INNOVATIONS IN UTILITY

CONFLICT MANAGEMENT
GARY L. RAY

Historical Perspective
Research

- A systematic controlled inquiry
  - Often involves analytical or experimental activities which seek to gain new knowledge
  - May involve development of new/revised products

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- Basic Research
  - Study of phenomena to gain knowledge

- Applied Research
  - Project directed at solving a specific problem
    - Usually results in the development of products ready for implementation
Research Project 0-5475

0-5475 Collection, Integration and Analysis of Utility Data in the Transportation Project Development Process

- **Start Date** - 09/01/2005
- **End Date** - 08/31/2007
Effort included interviewing employees from
- Various TxDOT Districts
- Turnpike Authority
- Utility service providers

Reviewed utility coordination procedures and processes
- Approaches to data collection and management
- Collected samples
- Identified needs and/or pertinent issues
Incompatible Systems

Utility coordinator web site
Conflict data in Excel and Word
1,400 utility conflict locations
40 utility companies
300 contacts
Microstation schematics
Meeting schedules
Other information

Right of Way Information System (ROWIS)
General approach

- **Analyze**
  - Data types, requirements
  - Information flow between stakeholders

- **Develop**
  - Business process model, perform data modeling
  - Prototype utility data management system
  - Visualization tool for analysis of utility conflicts
Deliverable Prototypes

- Utility Conflict Data Management System
  - Capable of generating reports
- Programmer Guide
- User Guide and Educational Materials

Good Ideas Are A Dime A Dozen, People That Put Them Into Action Are Priceless

- Initial implementation fell short
  - Good News, we now have a second chance!
SHRP 2 PROJECT R15B AND C

PILOT APPLICATION OF PRODUCTS FOR THE IDENTIFICATION OF UTILITY CONFLICTS AND SOLUTIONS

EDGAR KRAUS, P.E.

Texas Transportation Institute
Identifying and Managing Utility Conflicts (R15B)

- **Challenge: utility issues**
  - One of the top reasons for delays affecting transportation projects
  - Critical factor: lack of adequate information about location and other attributes of utility facilities affected by a transportation project

- **Solution: R15B products**
  - Use utility conflict matrix (UCM)- based approach
  - Designed to help agencies and utility companies manage utility conflicts effectively during project development and construction
SHRP2 R15B Products

- Compact, standalone UCM
- Utility conflict data model and database
- One-day UCM training course
Product 1: Utility Conflict Matrix

- MS Excel format, includes drop-down lists
- Standalone UCM spreadsheet is the product
- Process embedded in table structure

<table>
<thead>
<tr>
<th>Utility Owner and/or Contact Name</th>
<th>Conflict ID</th>
<th>Drawing or Sheet No.</th>
<th>Utility Type</th>
<th>Size and/or Material</th>
<th>Utility Conflict Description</th>
<th>Start Station</th>
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<th>Start Offset</th>
<th>End Offset</th>
<th>Utility Investigation Level Needed</th>
<th>Test Hole</th>
<th>Recommended Action or Resolution</th>
<th>Estimated Resolution Date</th>
<th>Resolution Status</th>
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Product 1: UCM Cost Estimate Analysis

- MS Excel format, includes drop-down lists

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Product 1: Benefits/Limitations

- **Benefits**
  - Systematic management of utility conflicts
  - Improved tracking and accountability
  - Cost estimate analysis spreadsheet
  - No IT support needed

- **Limitations/challenges**
  - Scalability
  - Variety of UCM structures in use
Product 2: Data Model and Database

- Formal data model
  - ERwin format

- Enterprise database support
  - Oracle, SQL Server

- Tested in MS Access using sample UCMs

- Focus on data model development and testing
Product 2: Benefits/Limitations

- **Benefits**
  - Efficient management of utility conflicts
  - Automated tracking and accountability
  - Wide range of queries and reports
  - More effective use of staff and other resources

- **Limitations/challenges**
  - IT support depending on implementation level/path
  - Higher initial investment
  - Need to develop user interface
Product 3: UCM Training Course

- 6 lessons, including
  - Overview of utility conflict identification and management
  - Use of database approach to manage utility conflicts
  - Hands-on utility conflict management exercise

- Training course binder
  - PowerPoint files, presenter notes, participant handouts, sample project plans, UCM templates
Objective:
- Work with MDSHA to conduct pilot implementation of the SHRP 2 R15B products

Deliverables:
- Report describing application and lessons learned
- Update SHRP 2 R15B products as needed
Lessons Learned: MD 32 Road Widening Project

- Avoided gas line relocation by changing drainage design
  - 4-6 months time savings
  - $500,000 cost savings

- Avoided other conflicts by changing construction sequencing

- Improved working relationship with utility owners, creating goodwill for future projects
Lessons Learned: MD 32 Road Widening Project

- UCM challenged designers to think out of the box
  - Made designers aware of utility issues on the project

- UCM facilitated teamwork
  - Helped utility coordinators understand design process better
  - Brought district staff closer together
Expanded Implementation

- Round 3 of joint FHWA/AASHTO Implementation Assistance Program

- Awards to 8 lead adopter states, including Texas
Workshops

TxDOT in conjunction with the FHWA and TTi will be conducting two day workshops beginning in October 2014.

The following topics will be presented at each workshop:

- SHRP 2 Project R15B and C
  Identification of Utility Conflicts and Solutions.
- Buy America Implementation.
- SB 514.
- Utility Process Updates.
Workshop Dates

- **October 23-24, 2014**
  Houston District

- **November 17-18, 2014**
  San Antonio District Office
  4615 NW Loop 410 at Callaghan Rd.
  Bldg. 2 Training Room
  San Antonio, TX. 78229-0928

- **December 01-02, 2014**
  Dallas District
JASON LANGE
Utility Coordination
TxDOT Bryan District
TRACKING REPORTS

- One Master Status report for all District projects
- One correspondence report that tracks individual project progress
# Timeline Chart

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WAYS TO AVOID DELAYS

- Work with Advanced Planning and the Design to get early notification
- Use utility records to avoid or mitigate conflicts
- Use one point of contact for reimbursable and non-reimbursable utilities
- The use of SUE contracts on more complex projects
Lives depend on it
QUESTIONS?