Mobile Data Development in Loudoun County, Virginia

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Overview

- Loudoun County
  - Where in the world?
  - Loudoun County's GIS
- AOL Monster Help Day
  - Purpose
  - Tool Development
  - Roadblocks/Setbacks/Solutions
  - Demo results
- Additional Mobile Development Projects

Loudoun County, Virginia

"Silicon Valley of the East."
~CNN Money

"Up to 70% of the world's internet traffic passes through Loudoun County on a daily basis."
~Loudoun County Economic Development Department

Loudoun County: Early adopter of GIS

- 1979: Began photogrammetric capture of basemap

- 1986: Purchased **ESRI License # 34**

- Today: Over 200 staff access
  - Distributed GIS, with integration into multiple departments, jurisdictions, and information systems

Mobile Solutions

- **Top Priority for Loudoun County!**

- Goal: Increase efficiency, improve job performance and simplify tasks.

- Current Status: Steps in the right direction . . . .

    - **AOL Monster Help Day: Data Collection**
        (ArcGIS for Smartphones and Tablets)
    - **Other Mobile Applications**
        (ArcGIS for Windows Mobile)
        (Web Browser Mobile Applications)

Crowd Sourcing in Loudoun County

- Bike Loudoun approached Loudoun County in 2009.

- Loudoun County had 50% of trails and sidewalks mapped.

- The original plan included using Google Earth.

- Then came the Community Base Map, ArcGIS.com and the App Store.

Crowd Sourcing in Loudoun County

- AOL requested assistance with AOL Monster Help Day in 2013.

- AOL Monster Help Day 2013.
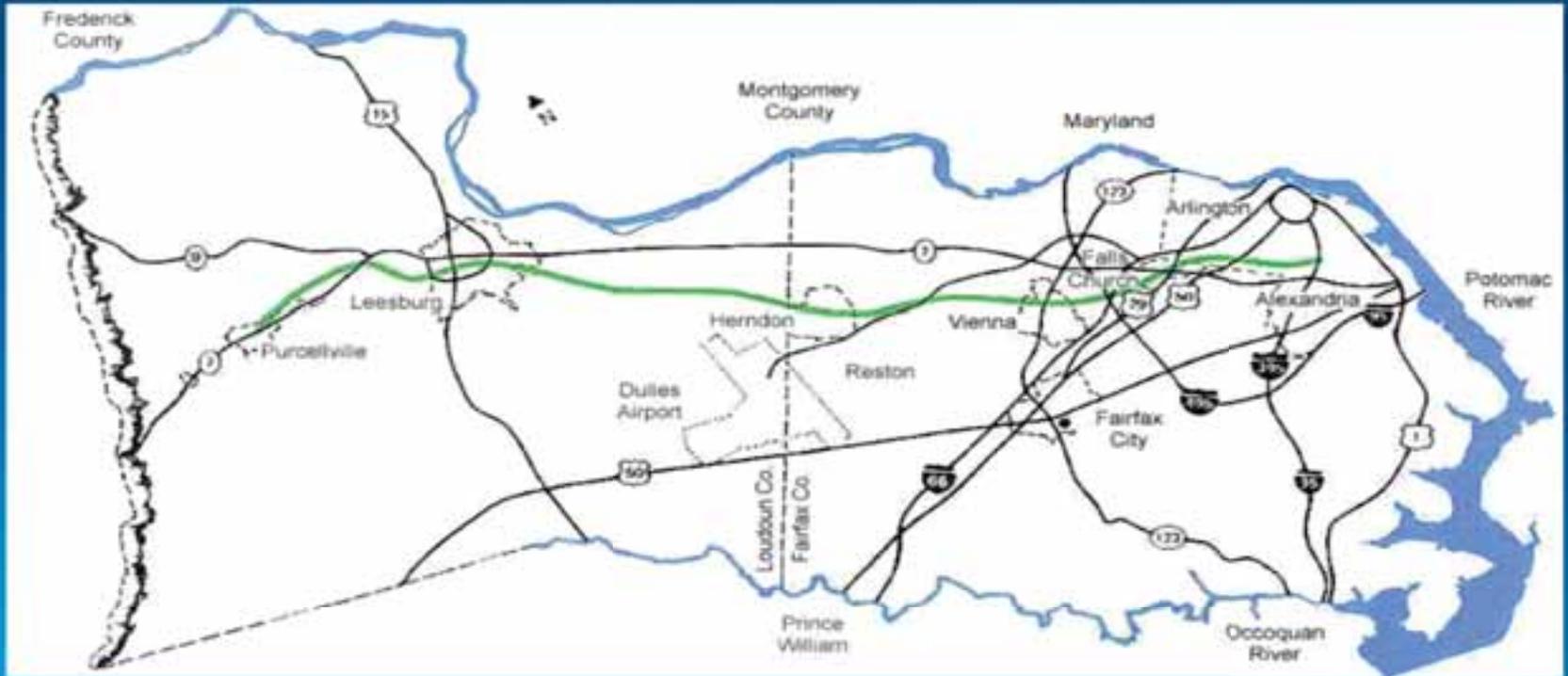
Crowd Sourcing in Loudoun County

- Loudoun County is a participant in the Community Base Map program.

- Loudoun County purchased five ArcGIS.com licenses.

- This would be the county's first crowd sourced data collection effort.

- At this point, 100% of the county's trails and sidewalks were now mapped.

Crowd Sourcing in Loudoun County

1. Stood up ArcGIS Online map.

2. Downloaded and configured the ArcGIS app.

3. Tested iPhone and Android devices.

4. Created iPhone and Android device training manuals.

5. Held a conference call training with AOL volunteers.
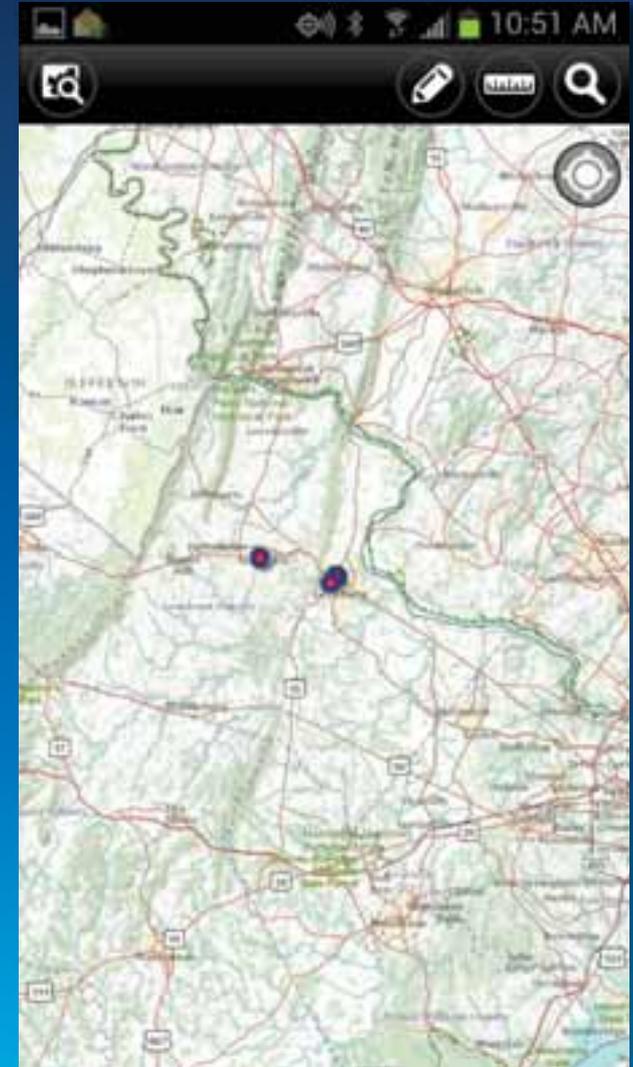
Crowd Sourcing in Loudoun County

- Features Collected:
  - Amenities
    - Air
    - Benches
    - Picnic tables
    - Shelters
    - Water fountains
    - Information kiosks
    - Bike Racks
    - Restrooms
  - Points of Interest
    - Heritage signs
    - Coffee shops
    - Mile markers
    - Trail crossings
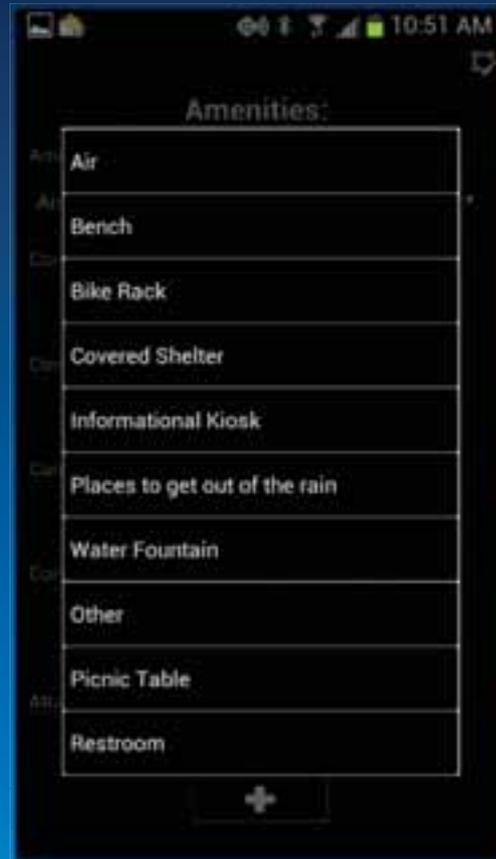
Android Interface
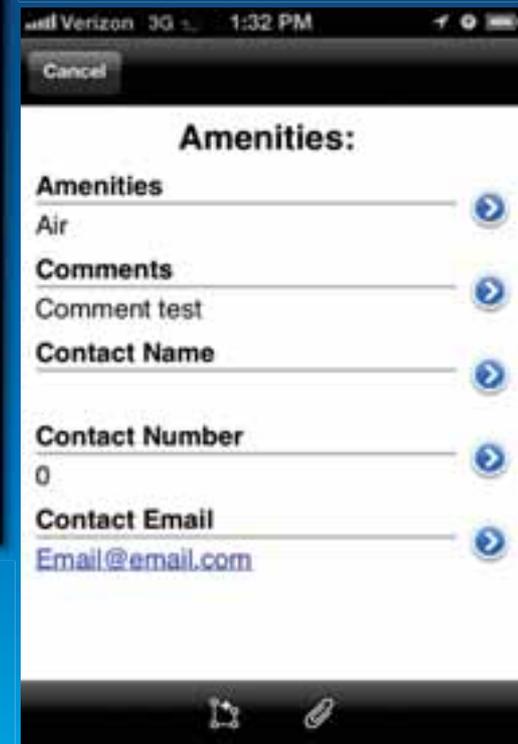
iPhone Interface

AOL Monster Help Day 2013

- A group of AOL volunteers met at the W&OD trail.
- We had a safety and instruction briefing.
- Groups of 3 to 5 volunteers road bicycles to their assigned trail segments.

AOL Monster Help Day 2013

- The group collected 270 points along the trail in about four hours.

- They were able to coordinate their work real time through the ArcGIS app.
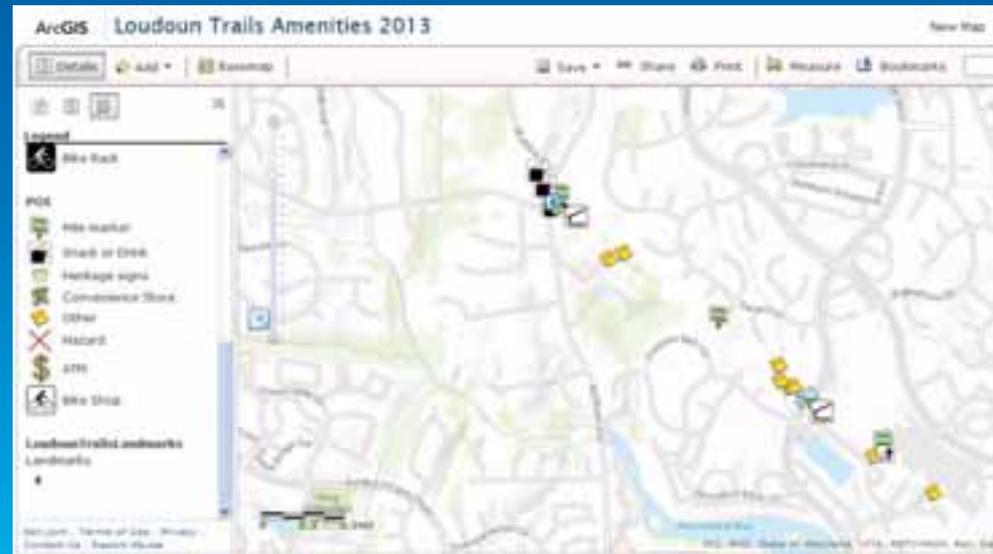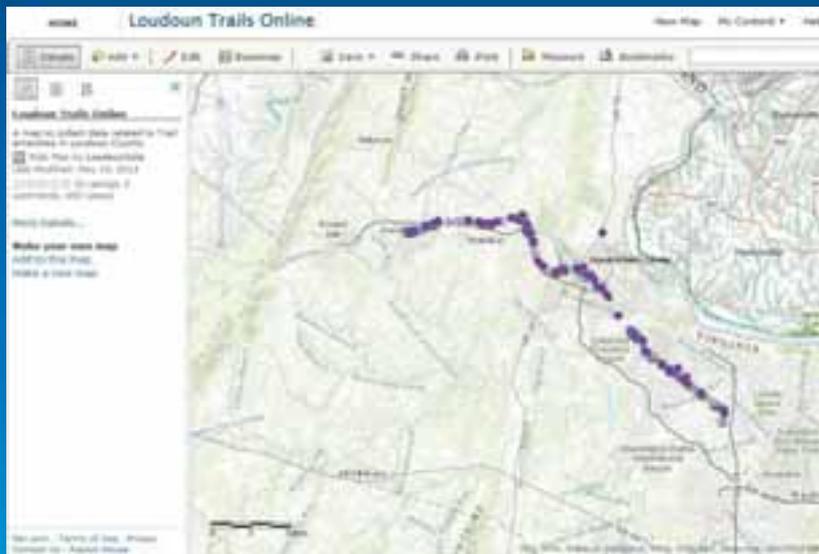
Amenities along the Trail . . .

AOL Monster Help Day 2013

AOL Monster Help Day 2013
ArcGIS Server Setup
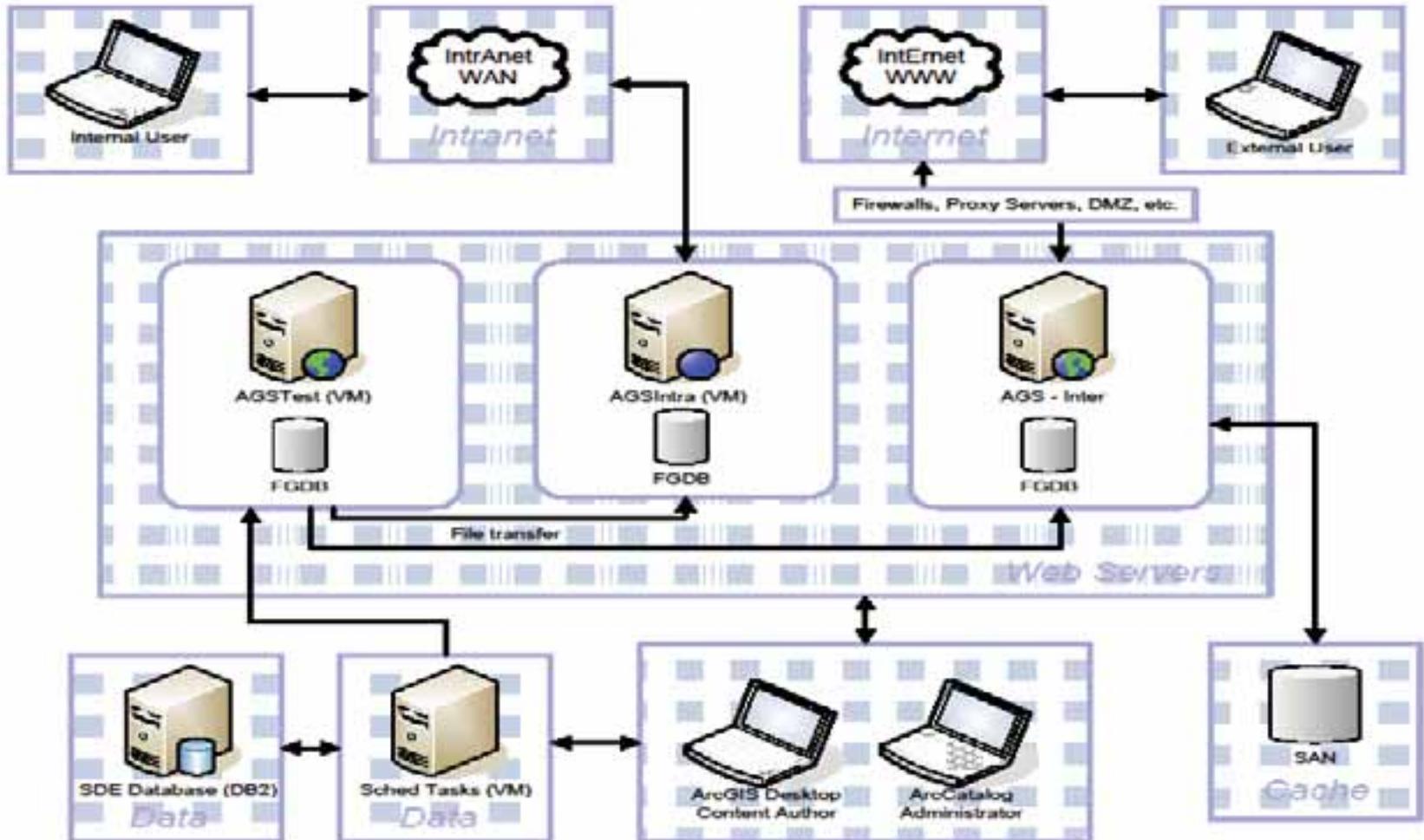
Loudoun County, VA 11/2011

AOL Monster Help Day 2013

ArcGIS for Smartphones and Tablets :

SQL Server → **Data** → ArcMap → **Publish** → ArcGIS Server → **Feature Service** → ArcGIS Online Subscription account → **Web Map** → ArcGIS App on iPhone/Android smartphones

AOL Monster Help Day 2013

SQL Server

gis_mobile.GISSOC.TrailAmenities_Online
gis_mobile.GISSOC.TrailAmenities_Online__ATTACH
gis_mobile.GISSOC.TrailAmenities_Online__ATTACHREL

Field Name	Data Type
OBJECTID	Object ID
Amenities	Text
Comments	Text
ContactName	Text
ContactEmail	Text
DateSubmitted	Date
SHAPE	Geometry
ContactNumber	Text

Coded Values:

Code
Air
Bench
Bike Rack
Covered Shelter
Informational Kiosk
Places to get out of the ra
Water Fountain
Other
Picnic Table
Restroom
Trash Bin

AOL Monster Help Day 2013

Roadblocks, Setbacks and Solutions!

- Collectors able to delete other's edits
- Some inaccurate edits recorded location
- Image size and Rotated images
- Unable to download collected images
- Monitoring ArcGIS Online credits

Other Mobile applications

ArcGIS for Smartphones and Tablets : Loudoun Field Data
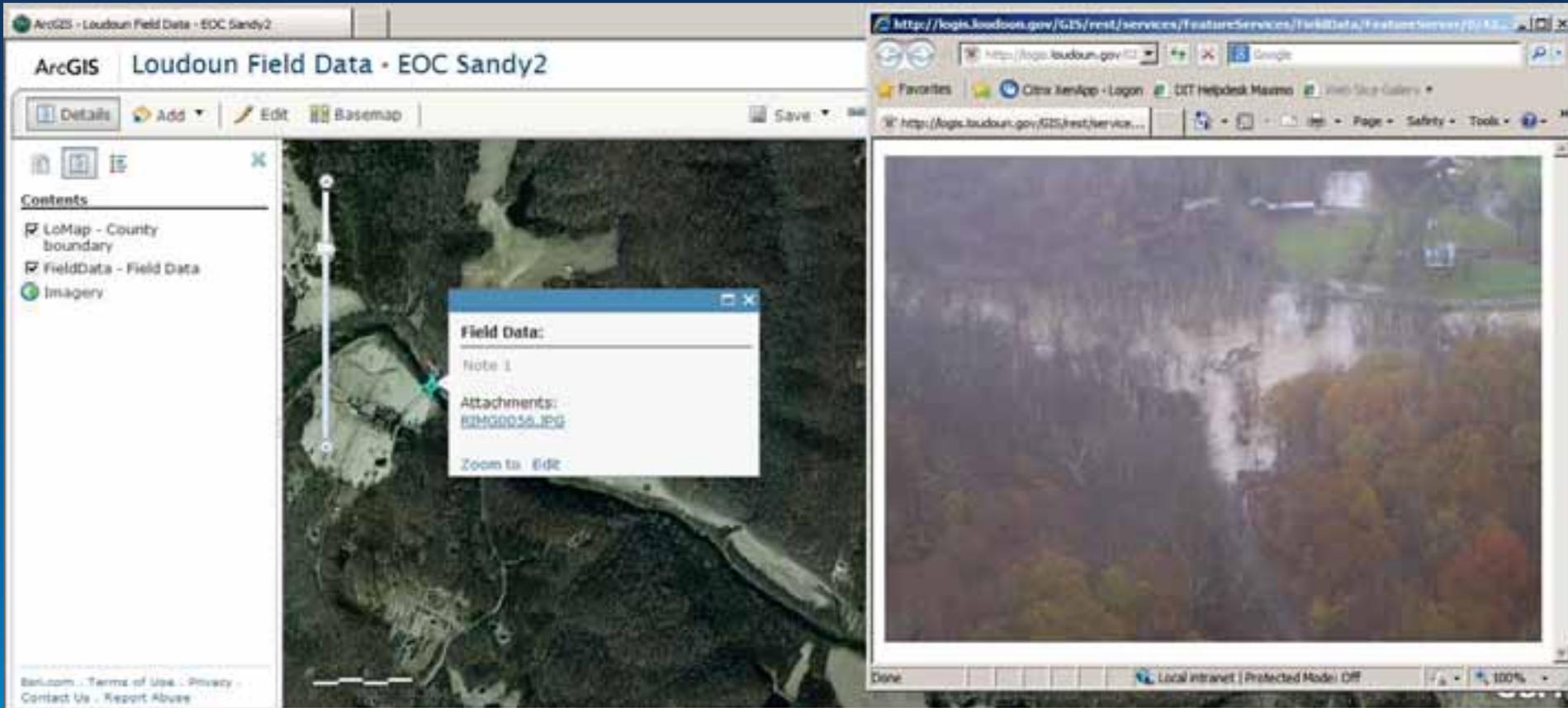
Other Mobile applications

ArcGIS for Windows : Traffic Intersection Data Collection

Other Mobile applications

Web Browser mobile applications: Sheriff (Find My Station)

Other Mobile applications

Web Browser mobile applications: Sheriff (Find My Station)

Other Mobile applications

Web Browser mobile applications: Polling Place lookup
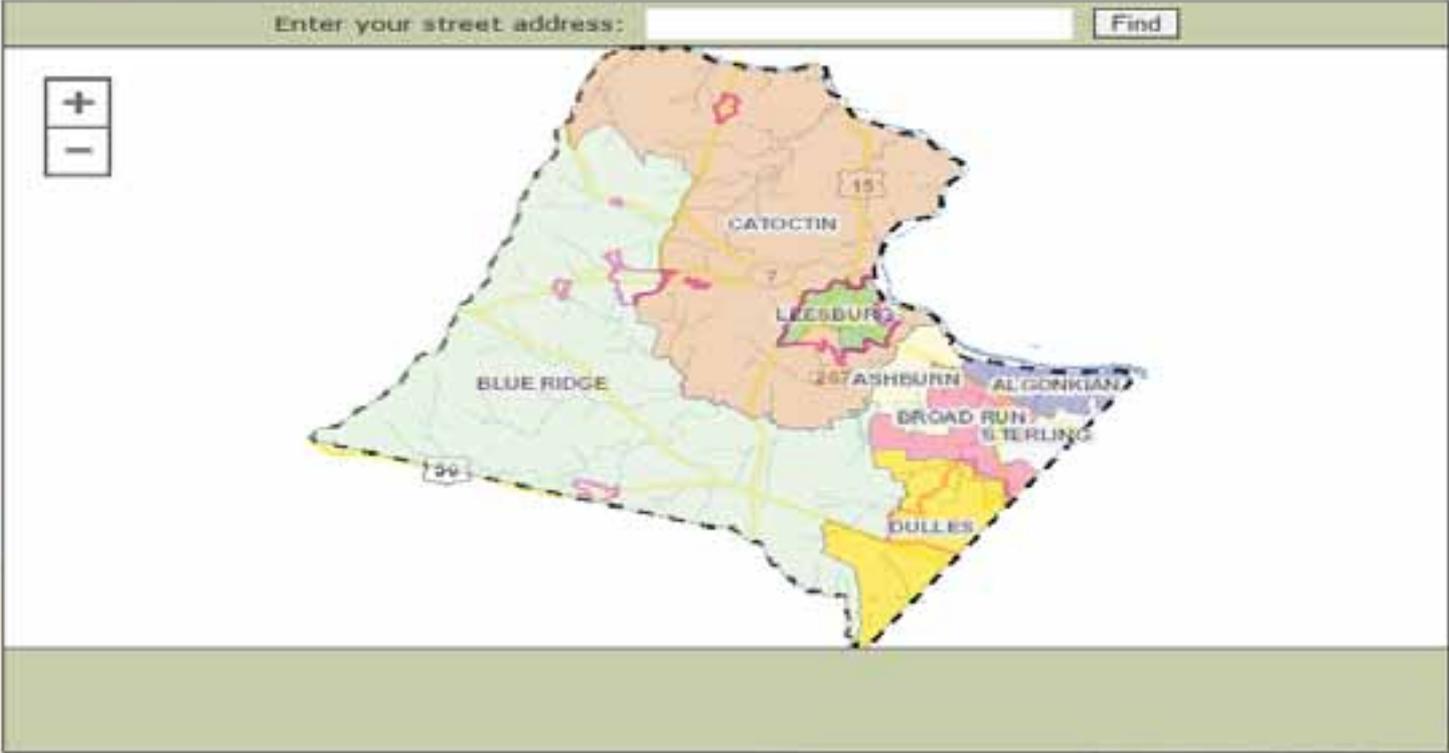
Other Mobile applications

Web Browser mobile applications: Stormwater Structure Search
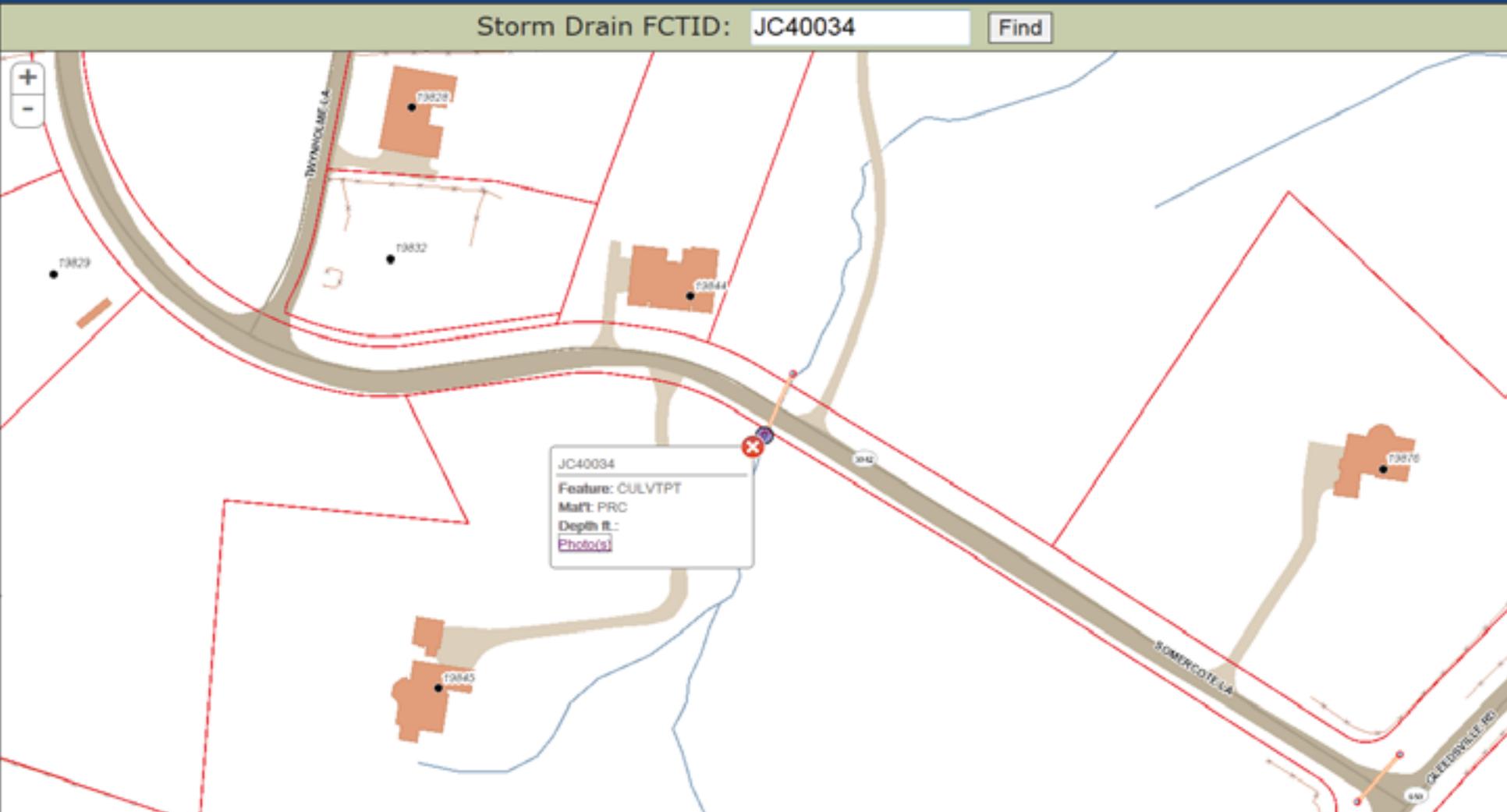
Other Mobile applications

Web Browser mobile applications: Application & Permit Search

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