

Leveraging Advanced Analytics & Open GIS Data

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Fairfax County GIS Program

Core Mission

To create the official maps of parcel and zoning boundaries for Fairfax County.

Other Duties

Collect and maintain map layers, develop and support geospatial applications and projects, provide analysis and data access to others.

County Facts

- 400 Square Miles
- 1M+ Residents

Fairfax County Efforts Supported by GIS

- Public Safety: Computer Aided Dispatch (911)
- Tax Administration: Real Estate Appraisal & Management
- Public Works:
 - Asset Management
 - Watershed Management
- Department of Planning and Zoning: Land Development
- Public: My Neighborhood and Police Event Viewer

County GIS Facts

- 800 Map Layers ~ 100GB
- 8TB Raster Data

Fairfax County GIS Search Requirements

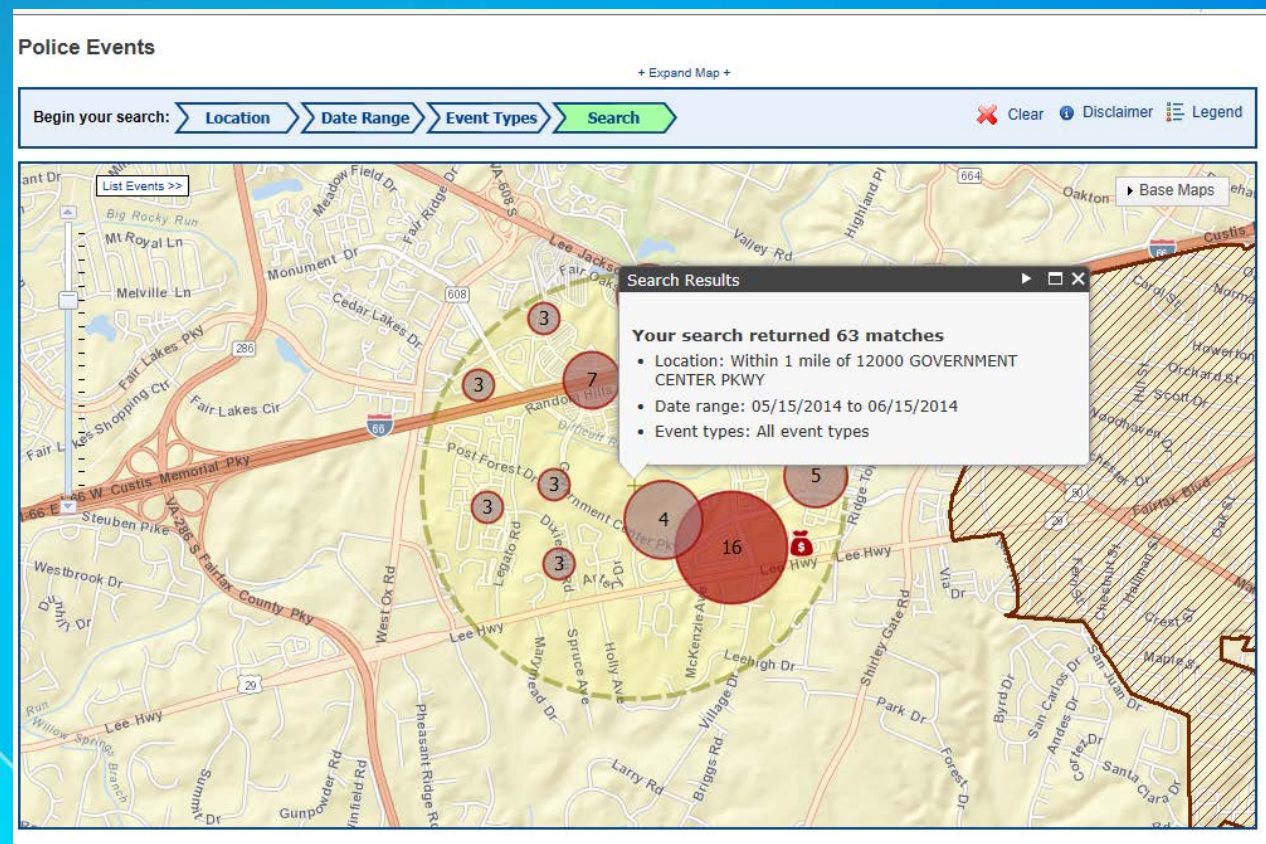
- Challenges:
 - Multiple applications need access to GIS Data
 - Searches typically are performed one layer at a time
 - Shared schema for data is hard across ~800 layers
 - Limiting external access to secure systems
- Need:
 - Single API to search across many layers at once
 - Results in multiple formats (XML, JSON, KML)

Fairfax County GIS Search Solution

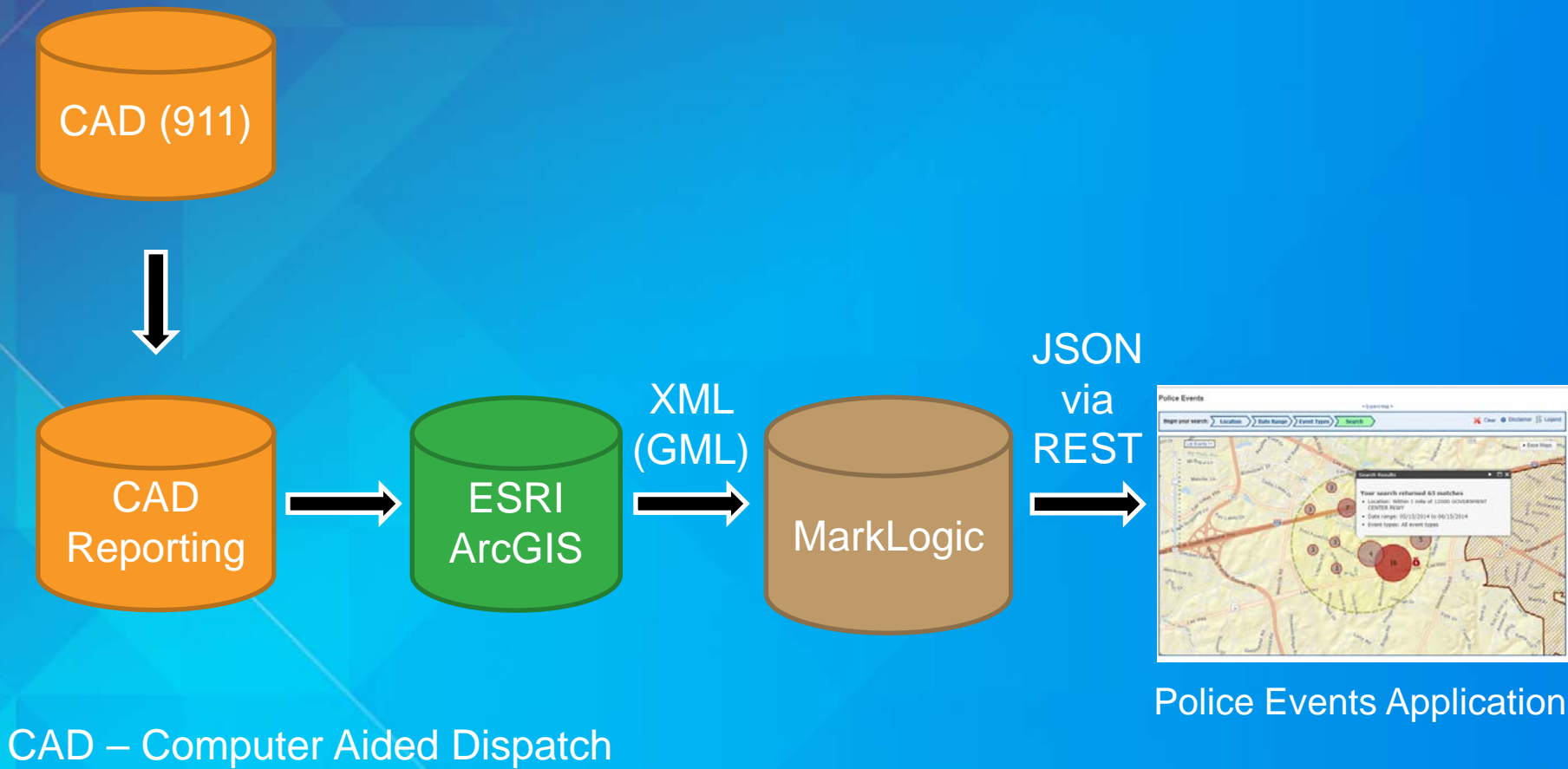
- MarkLogic Enterprise NoSQL Platform
- REST API
- Search across all or a list of layers at once
- Provides combined geospatial and text searches
- Supports paging controls
- Publicly available, documented

Fairfax County Police Events Application

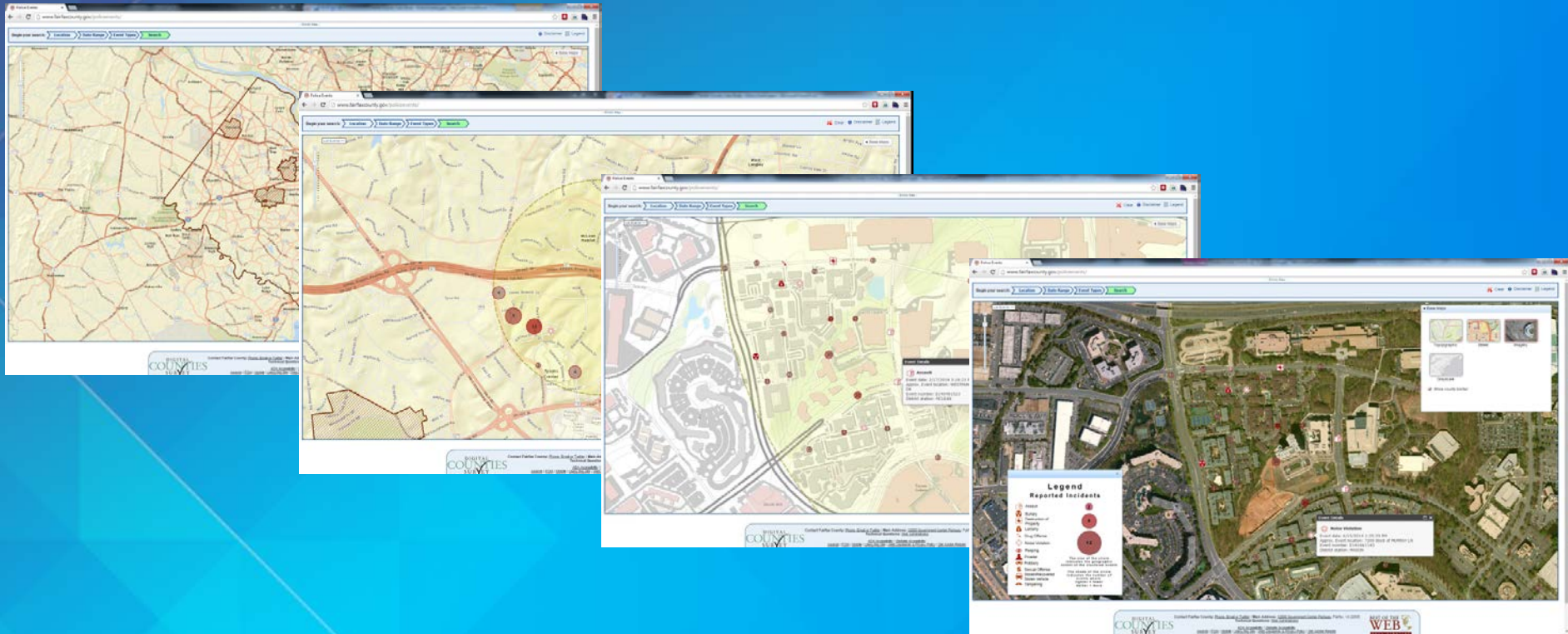
- Over 400,000 events spanning almost a decade
- Search can be constrained by date range, type of event and several different geographic boundaries, mobile device location.



Police Events Application Data Flow



Police Events Application Walk Through



Fairfax County GIS Search Solution Next Steps

- Expand API to support more GIS layers
- Publicize API to wider development community
- Include additional output formats (including native ESRI)

Resources

- Fairfax County
 - GIS & Mapping: <http://www.fairfaxcounty.gov/maps/>
 - GIS API: <http://www.fairfaxcounty.gov/FFXGISAPI/>
 - Police Events: <http://www.fairfaxcounty.gov/policeevents>
- MarkLogic: <http://www.marklogic.com/>

