Delivering Traffic and ITS on a $1 Billion Design-Build Project
DFW Connector Production and Management Structure

**Production Centers**
- Traffic/ITS (KHA)
- Areas 1-3 (BF)
- Areas 4-6 (PB)
- Utilities (PB)
- ROW (PB)

**Task Force Leads**
- Traffic/ITS (KHA)
- Structures (PB)
- Walls (PB)
- Drainage (PB)
- Roadway (PB)
- Schedule (PB)
- Geotech (PB)
- Paving (PB)
- MOT (PB)
- Environmental (PB)
- PI (NGC)
- Quality (NGC)
- ROW (NGC)
- Survey (NGC)
- Aesthetics (NGC)
- Utility (NGC)

**KHA Team Role**
- Illumination (T&P)
- Guide Signs (T&P)
- ITS (T&P)
- Traffic Signals (T&P)
- Signal Timing (T&P)
- Small Signs (P)
- Pavement Markings (P)
- TMC w/ KITS (T)
- TMC Operations (T)
- Tolling Facilities (P)
- Traffic Studies (T&P)
- Construction Engineering

**KHA = Kimley-Horn**
- PB = Parsons Brinkerhoff
- BF = Bridgefarmer
- NGC = NorthGate Constructors
- PI = Public Information
- MOT = Maintenance of Traffic

- T = Temporary
- P = Permanent
KHA Traffic / ITS Design Team

- Civil Associates, Inc. – Everything
- GRAM Traffic, Inc. – Traffic Data
- Hayden Consultants, Inc. – Signal Timing
- PowerSolutions, Inc. – Electrical
- Savant Group, Inc. – Guide Signs

Each firm above is a DBE, MBE, and/or a WBE
DFWC by the Numbers

- 1.02 billion
- 26
- 8.4
- 2.8 million
- 450,000
- 2550
- 10k
- 9001
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DFWC by the Numbers

- $1.02 billion for construction
- 26 lanes across at widest point
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DFWC by the Numbers

• $1.02 billion for construction
• 26 lanes across at widest point
• 8.4 miles of new freeway
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DFWC by the Numbers

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- 8.4 miles of new freeway
- 2.8 million total labor hours
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- ISO 9001 Compliant project
Project Phasing
Construction in Action
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Construction in Action
Expect the Unexpected
Expect the Unexpected
Expect the Unexpected
Interim TMC

- Detect and communicate traffic and operational conditions project-wide
- Two-way control of ITS devices
- ITS system:
  - DMS
  - CCTV cameras
  - Traffic sensors
  - Traffic signals
  - Communications
  - FTMS Software
  - TMC
Operations Manual

- Purpose
- Responsibilities
- Policies
- Contact information
- Operational procedures
Communication Tools

- Information hotline: Toll-Free 1-877-411-4212
- Project Office Storefront
- Web Site: www.dfwconnector.com
- Project fact sheets
- E-alerts
- Texting
Interim Communications

Interim Communications

Kimball DA

Bus. 114

Main

Texan Trail

Wm. D. Tate

SH 114

TxDOT

TxDOT TransVISION

TxDOT Satellite Communications Building

NorthGate Constructors Project Office

Stone Meyer

Kimley-Horn and Associates, Inc.
Dynamic Message Signs
CCTV Cameras

- 10 existing
- 9 to be constructed
Traffic Detection

- 16 devices existing
- 9 devices to be constructed
Permanent Communications

• Fiber Optic Cable
COMMON GOALS / THREADS

- Minimizing liability
- Meeting schedules
- Minimizing rework
- Staffing correctly
- Providing quality work
- Minimizing costs
- Attention to detail 😊
SUBMITTALS

- Interim (30%)
- Revised (60%)
- final (90%)
- FINAL (95%)
- Released for Construction - RFC (100%)
MULTILEVEL REVIEW PROCESS

- ISO 9001 Compliant
- Allow time for reviews in the schedule!!!!
- Design Quality Management Plan (DQMP)
  - Five-step Designer reviews
  - Interdisciplinary reviews
  - Three-step Design Management review
  - Reviews from NorthGate and TxDOT
  - Over-the-shoulder reviews / status sets
  - TIMES FOUR submittals!!!
  - +100 sets of eyes BEFORE RFC
DESIGN-BUILD CHALLENGES FOR DESIGNERS

• Increased workload / availability
• Tight schedules (just in-time plans)
• Extensive project management structure
• Interdisciplinary coordination
• Construction schedule modifications (a.k.a., you’ve got to be *&^%# kidding)
• Partnering a must
TOP TEN DESIGN ISSUES

10. Schedule creep / review times
9. CDA / schematic interpretations
8. Interdisciplinary conflicts (chicken and egg)
7. DOT / subcontractor preferences
6. Poor survey / base map information
5. CQAM versus the Design Plans (aka, common sense gone awry)
4. Design consistency
3. Permit and Right-of-Way approvals
2. Timely decisions
1. Aesthetics
QUESTIONS / DISCUSSION