

Montgomery County

Geographic Information Systems: An Update

Apollo Teng
GIS Manager

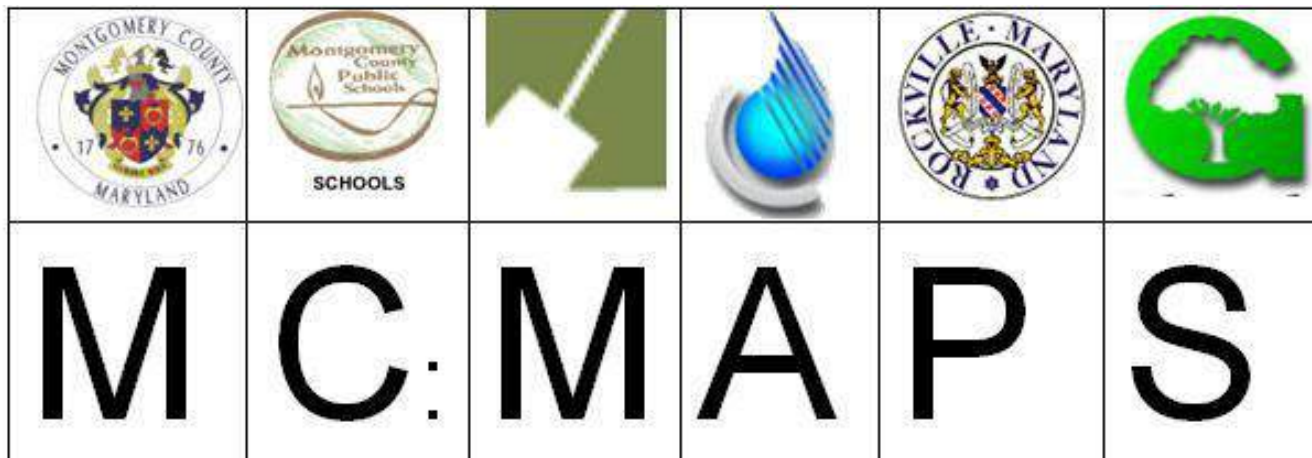
10/19/2011



Organizational Settings

- GeoMaP
- MC:MAPS
 - Executive Branch
 - Planning Commission
 - WSSC
 - MCPS
- County Government
 - DTS, DEP, DGS, DOT, Police, MCFRS, DHCA





MC:MAPS Consortium Bi-monthly Meeting

AGENDA

LOCATION: DTS GIS Conference Room
21 Maryland Avenue, Suite 340
Rockville, MD 20850

DATE: Wed., October 26, 2011
TIME: 10:00 A.M. – 12:00 P.M.

- PURPOSES:**
1. ArcGIS 10 Briefing
 2. Data Projects Updates
 3. Agency Project Updates
 4. Snowplow Tracking Map Viewer

10:00 – 10:10

Opening

Apollo Teng

10:10 – 10:40

ESRI Tech Update

Anthony Puzzo



Current Projects

- ArcSDE/Oracle Databases
- File Server (Dell/Linux)
- Street Centerlines, buildings
- 11Q4 delivery to PSDS (E-911)
- Elections Mapping
- Web GIS (snow map, bikeway)
-



• Geodatabase Datasets

192.9.204.150 'GIS-DB3'

 Geocoding Services	Geocoding Services Folder
 SDE.BASEMAPS	SDE Feature Dataset
 SDE.CAD	SDE Feature Dataset
 SDE.CLINES	SDE Feature Dataset
 SDE.DISTRICTS	SDE Feature Dataset
 SDE.ENVIRONMENT	SDE Feature Dataset
 SDE.GRIDS	SDE Feature Dataset
 SDE.INFRASTRUCTURE	SDE Feature Dataset
 SDE.LOCATIONS	SDE Feature Dataset
 SDE.Munis&Urban_Areas	SDE Feature Dataset
 SDE.NATURE&REC	SDE Feature Dataset
 SDE.PROPERTIES	SDE Feature Dataset
 SDE.SEWER	SDE Feature Dataset
 SDE.WATER	SDE Feature Dataset
 SDE.ASSESSMENT	SDE Table
 SDE.ORTHO02	SDE Raster Dataset
 SDEGRP1.PLOI2003	SDE Table



Inter-jurisdictional data sharing

- Email, FTP, or ‘sneaker net’
 - 2001 sniper shooting event
 - MC PS2000
- ArcIMS era
 - MEGIN: Maryland Emergency Geographic Information Network
- ArcGIS Server era
 - WebEOC: ‘Mapper’
 - NCR Geospatial Data Exchange





Blair Rd

Fenton St

Juniper St

Marlboro
District of Columbia

9th St

8th St

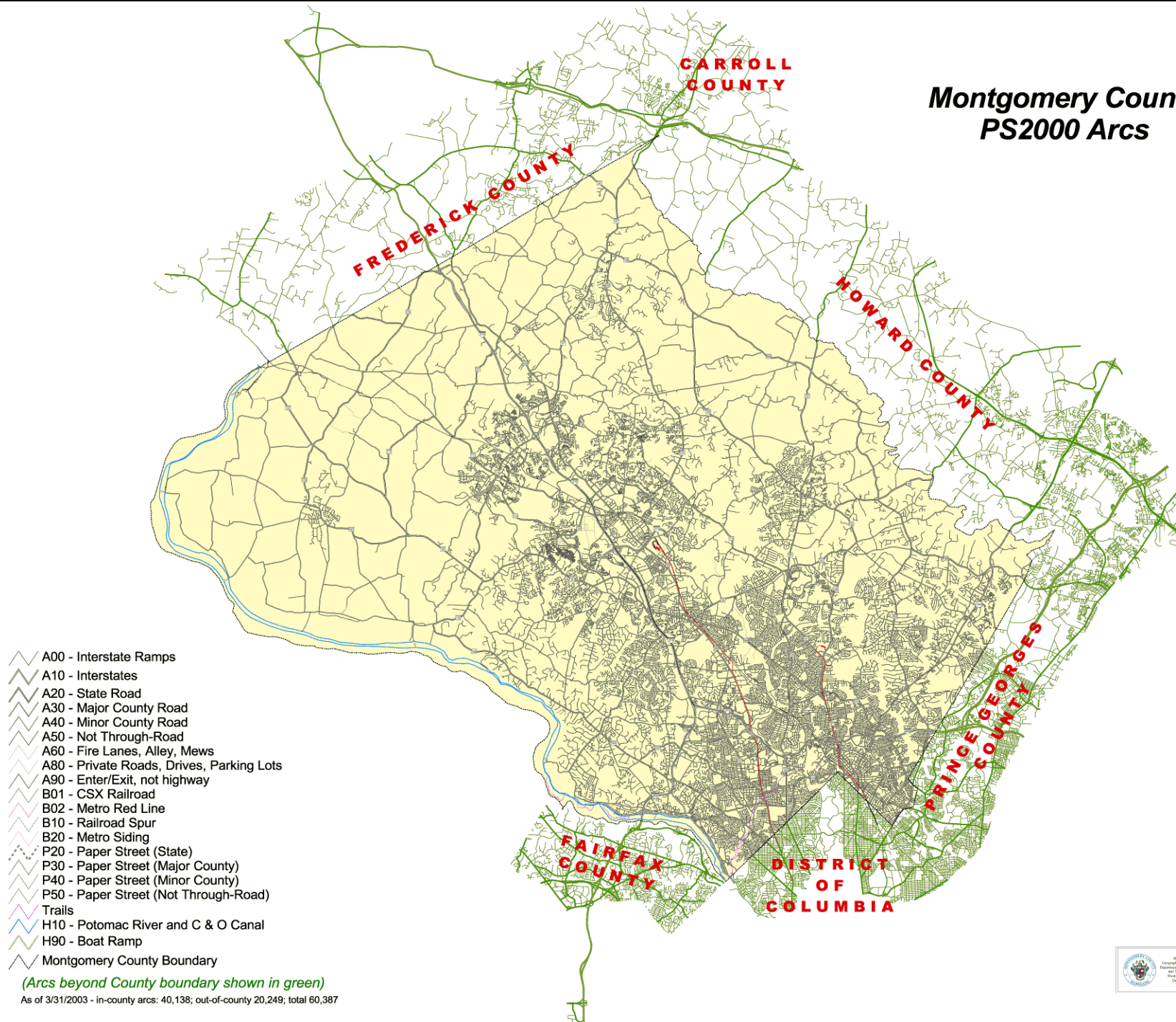
Hemlock St

7th St

Eastern Ave



Montgomery County PS2000 Arcs



As of 3/31/2003 - in-county arcs: 40,138; out-of-county 20,249; total 60,387

MCG Map Viewer

MONTGOMERY COUNTY MARYLAND montgomerycountymd.gov

Comments | Help | Metadata

MONTGOMERY COUNTY GOVERNMENT MAP VIEWER

DTS GIS

Available Data Layers

- ☒ Aerial Photos
- ☒ Basemaps
 - ☒ Buildings
 - ☒ Contours (5 foot)
 - ☒ Contours (2 foot)
 - ☒ Cultural Features
 - ☒ Natural Features
 - ☒ Park Boundaries
 - ☒ Parking Lots
 - ☒ Property
 - ☒ Roadways
 - ☒ Streams and Rivers
 - ☒ Water Bodies
- ☒ Boundaries
- ☒ Census
- ☒ Economic Development
- ☒ Education
- ☒ Elections
- ☒ Environmental Protection
- ☒ Grids
- ☒ Health and Human Services
- ☒ Housing
- ☒ Places of Interest
 - ☒ Business Parks
 - ☒ Cemeteries
 - ☒ Libraries
 - ☒ Liquor Stores
 - ☒ Lodging
 - ☒ Park Facilities
 - ☒ Places of Worship
 - ☒ Post Offices
 - ☒ Shopping Centers
- ☒ Public Safety
 - ☒ Fire and Rescue
 - ☒ Fire Boxes
 - ☒ Fire Corporations
 - ☒ Fire Stations
 - ☒ Fire Response Areas
 - ☒ Fire Hydrants
 - ☒ Fire Battalions
 - ☒ Hospitals
 - ☒ Police
- ☒ Public Works and Transportation
 - ☒ Bikeways
 - ☒ Highway Maintenance
 - ☒ Parking Services
 - ☒ Solid Waste Services
 - ☒ Traffic and Safety
 - ☒ Transit
 - ☒ Recreation
 - ☒ Regional Services Centers
 - ☒ Streets and Zip Codes

Map Tools: Add Bookmark, Add Circle, Add Lines, Add Points, Add Polygons, Locate Address, Search Keywords, Select Features, Add Text, Crossing Streets, Zoom In, Zoom Out, Zoom All, Email Map, Previous Map, Clear Map, Map Legend, Overview Map, Print Map, Query Builder, Selection Colors, Theme Map, Zoom Layer, Zoom to Scale

Map Coordinates: 1270279.62, 518053.43 -- Image X,Y: 1105, 4 -- Map Scale: 1" = 197'

Copyright (C) 2005, Montgomery County, MD Government

Local intranet 100%



Public Safety Map Viewer



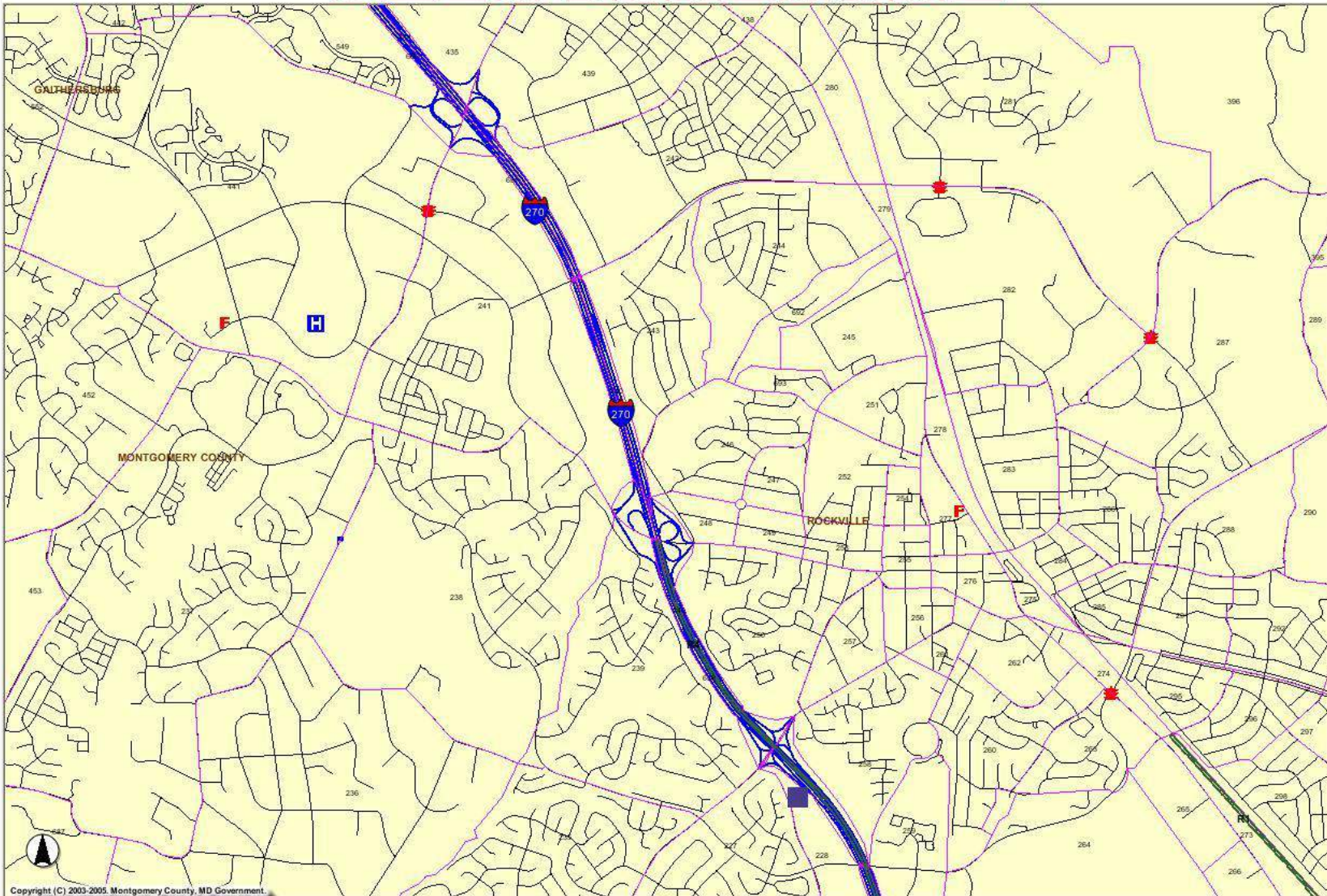
Montgomery County, Maryland Public Safety Map Viewer

[Fire and Rescue Service](#)
[Police Department](#)
[Public Health & Emergency Info](#)
[Sheriff's Office](#)
[States Attorney's Office](#)

Map Legend

- ☒ County Boundary
 - ☒ Fire and Rescue Stations
 - ☒ Police District Station
 - ☒ Hospitals
 - ☐ 4408 Fire Boxes
 - ☐ 14 Fire Station Response Areas
 - ☒ R1 Rescue Response Areas
 - ☐ Fire Corporations
 - ☐ 01 Fire Districts
 - ☐ 184 Police Beats
 - ☒ 417 Police Reporting Areas
 - ☐ Police Districts
 - ☒ Police Red Light Cameras
 - ☒ Police Fixed Pole Cameras
 - ☐ Police Mobile Cameras
 - ☒ Interstates
 - ☒ Streets
 - ☐ Street Names
- [Refresh Map](#)

[Locate Address](#) [Identify](#) [Measure](#) [Clear Select](#) [Zoom In](#) [Zoom Out](#) [Zoom All](#) [Pan](#) [Previous Map](#) [Overview Map](#) [Print Map](#) [Help](#)



MEGIN: Garrett, Frederick, Montgomery

MEGIN Montgomery County - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address <http://megin.montgomerycountymd.gov/website/megin/viewer.htm>

MEGIN Montgomery County

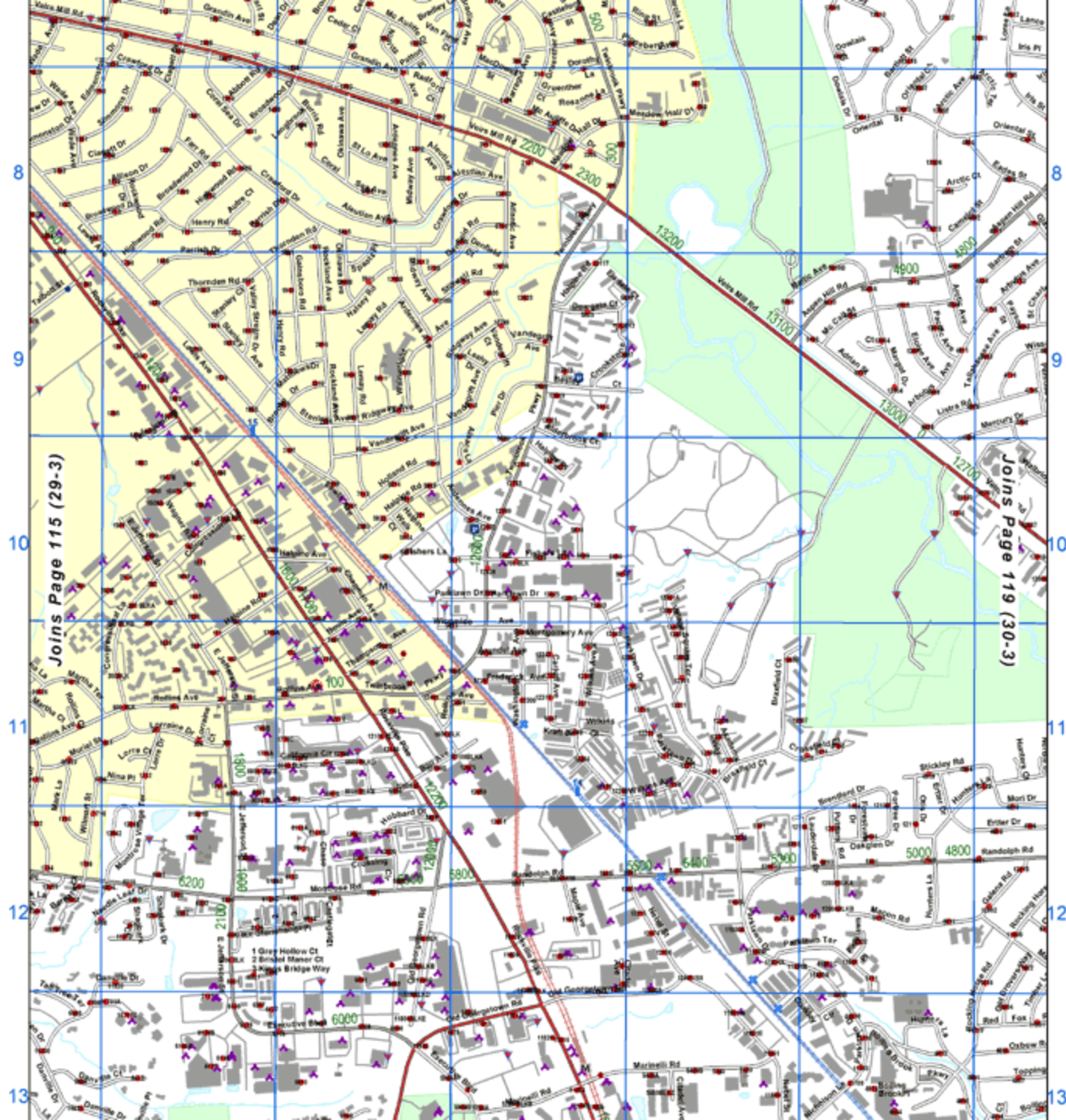
Visible Active

- ☐ MARC Stations
- ☒ Metro Stations
- ☒ Metro Lines
- ☐ Parking Lots and Garages
- ☐ Fire Response Areas
- ☐ Fire Corporations
- ☐ Fire Boxes
- ☐ Fire Battalions
- ☐ Rescue Response Areas
- ☐ Police Beats
- ☐ Police Reporting Areas
- ☒ Police Districts
- ☐ Snow Operations Areas
- ☐ Snow Route Zones
- ☒ Snow Streets

Refresh Map

Map created with ArcIMS - Copyright (C) 1992-2005 ESRI Inc.

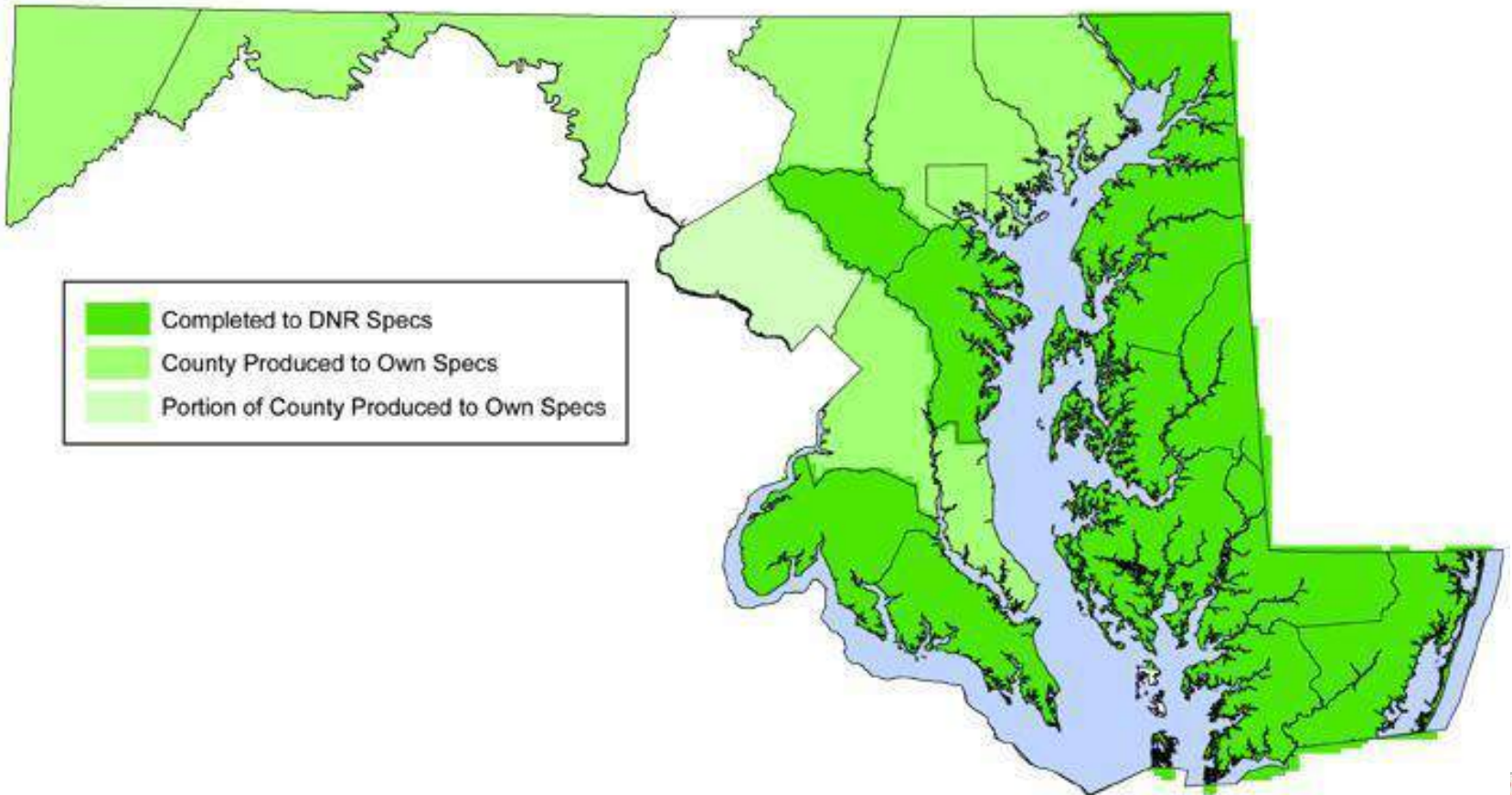
Police Districts is now the Active Layer



LiDAR Data

LIDAR Production Status and Quality Assurance Reports

To view the LIDAR Quality Assurance Reports that are available place your mouse over an area of the map.



MCG 2008 LiDAR

- Funding – DOT, DEP, DTS-GIS
- Contracting dept – DEP
- 2-ft contours generation – DEP
- Processing and hosting – DTS
- FEMA dFIRM ?



Orthoimagery

- 1993 - 95 b&w
 - Early adopter of onboard GPS
- 2002 VARGIS
- 2004 ISTAR (partial)
- 2006 EarthData (some USGS fund)
 - Support soft-copy photogrammetry
- 2008 AXIS
- Pictometry 'byproduct' 2010
- 2010/2011 EarthData (partial)
 - Support soft-copy photogrammetry





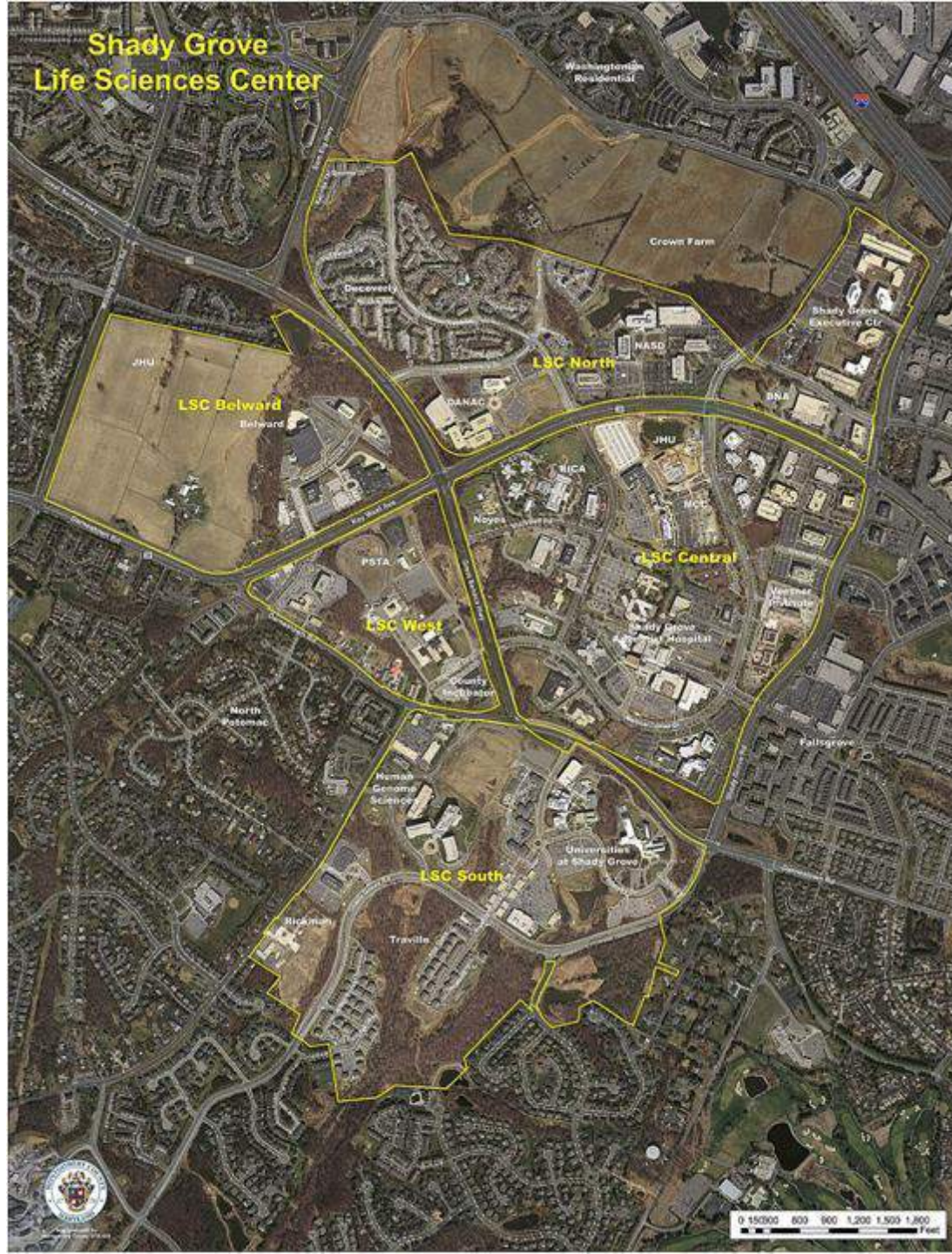
Research and Development Village



Map produced by Montgomery County GIS, GIS in April 2001

Scale bar showing 0 to 1 mile

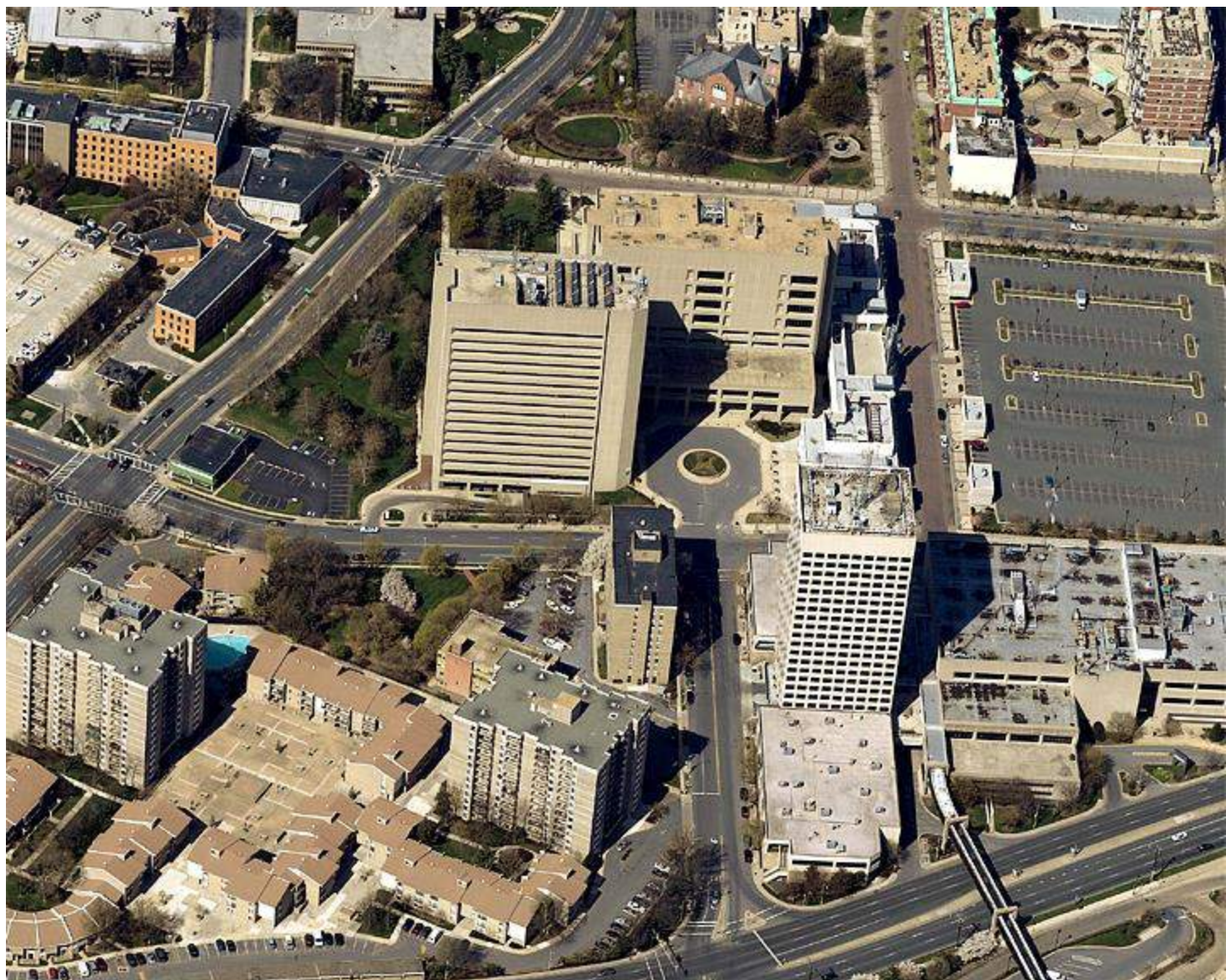
Shady Grove Life Sciences Center



Pictometry Oblique Image Warehouse

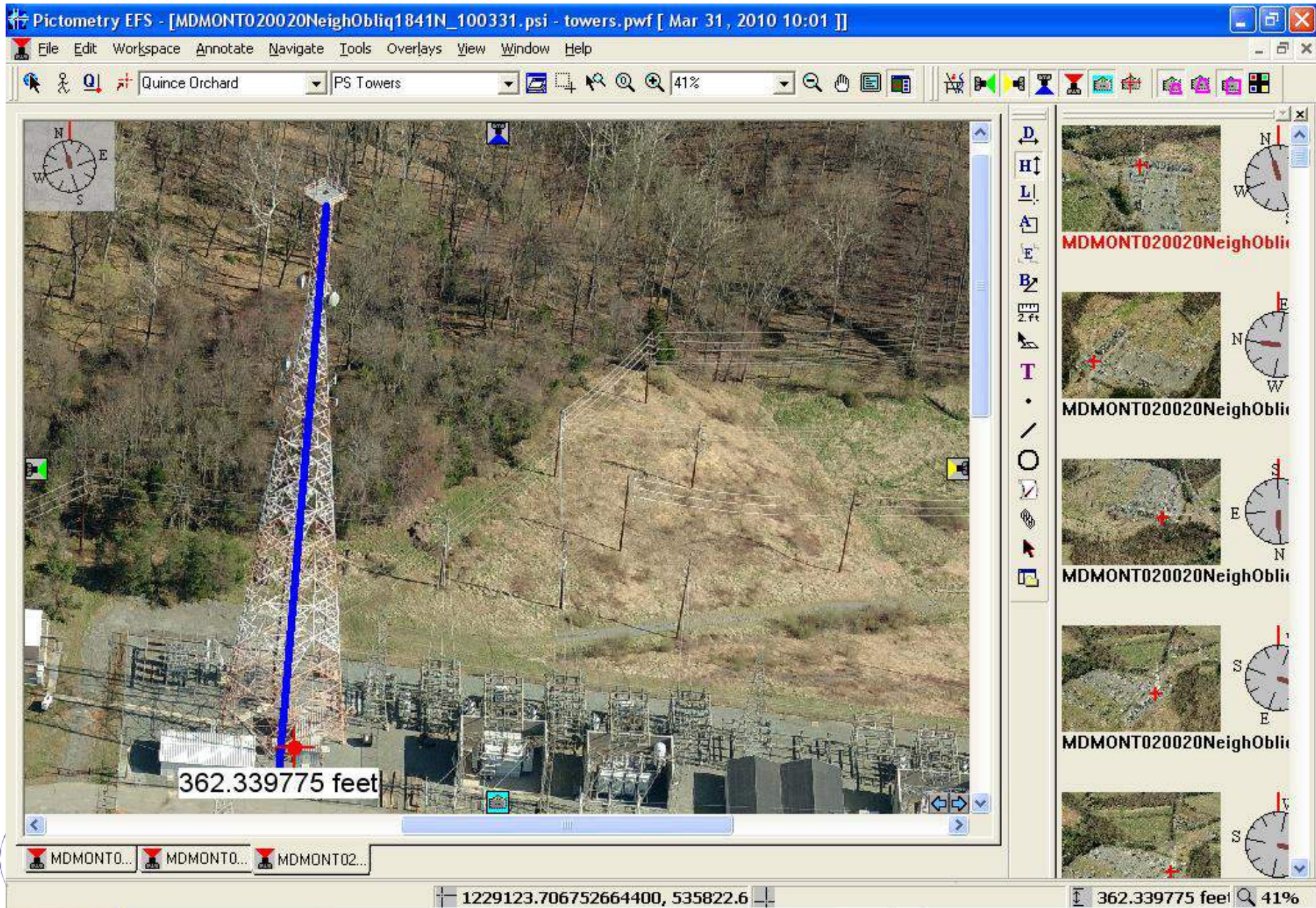
- 6/27/2002 – initial contract
- 9/9/2004 – 9/8/2005 - \$76,720 (570 com; 315 nei)
- 9/9/2005 – 9/8/2006 - \$76,720
- 3/1/2006 – 2/28/2007 - \$24,715 (add'l winter 05 library)
- 9/9/2007 – 9/8/2008 - \$108,185
- 10/20/2008 – 10/19/2009 - \$108,185 (whole county)
- 10/20/2009 – 10/19/2010 - \$104,040
- 7/1/2010 – 6/30/2011 - \$104,040 (whole county)
- 7/1/2011 – 6/30/2012 - \$104,040



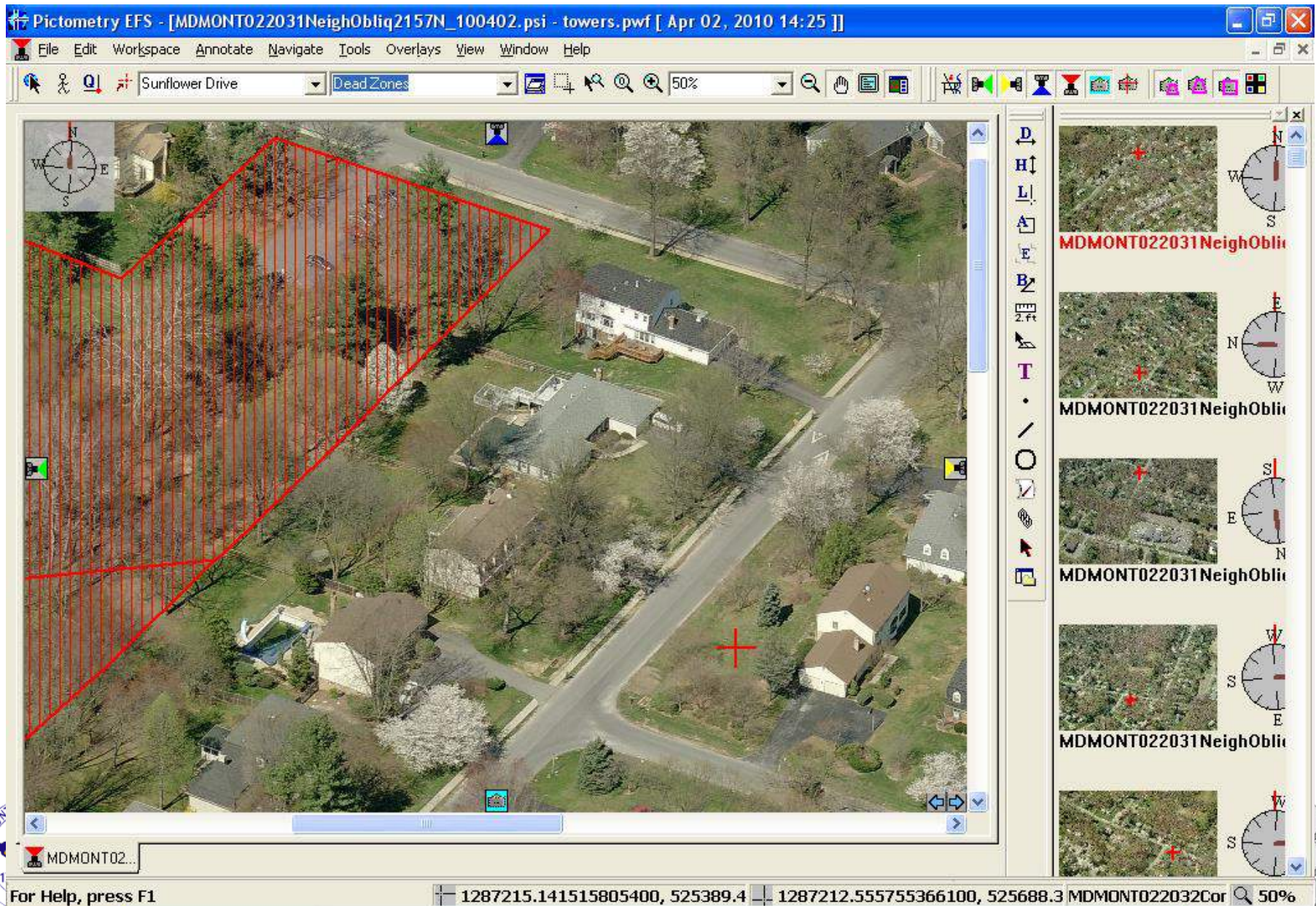




Communications Towers



Selecting a new tower site



Web Services

- **Apartment Rental Guide and Manager**
- **Digital Aerial Photo Image Server (DAPIS)**
- **Map Gallery (More than 90 maps available)**
- **Bikeway Map**
- **Places of Interest Guide (Over 1,800 places!)**
- **Recycle / Refuse Pickup Day Locator**
- **Streetlight Maintenance Reporting**
- **Snow Map**
- **[Census 2010 Demographic Data Viewer]**

» NACo Awards highlighted in Brick color

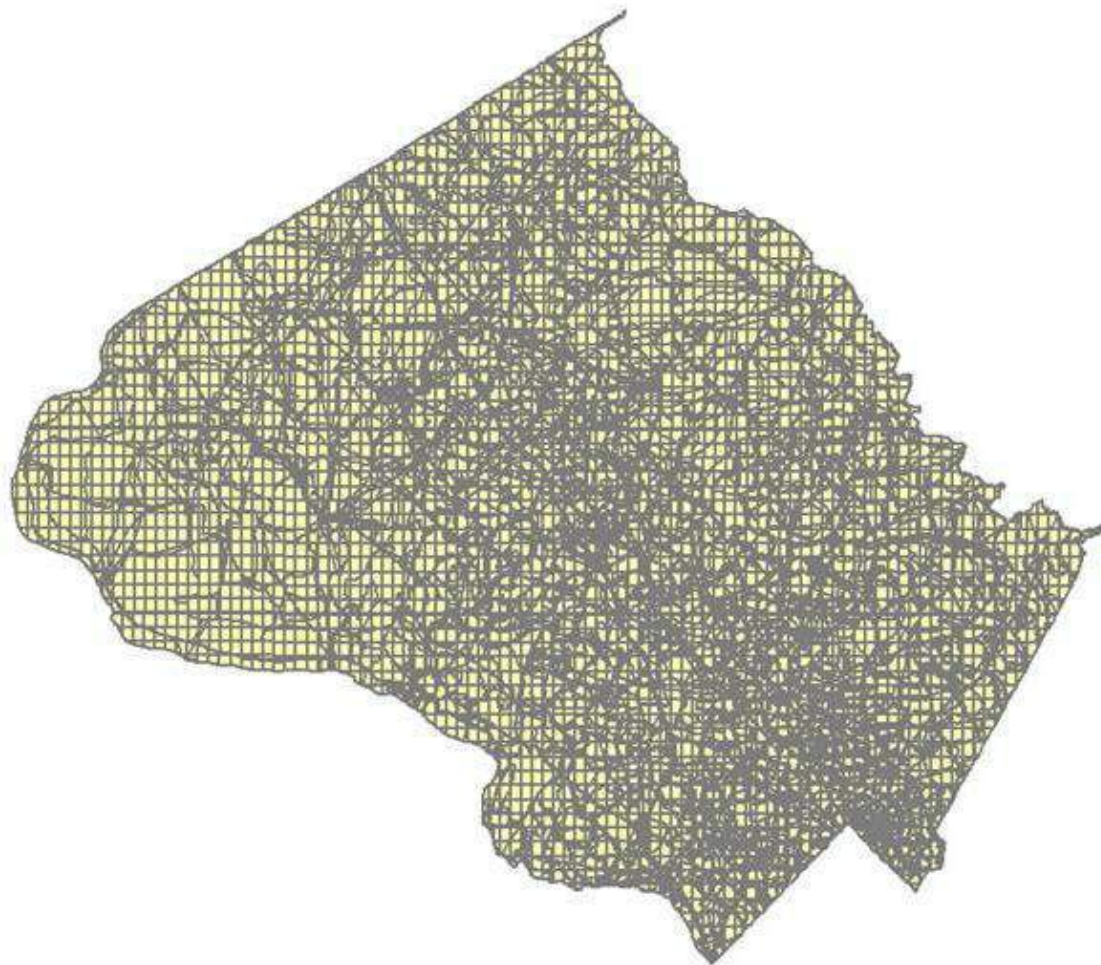


Web services

- Locate by street address
- Locate by street intersection
- Locate by highway exit
- Retrieve POI within a radius



- WEB.ADC_GRID
- WEB.ADDRESS_TAX
- WEB.ADDRESS_TAX1
- WEB.bdofed
- WEB.BEAT
- WEB.CBP
- WEB.clines_loc
- WEB.CLINES_PS_4
- WEB.clines_ps_5
- WEB.CONGRESS
- WEB.COUNCIL
- WEB.CRA
- WEB.depot09
- WEB.DEPOT_NEW
- WEB.DHCA_MARKET
- WEB.DIST
- WEB.ELECDIST
- WEB.FIRE_BOX
- WEB.GSLComments
- WEB.GSLEmail
- WEB.HWYEXIT
- WEB.LeafCollectionZone
- WEB.LEGISLAT
- WEB.legistat
- WEB.mc311_poly1**
- WEB.mc311_poly2
- WEB.MCG_GISTAX
- WEB.MCG_GISTAX_NEW
- WEB.MUNI
- WEB.mymc
- WEB.PoiSites3
- WEB.postoffice
- WEB.PRA
- WEB.PRECINCT
- WEB.REC_SERV_AREA
- WEB.RecycleRoute
- WEB.RefuseRoute
- WEB.RouteAreas
- WEB.ROUTEAREAS_NEW
- WEB.SnowStreets
- WEB.SPA
- WEB.SSA_ES
- WEB.SSA_HS
- WEB.SSA_MS
- WEB.svs_prop_pnts
- WEB.TRACT
- WEB.WasteCollectionArea
- WEB.WATERSHEDS
- WEB.XYInterStreets
- WEB.XYInterStreets1
- WEB.YardTrimRoute
- WEB.ZIPCODE



Geo Info returned to MC311 call agents

File Edit View Navigate Query Tools Help

MC311

Analytics Web Administration:

Home Contacts Incidents Service Accounts Knowledge Base My Dashboard Administration - Solution

Service Requests Home Service Requests List Simulate New Call

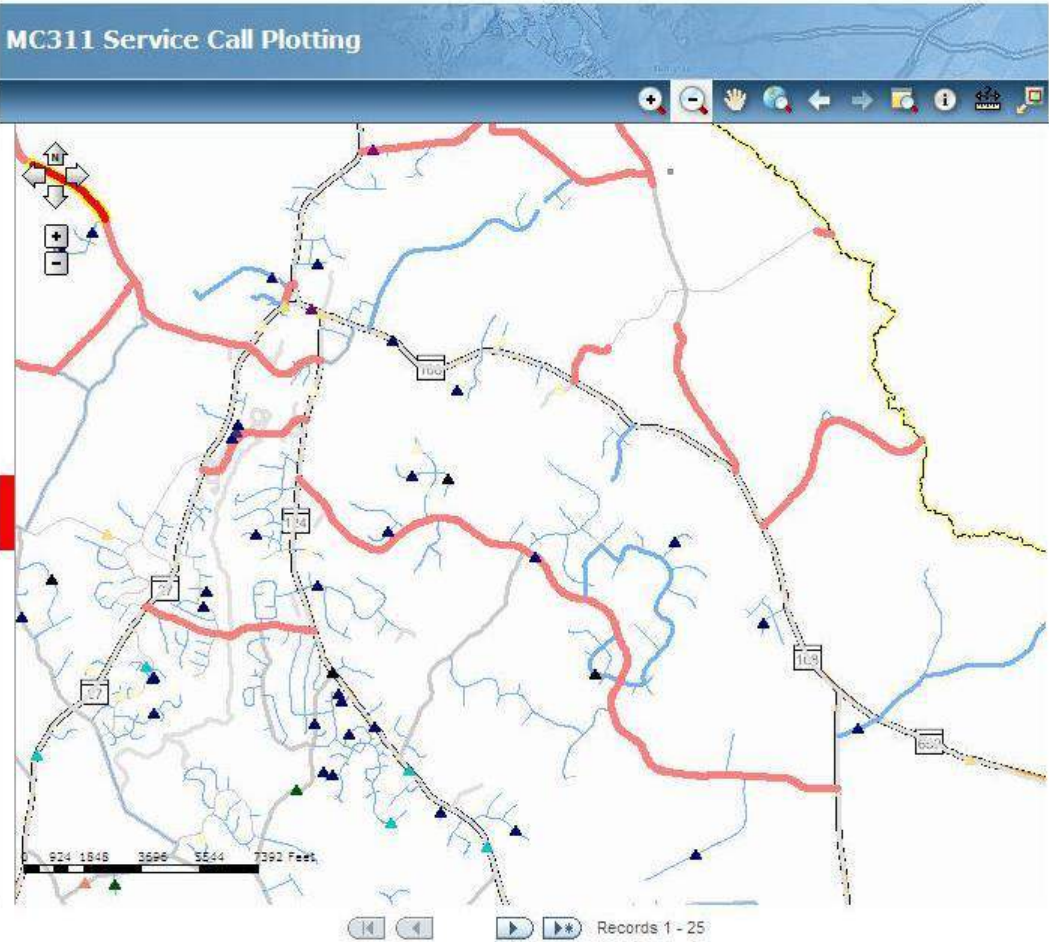
Menu Verify Location

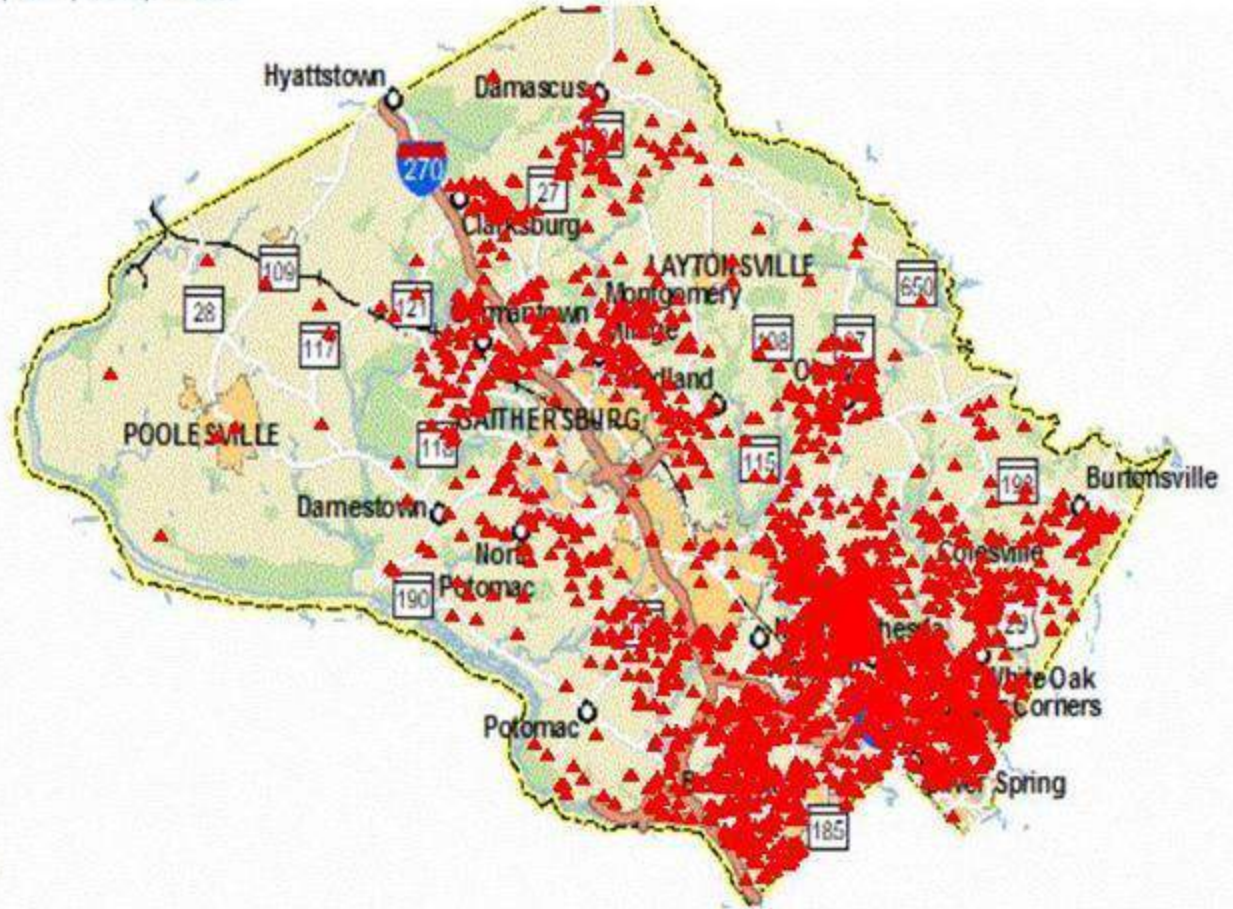
GIS Information

ADC Index: 5168-C4	Response Status: Location Found	Regional Service Center: EAST COUNTY	Congressional District: 4
Latitude: 39.1061978530349		MNCPPC Planner Map:	Congressional Member: DONNA F. EL
Longitude: -76.9227902753079	Beat: 312	Community Reporting Area: Burtonsville	Congressional Phone: 301-562-796
Census Boundary: 701410	Police District: 3	DHCA Market Area: COLESVILLE WHITE O	Congressional Member URL: http://donna
Municipality: Montgomery County	Precinct District: 20	School Board District: 5	Council District: 4
Solid Waste Service Areas:	Police Response Area: 381	School Service Area - Elementary: Burtonsville E5	Council Member Name: Nancy Navai
Trash Collection Schedule:	Fire District: 1	School Service Area - Middle: Banneker MS	Council Member Email: Councilmemb
Yard Trim Pickup Schedule: FRIDAY	Fire Service Company: BURTONSVILLE	School Service Area - High: Paint Branch HS	Council Member Phone: 240-777-796
Recycle Schedule: FRIDAY	Fire Station Response Areas: 15	Election District: 5	Council Member URL: http://www.
Leaf Collection Zone:	Firebox: 1501	Maryland State District: 14	
Leaf Collection URL:	Snow Plow Priorities: Non-County Route		
Special Protection Areas:	Snow Plow Status: No Status		
Roadway Ownership: Not County Maintaine	Watershed: Little Paint Branch		
DOT Depots: COLESVILLE			



and GIS-LAT is not null
and GIS-LONG is not null
and Open Date is between 9/15/2011 12:00:00 AM and 9/27/2011 12:00:00 AM





Open Date	Organization Name	Area	Sub Area	Status	SR #
03/01/2011	DEP	Solid Waste	Blue Can-New	In Progress	144635690
					144668744
					144675829
					144686391
					144710781

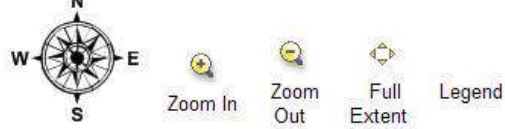
[Refresh](#) |
 [Print](#) |
 [Download](#)



vanila ArcGIS Server app

- Points of interest
- Zoom in, zoom out, full extent, legend
- Specify search radius





Find By:

☒ Address ☐ Zip Code

6 Pissaro Ct

20878

51 Monroe St

Ex. 20850

Within Miles (do
not search Fire
Hydrants
beyond 0.5
miles radius)

1.5

Find

☐ Select All

☐ Apartments

☐ Business Parks

☐ Cemeteries

☐ Colleges and Universities

☒ Elementary Schools

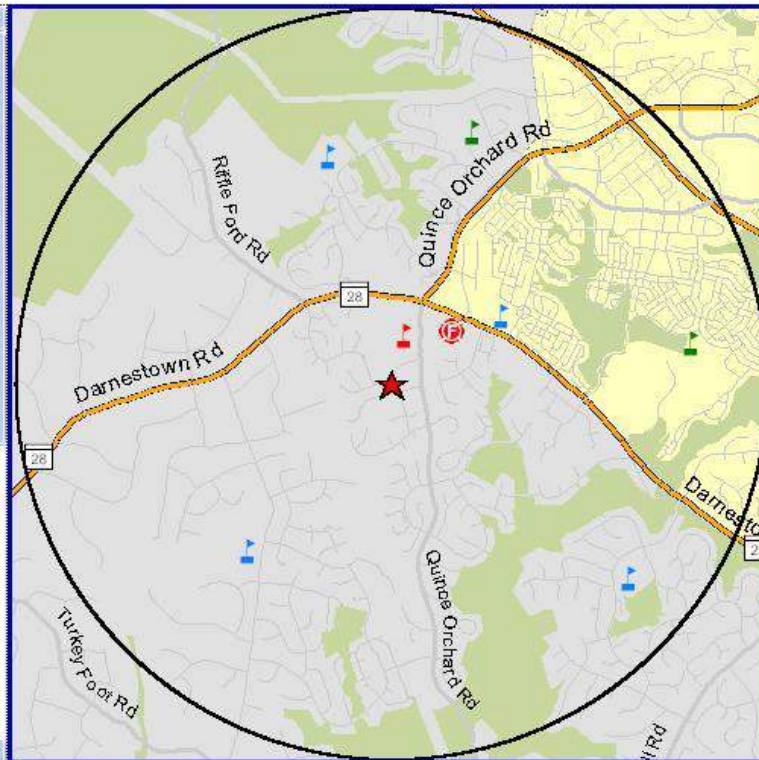
☐ Fire Hydrants

☒ Fire Stations

☐ Golf Courses

☒ High Schools

☐ Hospitals



There are total 4 elementary schools

Elementary School	Address	City	Zip Code	Phone
Thurgood Marshall ES	12260 McDonald Chapel Dr	Gaithersburg	20876	301-670-8282
Dufief ES	15001 DuFief Dr	North Potomac	20878	301-279-4980
Jones Lane ES	15110 Jones La	Gaithersburg	20878	301-840-8160
Rachel Carson ES	100 Tschiffely Square Rd	Gaithersburg	20878	301-840-5333

There are total 1 fire stations

Fire Station	Address	City	Zip Code	Phone
Station 31 - Rockville	12100 Darnestown Rd	North Potomac	20878	301-840-2483

There are total 1 high schools

High School	Address	City	Zip Code	Phone
Quince Orchard HS	15800 Quince Orchard Rd	North Potomac	20878	301-840-4686

There are total 2 middle schools

Middle School	Address	City	Zip Code	Phone
Ridgeview MS	16600 Raven Rock Dr	Gaithersburg	20878	301-840-4770



Google map - MyMontgomery

- Specify location
- Specify radius
- Select layers of points of interest
- POI updated quarterly



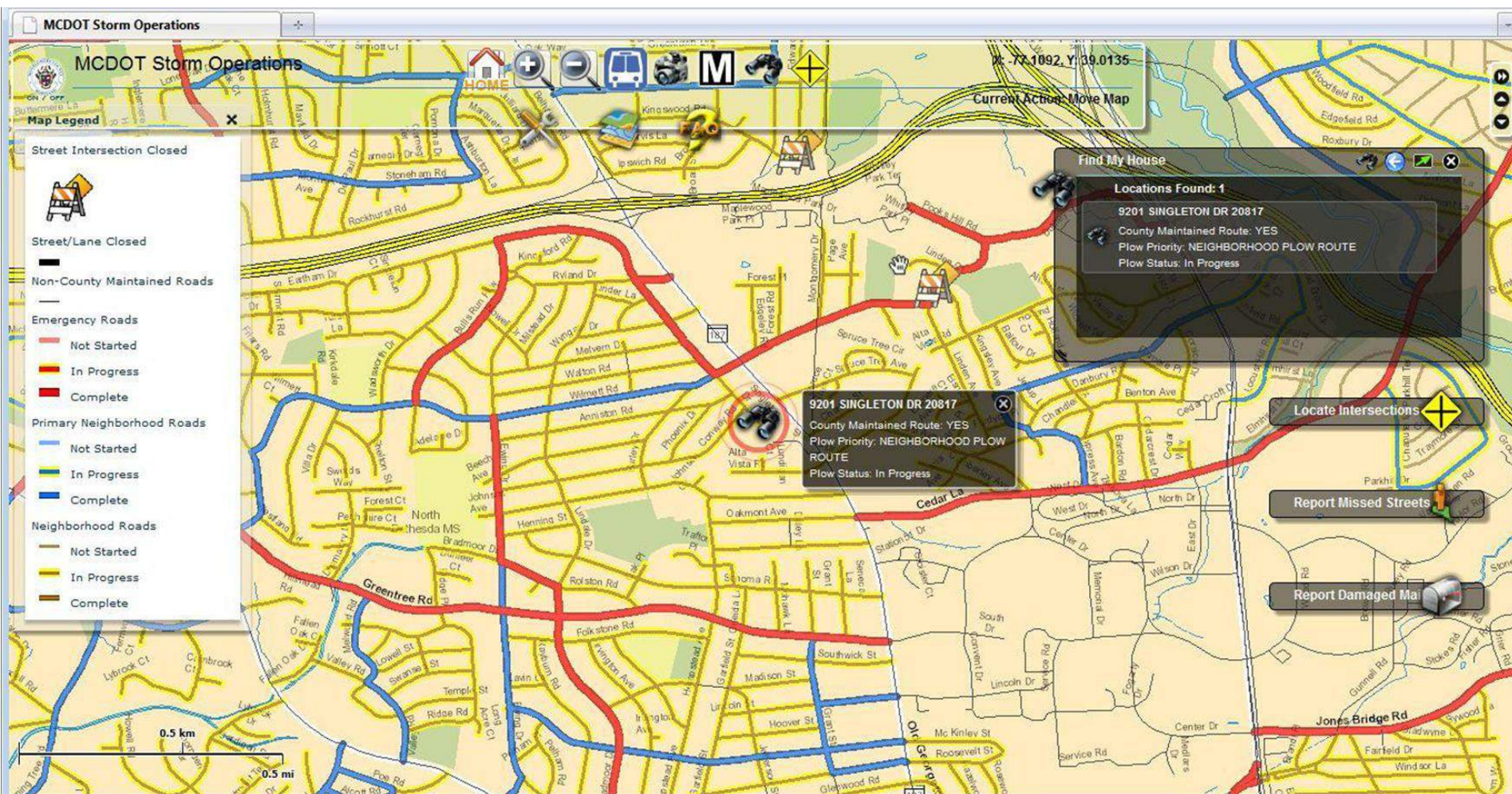
Search Locations

ArcGIS Server Apps

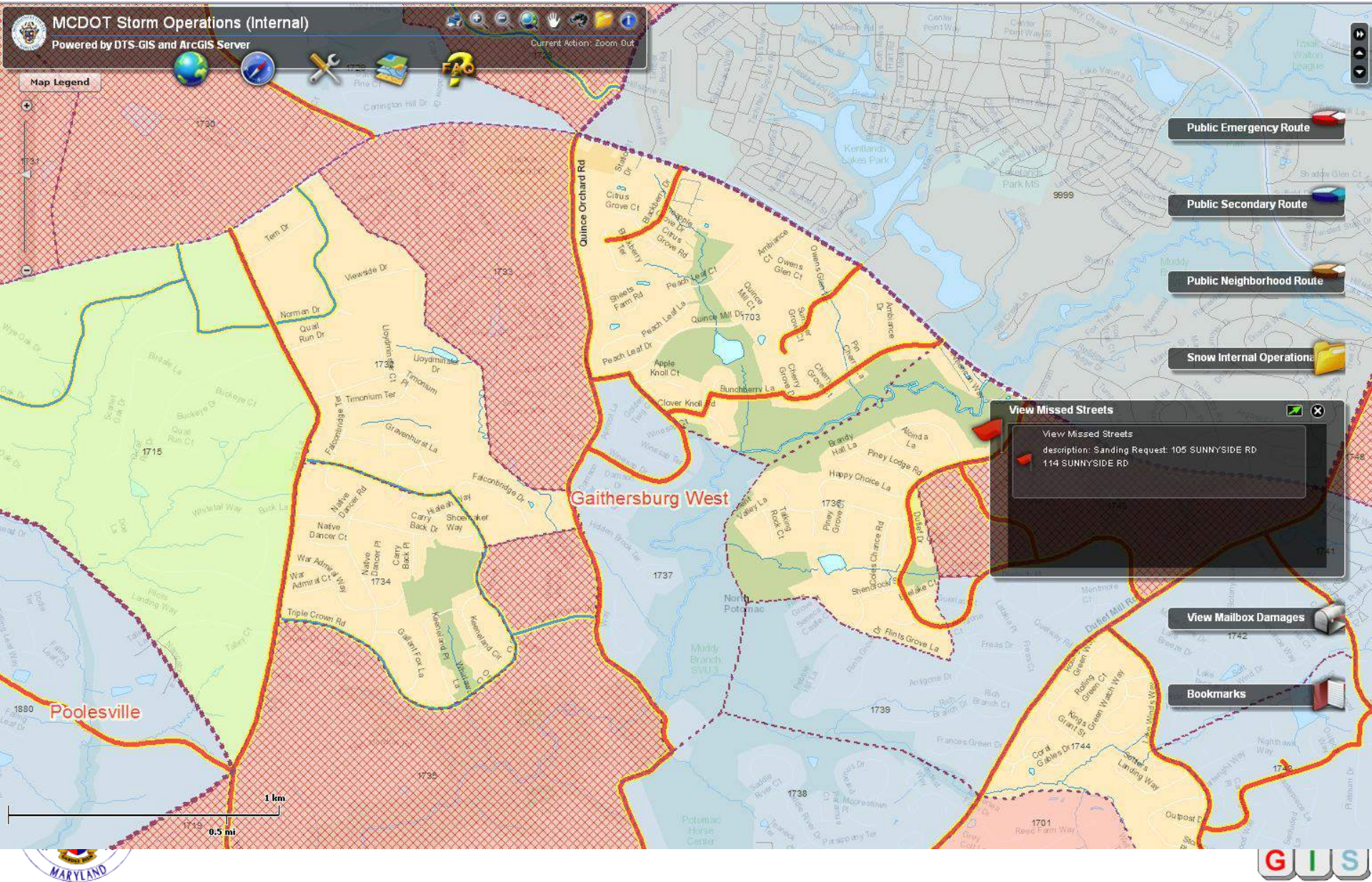
- Flex Viewers
 - DOT Snow Storm Operations Tracking
 - DOT Bikeway Map
 - Police COP



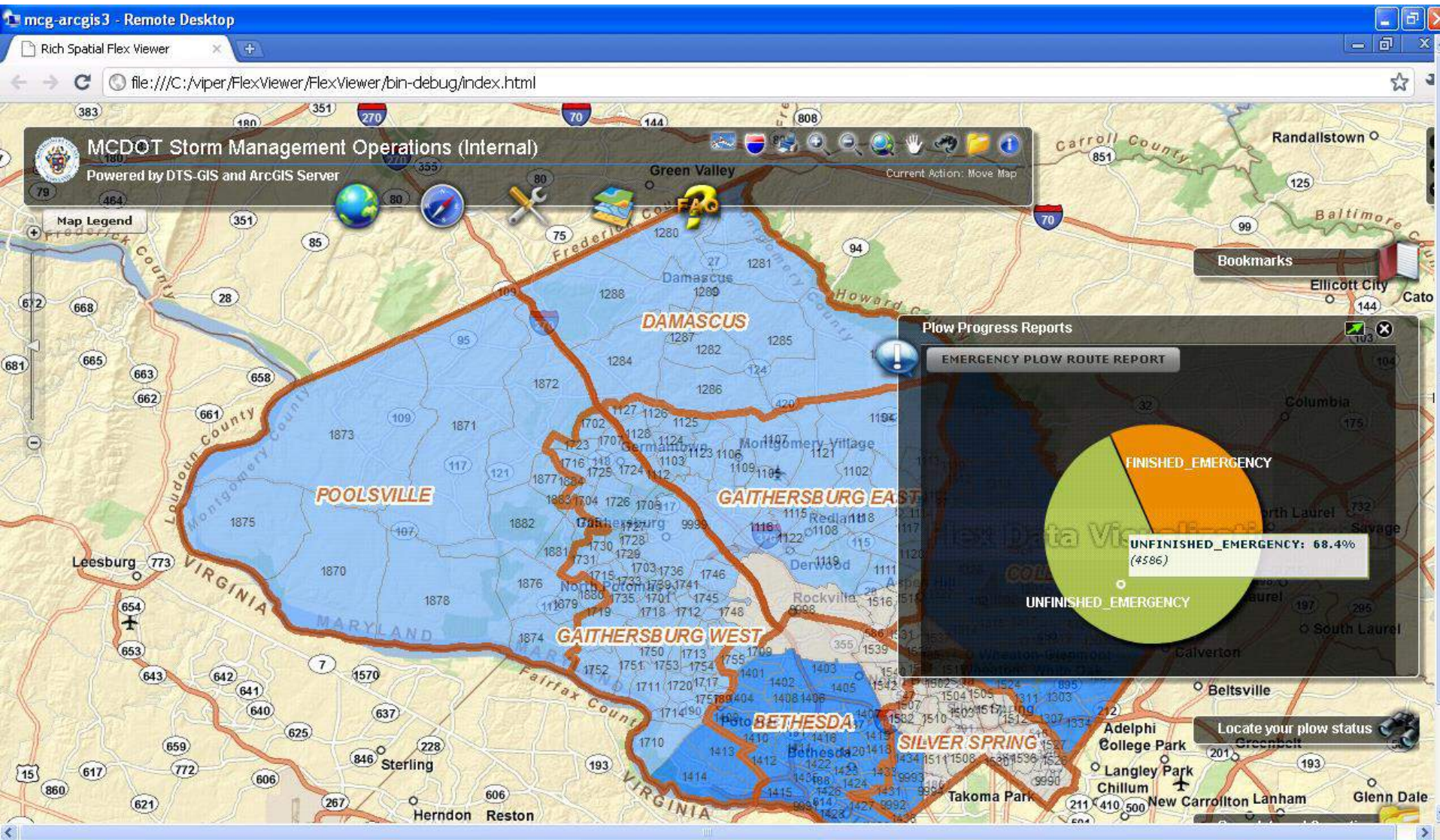
DOT Snow Storm Operations Tracking System



Internal map – view misses streets, mailbox damages



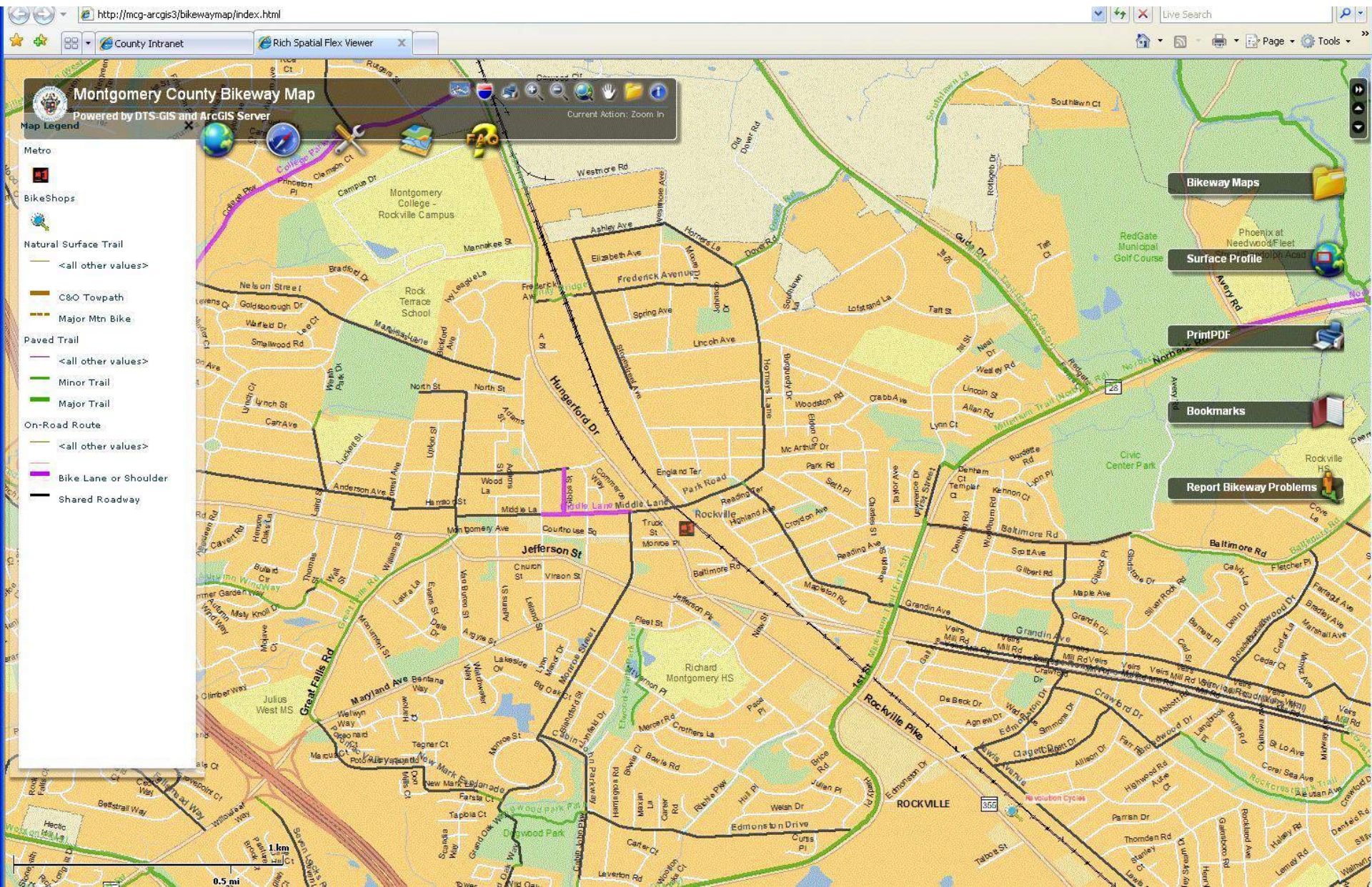
Countywide progress – emergency plow routes



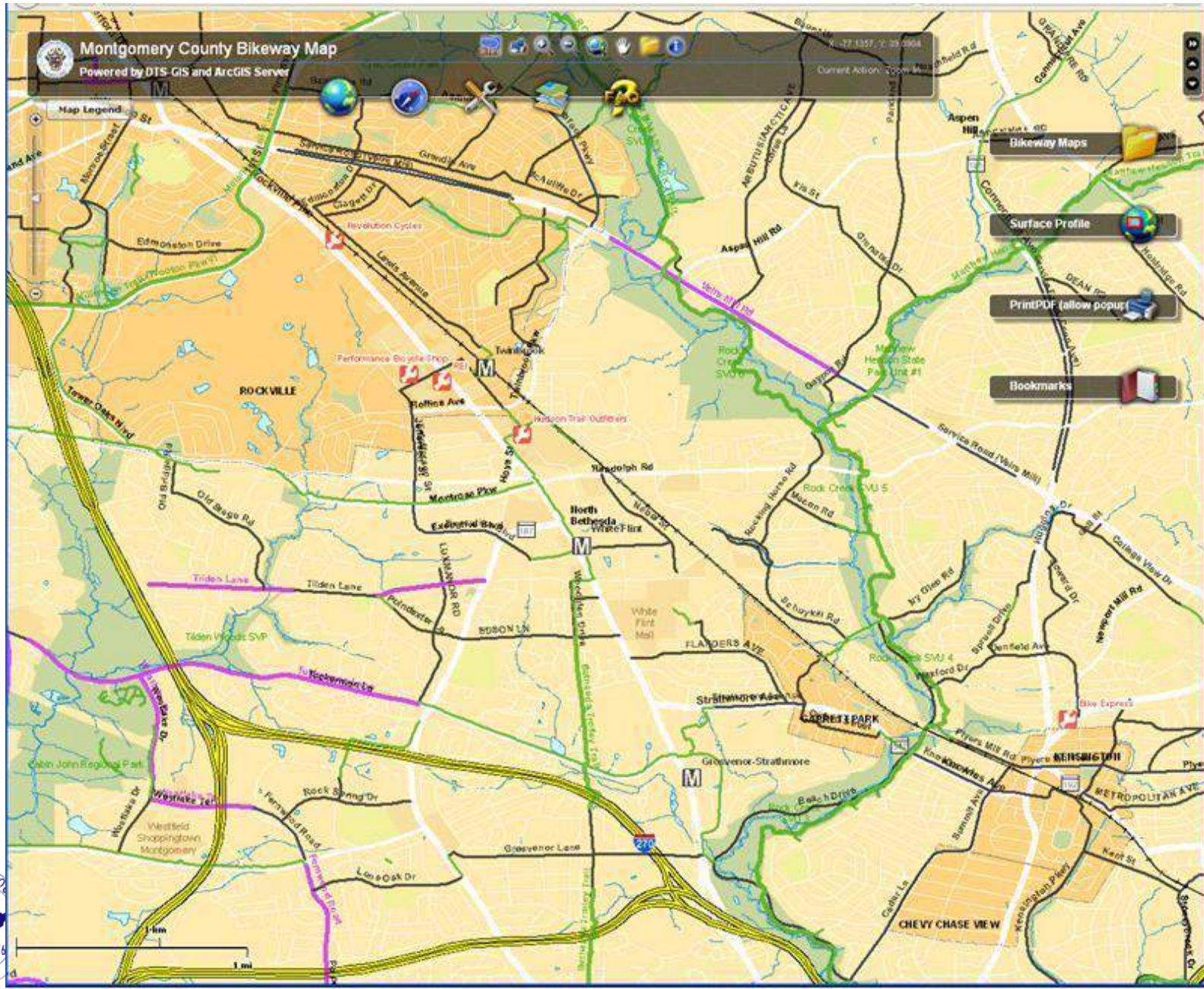
DOT Bikeway Map Viewer



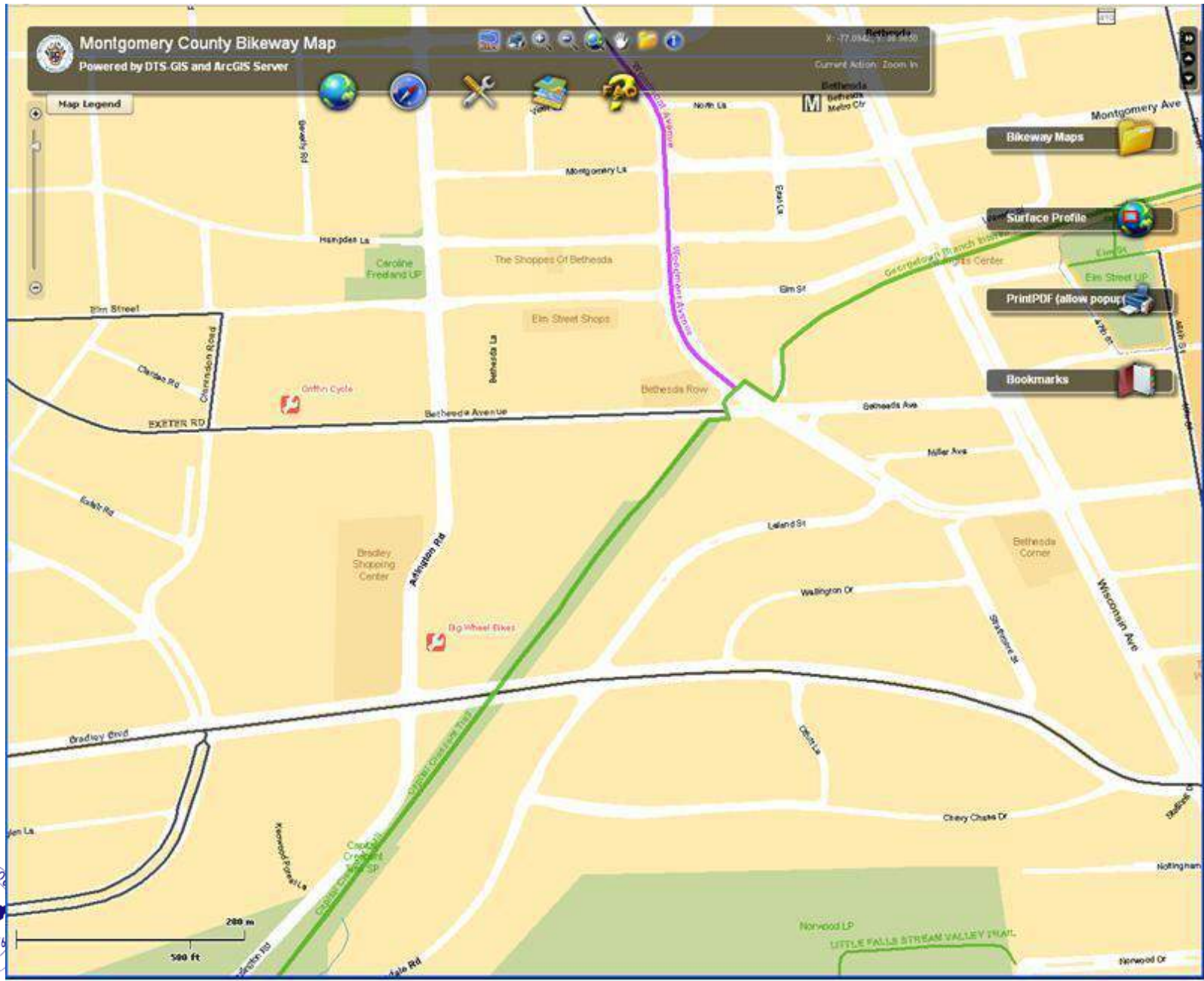
Montgomery County Bikeway Map



Bike shops



Cached base map



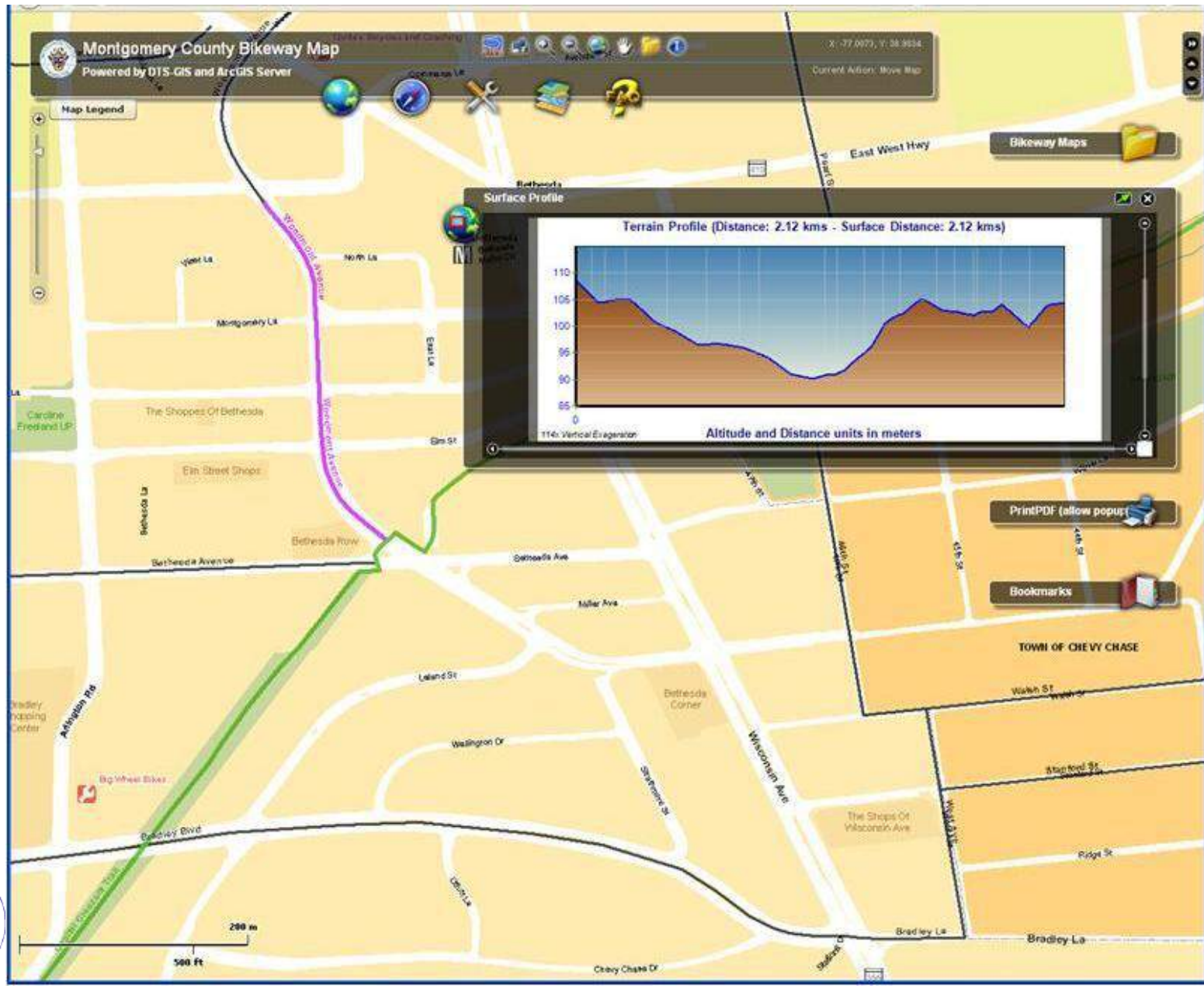
Report Bikeway Problems

The screenshot displays the Montgomery County Bikeway Map web application. The map shows a network of bikeways in Rockville, Maryland, with major roads like Glenmont Rd, Research Blvd, and Montgomery Ave. A 'Report Bikeway Problems' form is overlaid on the right side of the map. The form contains the following fields and text:

- Montgomery County Bikeway Map**
Powered by DTS-GIS and ArcGIS Server
- Map Legend**
- Current Action:** Zoom In
- Report Bikeway Problems**
Fill in the boxes below to report Bikeway Problems!
- The Bikeway Trail Issues:** pothole - a test report
- Your Name:** apollo
- Your Contact Phone:** 7-2883
- Send Your Request to A Team Memeber**
- We have received your latest request,**

The map also includes a scale bar (1 km, 1 mi) and various navigation tools like zoom in, zoom out, and pan.

Terrain Profile

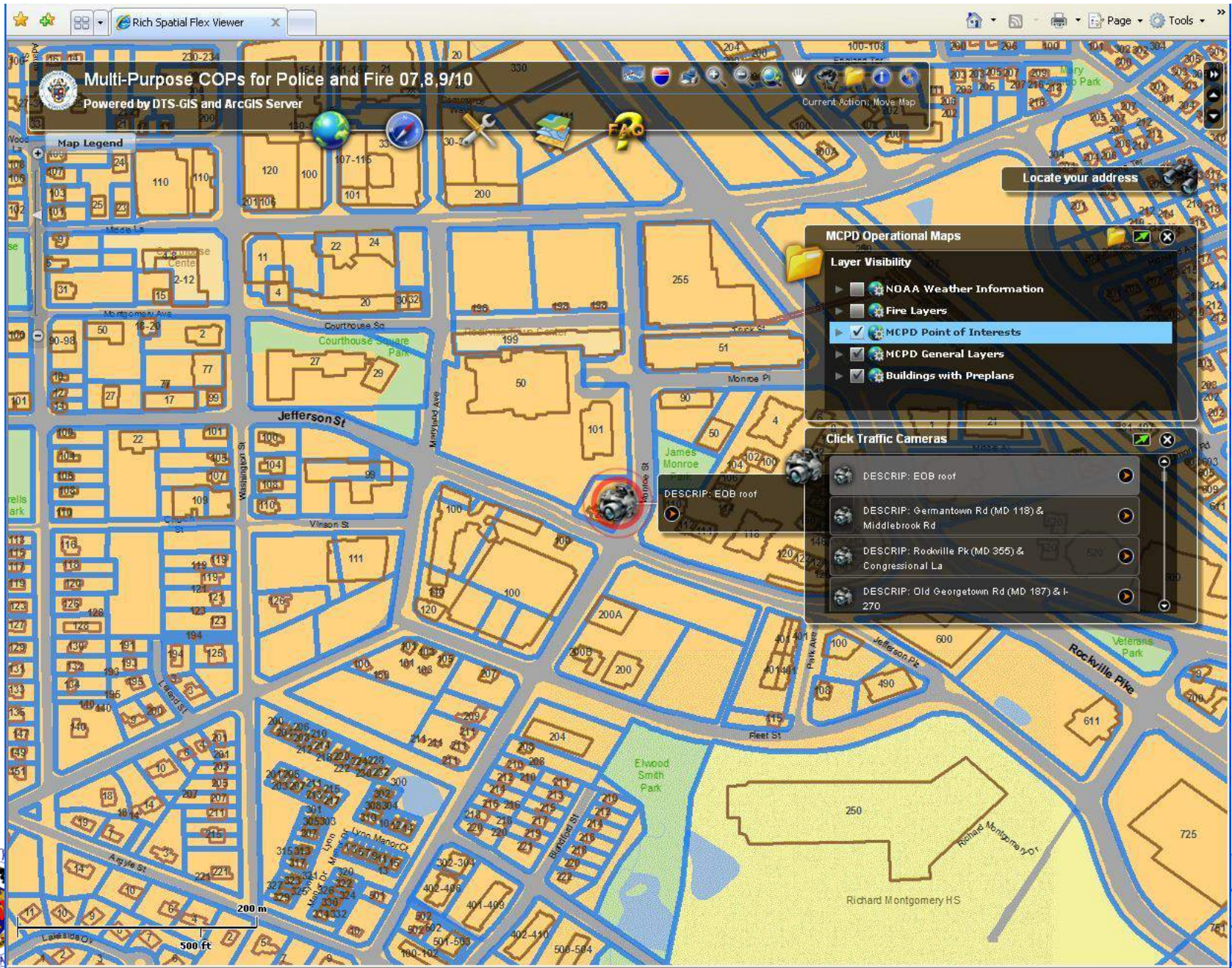


Police COP

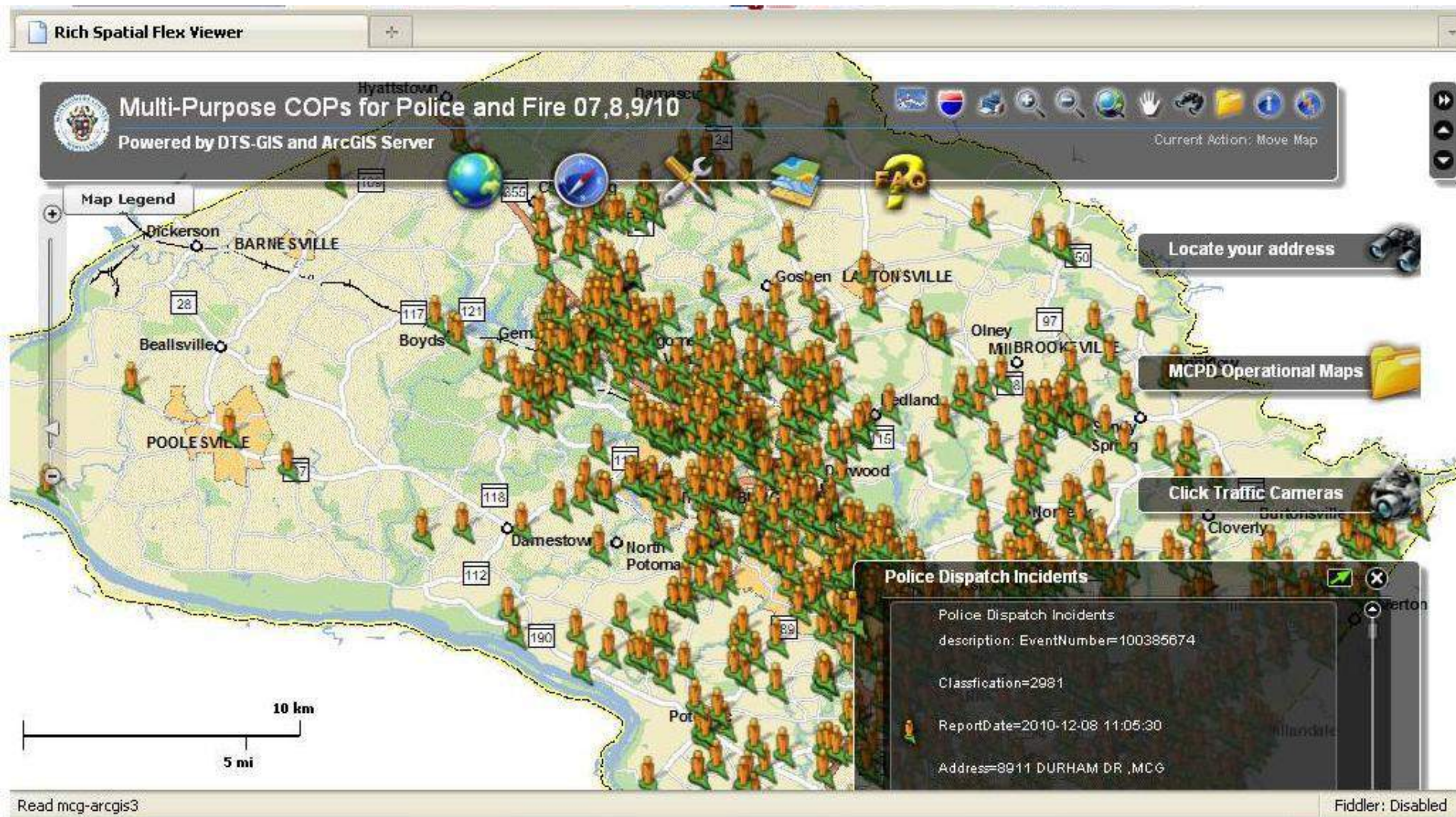
- A rich set of basemap layers
- Traffic cameras
- Dispatch incidents



COP for Police



Police dispatch incidents (secure site)



NCR Geospatial Data Exchange

- UASI grant project – MetroCIO Committee
- Based on DHS vUSA
- Jurisdictions publish map (“REST”) services
- NCR GDE (vUSA) users consume services
- Roles & security levels



NCR

