Progressive Design Build
Highway 89; Farmington to I-84

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Project Overview

• 9.7 Miles
• 4 New Interchanges
• 2 New Grade Separated Crossings
• New Surface Street Connections to the Interchanges
• Additional Lane of Travel in each Direction
Overview: Challenges & Constraints

- Fault line
- Municipal water tank
- Future transit Park-n-Ride location
- US Forest trailhead access
- Major petroleum supply line
- Stringent BOR requirements over its waterline
UDOT’s Approach to Progressive Design-Build

1) **Qualification Based Selection:** Looked to partner with the Design-Builder to develop the process.

2) **Bid-Letting:** Construction pricing used an Independent Cost Estimate (ICE) for bid reconciliation.

3) **Contract Structure:** Final contract structure uses UDOT’s Design-Build template.
Getting the Project UDOT Wants

1) **Opportunity:** An Owner-controlled, Contractor-involved scoping

2) **Optimization:** Constructability and innovation integrated into the project

3) **Reliable:** Collaborative risk allocation to resolve project challenges
A Different Team Structure

1) Contractor-engaged input during *scoping phase*

2) A *collaborative* Owner-Contractor *relationship*

3) Program Manager as an *extension* of UDOT staff

4) ICE to *validate pricing*
Accelerated Delivery: DB vs. PDB

Schedule Savings: 4 months
A Community-Influenced Project
A Focus on Optimization

All team members developed progressive concepts to:

1) Enhance *constructability from day 1*
2) Challenge *preferences* and expand *new techniques*
3) Engage challenges and constraints *head on*
Optimizing Oak Hills Road

BEFORE

- Limited access to the Holmes Creek area
- New culvert
- Stringent BOR requirements over its waterline
- Major petroleum supply line
- US Forest Trailhead Access
Created location for project fill (94K CY): $600k savings

Improved access to the Holmes Creek area

Eliminated need for box culvert: $500k savings

Mitigated BOR impacts w/ lightweight fill and wall: $1.2M savings

Combined trailhead parking and transit park-n-ride facility

Savings Total: $2.3M
A Quality Structure that Improved Efficiency

Integrated Quality Management Group (IQMG)

Legend
- Owner
- PDB Team
- Integrated Quality Management Group (IQMG)
- Blended Staff
Lessons Learned: What We Wish We Knew

- Better defined “project scope” and other related design criteria
- Blended roles of the Design-Builder
- Established budget and schedule expectations
- Engagement of the program management team simultaneously
- Right-size independent estimating resources
- Risk allocation is more complex due to conforming nature of the contract
Lessons Learned: PDB Value Added

• Innovation and creativity due to loosely defined scope
• Release of early packages
• Risk reduction through focused geotechnical investigations
• Feasible MOT plan that reduced local and highway impacts
• Construction Quality Management Plan approved prior to Contract
• Utilization of existing materials
Lessons Learned: PDB Value Added

• Unconstrained dialogue to explore innovative concepts
• Public Trust
• No Surprises
  • Contractually
  • Publicly
• Contractor is involved in Contract Creation (Not a lowest common denominator contract)
To be continued.....