Leveraging ArcGIS Across The Utility Enterprise

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Agenda

- Introduction
- About Northeast Utilities
- About Epoch Solutions Group
- eGIS Initiative & Business Drivers
- Mobile GIS
- Damage Assessment
- Questions
About Northeast Utilities

• New England’s Largest Utility System
  - Fortune 500 company
  - Connecticut, Massachusetts and New Hampshire
  - 3.6 Million Electric & Natural Gas Customers
  - 4,270 circuit miles electric transmission
  - 72,000 pole miles electric distribution
  - 3,500 miles gas pipeline

• Long History Of GIS Technologies
  - GE Smallworld and Esri

• Recently merged with NSTAR
About Epoch Solutions Group

• Founded in 2006

• Provider of Geospatial Technology Products & Implementation Services
  • Domain knowledge primarily Utility Industry
  • Initial business focus on cross platform integration

• Specialize in:
  • Esri ArcGIS (ArcGIS Server, Web API’s, ArcGIS Online, ArcObjects etc.)
  • Mobile Field Solutions & Workflow (EpochField Production Solution)
  • Smallworld – Esri Integration (EpochSync Product Solution)
eGIS Initiative

• Pre NSTAR merger NU had a long history with GIS and had in place a GE Smallworld solution that supports engineering design, engineering analysis, thematic reporting, map generation, and network connectivity model except for one operating company (PSNH) and the Transmission Dept.

• PSNH and Transmission have indicated preferences for exploring other GIS vendor platform options (namely ESRI)

• PSNH had already started a GIS project with NHPUC approved funding of $2M capital per year over the next 5 years

• NU executive team approved formation of an Enterprise GIS Strategy Team in the summer of 2011

• Team developed this Enterprise GIS Strategy which established a “directional roadmap” and IT Architecture within the context of a 5 year roadmap that included:
  - Looking for an enterprise solution to be used by all operating companies and transmission
  - Recommendations regarding technology platform, integration and support organizations
  - Develop strategy implementation approach
  - Develop order of magnitude cost to execute strategy
Pre eGIS Systems at Northeast Utilities

• GE Smallworld
  - Applications CT, NH, Western MA
    - Electric Distribution
    - Gas Distribution

• ESRI ArcGIS
  - Applications
    - NSTAR Electric (ArcSTORM)
Pre eGIS Challenges

• **GE Smallworld GIS Technology**
  - Proprietary Database & Language
  - App Development / Support Costs
  - Resource Availability & Cost
  - Obsolescence Concerns
  - Limited Use of Emerging Technologies
  - No easy way to bring GIS to have “masses”

• **Operating Companies Desire For Esri Technology**
Current Architecture

ArcGIS Online Services

NSTAR Esri Geodatabase

eGIS Esri Geodatabase

Electric/Gas/Land GIS
CT,NH,W MA
Advantages

• Enabling, Best-of-Breed Architecture
• Creates a standard, scalable GIS Database that can support all NU companies
• Ability to Leverage Emerging Technologies
• Open Data Access which resulted increased workforce performance through easier access to T&D asset information which results in better decision making
• COTS* & rapid application development process
• Mainstream Development Tools & Language
• Increased Resource Availability
• Reduced Costs
• Simplified Systems Integration
• Standard, secure methods for sharing GIS data
• Sustain performance & expand to GIS Mobile
• Improves NU’s capability to communicate with internal and external stakeholders through GIS-based visualization and pattern-based techniques
Northeast Utilities Applications

- Vegetation Management
- eGIS Web Portal
- Distriview
- Desktop
- Damage Assessment
- eGIS
- Reporting
- Adhoc Users
- EpochField
- Mobile GIS
- Smallworld Data Cleanup Results
- VEGETATION MANAGEMENT
Mobile GIS – EpochField

- Built On Esri Runtime
- Disconnected & Connected Data Access
- Integration with Esri ArcGIS Server for data extract
- Integration with ArcGIS Online & Cloud Based Services
- Fast Performance – Tile Based Rendering
- Multi Touch & Gesture Support For Latest Devices
- Multimedia & GPS Support
- Field Data Collection & Synchronization Of Results
- Field Workflow Support – Damage Assessment, Vegetation Management, Inspection
- Expandable Framework – Customizable Components & API
- Technology Roadmap
eGIS Viewer

- Corporate GIS Viewer
- Esri Web API based application
- ArcGIS Server Tile Based Services For Asset Data
- Minimal Training Required For Entire Enterprise
- Allowed Non-Traditional Users Access To GIS Data
- Springboard For New Application Needs Across Company
- Integrated with ArcGIS Online/Cloud Services
Damage Assessment

Electric GIS CT,NH,W MA

Land GIS CT,NH, W MA

Esri Advanced Server Cluster

OMS Oracle RAC

SQL Server

Damage Assessment Schema
OMS Schema
SDE Schema

Damage Assesssment Dashboard

OMS / DA Sync Process

Damage Patroller ArcGIS Mobile

OMS Analyzer

DA Web User
Questions