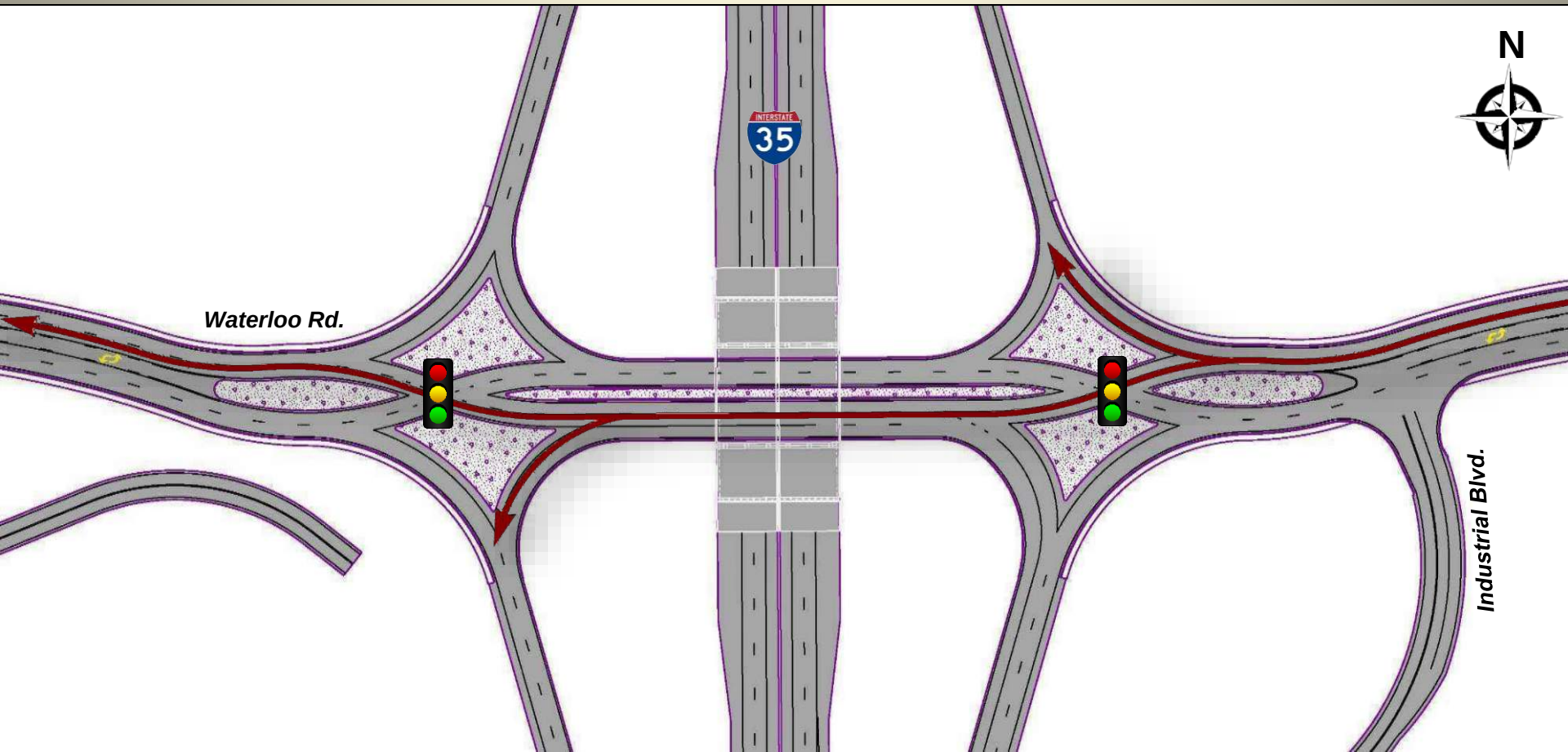

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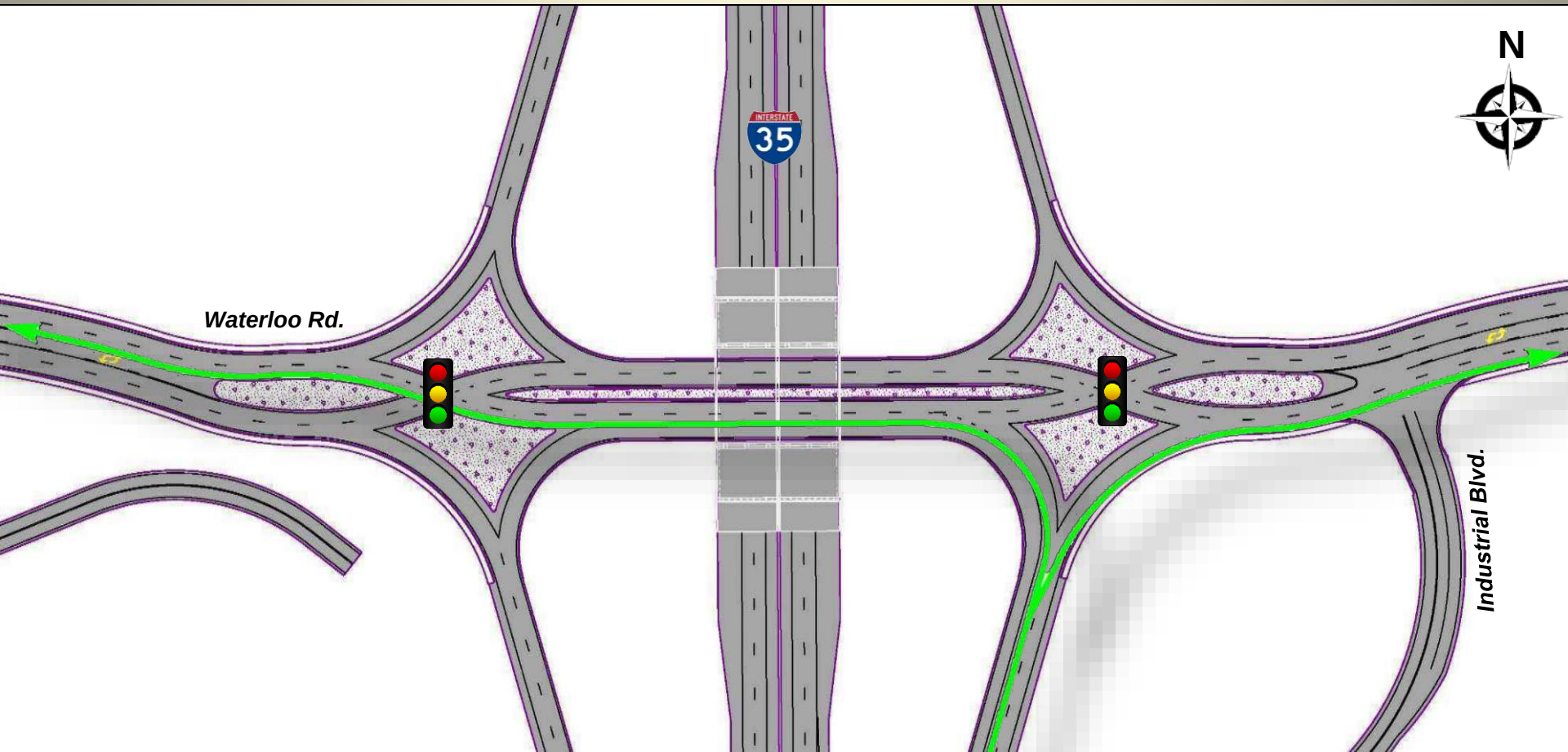

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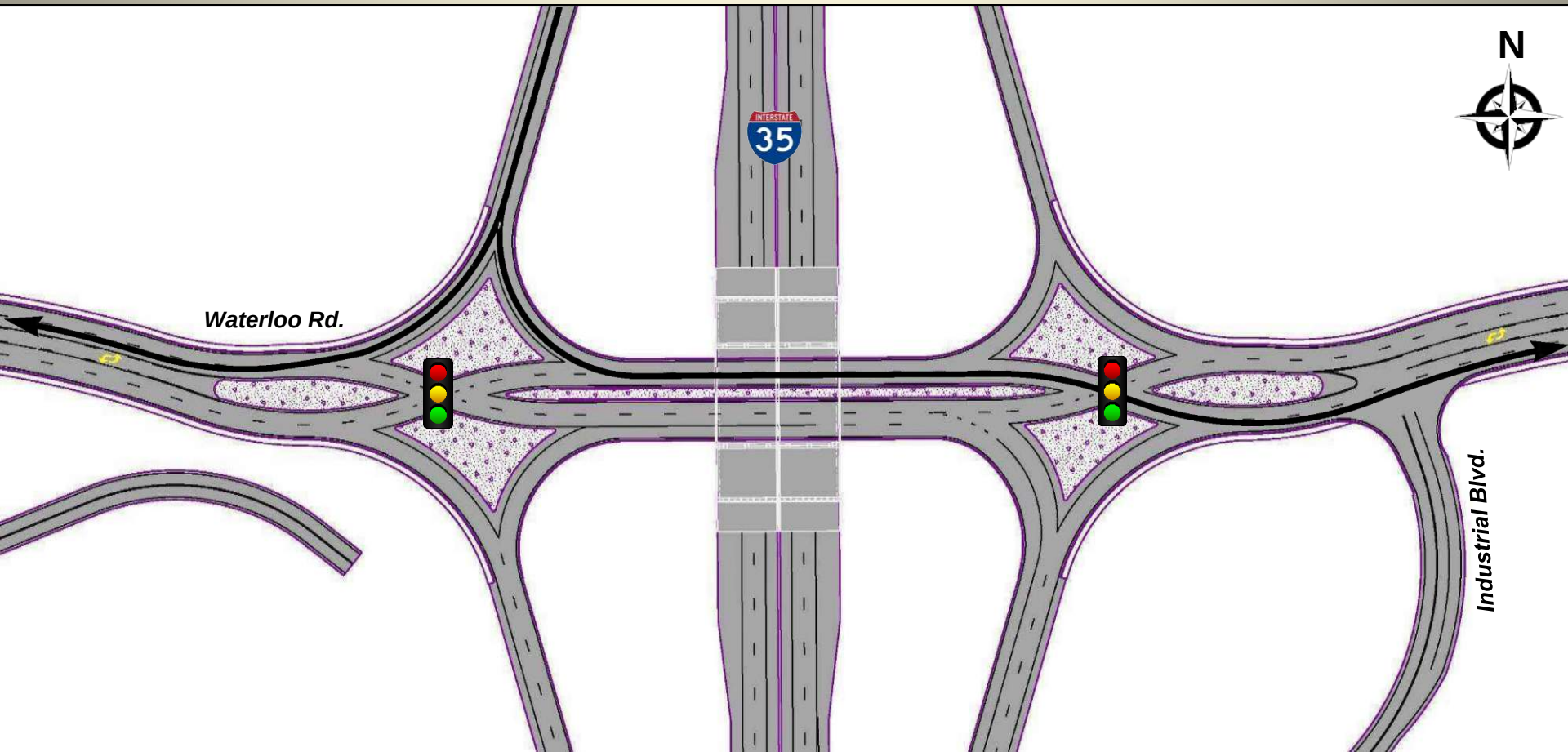
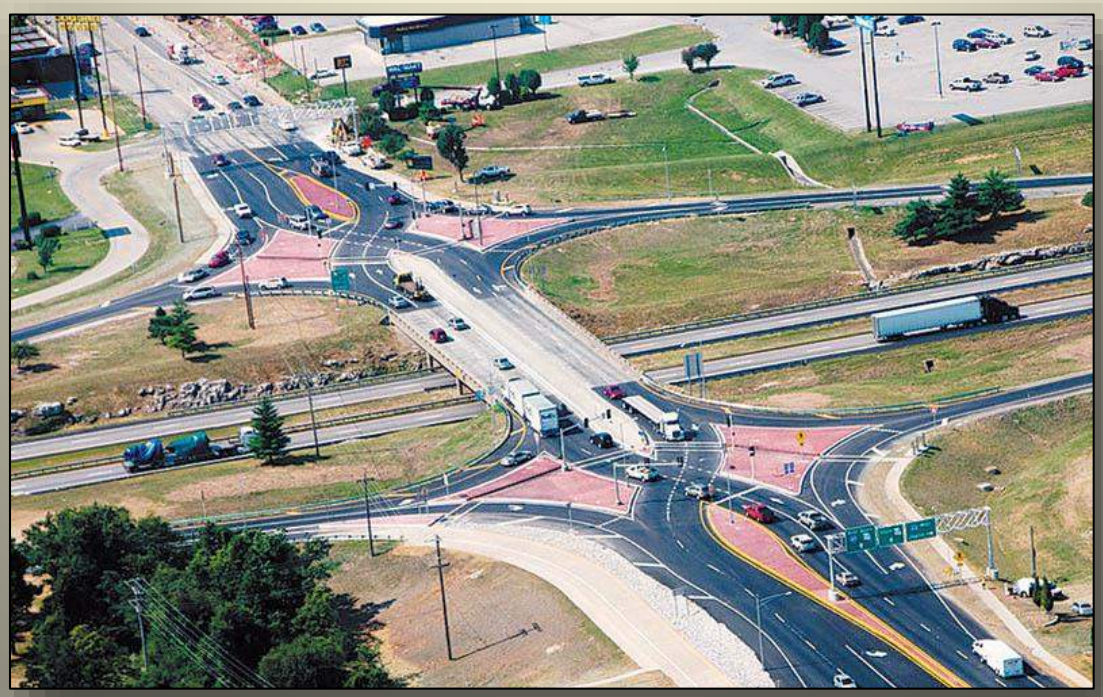


DRIVING THRU A DIVERGING DIAMOND INTERCHANGE

GENERAL INFORMATION - DDI

- **States Where DDI's Are Constructed**
  - Missouri was the First State June 21, 2009 (15 DDIs)
  - 63 Have Opened as of December 1, 2015
- **Performance of DDI**
  - Overall Collision Reduction
  - Less Severity of Collisions due to Slower Speeds
  - Wrong Way Entry to Ramps Virtually Eliminated
  - 97% Approval Rating of Users According to MODOT



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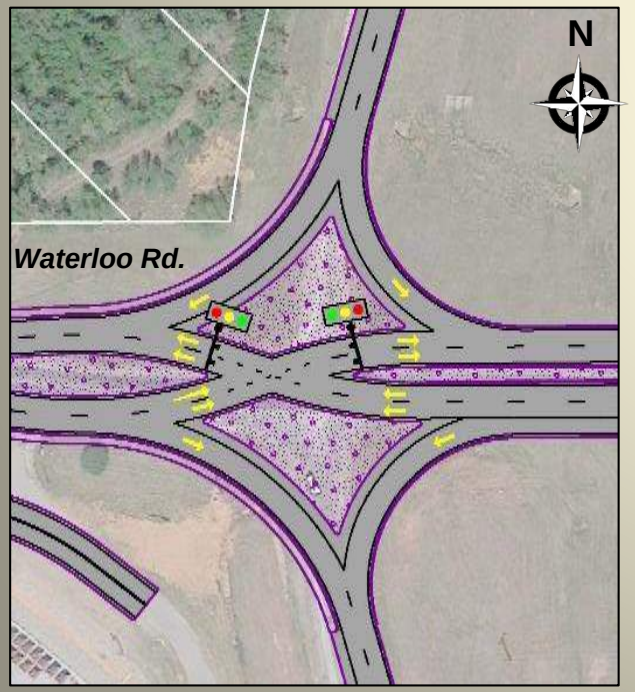

I-35 & WATERLOO ROAD - DDI

- **Benefits at Waterloo Road**
  - Thru Traffic on Waterloo Road Stays in Same Lane
  - Southside Heavy Traffic Movements Accommodated
    - Westside Skewed Due to Trinity Development
    - Northbound Off Ramp – Two Lane Exit With Two-Lane Left Turn
    - Southbound On Ramp – Two Lane Entrance
  - Less Delay than Traditional Diamond Interchange (Alt. 1)
    - 15% Reduction for Average User

POTENTIAL IMPACTS

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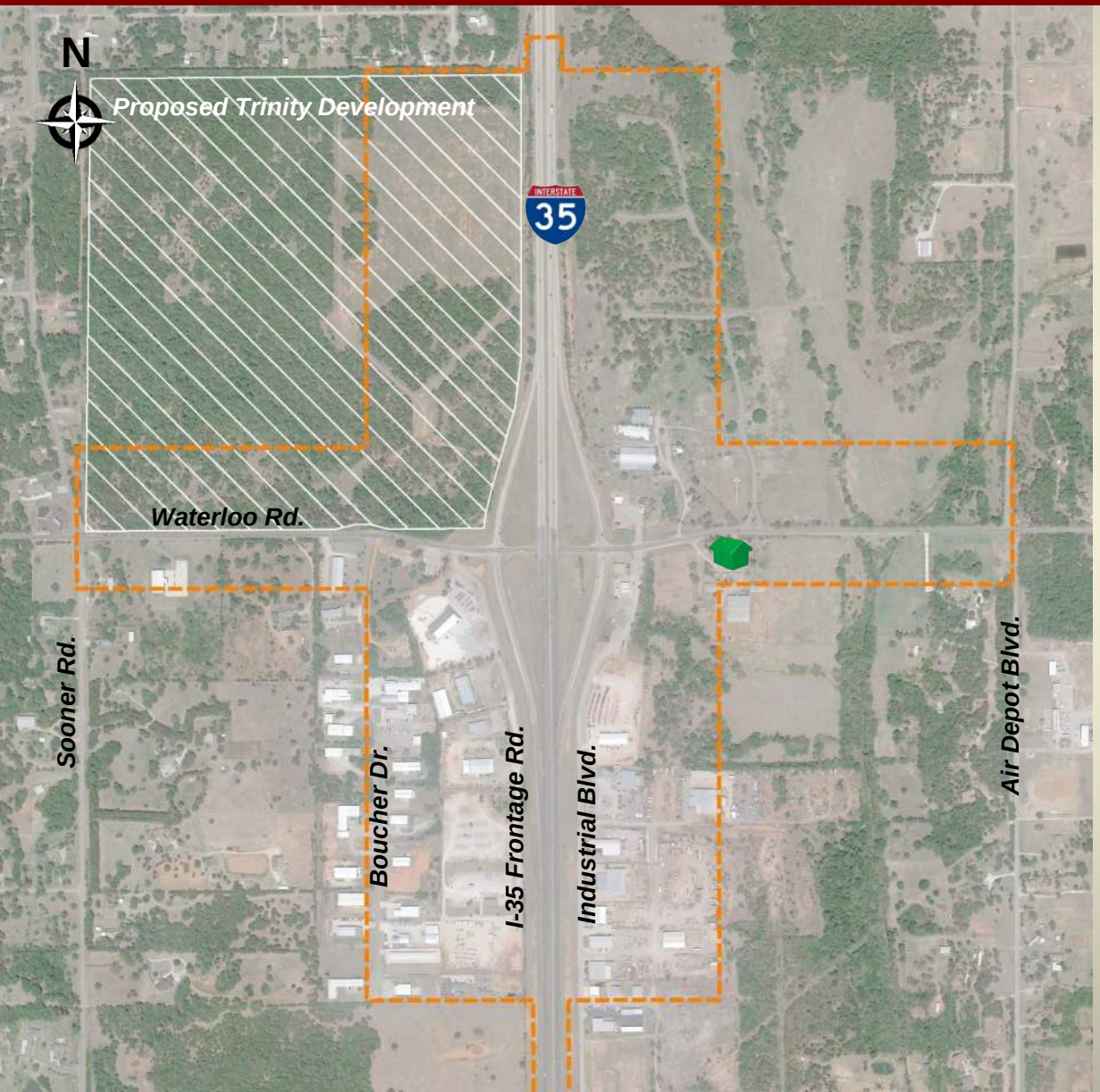

- **Potential Impacts:**
  - One Residential Relocation

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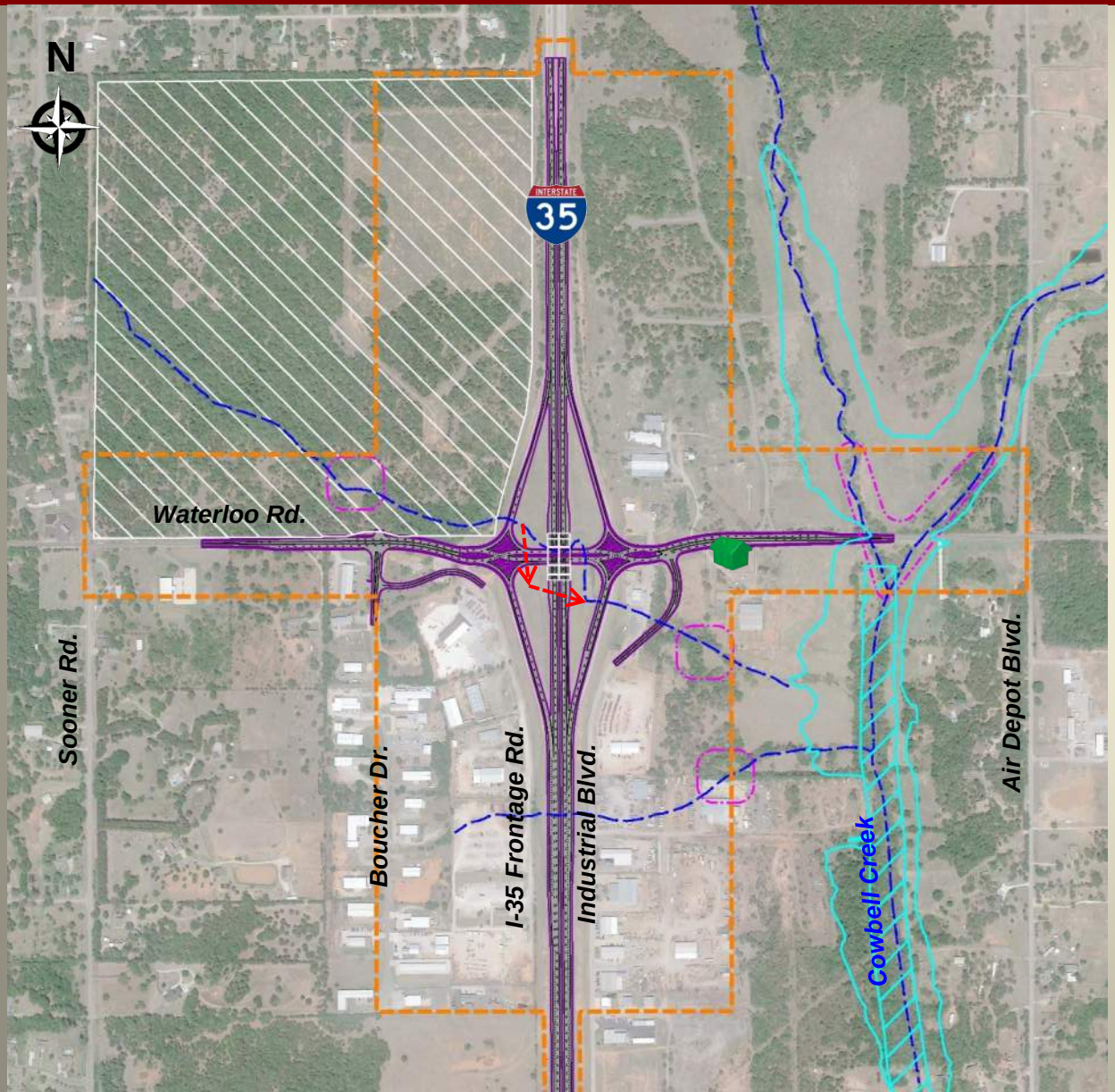

- **Potential Impacts:**
  - One Potential Residential Relocation
  - Realignment of Cowbell Creek Tributary

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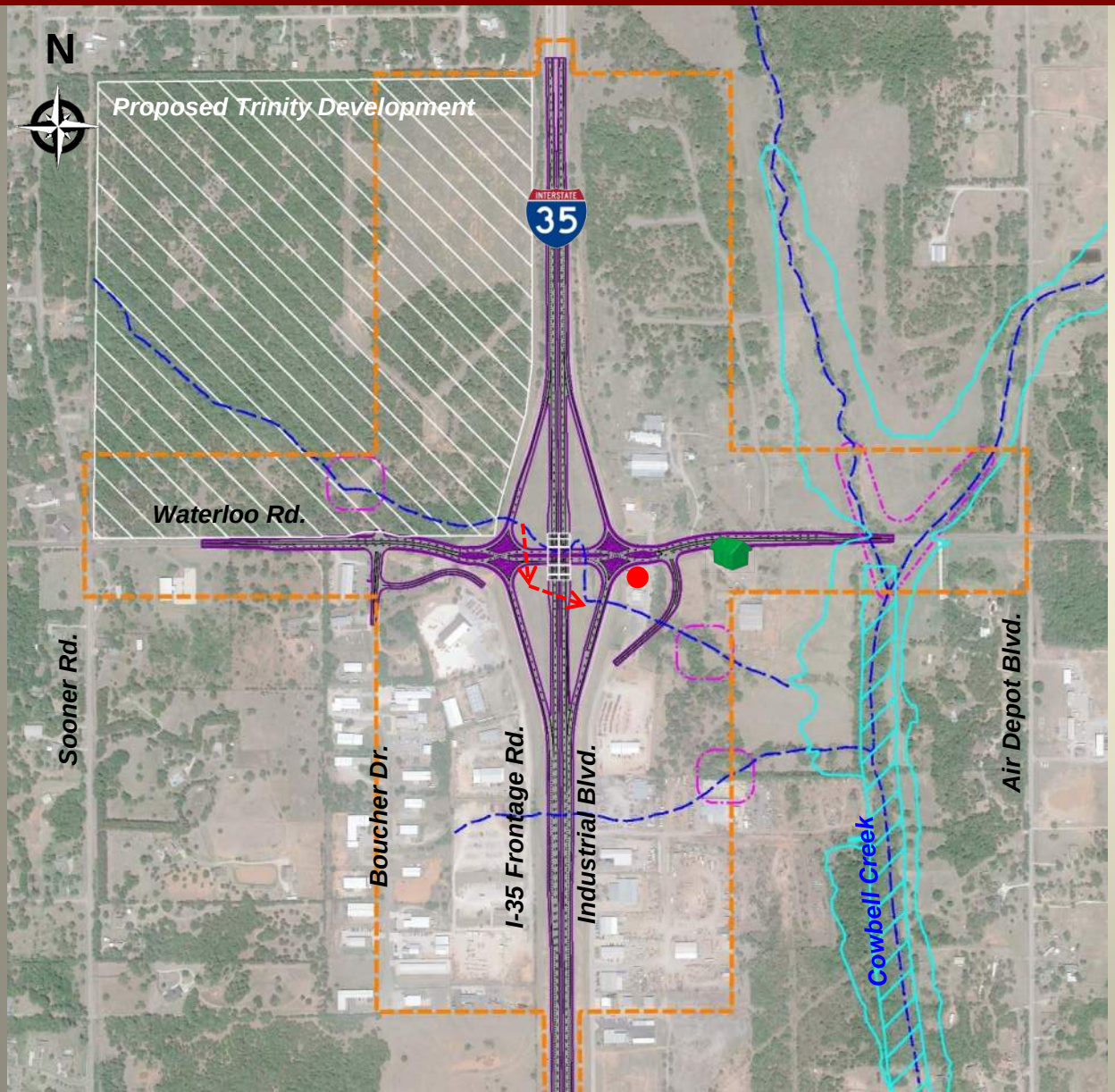

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  - Channelization of Cowbell Creek Tributary
  - Construction Near Gas Station – Documented Past Leaks

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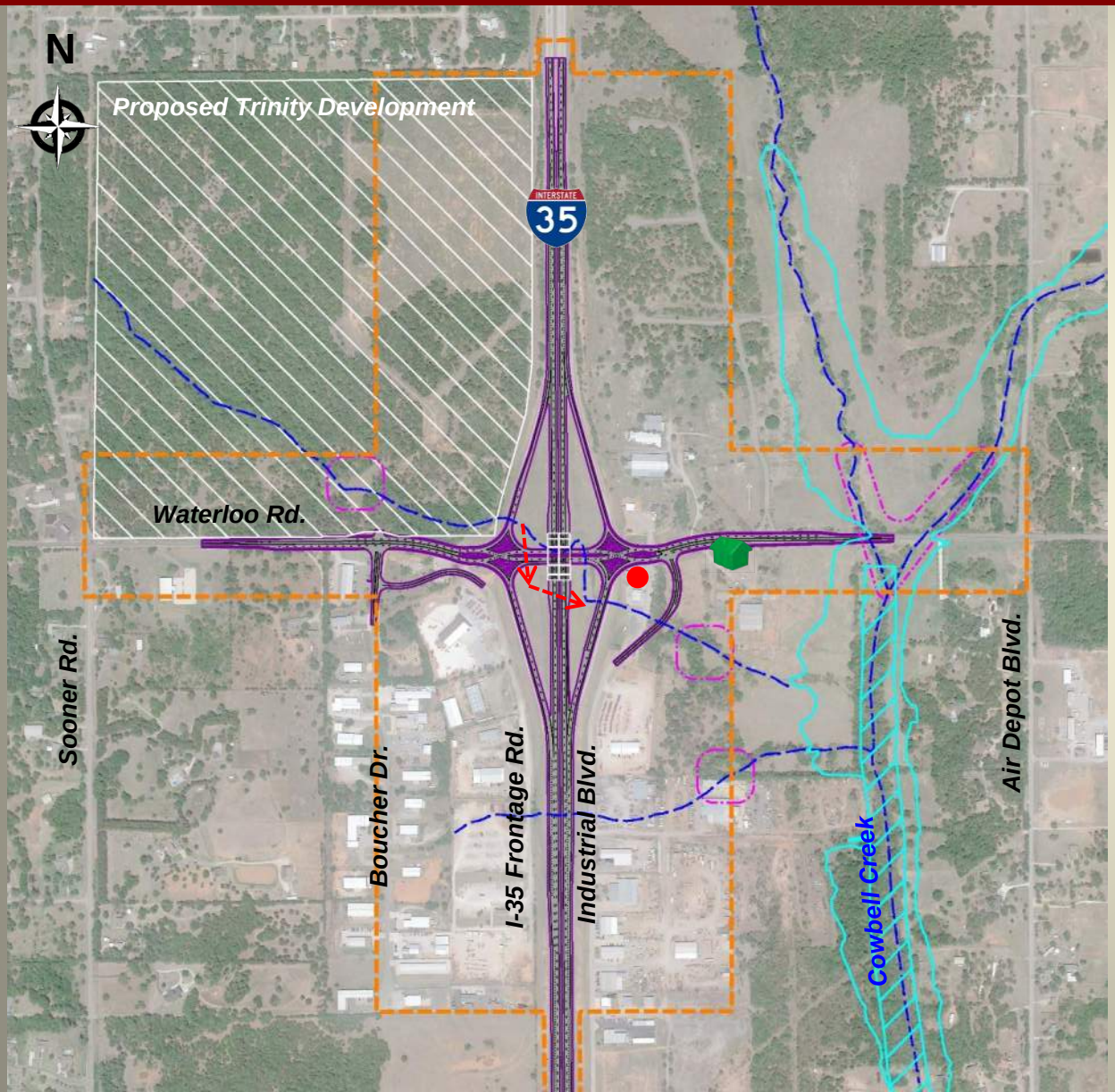

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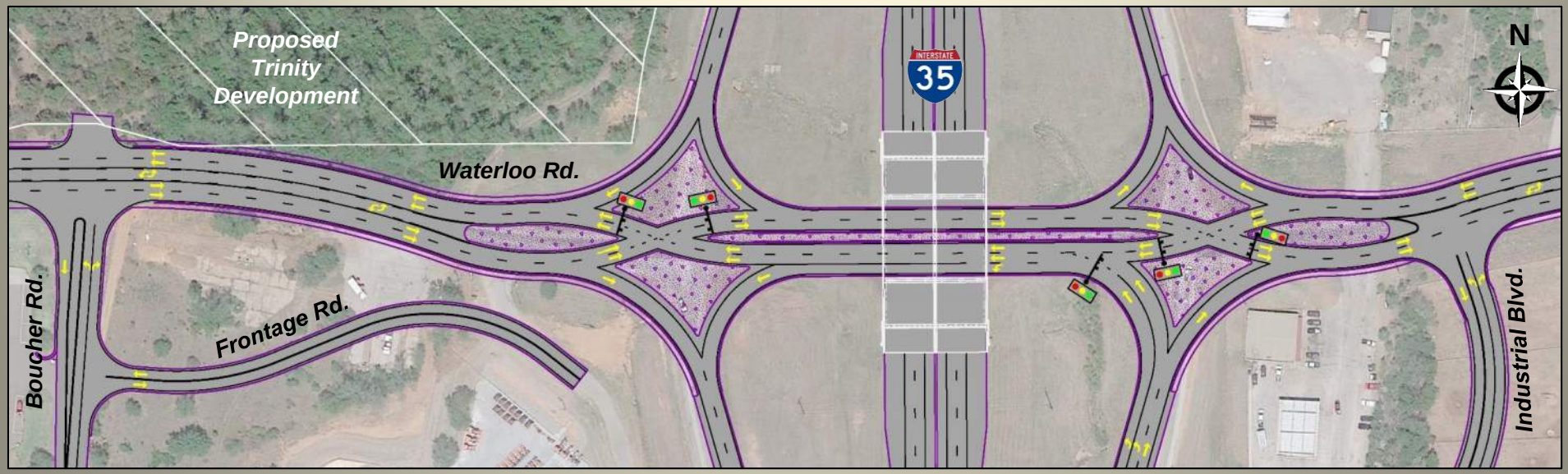
  - One Potential Residential Relocation
  - Channelization of Cowbell Creek Tributary
  - Construction Near Gas Station – Documented Past Leaks
  - Noise Study Will be Conducted but Based on the Land Use Noise Walls are Not Anticipated

ALTERNATIVE 3 SUMMARY

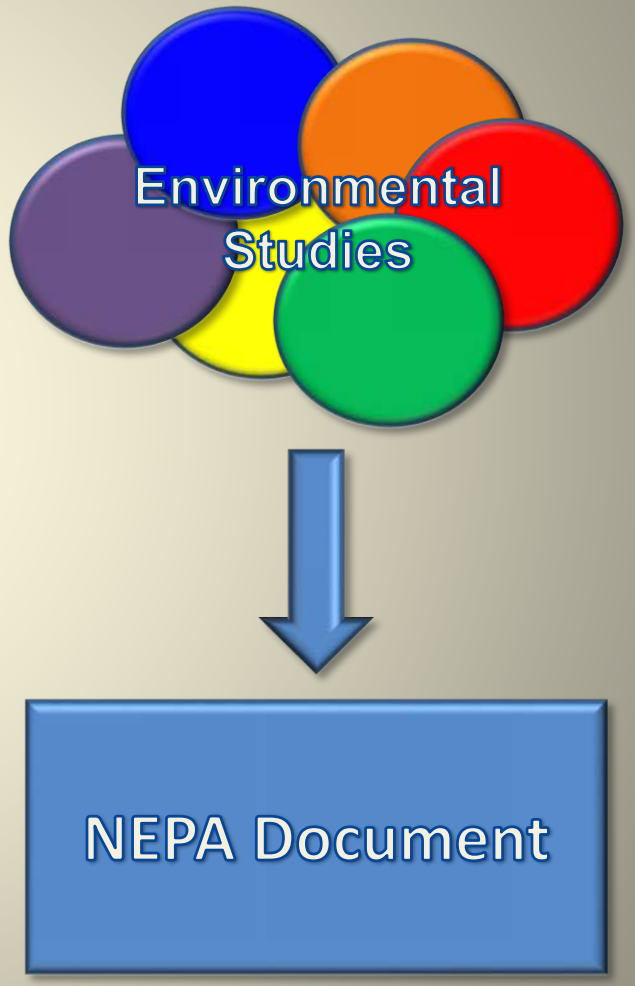
- **Key Features – Diverging Diamond Interchange**
  - More Traffic can Move Through the Interchange With Less Delay
  - Turning Movements Don't Cross Traffic – Fewer Accidents and Lower Severity
  - Turning Movements for On Ramps Bypass Signals
  - Greater Separation between Intersections
  - Maintains Traffic During Construction for Peak Periods
  - Minor Changes to Access for Some Properties
  - One Residential Relocation
  - Total Project Cost: Estimated at $31.9 Million



NEXT STEPS

NEXT ENVIRONMENTAL STEPS

- **Detailed Environmental Studies Will be Performed**
  - Archaeological and Historic Survey
  - Wetland Delineations
  - Biological Assessment
  - Hazardous Waste Investigation
  - Noise Study
- **Studies Will be Summarized in an Environmental Document to Satisfy State and Federal Regulations**
- **Later Phase Environmental Activities Will Include**
  - Clean Water Act Permits
  - Stream Mitigation Plan, if Required



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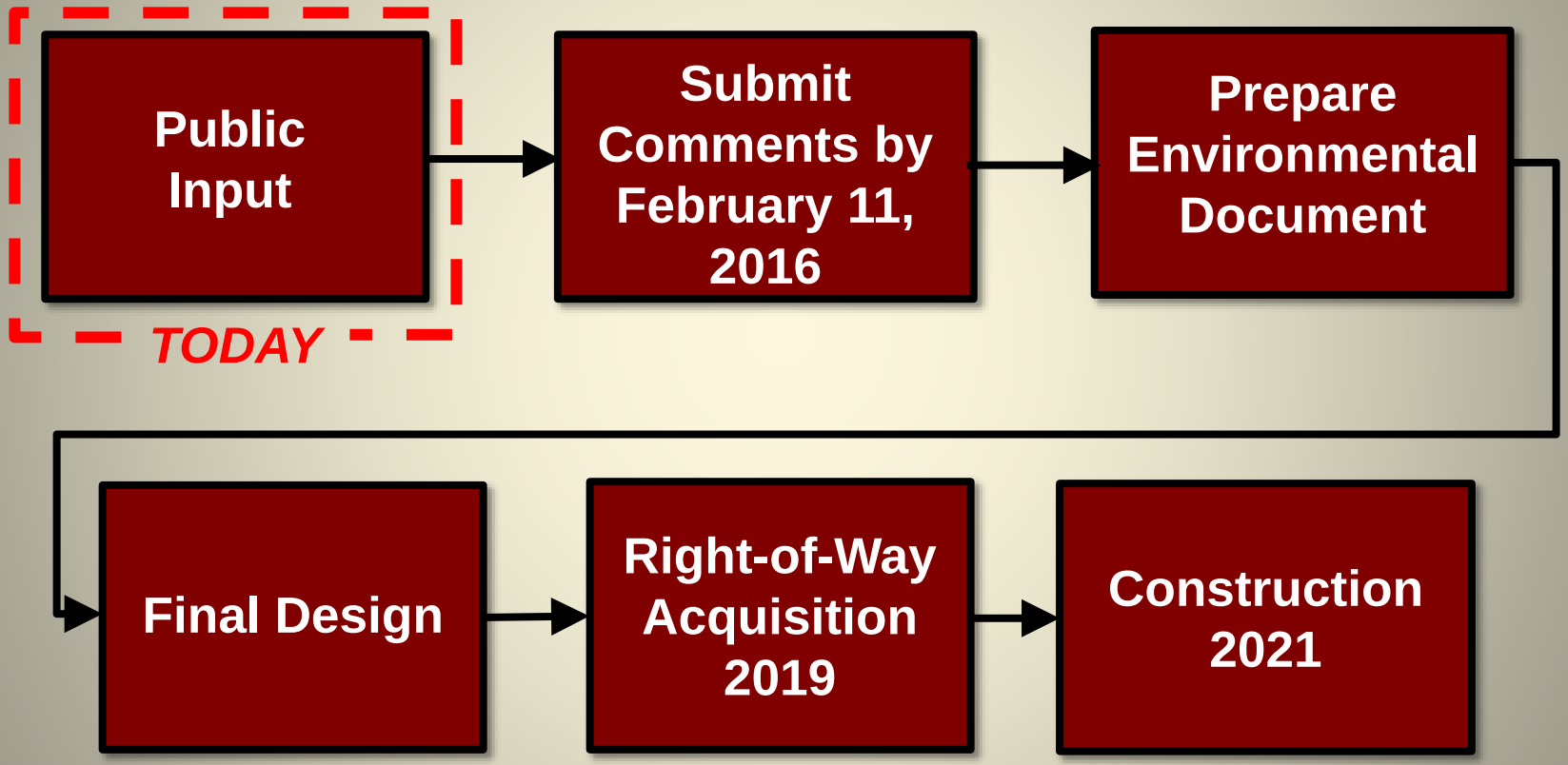

THANK YOU!

Please Submit Your Comments by February 11, 2016

- ✓ **Leave Your Comment Form Here Tonight**
- ✓ **Mail the Comment Form Back to ODOT:**

  Environmental Programs Division
  200 NE 21st Street
  Oklahoma City, OK 73105

- ✓ **Email Your Comments to ODOT-Environment@ODOT.ORG**
- ✓ **Submit via Internet at www.odot.org\publicmeetings**

QUESTIONS?