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

- Identify Problem
- Initial Data Collection
- Develop Preliminary Alternatives
- Initial Alternative Screening
- Public Meeting

TODAY
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**
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Identify Problem
Initial Data Collection
Preliminary Alternatives
Alternative Screening
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
EXISTING TRAFFIC

- **Two Lane Threshold:** 10,000 veh/day
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- **Heavy Traffic Movements**
  - AM Peak – Southbound On Ramp
  - PM Peak – Northbound Off Ramp

- **Signals Warranted Today**
COLLISION DATA

Collision Data
  - 126 Personal Property Damage
  - 46 Injury (With 2 Fatal Accidents)
- Over 44% Rear End or Turning Collisions
COLLISION DATA

Identify Problem
Initial Data Collection
Preliminary Alternatives
Alternative Screening

Fatal Crash

Legend:
- Slide Swipe
- Right Angle
- Rear End
- Angle
- Collision with Object
- Improper Backing
- Single Vehicle
- total number of crashes (of particular type and location)
COLLISION DATA

- Total: 175 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
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

![Roadway Deficiencies Examples](images)

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’
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
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Master Plan Vision
- Connected Village of Mixed Uses
- Unique and Programmed Open Spaces
- High density development along major roads
- Lower density at interior of site
- Improved traffic flow
- Street Improvements coordinated with new interchange construction

Identify Problem
Initial Data Collection
Preliminary Alternatives
Alternative Screening
PROJECT CONSTRAINTS

- **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
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- 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*
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
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
Proposed Bridge Structures

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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

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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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DRIVING THRU A DIVERGING DIAMOND INTERCHANGE

Videos
https://www.youtube.com/watch?v=Pxd9Rt5wlrA&feature=related
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
GENERAL INFORMATION - DDI

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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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  - One Potential Residential Relocation
  - Realignment of Cowbell Creek Tributary
POTENTIAL IMPACTS

- Potential Impacts:
  - One Potential Residential Relocation
  - Channelization of Cowbell Creek Tributary
  - Construction Near Gas Station – Documented Past Leaks
POTENTIAL IMPACTS

- Potential Impacts:
  - 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
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
NEXT PROJECT STEPS

Public Input

Submit Comments by February 11, 2016

Prepare Environmental Document

Final Design

Right-of-Way Acquisition 2019

Construction 2021

TODAY

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Prepare Environmental Document

Construction 2021

Final Design

Right-of-Way Acquisition 2019

Public Input
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?