# SH-130 – Segments 1-4

Texas Department of Transportation

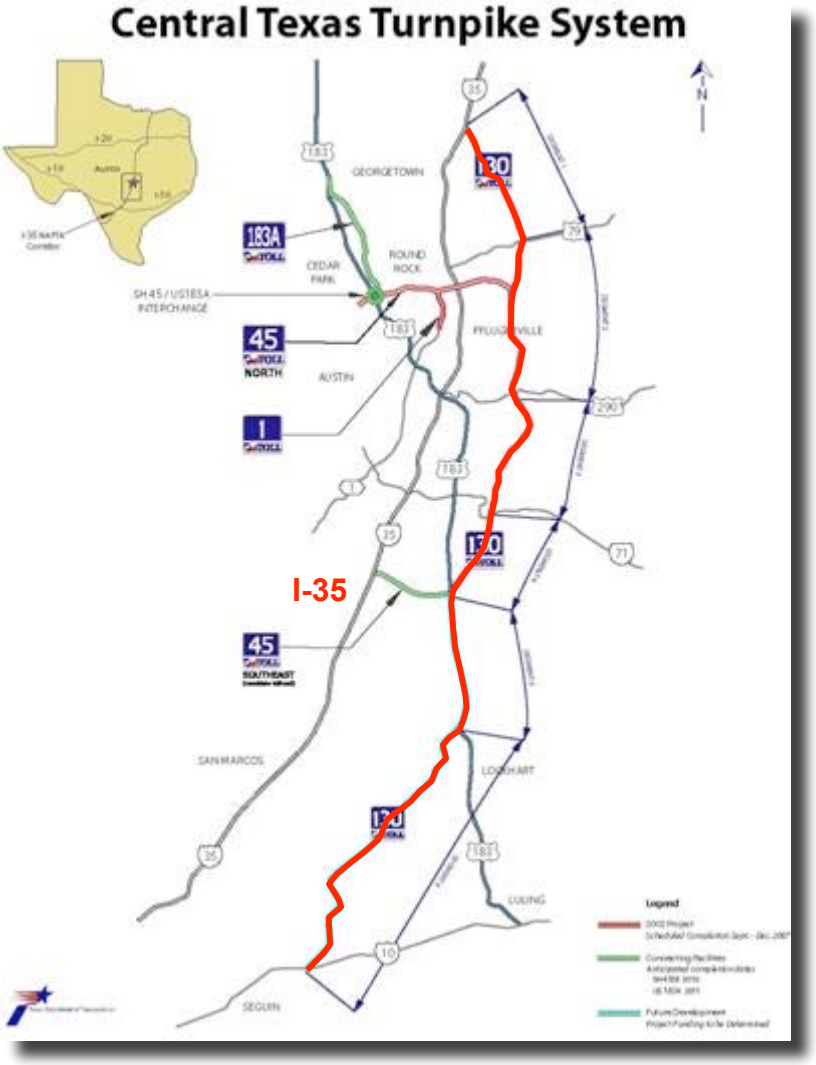
LONE STAR INFRASTRUCTURE

## July 18, 2007

# Agenda

- Scope of Project
- Status of SH-130 Project
- What is Design-Build? (Traditional vs Design-Build)
  - Organization of Project Elements
  - Phased Design & Construction
- Lessons Learned
  - Procurement Phase
  - Design Phase
  - PreConstruction Phase
  - Construction Phase

# SH-130 Project




- Part of Central Texas Turnpike System
- 91 Mile Project from Georgetown to Seguin
- Total Project Developed in 6 Segments for Delivery
- Segments 1 – 4 approximately 50 miles developed by LSI

# SH-130 Procurement

- Clear Deviation from Traditional Approach
  - Design Advanced to Concept Stage for Environmental Clearance of Project
- Teams Shortlisted Based on Qualifications
  - With Designers Participating as Part of Teams
- Scope Included
  - Design, ROW Acquisition Services, Utility Coordination, Regulatory Permitting, Construction, Long Term Maintenance, and Developer Financing
- Best Value Selection - 85% Price / 15% Technical

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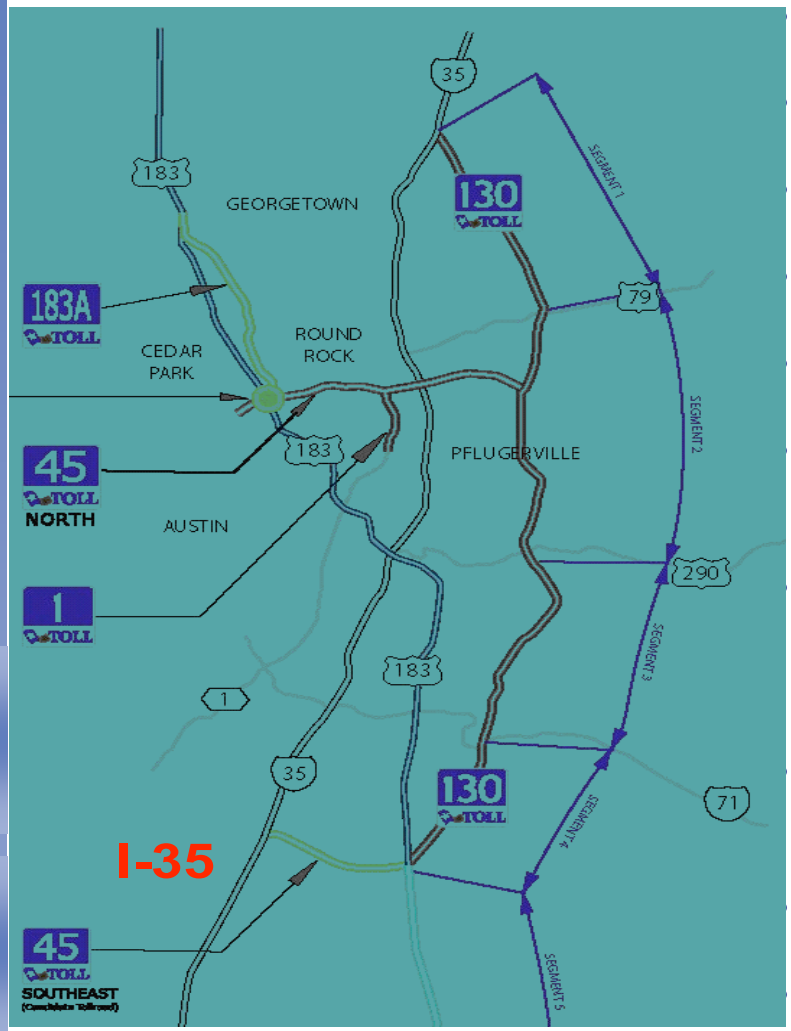
# SH-130 Project – Segment 1-4 Status




NTP 1 Issued on 7/16/02

NTP 2 Issued on 1/6/03

Design - Complete

ROW Acquisition - Complete

Utility Relocations - Nearly Complete

Construction Started in October 2003 and Peaked in 2005/2006

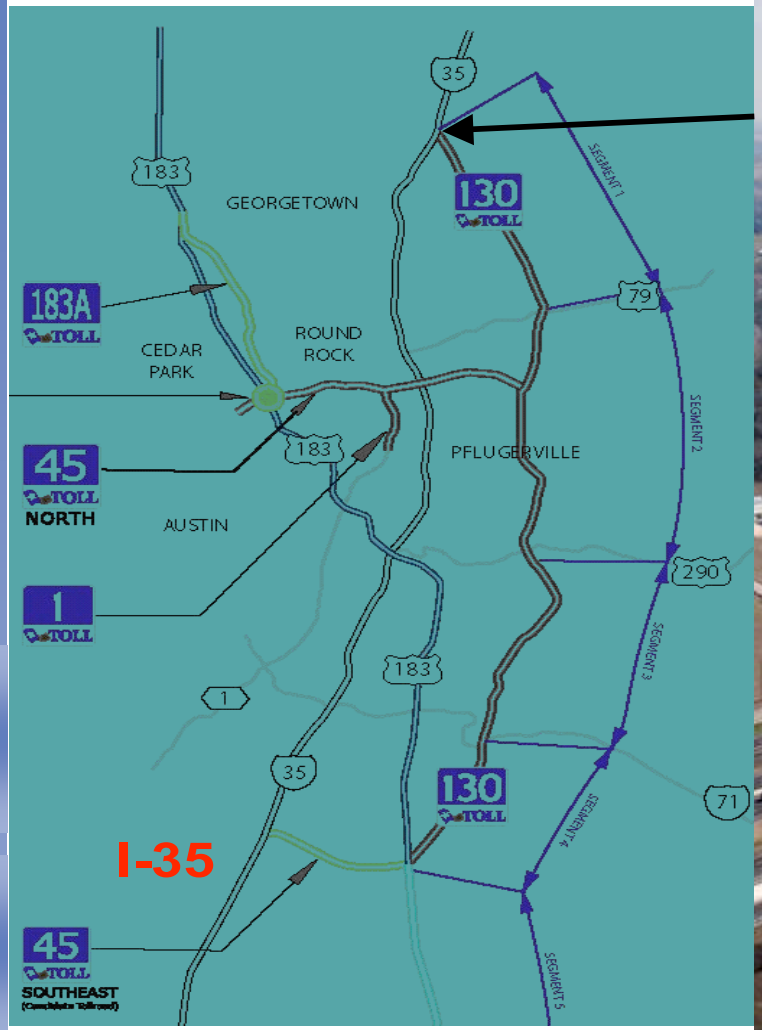
Through 2005 and 2006 Construction Activity Averaged $1M per day, peaked at 1,700 craftsmen

Segments 1 & 2 Construction - Complete and Segments under Traffic

Segment 3 - Substantially Complete

Segment 4 - Complete End of Year

# SH-130 Project – Segment 1 Status

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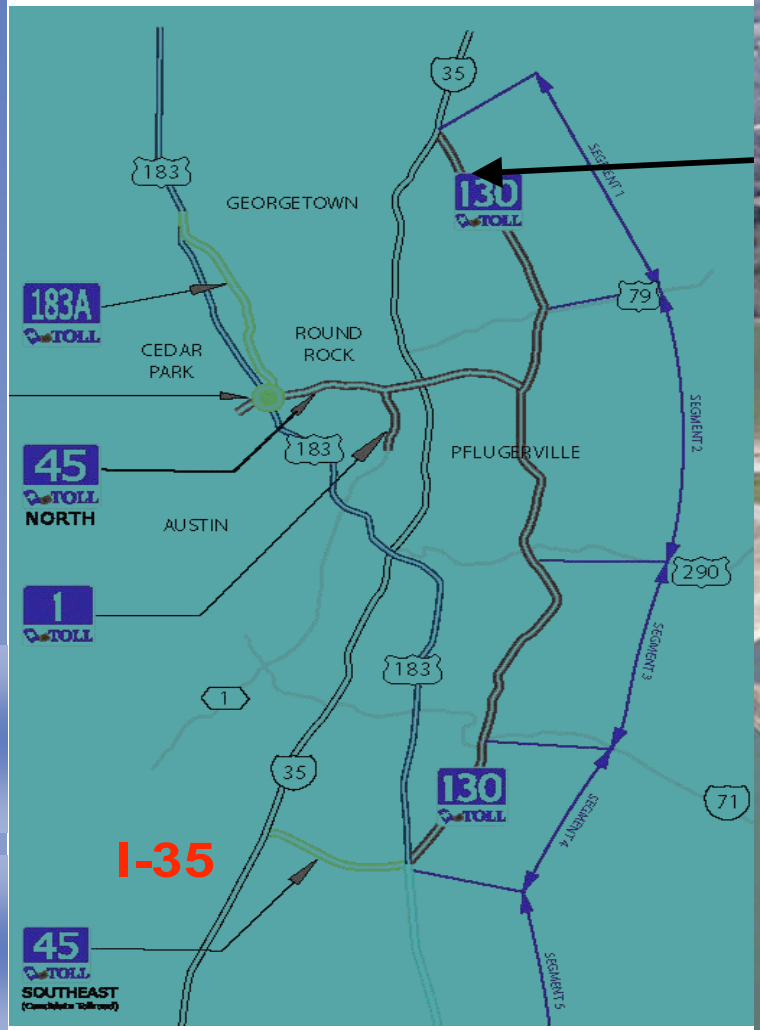



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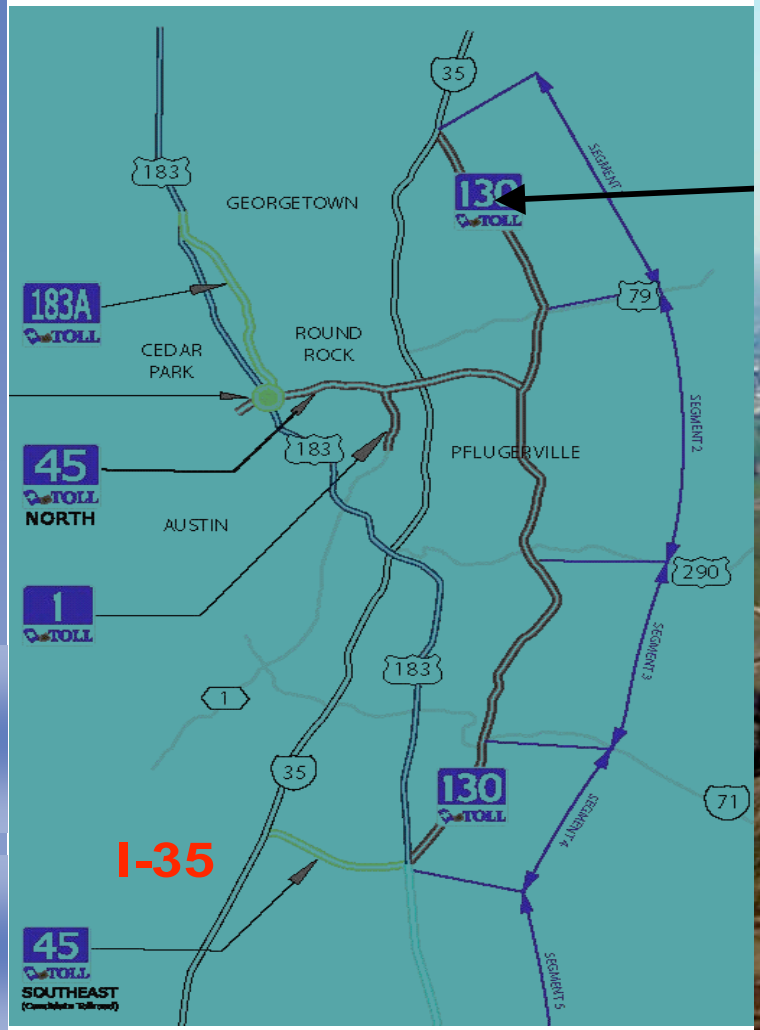
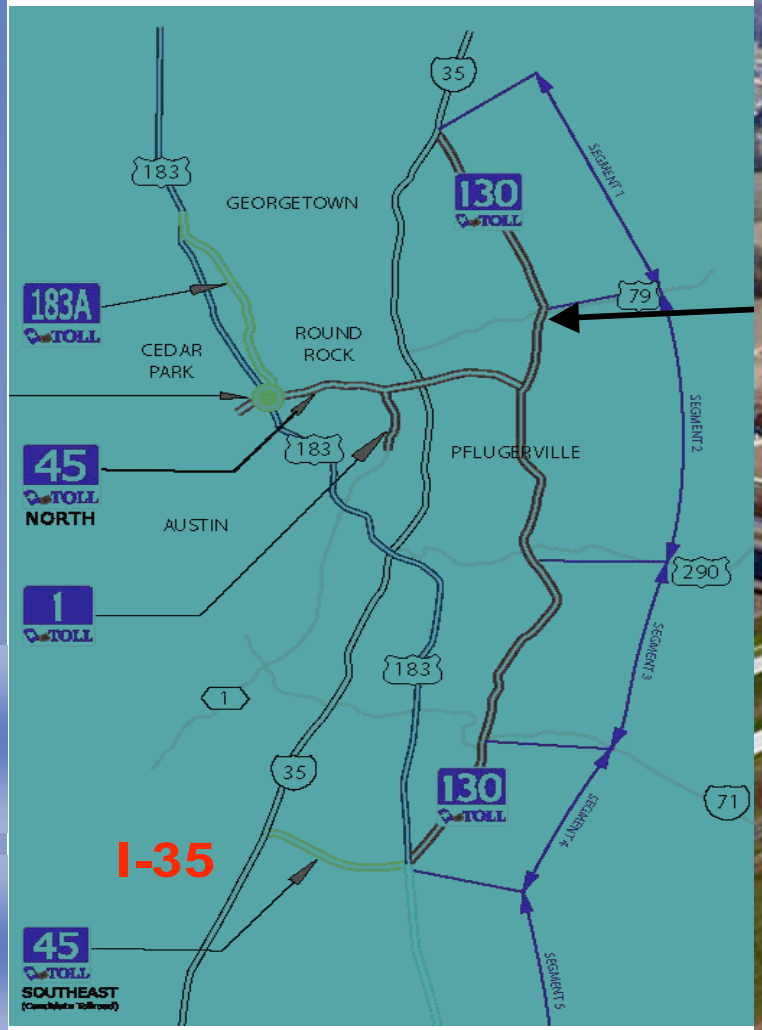



# SH-130 Project – Segment 2 Status

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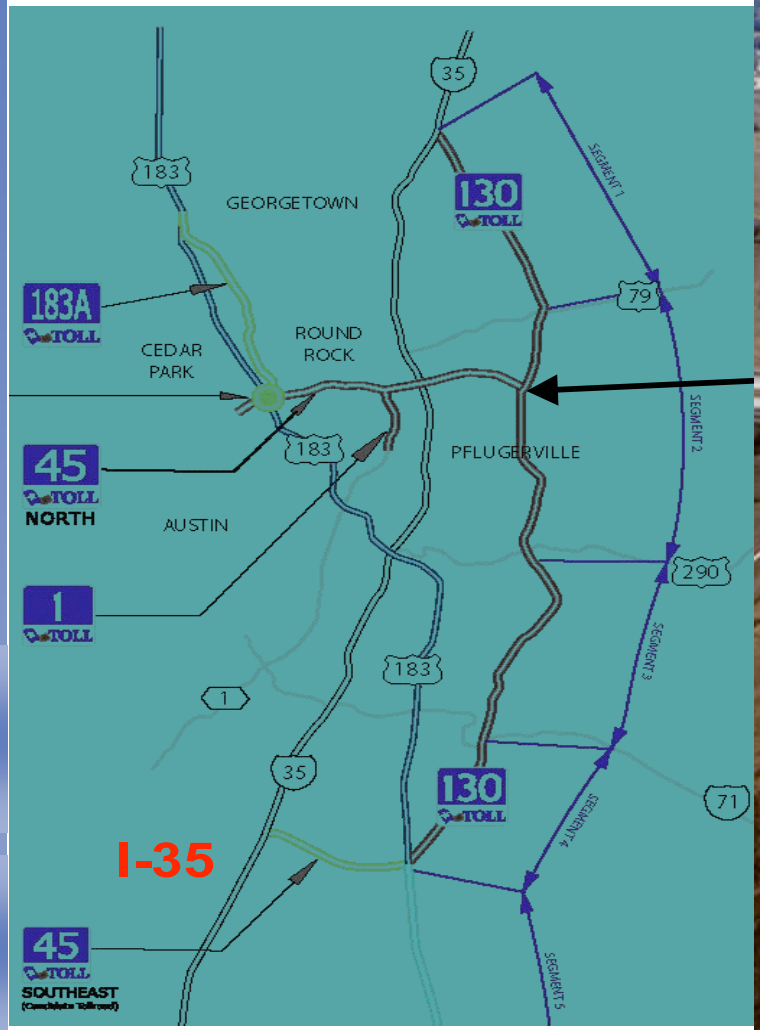


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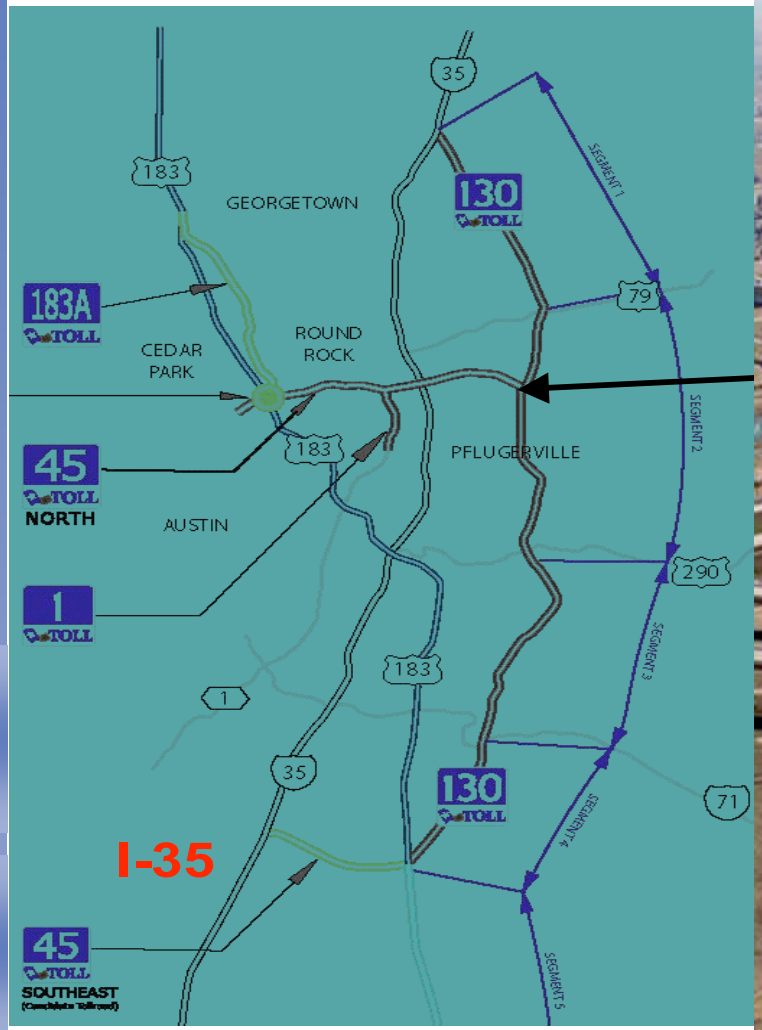


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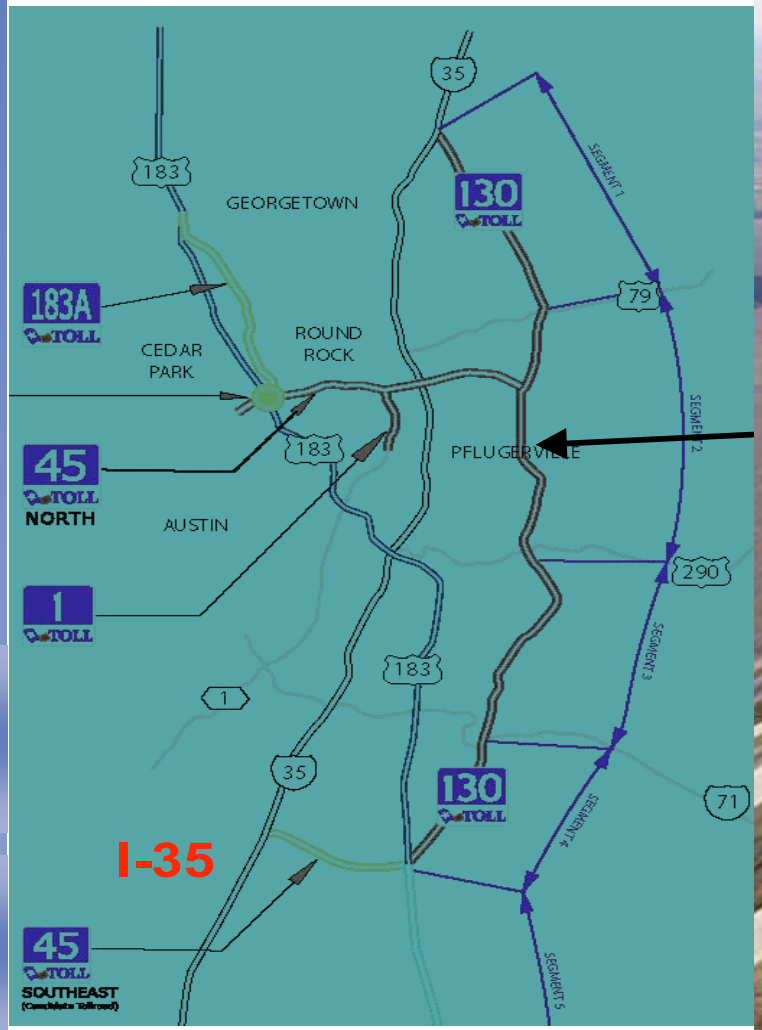


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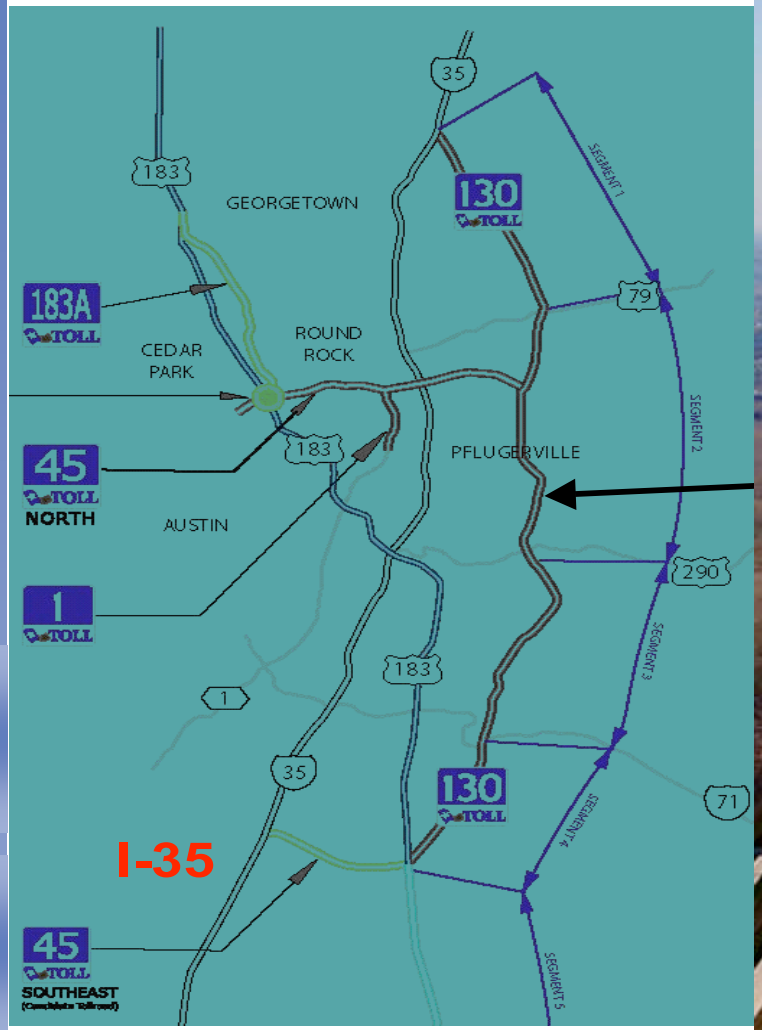


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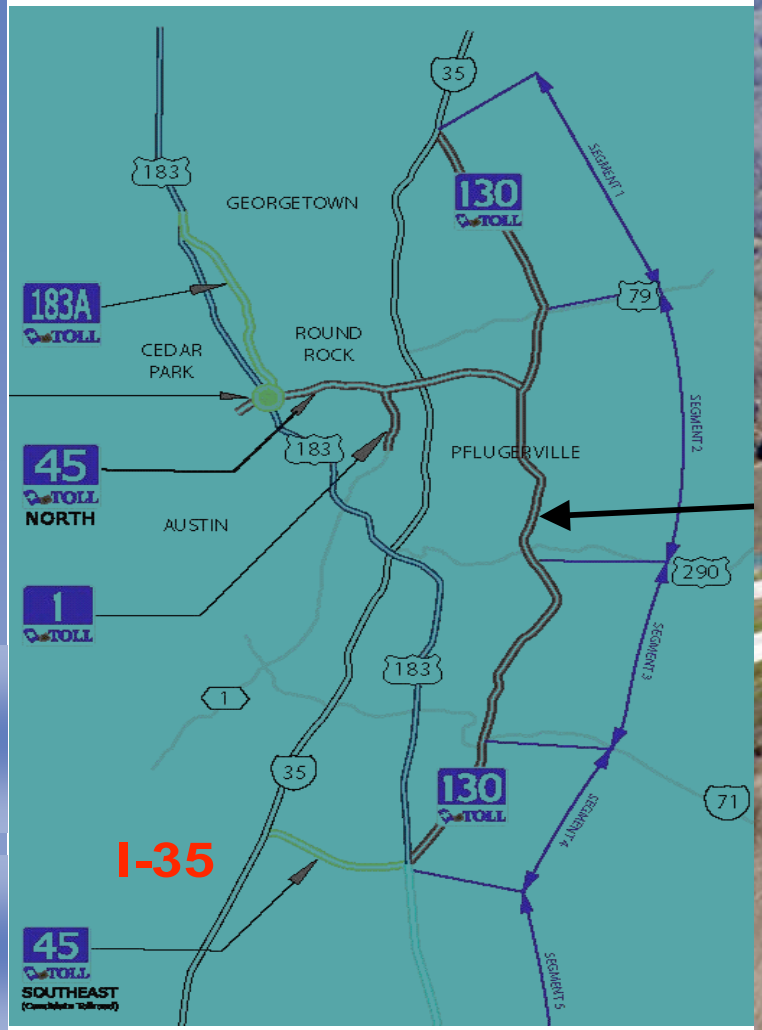


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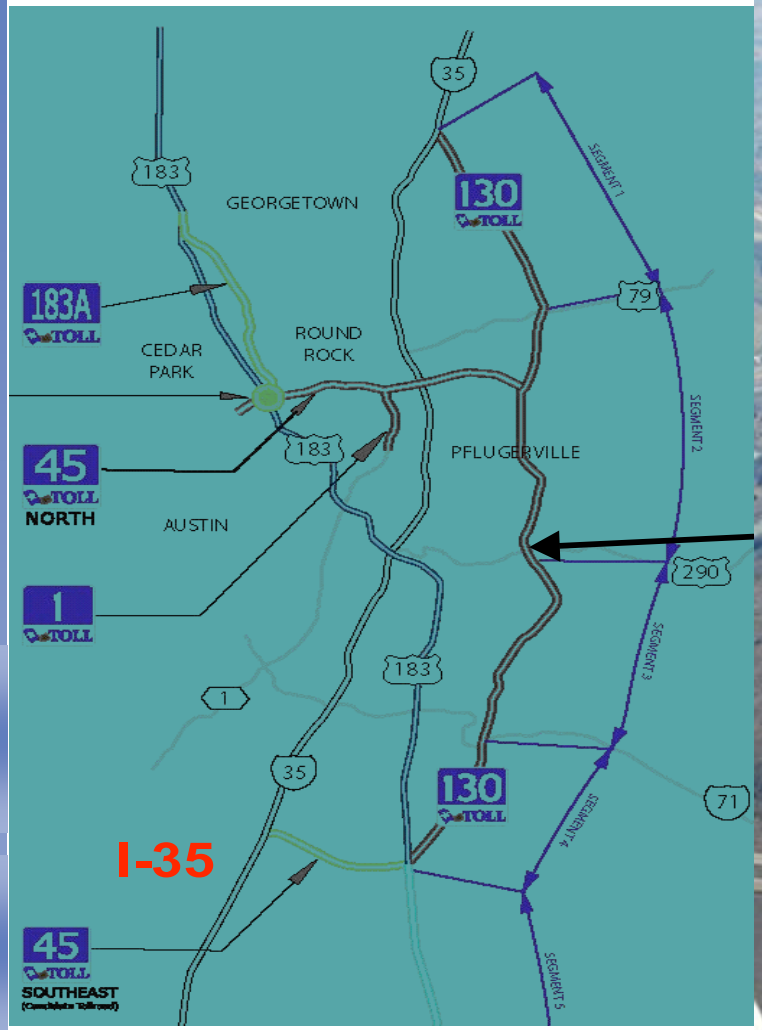



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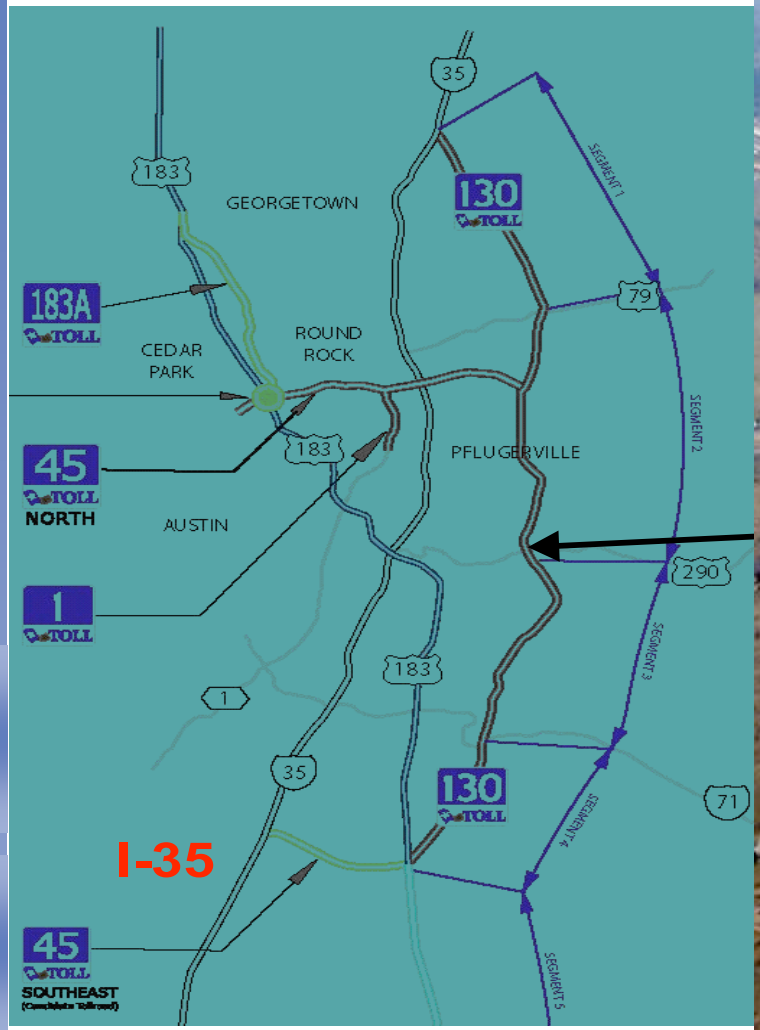


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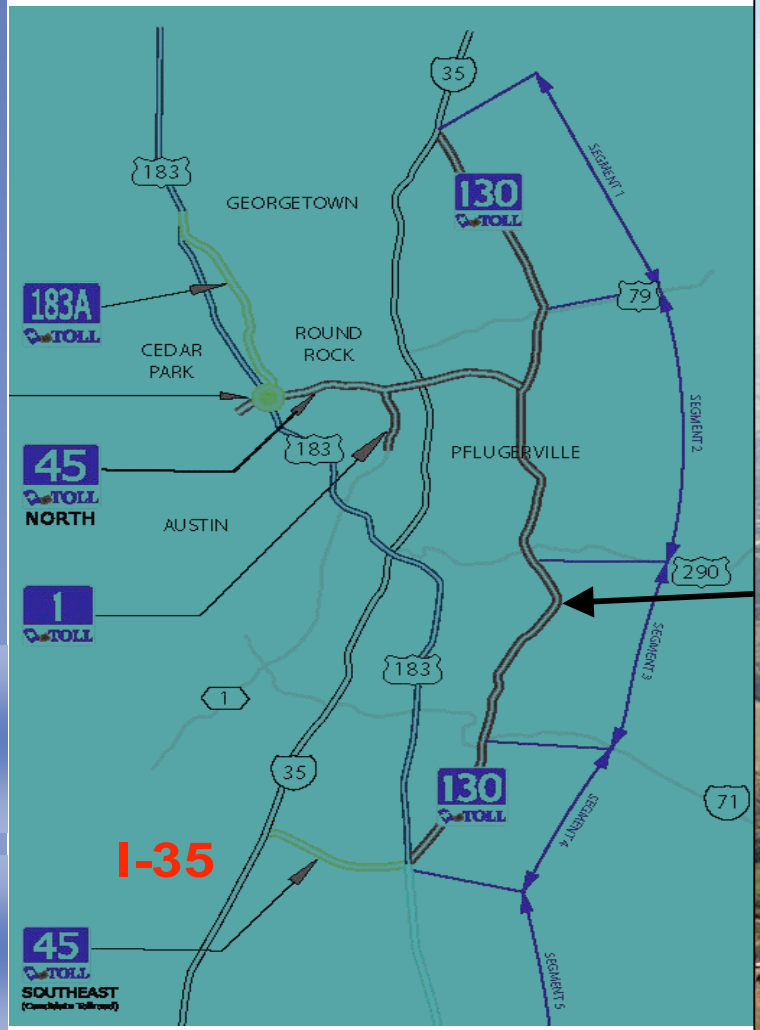



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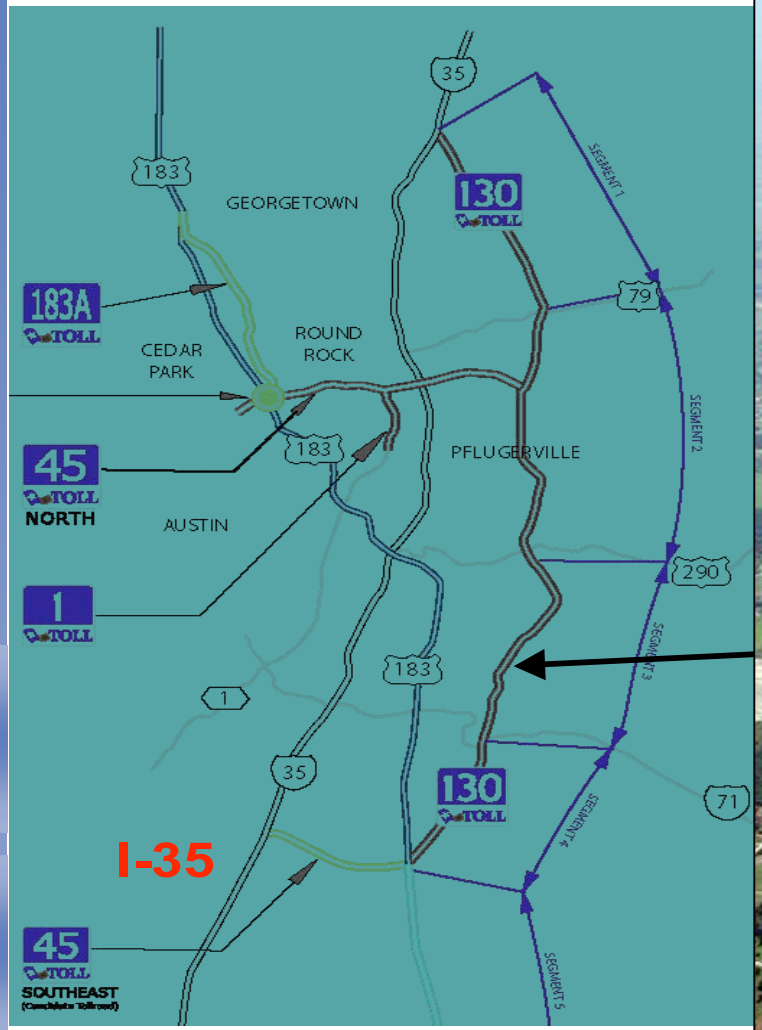


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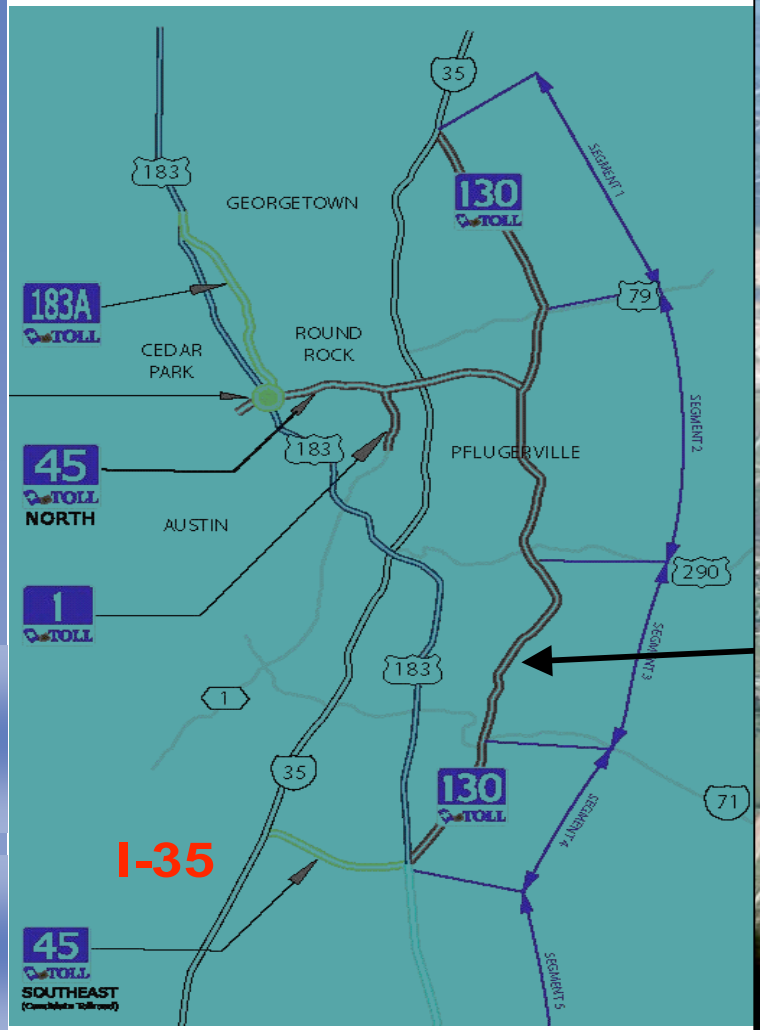



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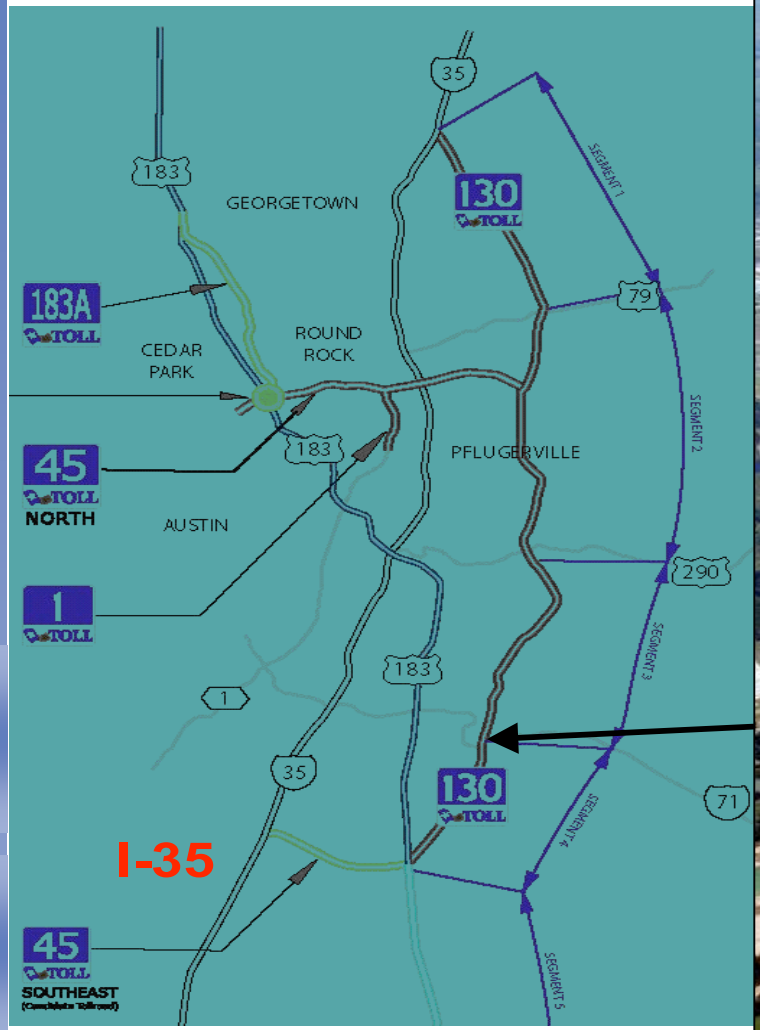


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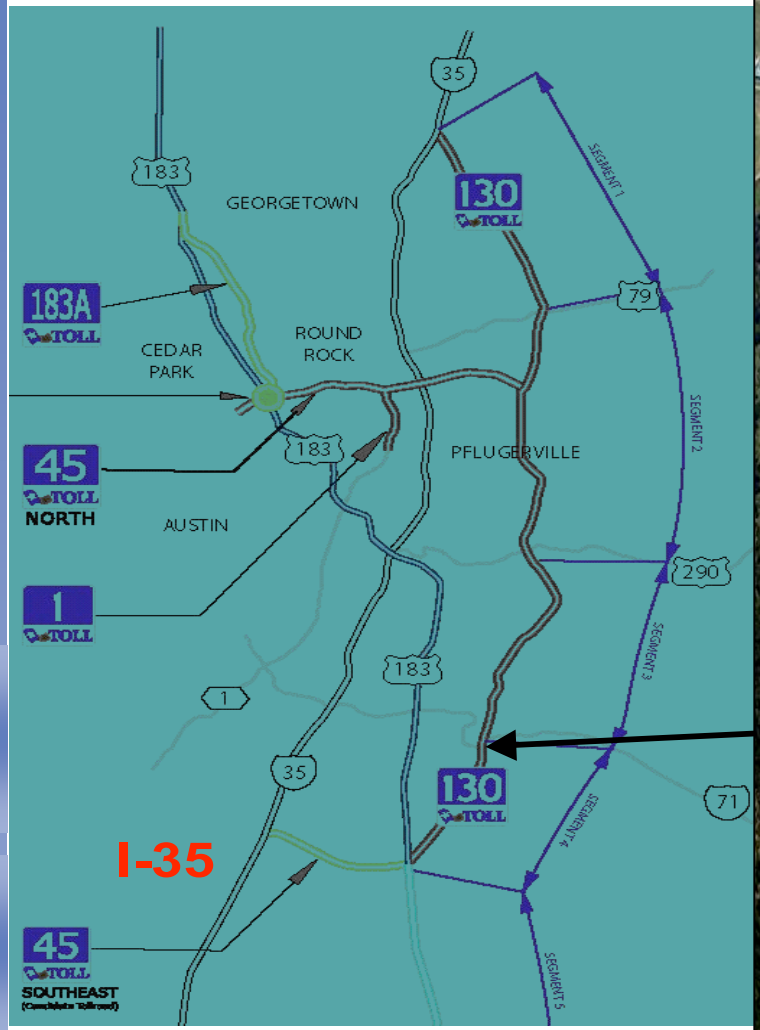


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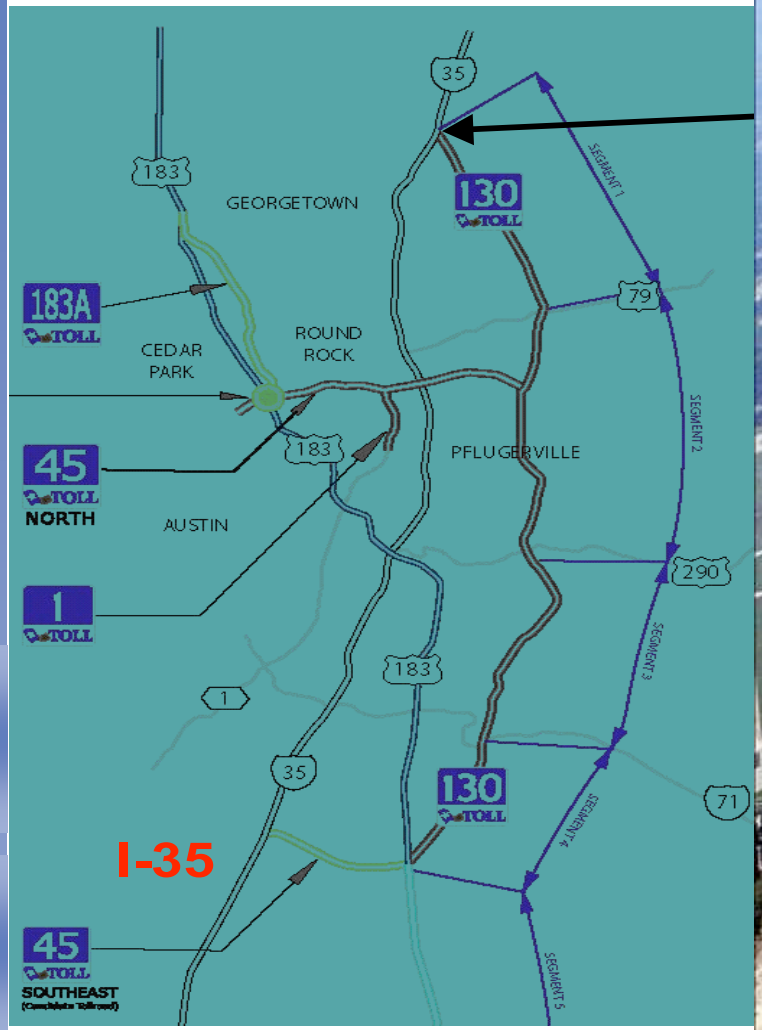



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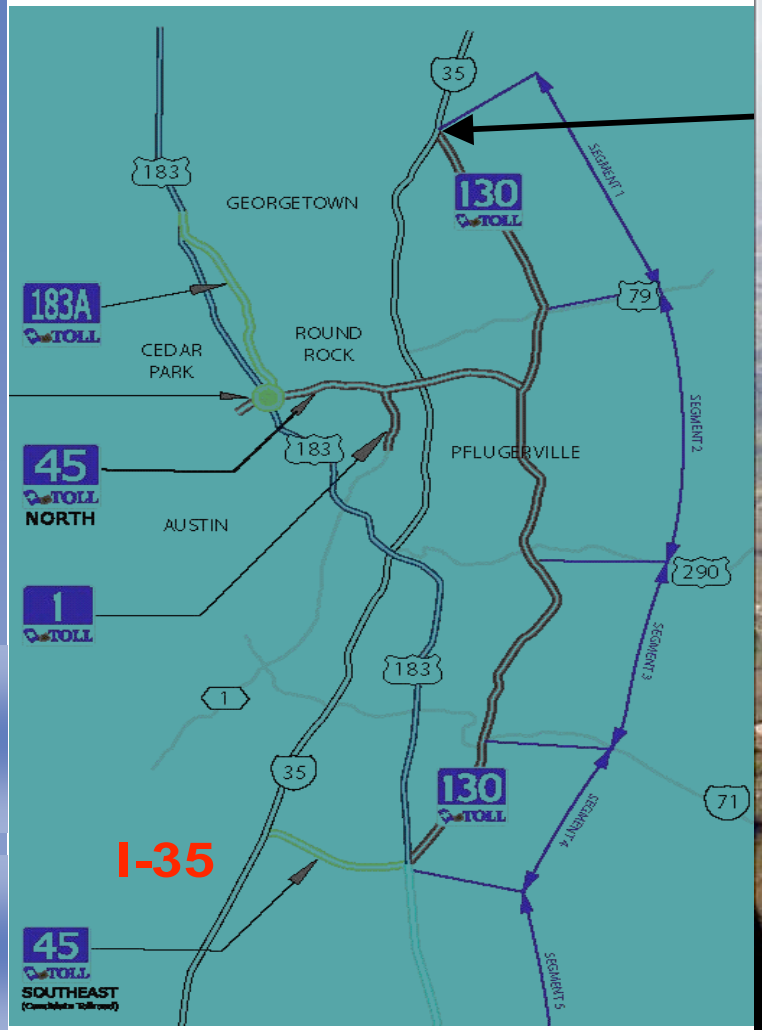


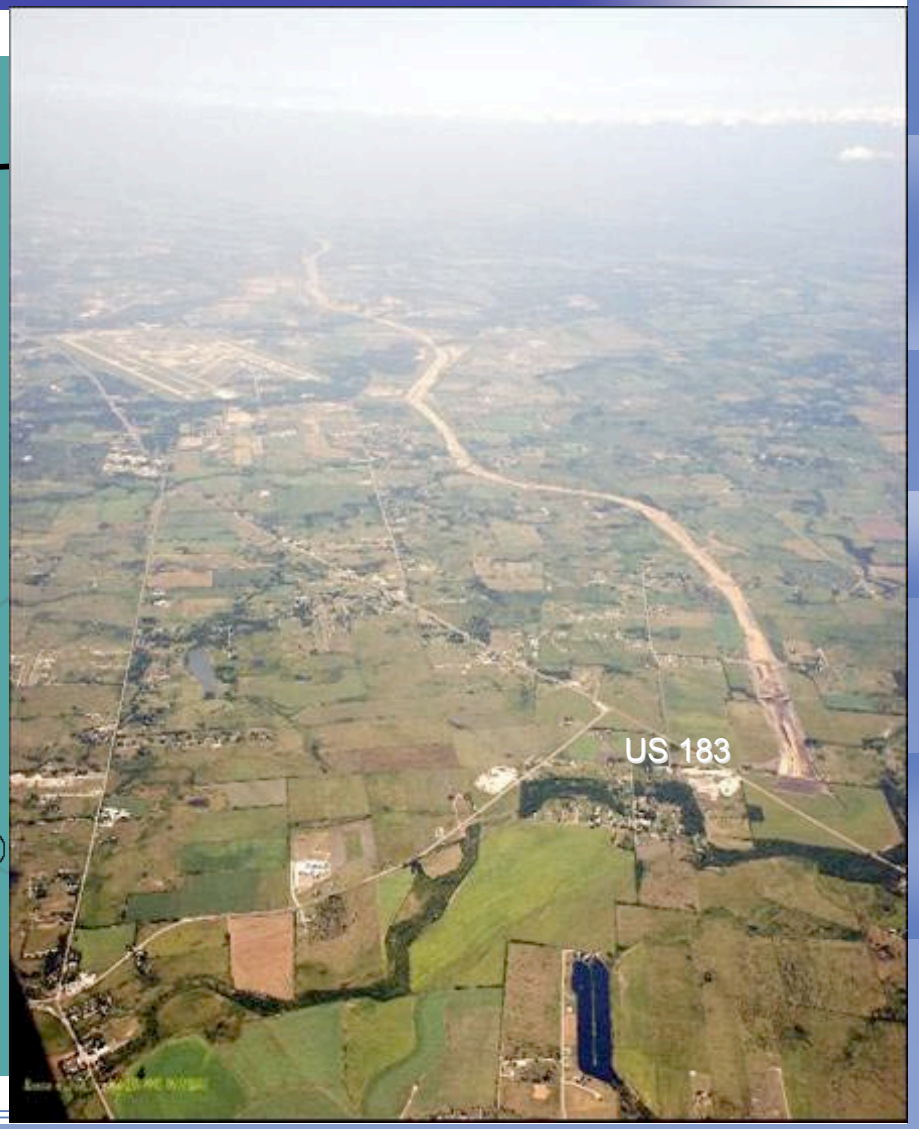

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# Project Elements

## Permitting

- Prelimiary Schematic Design
- NEPA Process
- USCOE 404 Permit
- USF&WL
- Historic Properties
- FEMA

## Design

- Final Schematics
- Final Design
- Design QC
- Design QA

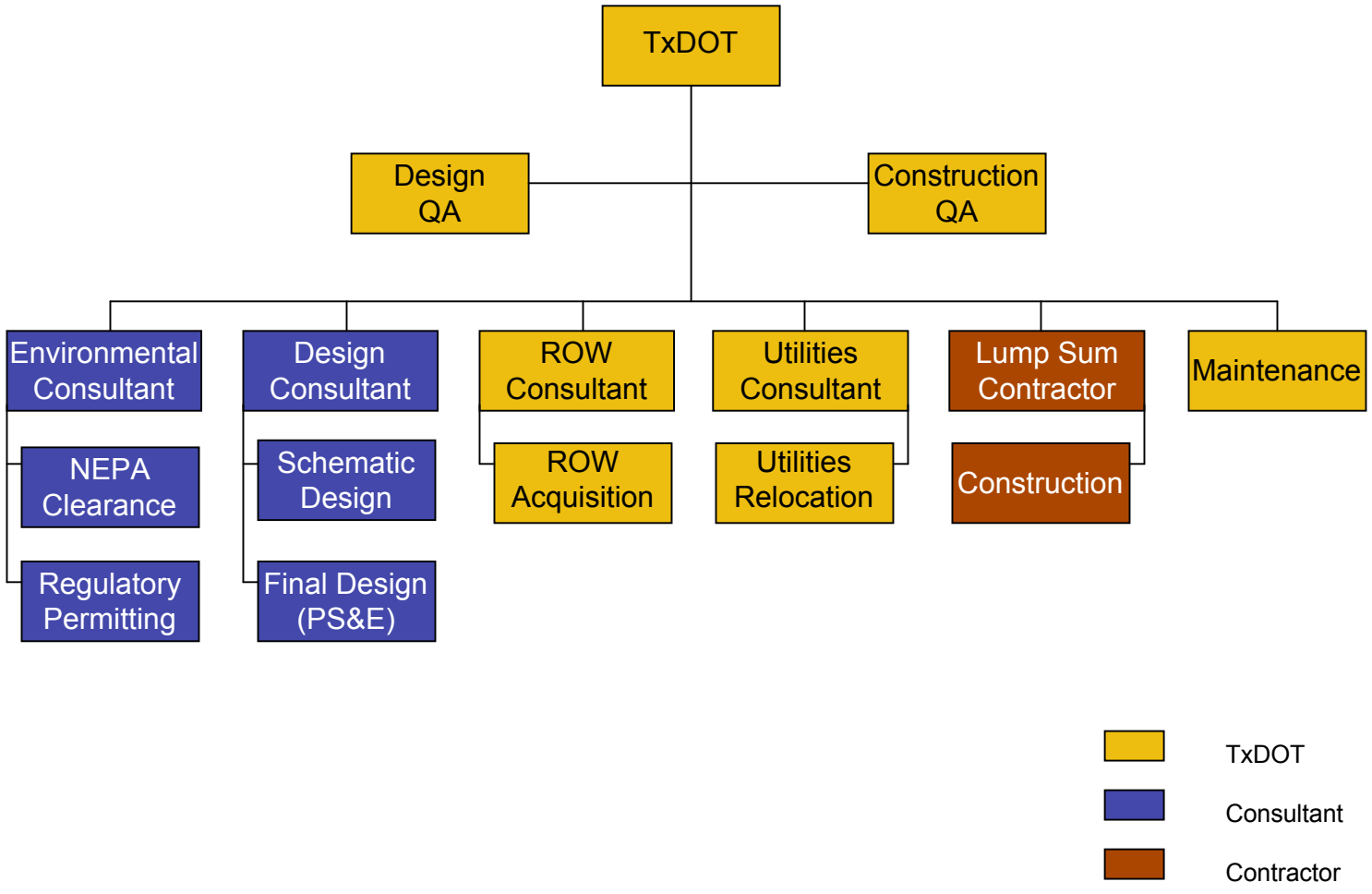
## PreConstruction

- ROW Acquisition
- Utilities Relocation

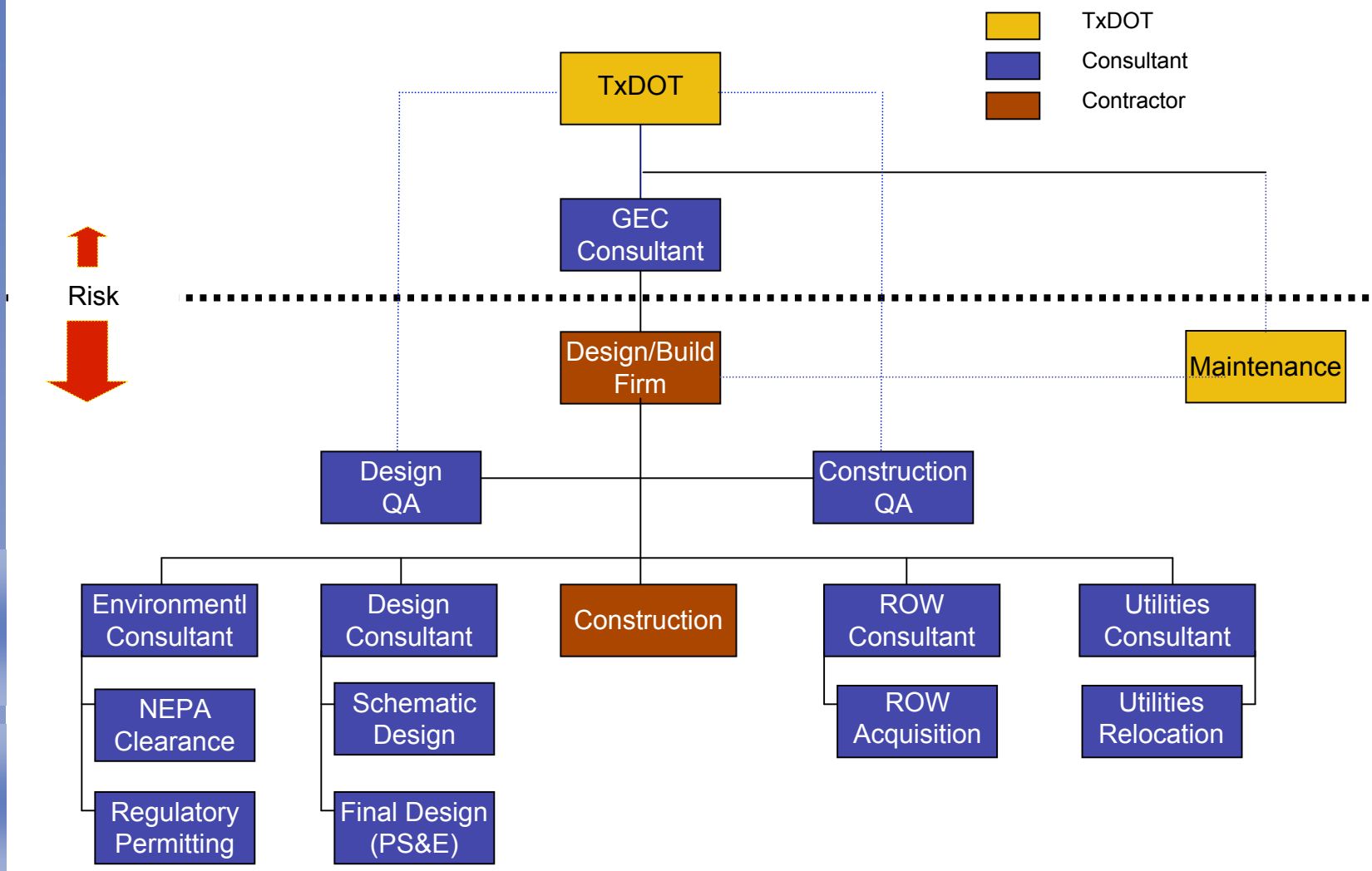
## Construction

- Construction
- Construction QC
- Construction QA

# Traditional Delivery Method

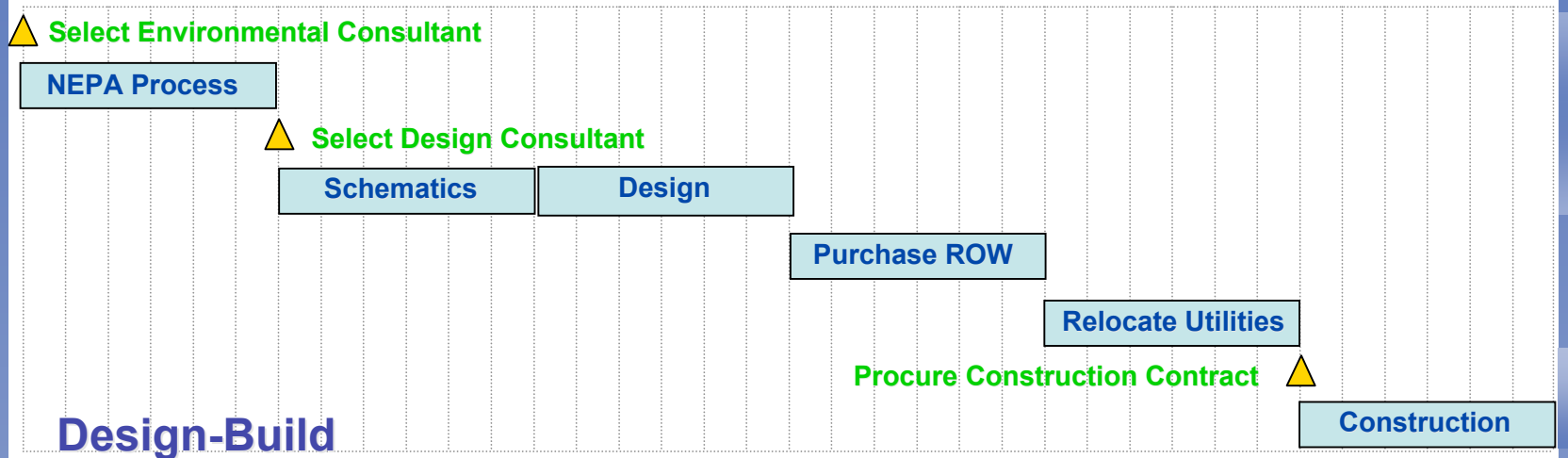


# Design-Build Delivery Method

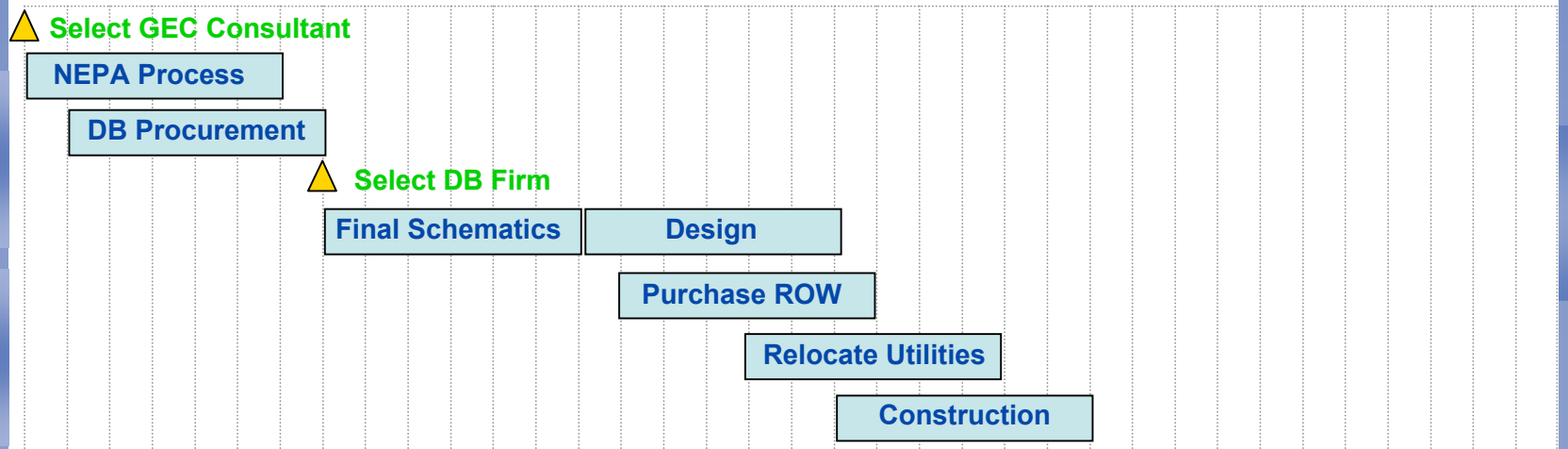


# Delivery Process

## Traditional




## Design-Build



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# Lessons Learned: Procurement Phase

- Industry Review Meetings were an Effective Tool
  - Mitigated Risk & Contingent Pricing
- Designer on D-B Team Was Positive
  - Project Receives Input from Multiple Design Teams
- ATC Process was an Effective Process
  - Owner Benefits from Multiple Design Approaches
- Control of Team Actions During Procurement
  - Impact on Local Authorities, Land Owners, Etc
  - Cross-Street Matrix
- Limit Primary Participant Requirements of SOQ
  - Exclusion of Consultant Community
- Acceptance Criteria
  - Affects Risk, Speed of Design, Quality Review Process
  - Will Challenge the Partnering Process

# Lessons Learned: Design Phase

- Open Communication a Must
  - Design Must Progress Quickly from Concept to Working Drawings
  - Many Professionals Involved in Process
- Resolve Design Criteria / DTPs Early
  - Lack of Clear Criteria will Affect Speed of Design & Quality Review
- Co-Location
  - Owner / D-B Contractor
  - D-B Contractor / Design Team
- Design Performed On-Site
  - Impacts Way Design Consultants Work
  - May Affect Consultant's Efficiency
- Independent Design Quality Assurance
  - Required Process to Assure Design Meets Requirements
  - Role & Expectations of Independent Review Must be Clear
  - Effectiveness Can Be Diluted by Vague Acceptance Criteria

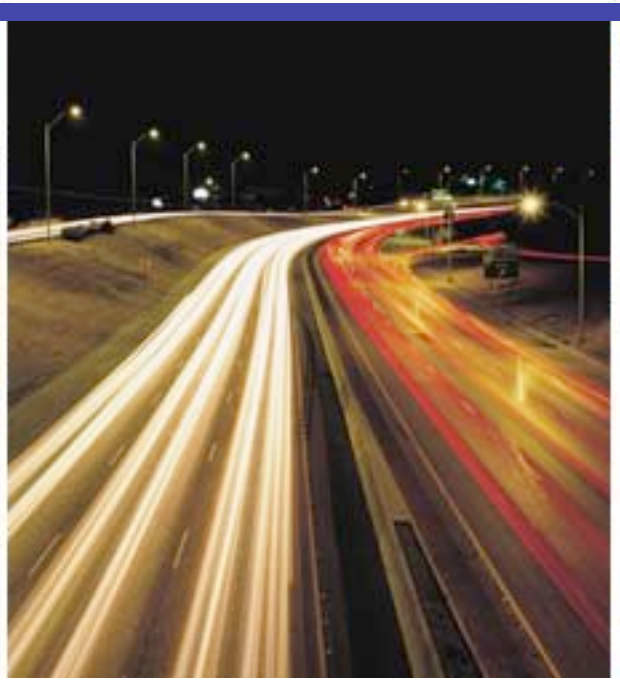
# Lessons Learned: PreConstruction Phase

- Allow Adequate Time for ROW Acquisition
  - Acquisition Process Protects Property Owner Rights and is Not Designed to Expedite Project Execution
- Establish Date of Taking for ROW Acquisition as NTP of Design-Build Contract
  - Legislative Issue
- Reconsider 1-Offer, 1-CounterOffer Rule
  - Reduce Condemnations
- On Large Projects, Consider Standing Committees to Expedite Condemnation Hearings
  - Multiple County Participation in Hearings
- Establish Umbrella Agreements with Utility Owners in Advance of Design-Build Contract
  - Design Standards, Betterments, Acceptable Subcontractor Lists
- Consider Compensation to Utility Companies for Relocations to be Based on Performance

# Lessons Learned: Construction Phase

- Definition of “Engineer” as it Pertains to Blue Book
  - Authority to Make Engineering Decisions
  - Acceptance of Work
- Quality Control vs Quality Assurance vs OVT
  - Clear Definition of Roles & Responsibilities
- Constructing with Drawings Which are Not 100%
  - Affects Quality Acceptance Process

# SH-130 – Lessons Learned



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