Innovative Utility Concepts

April 16th, 2013 (8:00 – 9:30 AM)
Innovative Utility Concepts

Panel Leads

- Rob Elliott, P.E.
  - FHWA Resource Center
- Wesley Kaisershot, P.E.
  - FHWA Texas Division
- John Breed, SR/WA
  - Texas Department of Transportation

Moderator

Ken Leuderalbert, P.E, FHWA Utility Program Manager
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Today’s Roundtable

- Rob Elliott, P.E.:
  - Early Involvement with Utilities (20 Minutes)
  - Q&A (10 Minutes)

- Wesley Kaisershot, P.E.:
  - Utility Successful Practices (20 Minutes)
  - Q&A (10 Minutes)

- John Breed, SR/WA:
  - DOT Innovative Practices (20 Minutes)
  - Q&A (10 Minutes)
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Early Involvement With Utilities

Rob Elliott, P.E. – FHWA Resource Center
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- During the NEPA and/or Planning process
  - Getting the Utilities to begin design and budget
    - Utilities often lack money to adjust
    - Utilities could get moving on design earlier
  - How?
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- Early Contractor Involvement = Early Utility Involvement
  - Point of contact with Utility Owners
    - Many projects will have same utility owner
    - Partnering is a key
  - Construction around Utility conflicts
    - Think outside the box
  - Contractor may have contacts
    - Previous projects/good relationship
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- Looking at the “Rest of the Story”
  - Other parties involved in the process of coordination
    - Metropolitan Planning Organizations
    - Local Governments – Dept. of Public Works
    - Utility Companies
  - Partnering
    - Multiple agencies
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- What’s Out There, and where are they?
  - DOT Choices for Investigation
    - Subsurface Utility Engineering (SUE) and – SHRP 2/TRB research ongoing
    - “Call 811” – Call Before You Dig
    - Utilities assisting with locates
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Project Development Process:
Cradle to Grave

Planning -> ENV -> Design -> ROW -> Cons -> Maint

Location & Design Concept approval

NEPA, CE, EA, EIS
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Phase

Ability to Influence Costs

High

Planning

ENV & R/W

Design

Bid

Construction

Operations & Maintenance

Constructability
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Round Table Discussion

- Early During the NEPA or Planning process
- Early Contractor, Early Utility Involvement
- What’s Out There?
- Development & Constructability ($$)
- Highway/Utility Issues Course: NHI 134006
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Utility Successful Practices

Wesley Kaisershot, P.E. – FHWA Texas Division
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Recent Innovative Practices

- State DOT successes
- Every Day Counts (EDC)
- Designing around
- State Laws/practices
- Your State?
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DOT Successes

- Mountain View Corridor Project, Salt Lake, Utah
  - Partnering agreements, cost sharing, acquisition of rights of way on behalf of utilities
  - 300-foot power/gas transmission corridor
  - 39% budget decrease and 1 year less in construction schedule

![Image of Mountain View Corridor Project]
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DOT Successes

- Louisiana Dept. of Transportation & Development (LADOTD)
  - Increase of projects in 2009 due to American Recovery and Reinvestment Act (ARRA)
    - Accelerated project schedules
    - Coordinating, collaborating, coordinating, information exchange
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DOT Successes

- Texas Dept. of Transportation, Neches River Bridge Project, Interstate 10, Beaumont, TX
  - Relocations one year ahead of schedule, $5 million savings
  - TxDOT, consultants, and eight communication companies
    - Coordinated utilities to share a single trench and conduit system
    - 36” conduit, 16 inner ducts, 4,200 LF, private access to lines
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DOT Successes

- Louisiana DOT; O’Neal Lane Project, LA 3245; Baton Rouge
  - Narrow ROW, stacked utilities, schedules of adjustments
  - LADOTD and consultants careful collaboration
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DOT Successes

- Segments 5&6, State Highway 130, Texas (SE of Austin)
  - Flexible reimbursement policies – owner/developer managed
  - Developer financed, designed, acquired ROW, adjust utilities
  - Built a spirit of cooperation between TxDOT, Developer, utility
  - Use of consultants greatly aided this achievement
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DOT Successes

- Sewer Rehab, Route 3 at Passaic River, Clifton, New Jersey
  - Innovative technologies to strengthen 90-year old arch sewer
  - $1.4 million savings over traditional methods
  - Robotic camera and laser probe to determine existing conditions
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Other DOT Successes

- Utility Permitting System, Georgia DOT
  - Reduced time and cost of issuing permits
  - Convenience of utility owners and speed of approvals

- Georgia DOT – Leadership of Utility Coordination Program
  - Removed roadblocks – improved project delivery process
  - Incorporates utility owners into planning and development of highway projects

- New Hampshire DOT
  - Numerous national cooperative highway research projects
  - Leadership, commitment, vision to advancing utility adjustments
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Every Day Counts (EDC)

- **Summer of 2010 – EDC Part I**
  - Agreements
    - Part of highway contract
    - Master agreements on project wide basis
  - Reimbursements
    - Flexibilities as state laws allow/incentives
  - Relocations
    - Stacking or joint-trenching
  - Case studies/DOT commitments
  - Exchange of ideas and summits
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- Designing around “High Risk” Utilities
  - Lessons learned
    - Koch Pipeline, Austin, TX
    - Design Build projects
    - Others
  - Who takes responsibility/risk?
    - State DOT
    - Contractor – Developer
    - Utility Company
    - Local Agencies
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- Utility Accommodation Policies/Rules across the States
  - Can State laws be changed to help?
    - % of Reimbursement allowed on projects
      - Interstate Projects
      - Toll Road Projects
      - Public Private Partnerships (PPP)/Concessionaire
      - Pass Through Financing (PTF)
  - Utilities beginning design/relocations earlier in process
    - State “Early Project Releases”
    - Preliminary Engineering funds?
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- More Utility Issues to Consider for Innovations
  - Utility’s Rights
    - Compensable interests
  - State DOT’s Rights
    - Public Use for transportation purposes
  - Joint Use Agreements
    - What are you using to “share the right-of-way”
  - New Installations
    - Tracking GIS coordinates and/or database?
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Round Table Discussion

- Recent DOT Innovative Practices
- Every Day Counts
- Designing around utilities
- Policies/Rules across states
- Rights, Joint Use Agreements, New Installations
- Other State Innovations/Successes?
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SPD ROW Section – Responsible for Managing ROW and Utility Activities for:

- Public-Private Partnerships (PPP)
- Comprehensive Development Agreements (CDA)
- Design/Build Projects
- Concession Projects

→ Developer: used to define the consortium or group of companies under contract with TxDOT to design and build a PPP project.

→ “Developer” does not take on the same meaning as a Developer in a typical “private” project. The Developer on this “Public” project must follow TxDOT and FHWA rules and regulations.

“Design-Build Contractor”
## SPD Project Portfolio

<table>
<thead>
<tr>
<th>Project</th>
<th>Location</th>
<th>Length</th>
<th>Capital Cost</th>
<th>Project Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>SH 130 (1-4)</td>
<td>Austin</td>
<td>49 miles</td>
<td>$1.51 billion</td>
<td>Design-build</td>
</tr>
<tr>
<td>SH 130 (5-6)</td>
<td>Austin</td>
<td>40 miles</td>
<td>$1.34 billion</td>
<td>Concession</td>
</tr>
<tr>
<td>Spur 601</td>
<td>El Paso</td>
<td>7.5 miles</td>
<td>$367 million</td>
<td>Pass-through finance, Non tolled</td>
</tr>
<tr>
<td>Loop 1N</td>
<td>Austin</td>
<td>4 miles</td>
<td>$107 million</td>
<td>Design/Bid/Build</td>
</tr>
<tr>
<td>SH 45N</td>
<td>Austin</td>
<td>13 miles</td>
<td>$423 million</td>
<td>Design/Bid/Build</td>
</tr>
</tbody>
</table>
## SPD Project Portfolio

### Active Projects by SPD

<table>
<thead>
<tr>
<th>Project Name</th>
<th>City</th>
<th>Length</th>
<th>Cost</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>DFW Connector</td>
<td>Fort Worth</td>
<td>4 miles</td>
<td>$1.02 billion</td>
<td>Design-Build</td>
</tr>
<tr>
<td>North Tarrant Express</td>
<td>Fort Worth</td>
<td>13.3 miles</td>
<td>$2.05 billion</td>
<td>Concession</td>
</tr>
<tr>
<td>LBJ Freeway</td>
<td>Dallas</td>
<td>16.2 miles</td>
<td>$2.7 billion</td>
<td>Concession</td>
</tr>
<tr>
<td>Interstate 35E</td>
<td>Dallas</td>
<td>28 miles</td>
<td>$849 million</td>
<td>Design-Build</td>
</tr>
<tr>
<td>US 77</td>
<td>Corpus Christi</td>
<td>8 miles</td>
<td>$72 million</td>
<td>Design-Build, Non tolled</td>
</tr>
<tr>
<td>SH 99, F &amp; G (Grand Parkway)</td>
<td>Houston</td>
<td>37 miles (total loop 180+ miles)</td>
<td>$1.1 billion</td>
<td>Design-Build</td>
</tr>
</tbody>
</table>
SPD’s Utility Role in PPP Projects

1. Utility oversight different than traditional TxDOT utility coordination

2. Requirements and Utility Accommodation Rules

3. DOT a third party beneficiary

4. Utility Joint Use Agreements - a two party agreement
PPP Demand for Employee Resources

PPP projects are labor intensive - compressed schedule

→ Employees are experienced. Schedule doesn’t allow for trainees.

→ Don’t underestimate how many ROW/Utility personnel are required to deliver the project on schedule. Rely on consultant assistance

→ DOT should hold training work shops for internal, consultant and Developer staff
The Importance of Early Involvement
“Get the Word Out”

- PPP projects are unfamiliar to most Utility owners
  - First PPP Project
  - Utility’s Fear
  - Get word out early

- Establish stakeholder support
  - Developer appreciates the coordination and reduces risk
  - Project letter to Utilities
  - Notify internal DOT sections
  - Kick off meeting and PPP forms
PPP Utility Incentives by Developer and TxDOT

Incentives in different forms:

a) Monetary (Developer)
b) Schedule
c) CDA Payment Requirements (Security)
d) Pre-Contract actions by DOT
Pre-Contract Actions by TxDOT: SH 99 – CenterPoint Energy

TxDOT Early Design & Material Purchase
Pre-Contract Actions by TxDOT: IH 35E: Atmos Gas - Lake Lewisville Crossing- TxDOT Early Design & Material Purchase
Co-Location and Local Approval Authority

- SPD has created project offices
- SPD staff co-locates with the Developer group
  - economies of scale in operational
- Informal Over the Shoulder reviews
Constructability and Schedule issues - Risk items transferred to Developer

- Most adjustments have no issues
  - Strong Developer performance
  - Preventing and resolving issues

- Constructability – developer’s financial and schedule risk

- TxDOT assistance
  - Constructability and schedule issues
Constructability Issues

- FH inaccessible
- FH too close to curb line
- Curb line and inlet is closer to water main than shown on DWU drawings
- Active 16" Water without embedment

[Image of a construction site with annotations indicating issues such as FH accessibility, curb line placement, and water main issues.]
Constructability Issues
Developers Risk – Schedule Issues: Pipeline carried all aviation fuel for the DFW, TX airport and a large portion of gasoline for the greater Austin area. Located in 30-foot cut section.
Developers Risk: Schedule Issues
Developers Risk: Schedule Issues
Developers Risk: Schedule Issues
SPD Partnership Approach

- Project success dependent on effective partnering and cooperation
- Parties working together to accomplish the common goal of delivering the project under the terms of the CDA.
- Developer’s proposed methodologies
  - Streamlining and Flexibilities
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Round Table Discussion

- PPP Innovations at TxDOT
- Other project delivery methods