

Delivering Traffic and ITS on a \$1 Billion Design-Build Project



DFW CONNECTOR ALTERNATIVES

- Configuration 3**
- May 15, 2009 Negotiated Scope**
- Configuration 2 Deferred Construction**



DFW CDA PROGRAM OFFICE



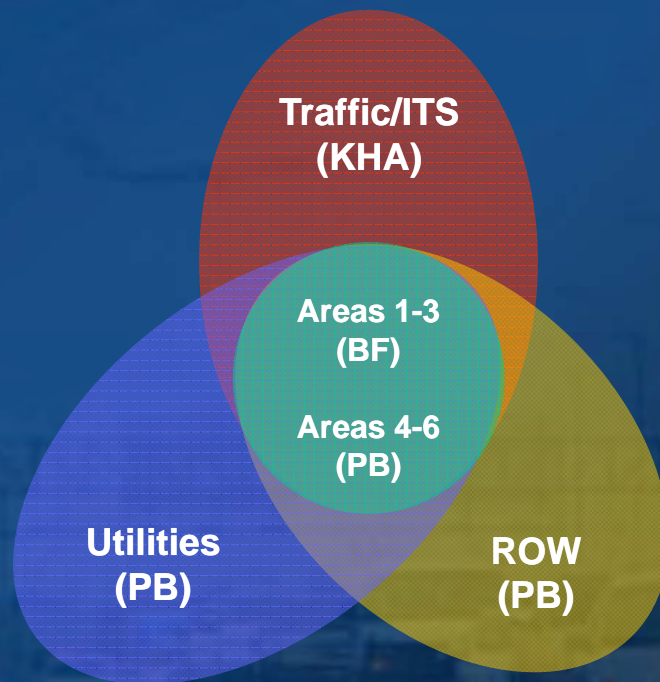
Kimley-Horn
and Associates, Inc.

NorthGate Constructors



DFW Connector Production and Management Structure

Production Centers



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

T = Temporary
 P = Permanent

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



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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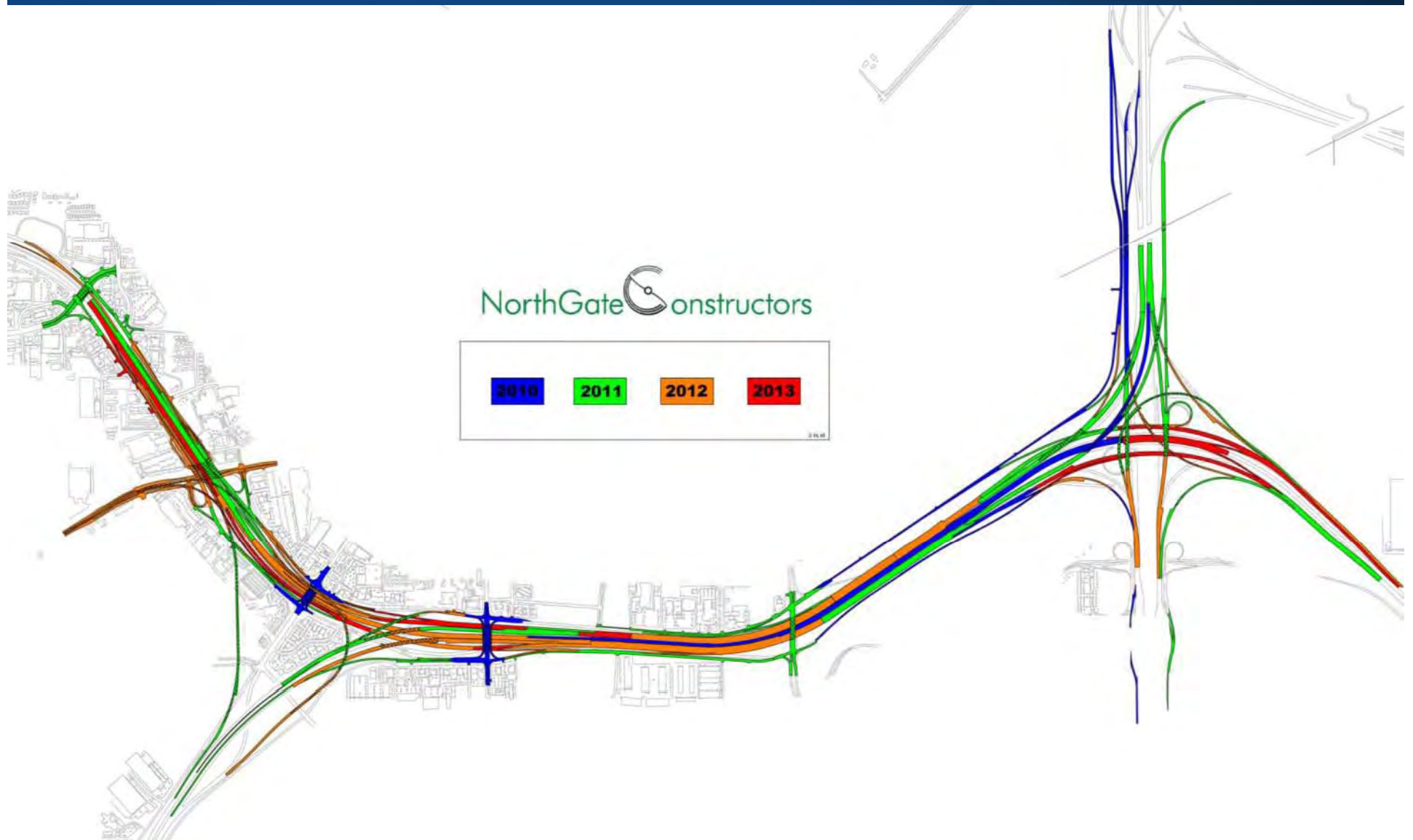


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- **ISO 9001 Compliant project**



Project Phasing



Construction in Action



Construction in Action



Construction in Action



Construction in Action



Construction in Action



Expect the Unexpected



Expect the Unexpected



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



DFW Connector

Transportation Management Center Operations Manual

Version 1.5.0

February 2010

Prepared by:
Kimley-Horn and Associates, Inc.

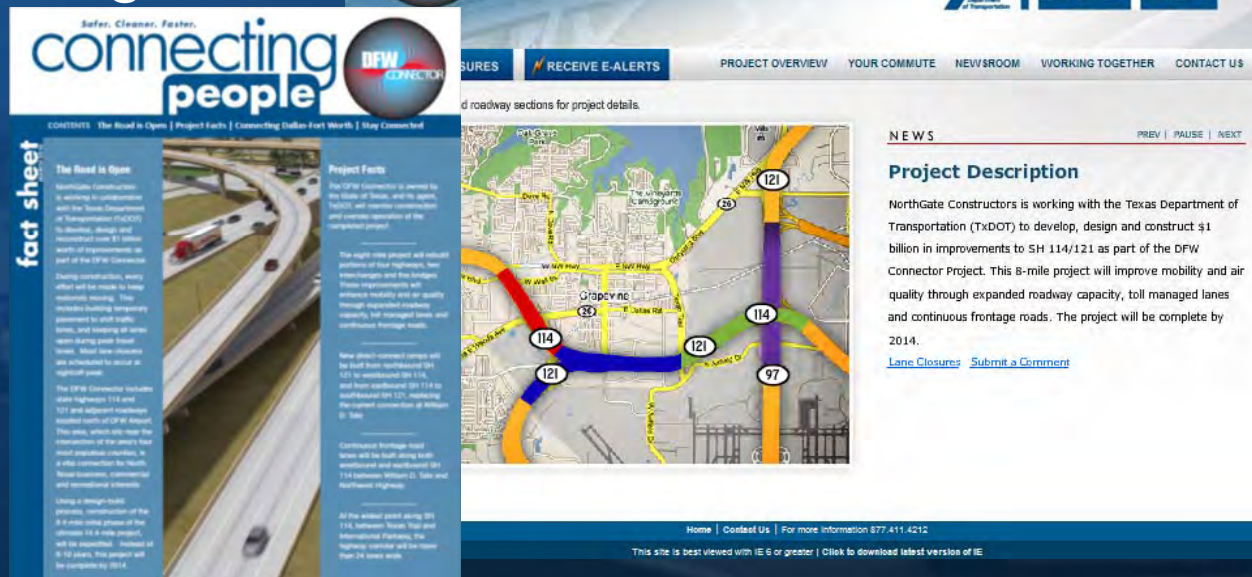


Prepared for:
NorthGate Constructors

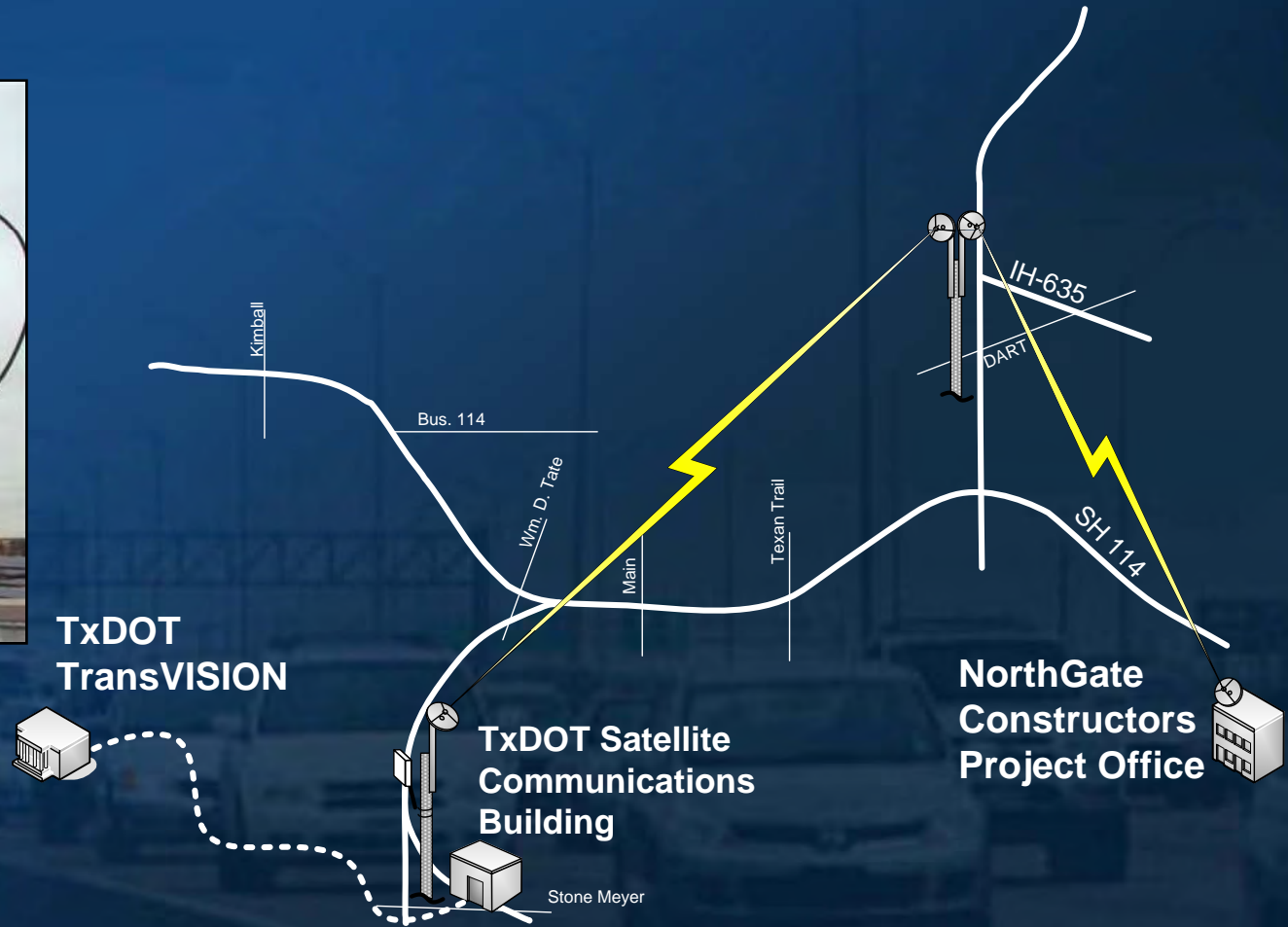


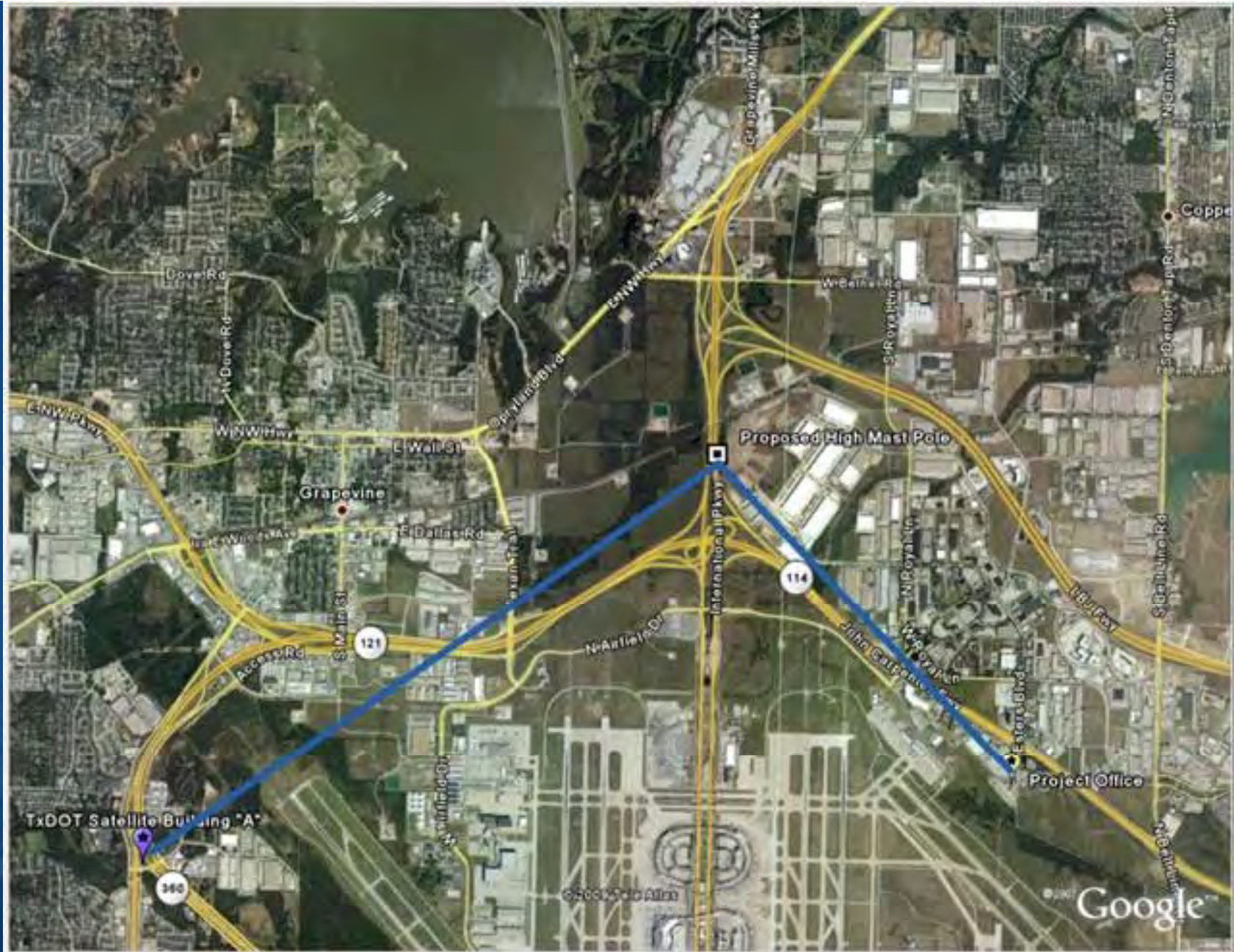
Kimley-Horn
and Associates, Inc.

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



Interim Communications





Dynamic Message Signs

DMS



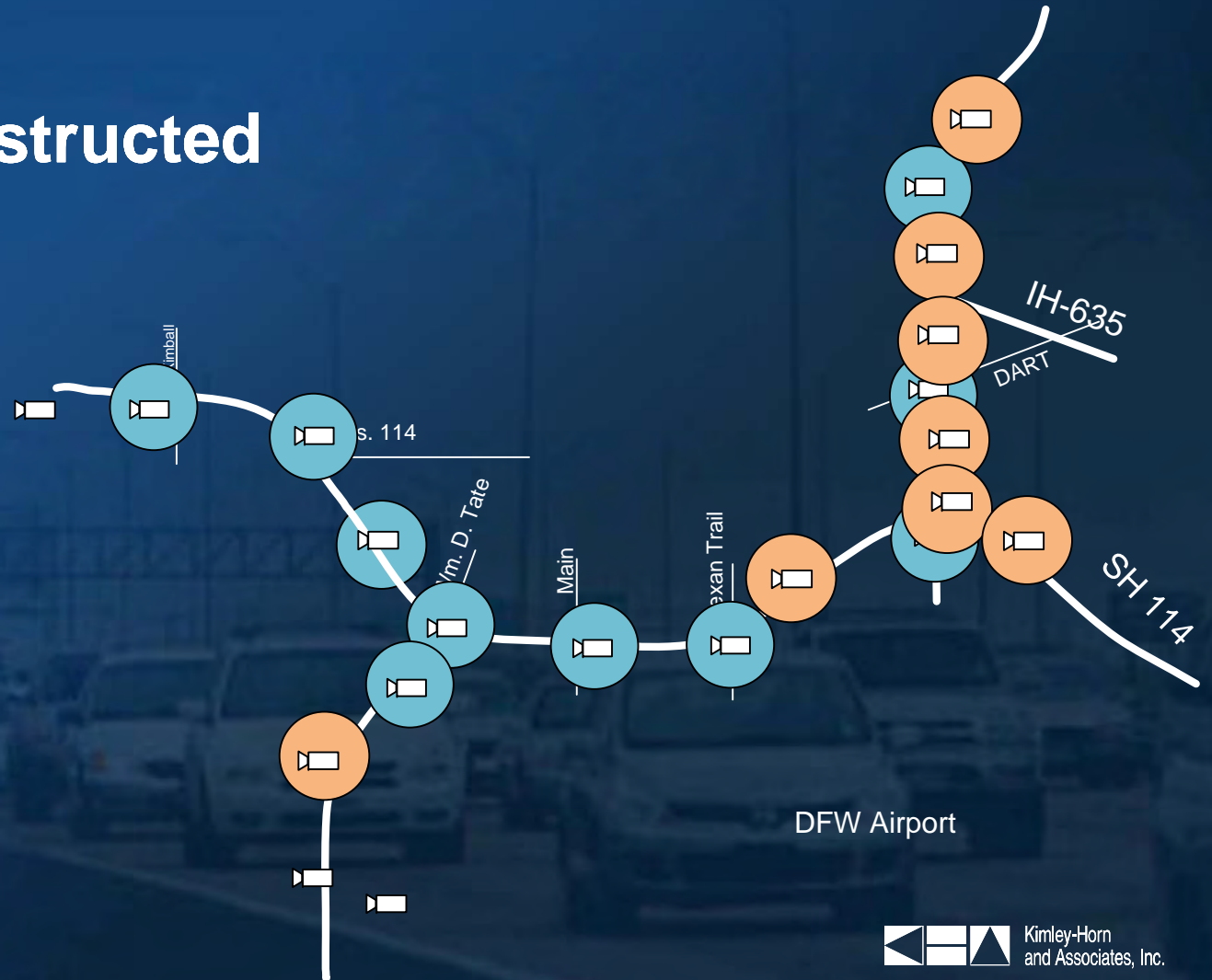
DMS

DMS



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

