Fast Track Conversion from ArcInfo 7 to ArcGIS 8/ArcFM 8

Colorado Springs Utilities
Miner & Miner Consulting Engineers
ESRI Electric and Gas Users Group
October 15, 2002
Project Background

Colorado Springs Utilities GIS History

- Approximately 200,000 Utility Customers
- An ESRI Site Since 1989
- Using MM PowerTools (AML/Librarian Application) Since 1992
- Over 50 CSU Employees in Various GIS Initiatives.
- A New Corporate Structure in 2001 Allowed for a GIS Integration Project Using ArcGIS and ArcFM 8
- An Internal CSU Client, the OMS Team, Pushed the Project Schedule and Deliverables
The 3-D Project Plan

- Design – Stage 1 (2 Months)
- Develop - Stage 2 (2 Months)
- Deploy - Stage 3 (2 ½ Months)
Design - Stage 1

- Functional Requirements Review
- Data Model Workshops 1 and 2
- *Working With ArcFM* Class at Miner & Miner’s Facility
- Data Migration Planning
Design - Functional Requirements Review

- Identified the Need for Two Customizations
- 1st Customization - Edited Features Tracking Monitor
  - All Attribute and Spatial Edits to Features are Logged to a Versioned Oracle Table
Edited Features Tracking Monitor

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Design - Functional Requirements Review

2nd Customization - Transformer to Service Point Connectivity

- Creates or Maintains Service Point to Transformer Relationships When Secondary Features Are Edited
Transformer to Service Point Connectivity
Design – Data Model Workshops 1 and 2

- ArcGIS Electric Distribution Data Model Used As Starting Point
- Gathered a Small Group of Subject Matter Experts
  - Electrical Engineer/Network Expert – 1 Person
  - CSU's Electric GIS Technical Team – 3 People
  - Electric Data Model Expert – 1 Person
- Modified the Model to Reflect CSU's Business and Data Needs
  - Built a Logical Model First and Then A Physical Model
  - Segmented the Data Into Voltage Categories – 12.5 & 34.5 kV
Design – Migration Planning

- Defined All Sources of Data to Be Migrated
  - Conductors, Electric Devices and Annotation - 12.5 & 34.5 kV
  - Secondary Features – Conductors, J Boxes and Meters
  - Physical Data – Poles and Structures
  - Landbase Data – Streets and Parcels
- Developed a Representative Data Model
- Developed a Data Conversion Matrix
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Develop - Stage 2

- Data Migration – Pilot 1
- Installed Production Hardware and Software
- Developed Preliminary Customizations
- Loaded and Reviewed Pilot 1 Data
- Adjusted the Data Model Based on Pilot Data Review
- Initially Configured GeoDatabase and ArcFM
Develop - Data Migration Pilot

- Created Conversion Routines Using AML and SQL
- Migrated From Librarian Tiles to ESRI Coverages
- Automated Some Data Clean-up Tasks
- Created QA/QC Tests for Attribute and Connectivity Integrity
- Split Coverages Into Feature Class Coverages
  - Separate Coverages Created for Transformer Banks, Switches, Fuses, OH Primaries, UG Secondaries…etc.
  - 3 Annotation Layers Were Split Into 60 Annotation Layers
- Loaded Coverages Into the Geodatabase
Develop - Preliminary Customizations

Used Standard Software Development Practices

- Specifications
- Approved Specs
- Initially Coding
- Unit Testing
- Installed
- Review
Develop - GDB and ArcFM Configuration

- Manually Created 60 Annotation Feature Classes
- Configured ArcFM Properties
  - Reordered Fields, Created Mandatory Fields, Chose Field Visibility & Set Primary Display Fields
  - Created Composite Favorites of Switch Cabinets
  - Assign Standard AutoUpdaters
  - Initial Set of Symbols and Stored Displays
  - Initial Set of Page Templates for Map Books
Develop - GDB and ArcFM Configuration
Deploy - Stage 3  (1 of 2 Slides)

- Migrated Data for Pilot 2
- Finalized ArcFM Configuration
- Final Development of Customizations
- Created Production GeoDatabase
- Loaded and Reviewed Pilot 2 Data
Deploy - Stage 3 (2 of 2 Slides)

- 3rd Pilot Was Needed to Correct Data and Routines
- Migrated and Loaded Production Data
- Configured Feeder Manager on Production Data
- System Acceptance Testing Completed
- End Users Trained On-Site
Deploy - Go Live!
Post Production Support

- Supported the Addition of Complex Switching Features to meet OMS Requirements
- Refined the Version Management Strategy
- Resolved Performance Issues
  - Corrected Faulty Profiles on the Novell Network
  - Suggested Strategies for Increasing ArcMap Performance Issues caused by Numerous Annotation Layers
  - Resolved Feeder Manager/ Versioning Issues
CSU Versioning Scheme

Default Version Protected

- Editor 1
  - Monday
  - Tuesday
  - Wednesday
  - Thursday
  - Friday

- Editor 2
  - Monday
  - Tuesday
  - Wednesday
  - Thursday
  - Friday

- Editor 3
  - Monday
  - Tuesday
  - Wednesday
  - Thursday
  - Friday

- Editor 4
  - Monday
  - Tuesday
  - Wednesday
  - Thursday
  - Friday

- Editor 5
  - Monday
  - Tuesday
  - Wednesday
  - Thursday
  - Friday

- Editor 6
  - Monday
  - Tuesday
  - Wednesday
  - Thursday
  - Friday
Project Challenges

- A Fast Paced Schedule Caused Some Extra Work
  - Data Errors Resulted in a Pilot
  - Limited Time for a Transfer of Knowledge in Managing a New and Complex System
- Difficulties With Geodatabase Annotation
  - Difficult to Create and Manage in ArcCatalog
  - Slowed Performance in ArcMap
- Network Profiles Caused Slow Client/Server Communication
- Feeder Management
  - The Data Cleanup Work Flow Caused Numerous Conflicts
Project Successes

- Successful Migration to ArcGIS 8.2 and ArcFM 8.2
- Met Limited Project Schedule and Budget
- Cooperative Client/Consultant Relationship
- Increased Editor Productivity
- End User Acceptance of New Application
- Increased Data Security and Data Integrity
- Stable Production GIS that Will Be Expanded to Include Water, Gas and Telecom Facilities.
- No Major Project Flaws were Encountered
Top 10 Factors Contributing Project Success

10 Well Defined Project Goals
9  Management’s Commitment to the Project
8  Experienced GIS Staff
7  Project Planning and Scope Management
6  Technical Expertise of the Consultant
5  Openness to Learning During the Implementation
4  A Positive and Proactive Attitude When Challenged by Setbacks
3  Project Leadership by both Client and Consultant
2  GIS Staff’s Ownership of the Project
1  A Lot of Hard Work!
Questions?

Tom Taber – Miner & Miner
tomt@miner.com

Will Allender – Colorado Springs Utilities
wallender@csu.org