



NASHVILLE FAST FIX 8



Tennessee DOT's Fast Fix 8 Project in Downtown Nashville
Module 2 – CM/GC Project Delivery
Construction Manager/General Contractor

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Kiewit
Infrastructure Group

Project Overview

- CM/GC Overview
- CM/GC Process in Tennessee
- 1st TN CM/GC Project - Fast Fix 8
- Lessons Learned
- 2nd TN CM/GC Project – Mem Fix 4
- Questions



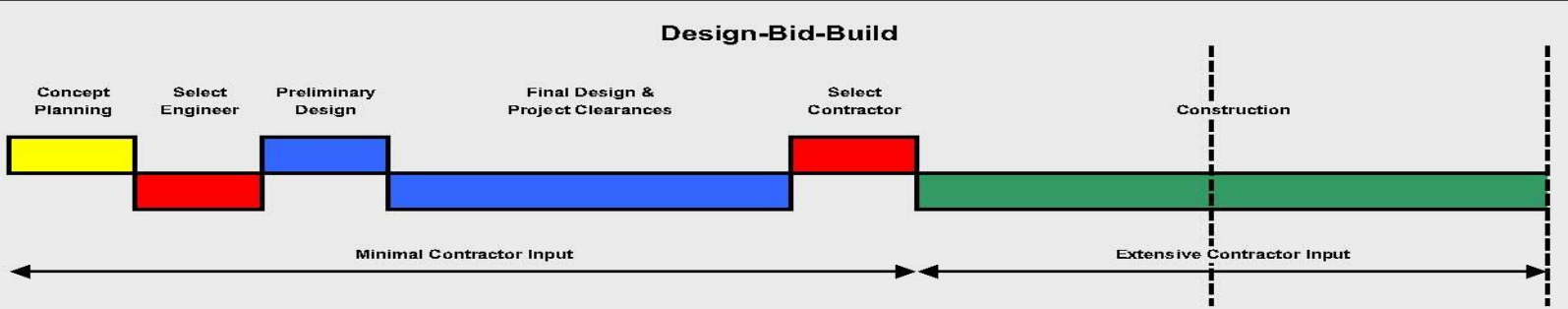
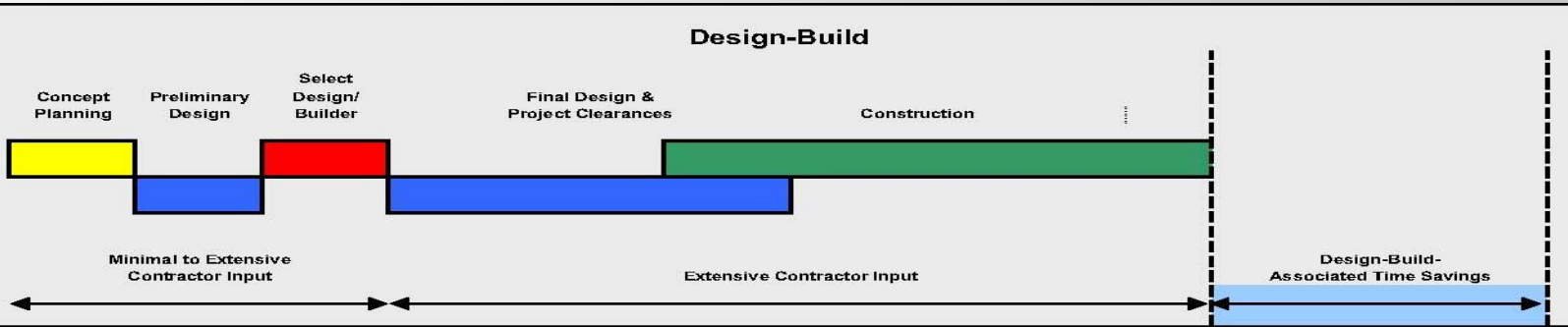
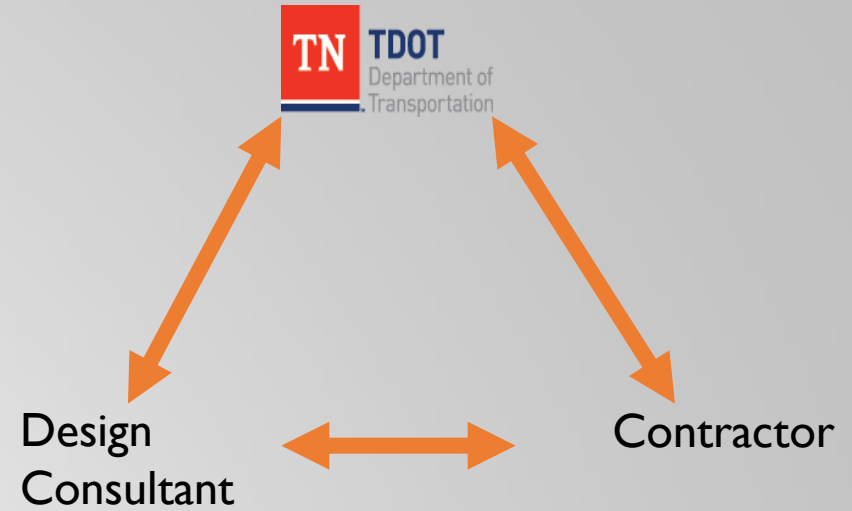
What is CM/GC ?

- Construction Manager/General Contractor (CM/GC) is a project delivery method.
- It is the middle ground between DB and DBB.
- With this project delivery method, the owner usually selects a construction management firm early in the design process (a best-value basis).
- CM provides input regarding scheduling, pricing, phasing and other input that helps the owner design a more constructible project



What is CM/GC ?

- TDOT The Owner
- Design Consultant Team
- CM/GC Contractor



What is CM/GC ?

- At approximately 90 percent design completion, the owner and the CM agree on a "guaranteed maximum price" for the construction of the project. If the discussions are successful, the construction manager becomes the general contractor. If they are not able to reach an acceptable price, the owner has the option of completing the design and letting a traditional bid-build contract for construction.



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Legislative Action

- Changes to Tennessee Code Annotated § 54-1-501 through § 54-1-508- Construction Manager/General Contractor allows the Department authority to use CM/GC.
- This is a PILOT PROGRAM consisting of three projects with a total aggregate of \$200 million in construction costs.
- The first CM/GC project shall not exceed seventy million dollars (\$70,000,000) in construction costs, and not one CM/GC project shall exceed one hundred million dollars (\$100,000,000) in construction costs. The department shall not initiate any other project using the CM/GC method until after a contract for construction of the first CM/GC project has been awarded.
- The program SUNSETS after five years and is effective July 1, 2014 to July 1, 2019.



Rule Promulgation

Key TDOT Positions

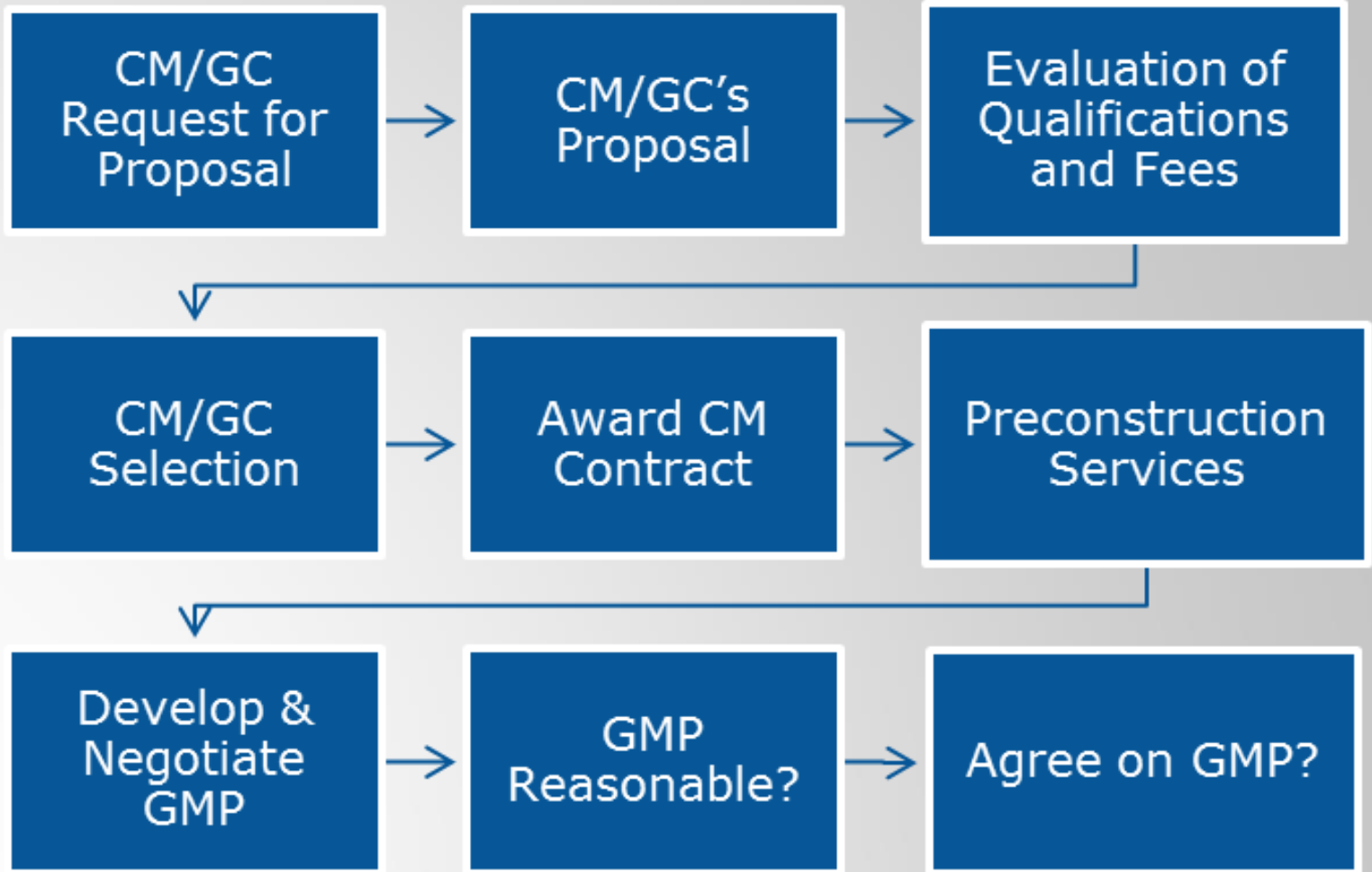
- Oversight Committee
- Alternative Contracting Manager/ PM
- Selection Committee
- Technical Project Committee



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One-step Best-Value CMGC Selection Model



Components of the Request For Proposals (RFP)

- Qualifications
- Cost factors
- Guidelines for responsive submittals
- Presentation directions and/or guidelines



Components of the Request For Proposals (RFP)

- **Scope of work**
 - Technical description of project
 - Budget constraints
 - Schedule requirements
 - Min/Max % of self-performed work
 - Owner constraints on the process for selecting subs by CMGC
- **Evaluation plan – totally transparent**
 - Evaluation criteria
 - Weighting scheme
 - Award metric

The CM/GC Process

- The construction manager provides price information, constructability, scheduling, construction phasing, and sequencing information to the owner.
- The Department may use Independent Cost Estimator (ICE) during the Preconstruction Phase
- The ICE uses production-based estimates



The CM/GC Process

- For each bid item, the selection team will evaluate if the GMP, Engineer's Estimate, or the ICE were within 10%
- TDOT has the option to accept the offered price or to procure the items later as part of the bid process for the construction project or by some other method



CM/GC Project Candidate

- Opportunity to explore innovation or technology
- Opportunities for value engineering
- Third party concerns must be settled early in process
- Selected Project

Fast Fix 8

Accelerated Bridge Construction Project

Nashville, Davidson County

TN TDOT

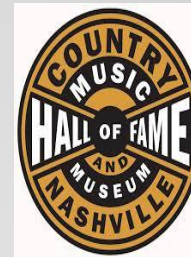


Project Overview



Project Overview

- Numerous Ongoing Maintenance Issues
- 140,000+ ADT
- Major Downtown Access Points



Fast Fix 8 Project Objectives

- Rehabilitate with Accelerated Construction Methods with Weekend Closures Only
- All lanes must be operational during work week (Monday thru Friday)
- Value lane closures (Working road and multiple bridges together)
- Reduce the number of weekend closures
- Close I-40 for safety and efficiency



Why CMGC on Fast Fix 8 ABC Project

- TDOT determined ABC would be used in order to minimize construction impacts to the traveling public.
- CM/GC delivery process was used in order to maximize design and construction efficiency.
- Existing condition of the structures necessitated the need for accelerated project delivery.
- CM/GC with ABC is a great approach because it provided the flexibility to better manage risk of dealing with uncertainty, and allowed contractor input very early on in the planning and design



Why CMGC on Fast Fix 8 ABC Project

- With the innovative construction method and time constraints CM/GC was the best to be used in order to obtain final project acceptance no later than June 2016 (Actual Completion December 2015)
- Early contractor involvement
- Constant input on schedule and cost
- Opportunities to manage costs risks through CM/GC involvement
- Flexibility (Early Action Items)



Why CMGC on Fast Fix 8 ABC Project

- Minimize inconvenience to the traveling public and maximize safety of workers and the travelling public.
- Facilitate a collaborative partnership with all of the members of the project team and the stakeholders.
- Provide high quality design and construction.
- Design to contractors strengths
- Shorten the delivery time at least two years.



CM/GC Selection Design Phase

- CM/GC Alternate Delivery Method – 1st TDOT Project

- Design Consultant



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- RFP Process to Evaluate Contractors
 - 4 Teams Submitted Proposals
 - Team Interviews and Innovation Discussions
 - 2 Part Evaluation Based on Technical Proposal & CM/GC Fee

- Kiewit Infrastructure South Co. was Selected

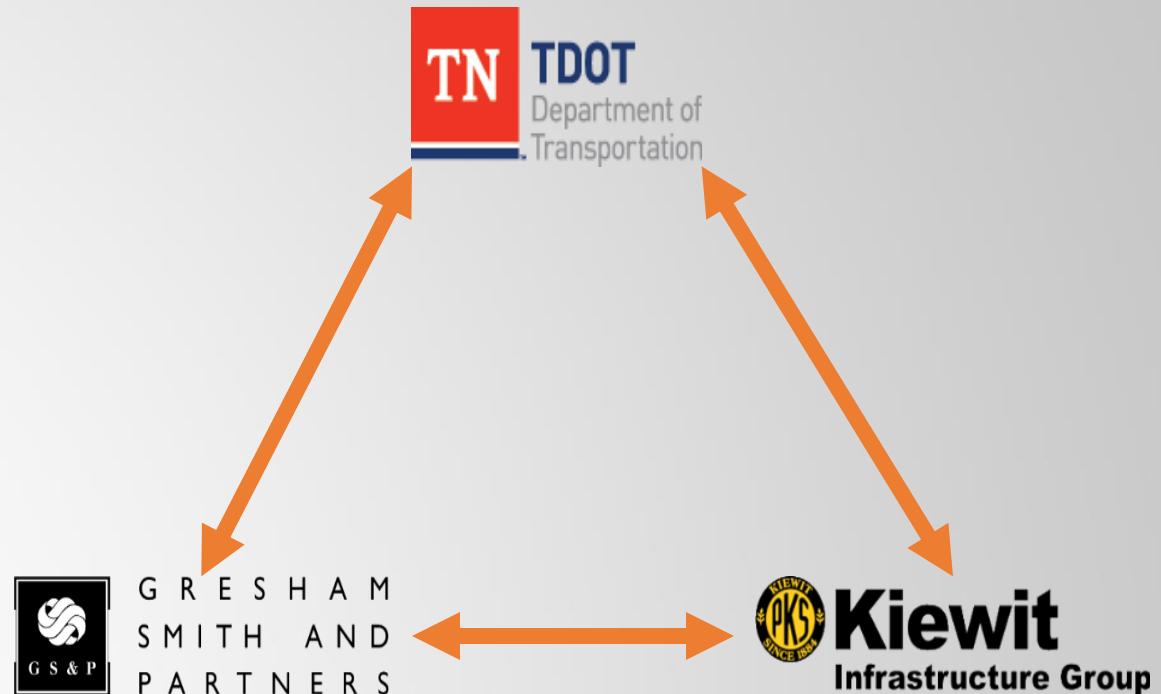


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Infrastructure Group



Pre-Construction Activities

- Working Group Meeting with:
 - TDOT Design Management Team
 - Gresham, Smith & Partners Design Team
 - Kiewit Infrastructure CM Group



Options Studied in the Project

- Deck Replacement with Full Depth Panels
- Superstructure Replacement
- Full Span Replacements
- Eliminate Spans
- Combination of Options



Pre-Construction Activities

- **Primary Project Evaluation Factors**
 - Budget
 - Schedule
- **Project Limitations**
 - Maintain Railroad Operations
 - Maintain Work-Week Traffic
 - Coordinate Local Access During Closures
- **Project Types Considered**
 - Structural Steel Superstructure Units
 - Full Depth Deck Panels
 - Lateral Bridge Slide
 - SPMT Bridge Move
 - Bridge Reconfiguration



Option Evaluation Criteria

- Duration of Closures – Number of Weekends
- Rough Order of Magnitude Costs
- Life-Cycle Analysis
- Railroad / Utility / ROW Impacts
- Procurement of Materials
- Constructability
- Risk



Pre-Construction Activities

- **Construction Milestones**

- CM/GC Process Kick-Off 10-22-2014
- ROM Pricing for All Options per Bridge Site 11-07-2014
- Preliminary Construction Estimates 12-30-2014
- GMP Estimate for all sites by 02-15-2015

- **Construction Limitations**

- 13 Weekends (maximum) Available beginning 5/1/2015
- Certain Weekends Not Allowed due to Major Community Events
- 6/15/2016 Deadline for Substantial Completion



Lessons Learned

- Early Coordination and Community Outreach keeps the public and media on your side.
- Communication between owner, designer, and contractor is imperative all of the way through the project.
- Work operations were improved from weekend to weekend by detailed team meetings discussing issues and how to improve work tasks.
- Keep the door of innovation open during the planning and design phases.



Lessons Learned

- CM/GC was chosen as the delivery method for Fast Fix 8 Project over D-B-B because of the need for speed and to manage risk.
- CM/GC gave us the flexibility to deal with risk in real time.
- the contractor was able to meet with the public early
- The contractor was able to adjust the construction approach because he was not restricted to a hard bid price.



Lessons Learned

- CM/GC with ABC was the best approach
- It shortened the time delivery by more than 2 years
- CMGC provided flexibility to respond to uncertainty, and captured the public's needs
- It facilitated a strong team work environment



2nd CM/GC Project in TN

- MemFix 4 is the second CM/GC Project in TN
- Using ABC with CM/GC
- Four Bridges including Rail Road Bridge Replacement

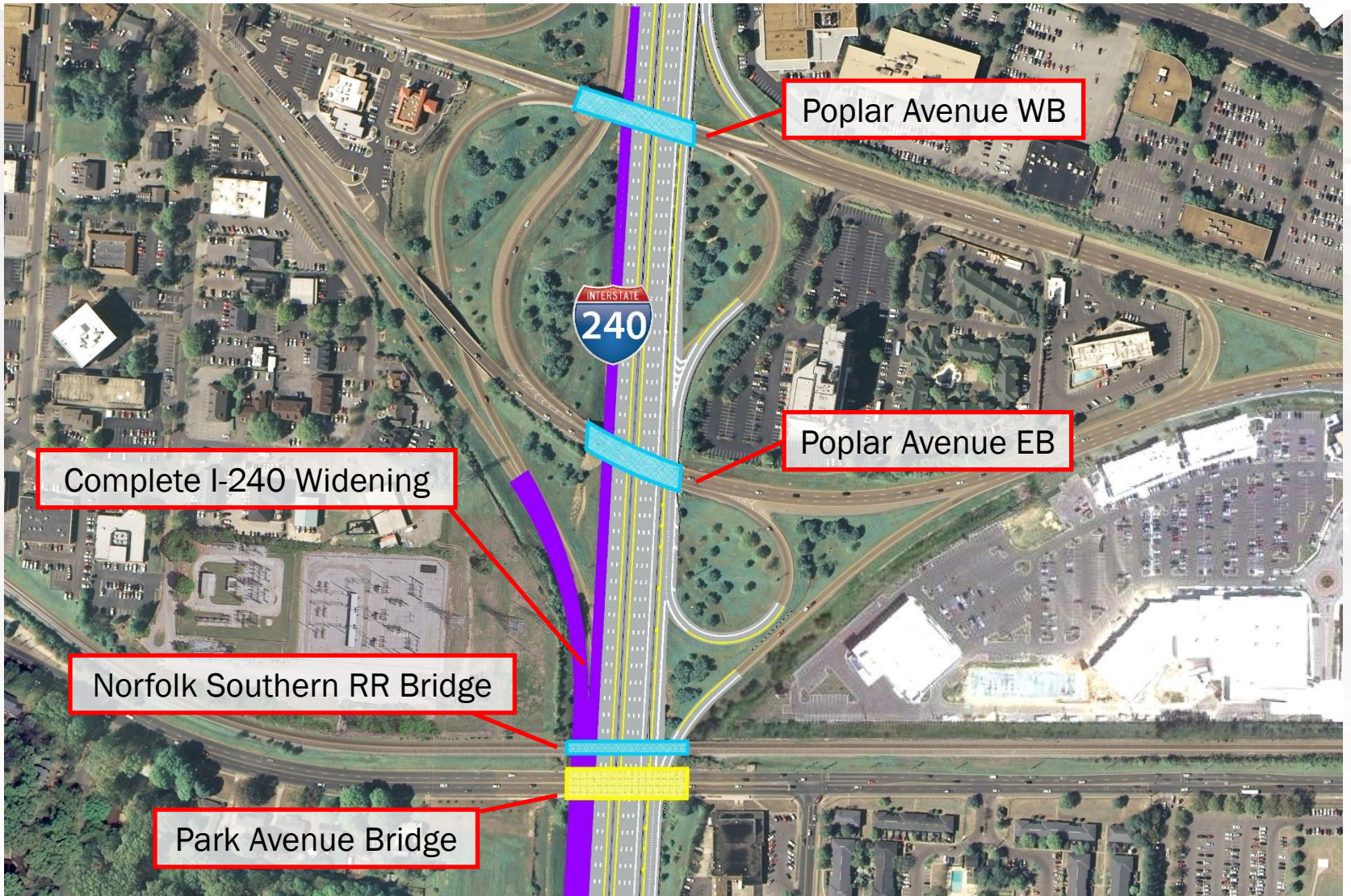




CM/GC PROJECT

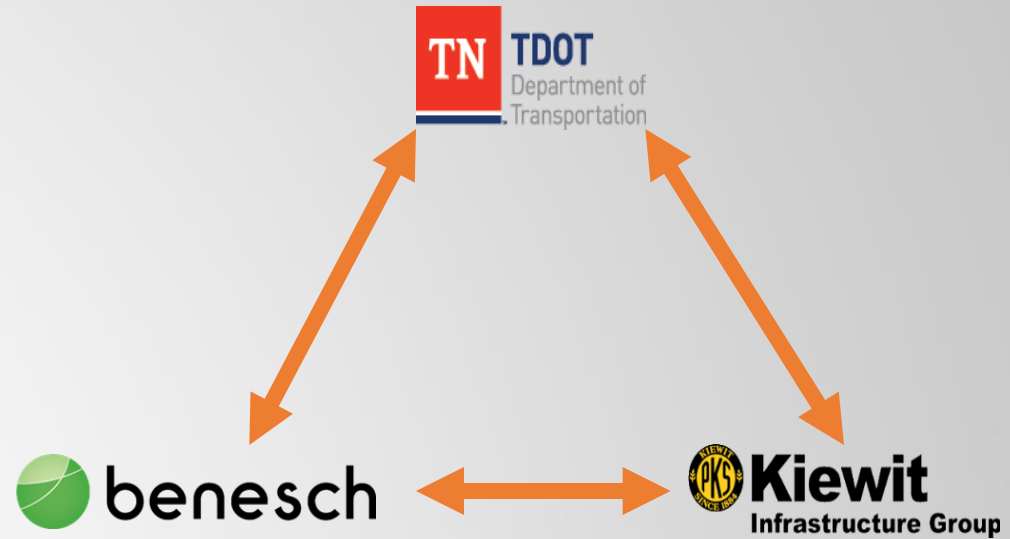


Project Overview



The MemFix 4 Team

- TDOT Design Management Team
- Benesch Design Team
- Kiewit Infrastructure CM Group



Questions



GRESHAM
SMITH AND
PARTNERS

