Dominion WebGIS

Leveraging ArcIMS to assist in Storm Outage restoration

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Introduction

Dominion WebGIS is:

- an intranet-based application

To be used for:

- daily GIS viewing
- map printing, and
- project “packaging” during storms
Why Dominion WebGIS?

• To provide the System Storm Center and Distribution Operations a system that blends certain features and functionality of both ArcFM Viewer and Dominion Viewer in a user-friendly Intranet application.

• To promote more effective storm restoration and resource planning.
What are the High-level Business Requirements?

- Group work in manageable packages by truck assignment on the TRS Work Request. (i.e., by circuit, grid, or contractor)
- Provide visual verification of work assignments
- Minimize potential safety issues.
What Dominion WebGIS Does

at the beginning of a storm event ...

job locations are usually issued on a ‘by circuit’ basis. This keeps different teams off of the same circuits
What Dominion WebGIS Does

as a storm event winds down …

the work packaging focuses more on geographic areas or grids. This allows crews to perform repairs in smaller areas and complete as much ‘minor’ work as possible.
How does it help to accomplish these tasks??
Symbolize Outage work requests by the number of customers out...
Symbolize Outage work requests by the work request Status...
Symbolize Outage work requests by the truck number assignments...
Zoom in to analyze the situation...
Grid Map Printing

- Leverage library of grid map PDFs, which are updated by a batch process, for inclusion in job packages distributed to field crews
- Ability to print individual grid maps
- Ability to print grid maps from an ArcIMS selection set
- Ability to select grid maps that are located in a specific office
- Ability to select grid maps that contain a specific feeder (circuit)
Grid Map Selection
Choose Which maps to merge...

- Select maps to merge from available list
- Merge Maps - submits a .dpi file to the Adlib service to merge several PDF files into a single PDF file. The merged PDF file is created on a web server for access via the intranet.
Merged Maps....

- The merged PDF file is created on a web server for access via the intranet.
Team Leader Map

Users can zoom to a desired area and create a 22x34 map that is launched in a new browser window for immediate printing.
Architecture

- Multi-tiered Architecture
- Consists of **Web** Server, **Applications** Server, **Database** Servers, and Storage Area Network (**SAN**).
- Designed for **scalability** on all tiers
Architecture

Designed for **scalability** on all tiers
Architecture

Firewall

Designed for extensibility
Architecture

- ASP / ASP.NET / JavaScript
- ESRI ArcIMS 4.0.1
- ESRI SDE 8
- Oracle 9i
Architecture

• Leverages **business** and spatial data.

• Enables true **Enterprise spatial information** decision support
Architecture

- **Database-Driven** Site Management and User preferences
  - Database-driven control over **functionality**
  - Database-driven control over **presentation**
  - Supports **Annotation**
  - Supports **coded-domains**
  - **Cost-effective** solution to implement.
Return on Investment

• Web-based solutions allow for the reduction of per-seat desktop GIS applications.

• This is important and most useful for clients with defined needs and established workflows.
Return on Investment

• This results in **cost-savings** in licensing, administration (patch deployments, etc), and end-user support.

• This lowers the total cost of ownership while **improving decision-making**.
Future Possibilities...

- Exposed Web Service to Dominion constituents (e.g., VDOT, Localities, State Police, Other utilities)

- Would enable the viewing of outage data real-time from any enabled / trusted client

- Would be accessible from any capable device (wireless etc.)
Example..

- Client
- Geospatial Application
- Exposed Web Service

XML Request

Response (Small JPG / GIF / PNG Image)
Example..
Questions....