EAST RIVER ELECTRIC

Develops ArcGIS Mobile for Collection and Inspection!

Esri UC 2014
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About East River

- Provides electric power to:
  - 24 Rural electric cooperatives & 1 municipally-owned system
  - 113,000 homes and businesses
  - 250,000 consumers
  - 8 regional service centers

- Service Area
  - 40,000 square miles
    - 41 counties in South Dakota
    - 22 counties in Minnesota
About East River

- 125 employees
- 226 substations
  - Power supply and distribution
- 2,800+ miles of transmission line
- 48,000+ transmission structures
About Pro-West

- Application development
  - Web
  - Mobile
  - Desktop
- Data development
- System architecture design
- Geodatabase design/tuning
- Training
- Consulting
- Aerial photography
ERE Previous Inspection System

- Paper Inspection form
  - Damages recorded

- Inspection forms were sent to be photo copied and archived.
ERE Previous Inspection System

- Information passed on to maintenance coordinator
- Damaged poles entered into a spreadsheet
- Contact made to Service Areas
  - Who reported the damage?
  - Was the damage fixed?
  - If not, when would it be fixed?
  - Who completed the work?
  - When was work completed (date)?
Motivation for Application development

- System wide Inventory of transmission structures
- Agency requirements on tracking inspections
- Reduce the amount of time
  - Recording Inspections
  - Processing Inspections
- Displaying / sharing structure locations and information
- Reporting
Workflow Overview

GPS Structures → Inspections → SharePoint
Planning for Mobile

- Field devices
  - Tested Trimble and Juniper devices

- Software
  - Esri: ArcGIS SDK for Windows Mobile

- Data collection
  - Field viewing/editing
  - Office viewing/editing

- Migrating existing MS Access to SQL
Mobile Application Development

- C#.NET, SQL Server Synchronization Services
- Workflow analysis
- Eliminating number of end user clicks
- Validation
- Draft forms
Developing the Application

- This and That
  - Make sure design application is flexible allowing it to adapt for changes
  - Application used dynamic form creation
    - Allowing items to be added to forms in application
Developing the Application

*This and That* (continued)

- Related tables synced using SQL Server Synchronization Services
- Scheduled syncing automated from device to SDE and SQL tables
- A WCF service is required for mobile application and SQL services to communicate
- Application identifies closest pole for inspection
Application Demonstration
End User Feedback

- Easy to use forms
- Ease of synchronization
- Lightweight field device with a larger screen
- Increased productivity
- More efficient
Keys to a Successful Project

- End user testing and involvement
- Timely responses to end user requests
- Choosing the right field device
- Good development practices
- Communication
- Well thought out design
Lessons Learned

- Communication is key
  - End users
  - Developers
  - GIS/IT staff
  - Others

- Is there anything ERE would do differently?
  - Development vs. Application Testing
Questions?

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