Municipal GIS Uses and Applications

Marc D Weinshenker, GIS Manager
City of Rockville

MSGIC Quarterly Meeting
16 July 2012

Get Into It

Overview

- Rockville as an example of a municipal GIS
- Resources and Intergovernmental Interaction
- GIS Directives
- GIS Application Scope and Strategies
- GIS Application Examples
- Future

Get Into It

Rockville Stats

- 13 square miles in Montgomery County (County Seat)
- 61,000 residents in 25,000 households
- City staffing of about 540 FTE plus seasonal and other temporary

Get Into It

GIS Resources

- GIS staffing = GIS Manager in IT + Public Works GIS Specialist + Planning GIS Specialist
- GIS software = 15 ArcGIS Desktop concurrent licenses (incl. 3 each ArcEditor and ArcInfo) + ArcSDE on SQL Server + ArcGIS Server + EDN subscription
- GIS operating budget = $59k (91% for ongoing maintenance of software, data, and hardware)
- Development resources = GIS Manager

Get Into It

Intergovernmental Interaction

- Rockville is mostly self-sufficient for data
- Municipal: data exchange as needed
- Montgomery County: orthophoto & Pictometry, data exchange as needed, SWM fee coordination with treasury office
- State: MD Property View subscription
- Regional: MWCOG, NCRGDX participation

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GIS Directives

- Serve the needs of varied user groups, internal and external
- Extend access and utility of GIS to more users
- Make GIS data available to public
- Work within limits of funding, resources, system growth

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GIS Application Scope

- ArcGIS Desktop (all license levels); centralized administration with multiuser editing on SDE
- Third-party GIS applications
- Web-based maps and tools
- Public GIS data downloads in multiple formats

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Strategies

- Web: Flex chosen for viewer and relative ease of modification (May 2011)
- Web: ArcGIS Online for simple, focused maps to get information (Sep 2011)
- Data sharing: open government, reduced staff time (March 2012)
- What's missing: web-based map composition, mobile, enterprise integration

Get Into It

GIS Application Examples

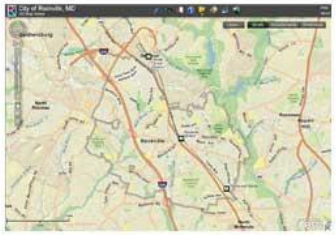
- Public Flex Map Applications
- Internal Flex Map Applications
- ArcGIS Online
- ArcGIS Desktop Tools
- Public GIS Data Downloads

Rockville Public Flex Maps Page

General Purpose City Map

Search Addresses, Find City Services and Property Information

This interactive map provides a convenient way to search addresses for location and to view information for City services and property ownership. City-related information associated with properties includes water service source, recycling & refuse service, voting location, neighborhood coordinator contacts, code inspection contacts, zoning, and more. In addition, each property includes State of Maryland property parcel data for tax assessment information. Schools, parks, City facilities and other points of interest can also be located in the map, many with links to descriptive web pages.



Stormwater Management Utility Fee Estimate

City of Rockville property owners can view their property on an aerial photo map that shows the measured impervious area and generates an estimate of the annual Stormwater Management Utility Fee. The measured impervious area is colored light brown on the map. Owners may access the map here. This map will be updated as information changes. To view a property, click on the 'Find an Address' tool in the top of the screen and type in the address. Alternately, use the navigation toolset on the left side of the screen to navigate to your property. Use the 'hand' tool to move around in the view to your vicinity and zoom in on the property with the zoom slider. Once you find your parcel, click on the 'i' (identify) tool, then click on the desired parcel.

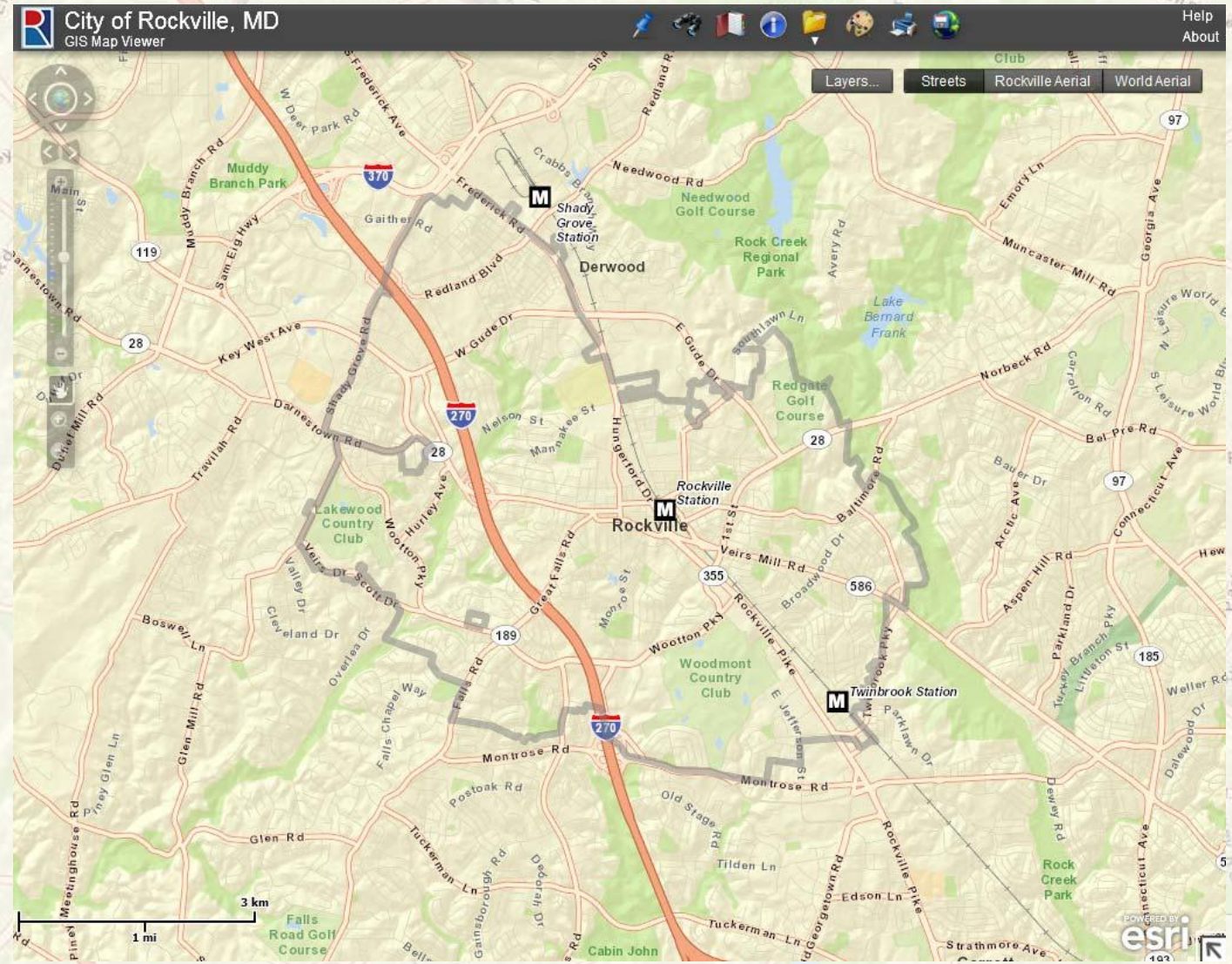
Forest Conservation Easements

This map shows the existing forest conservation easements within the City of Rockville and provides supplemental data such as the approved Forest Conservation Plan number, Montgomery County Land Records reference number (if available), size and type of easement, and notes on forest conservation credits. There are two types of forest conservation easements: one that protects forests and one that protects individual trees. Easements protecting forests are placed over the forested areas only within the property boundary and are labeled as "partial". Easements protecting individual trees are usually placed over the entire property and refer back to the approved Forest Conservation Plan to show which trees are covered by the easement. These easements are labeled as "entire." Street trees are protected under the Maryland Roadside Tree Law and therefore, not subject to forest conservation easements. If you have questions on forest conservation easements, please contact the City Forester's office at 240-314-8700.

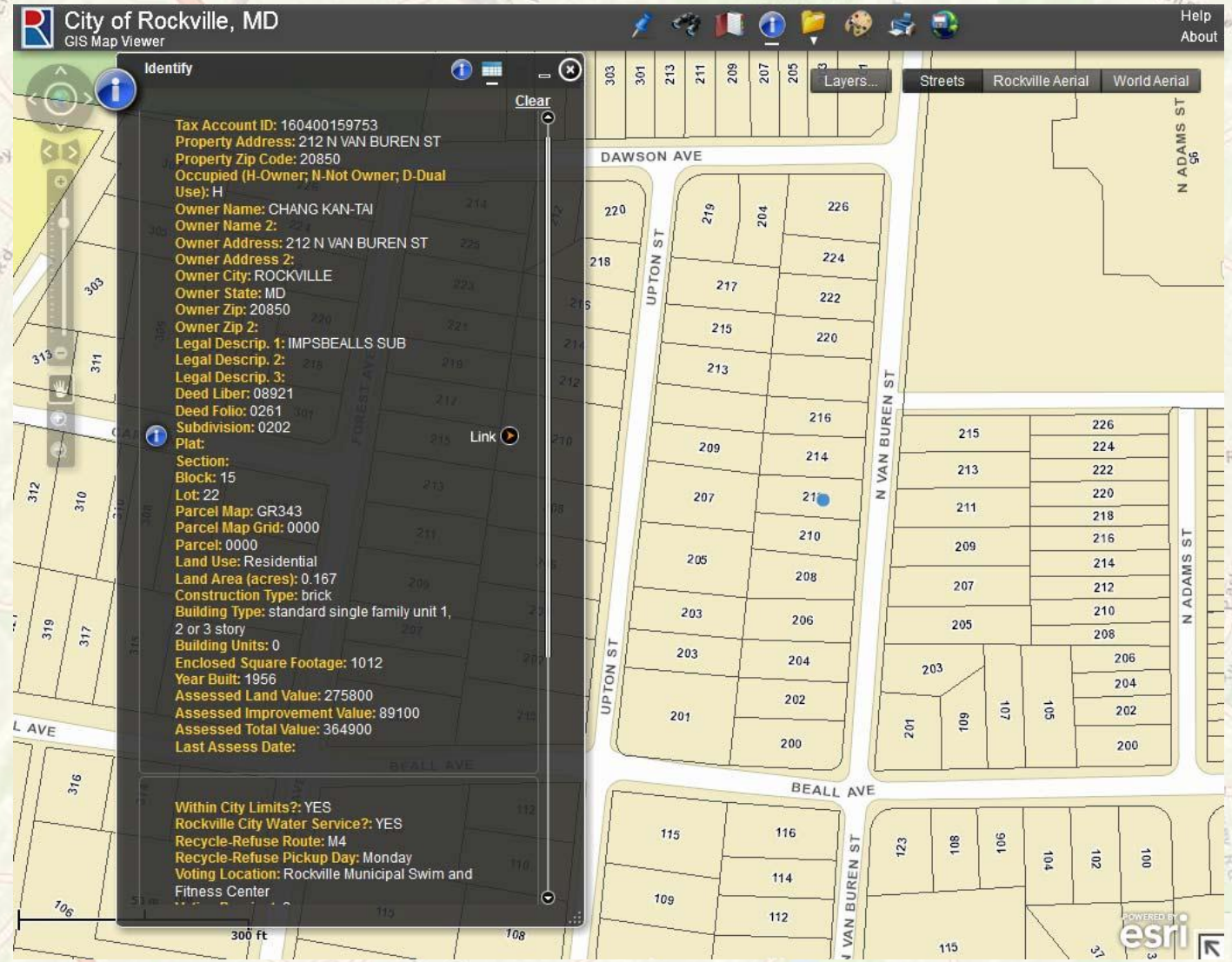
Urban Tree Canopy

City of Rockville property owners can view their property on a map that shows the estimated percentage of their property that is covered by tree canopy. Properties are color coded based upon the percentage range of tree canopy their property falls into. This map shows tree canopy data taken from 2007 aerial imagery. The analysis was performed by the University of Vermont's Spatial Analysis Laboratory in consultation with the USDA Forest Service's Northern Research Station. For more information, view the Urban Tree Canopy Report (pdf).

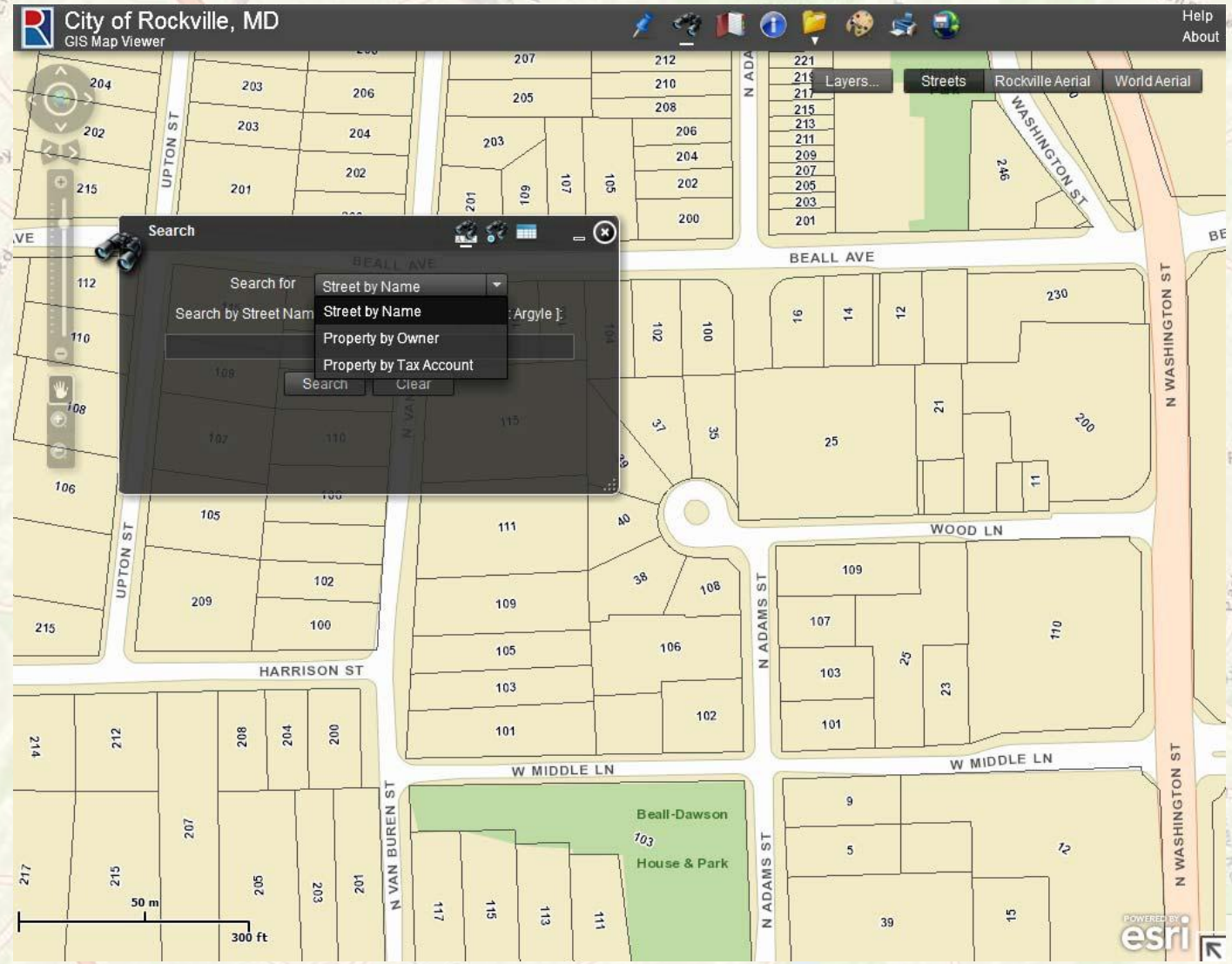
Rockville General Purpose Flex Map



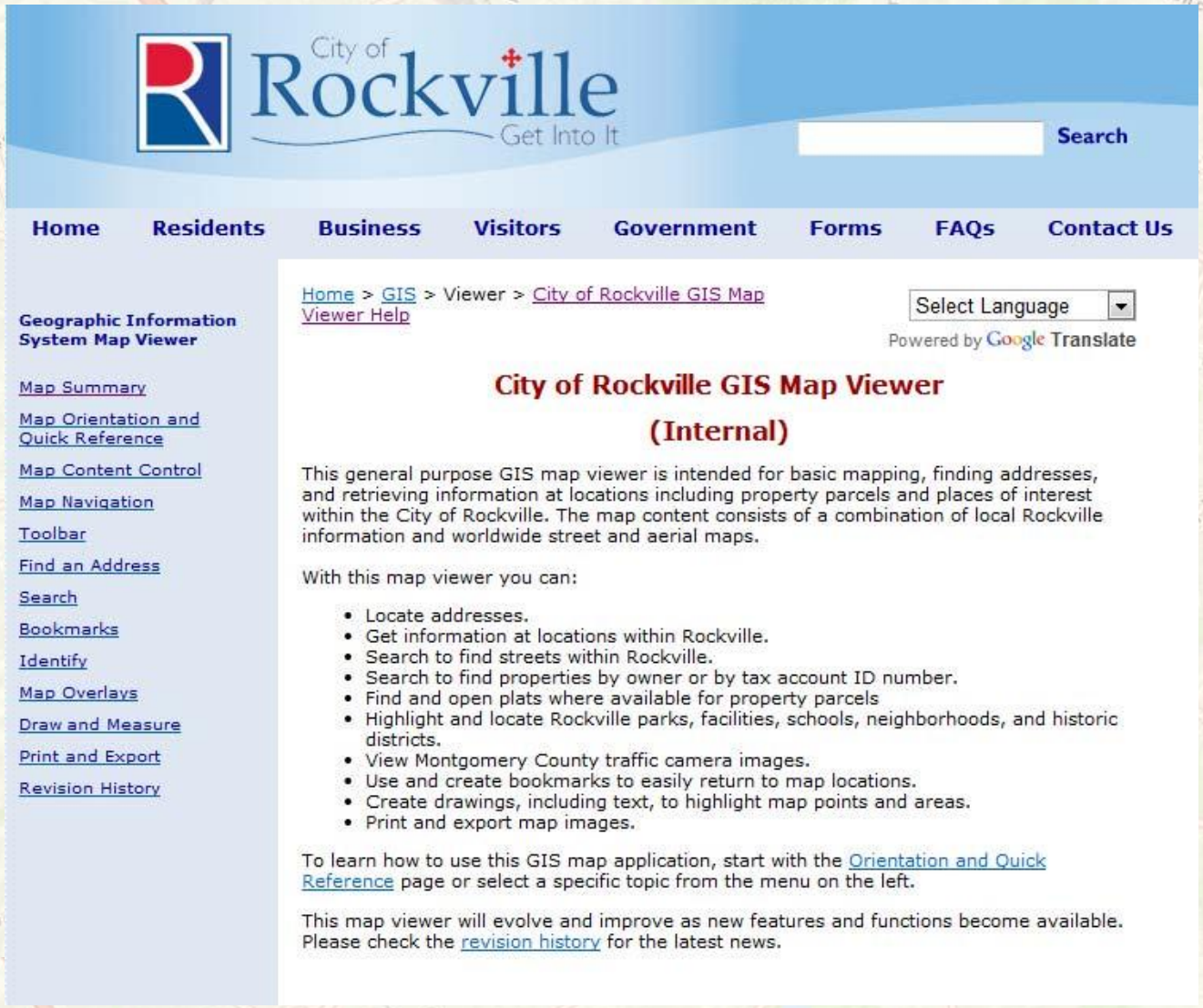
Rockville General Purpose Flex Map



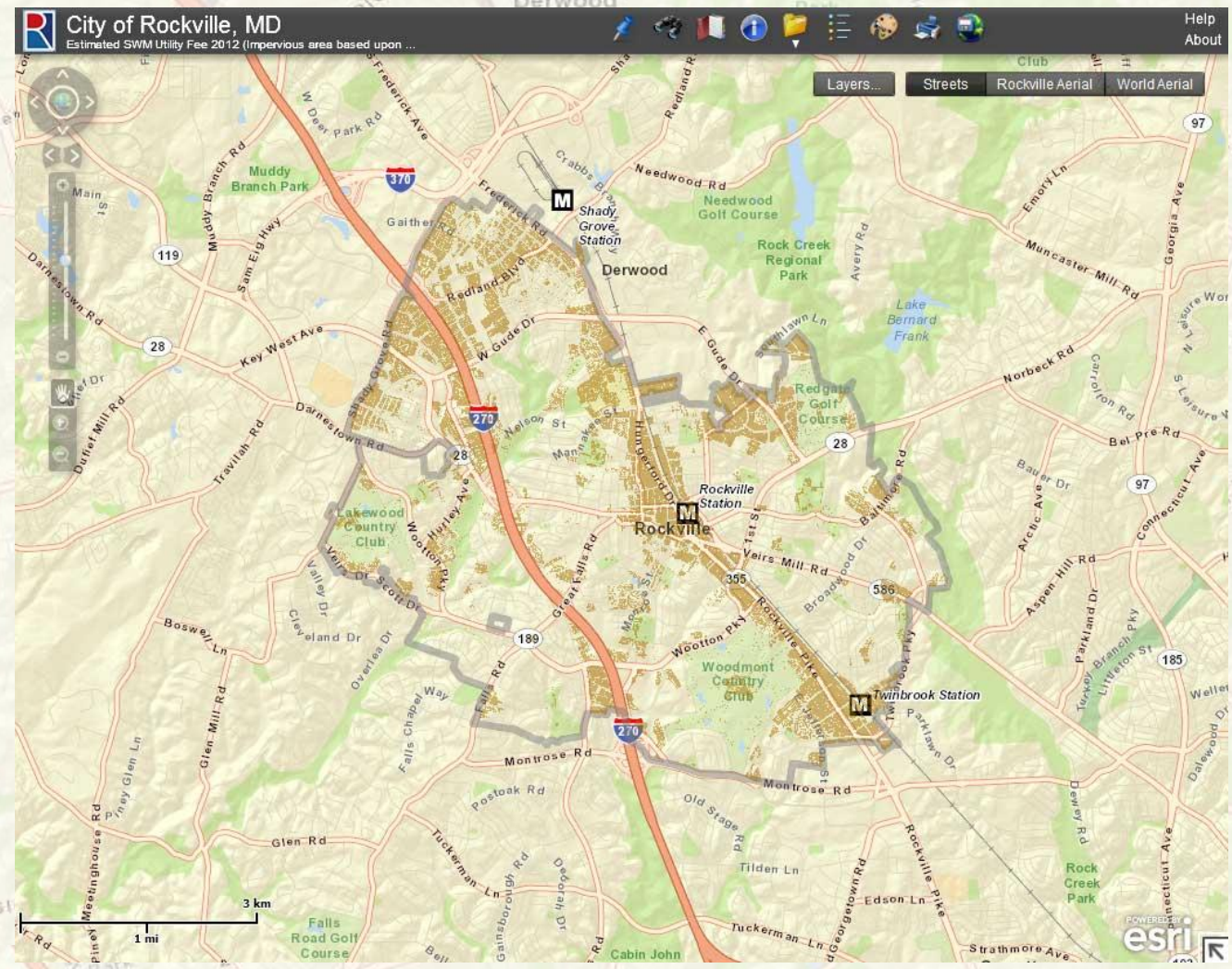
Rockville General Purpose Flex Map



Rockville General Purpose Flex Map



Rockville SWM Utility Fee Flex Map



Rockville SWM Fee Flex Map

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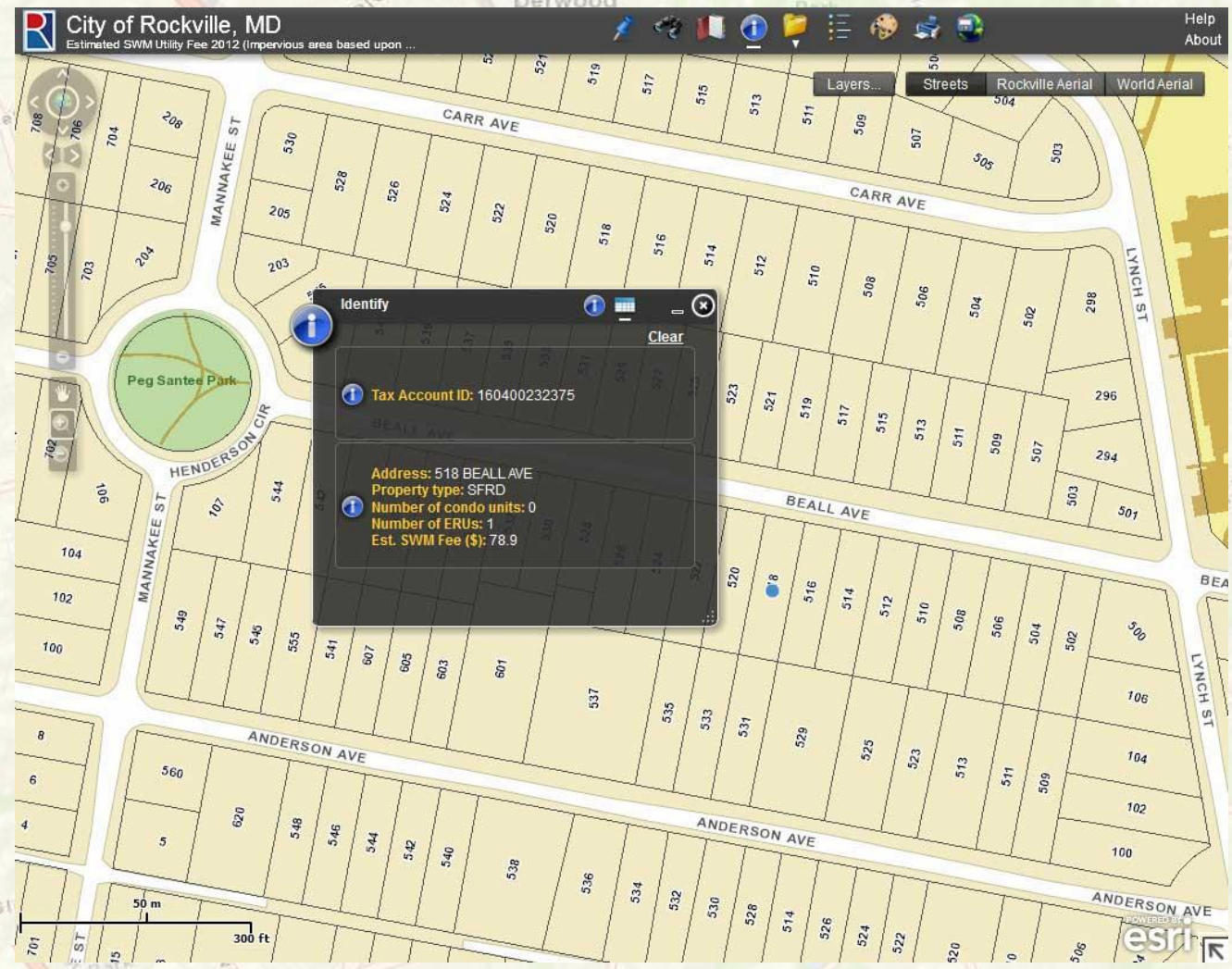
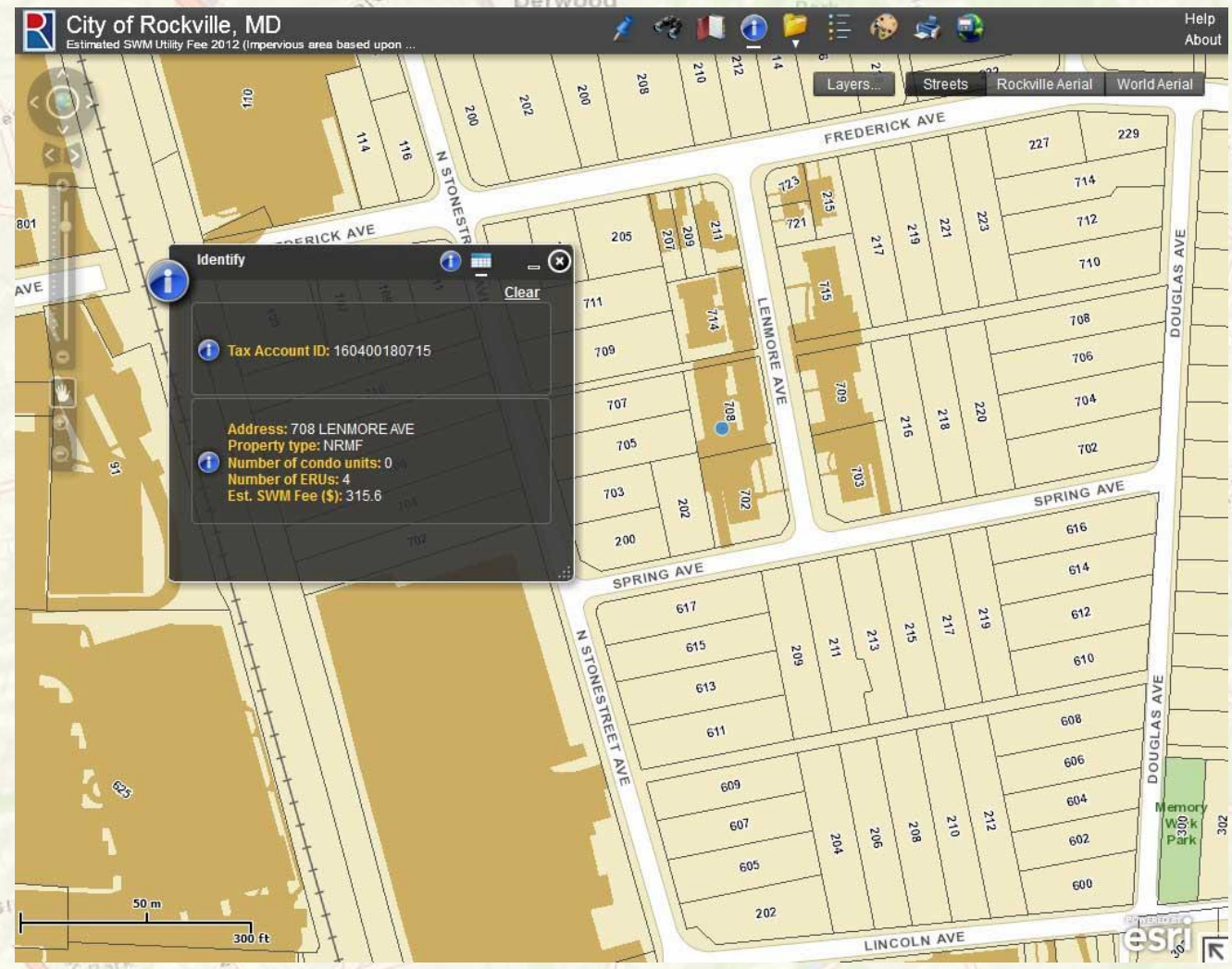
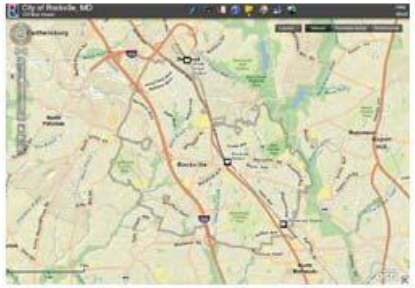


Rockville SWM Fee Flex Map

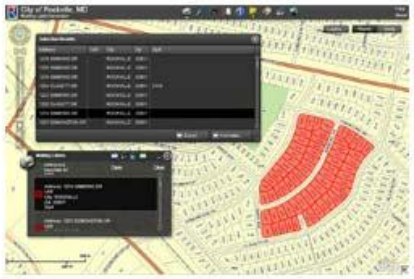


Rockville Internal Flex Maps Page

Maps

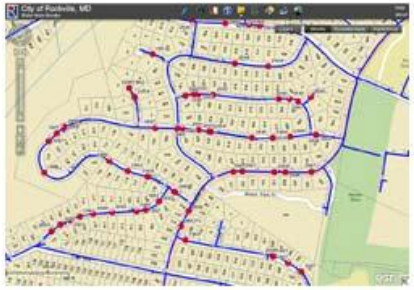


General Purpose GIS Map



Mailing Label Generator (use with Internet Explorer browser only)

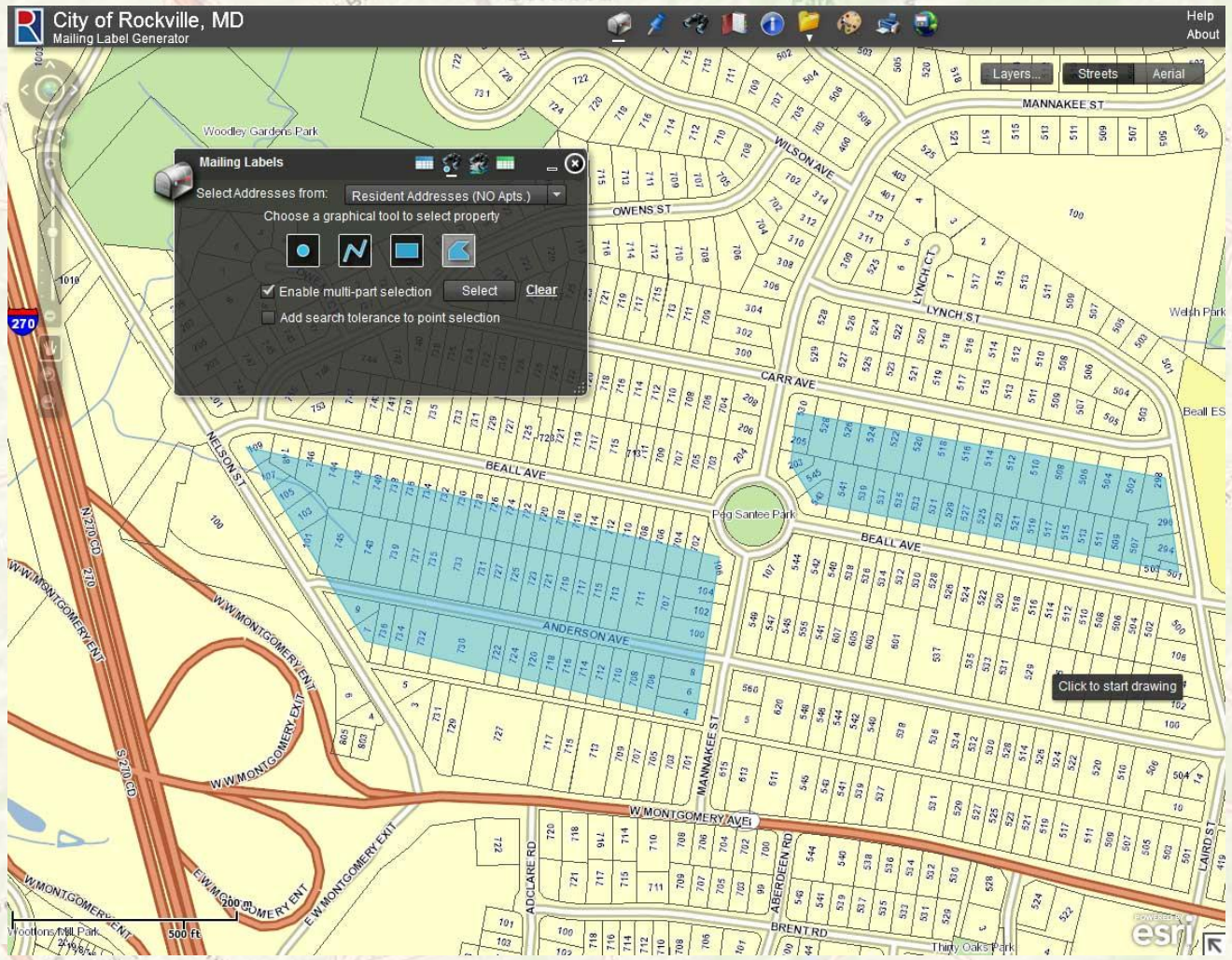
Streetlight Locator



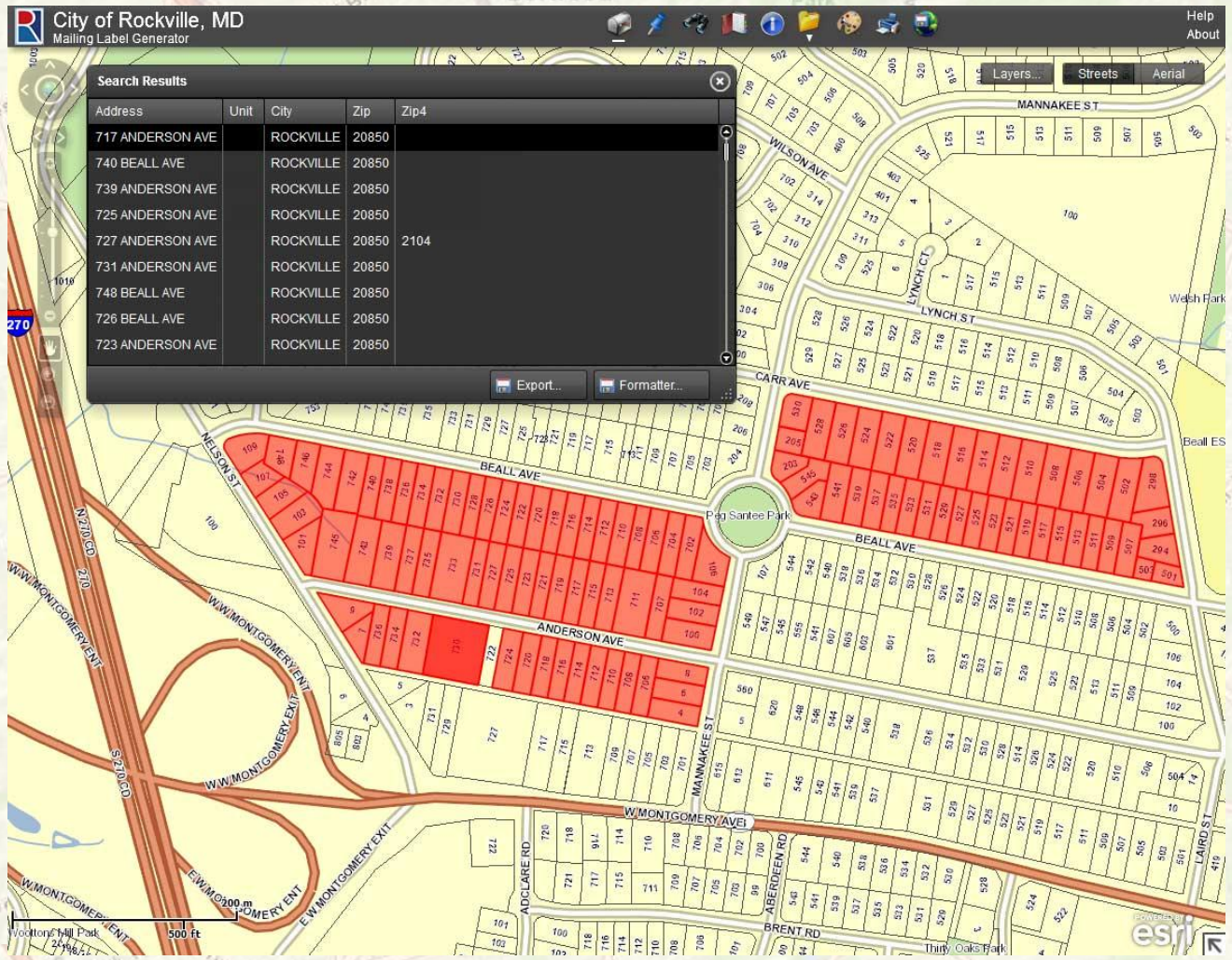
Water Main Breaks

Storm Drain System

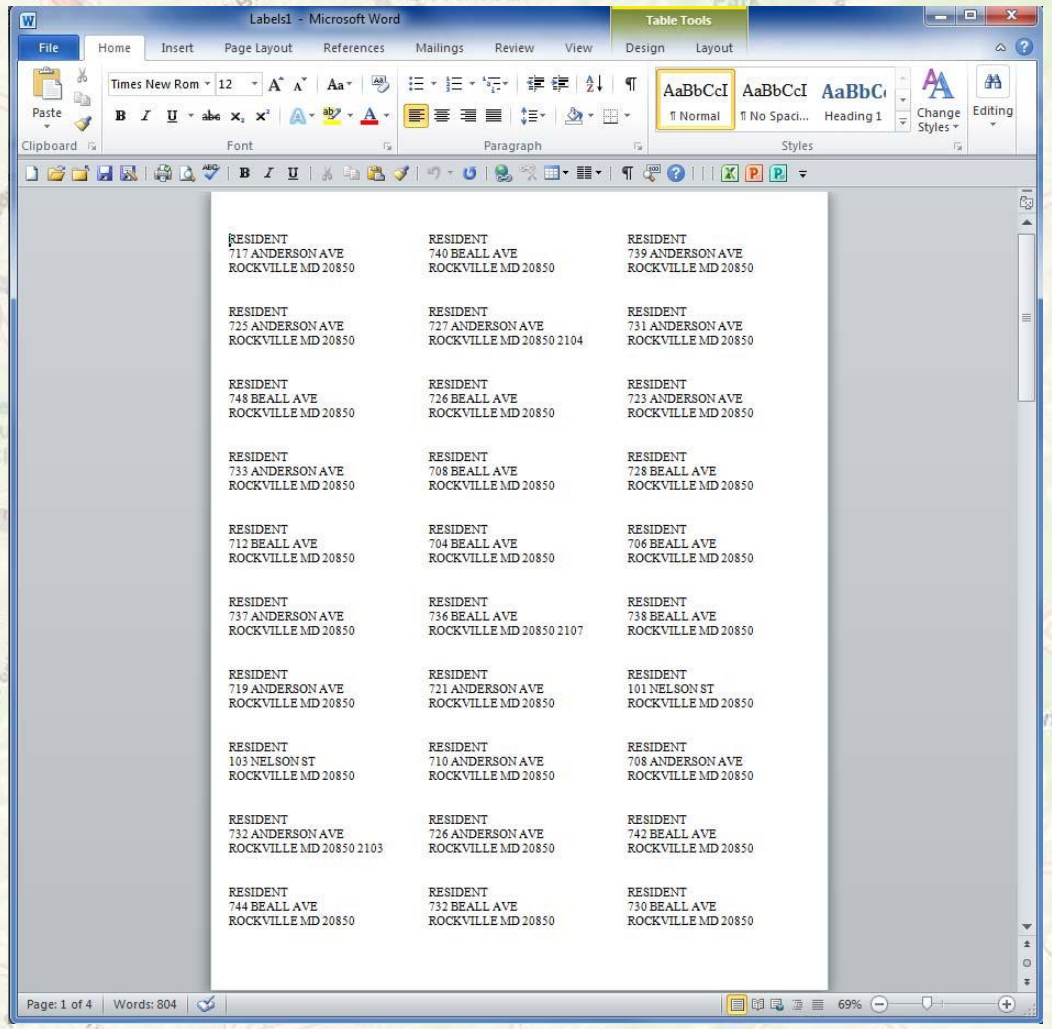
Rockville Mailing Labels Flex Map



Rockville Mailing Labels Flex Map



Rockville Mailing Labels Flex Map



RESIDENT
717 ANDERSON AVE
ROCKVILLE MD 20850

RESIDENT
740 BEALL AVE
ROCKVILLE MD 20850

RESIDENT
739 ANDERSON AVE
ROCKVILLE MD 20850

RESIDENT
725 ANDERSON AVE
ROCKVILLE MD 20850

RESIDENT
727 ANDERSON AVE
ROCKVILLE MD 20850 2104

RESIDENT
731 ANDERSON AVE
ROCKVILLE MD 20850

RESIDENT
748 BEALL AVE
ROCKVILLE MD 20850

RESIDENT
726 BEALL AVE
ROCKVILLE MD 20850

RESIDENT
723 ANDERSON AVE
ROCKVILLE MD 20850

RESIDENT
733 ANDERSON AVE
ROCKVILLE MD 20850

RESIDENT
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ROCKVILLE MD 20850

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728 BEALL AVE
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712 BEALL AVE
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706 BEALL AVE
ROCKVILLE MD 20850

RESIDENT
737 ANDERSON AVE
ROCKVILLE MD 20850

RESIDENT
736 BEALL AVE
ROCKVILLE MD 20850 2107

RESIDENT
738 BEALL AVE
ROCKVILLE MD 20850

RESIDENT
719 ANDERSON AVE
ROCKVILLE MD 20850

RESIDENT
721 ANDERSON AVE
ROCKVILLE MD 20850

RESIDENT
101 NELSON ST
ROCKVILLE MD 20850

RESIDENT
103 NELSON ST
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732 BEALL AVE
ROCKVILLE MD 20850

RESIDENT
730 BEALL AVE
ROCKVILLE MD 20850

Rockville Map Gallery

Maps

This Map Gallery is a collection of web maps for the City of Rockville, Maryland.

Search maps

2010 Census and Demographics Data

City Elections

Development Review Projects

Forest Conservation Easements (requires Flash)

General Purpose City Map (requires Flash)

Historic Buildings Catalog

Historic Districts

Neighborhood Associations

Parks and Facilities

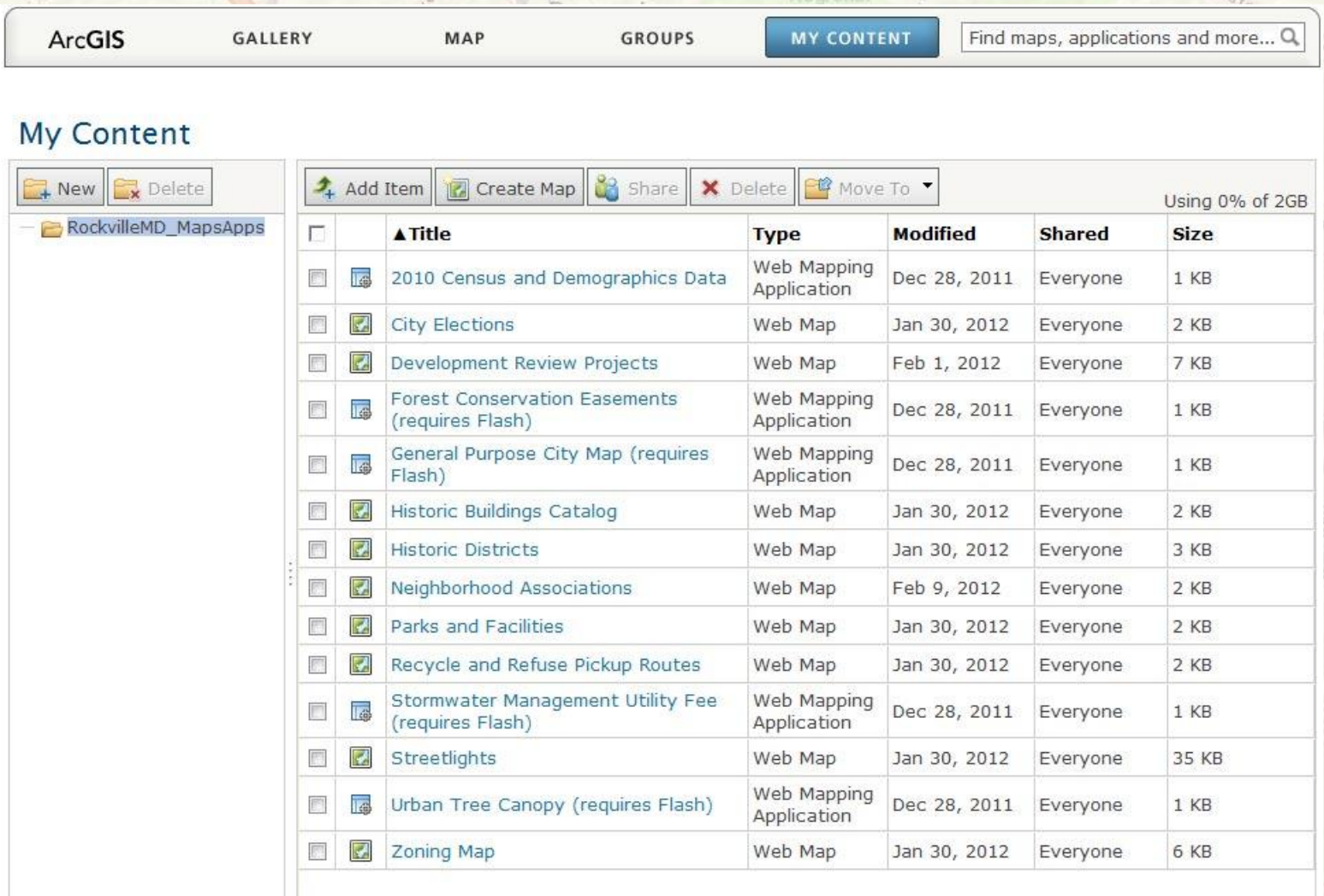
1 2 ›

More Maps

Additional maps on the City of Rockville web site:

- Bicycle Routes
- Leaf Collection
- Red Light Cameras
- Speed Cameras
- Water & Sewer Service Boundary

Rockville ArcGIS Online Content



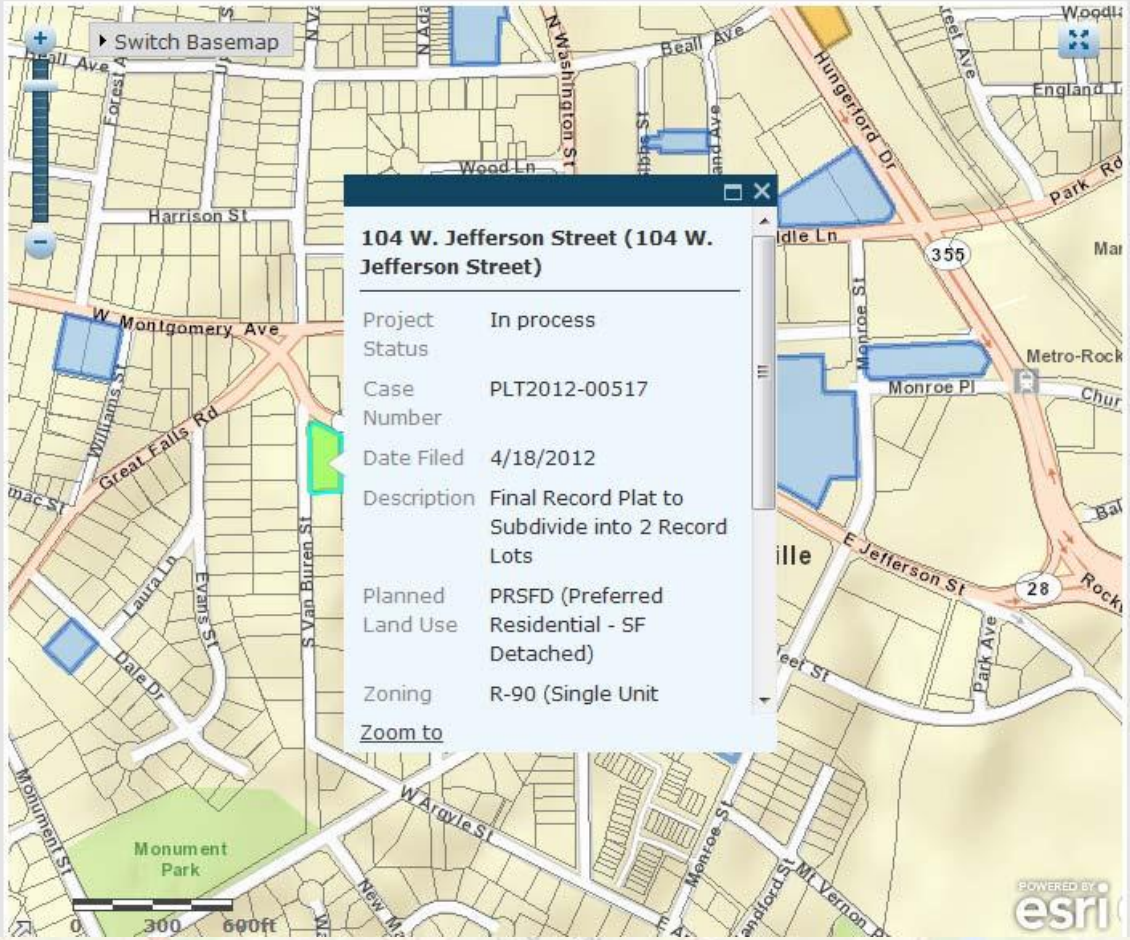
▲Title	Type	Modified	Shared	Size
2010 Census and Demographics Data	Web Mapping Application	Dec 28, 2011	Everyone	1 KB
City Elections	Web Map	Jan 30, 2012	Everyone	2 KB
Development Review Projects	Web Map	Feb 1, 2012	Everyone	7 KB
Forest Conservation Easements (requires Flash)	Web Mapping Application	Dec 28, 2011	Everyone	1 KB
General Purpose City Map (requires Flash)	Web Mapping Application	Dec 28, 2011	Everyone	1 KB
Historic Buildings Catalog	Web Map	Jan 30, 2012	Everyone	2 KB
Historic Districts	Web Map	Jan 30, 2012	Everyone	3 KB
Neighborhood Associations	Web Map	Feb 9, 2012	Everyone	2 KB
Parks and Facilities	Web Map	Jan 30, 2012	Everyone	2 KB
Recycle and Refuse Pickup Routes	Web Map	Jan 30, 2012	Everyone	2 KB
Stormwater Management Utility Fee (requires Flash)	Web Mapping Application	Dec 28, 2011	Everyone	1 KB
Streetlights	Web Map	Jan 30, 2012	Everyone	35 KB
Urban Tree Canopy (requires Flash)	Web Mapping Application	Dec 28, 2011	Everyone	1 KB
Zoning Map	Web Map	Jan 30, 2012	Everyone	6 KB

Rockville Map Gallery

Development Review Projects

City of Rockville, MD Development Review Projects

Locate an address



Legend | About

Layers

- [x] Rockville City Limits
- [x] Rockville Development Review Projects
- [x] Rockville Property

Legend

Rockville City Limits
Rockville City Limits

Rockville Development Review Projects
Development Review Projects

- Pre-Application
- In process
- Approved

Rockville Property
Property

Property Display
Property 15k - 1k

Applications In Process

The following is a list of formal application submittals that are currently in the City's Development Review Process.

3 Choke Cherry Road (Upper Rock District)
File #: STP2012-00118
Description: Minor Site Plan Amendment for the Development of a Median Landscape Plan
Status: Application Accepted as Complete
Project Planner: Cas Chasten, 240-314-8223, cchasten@rockvillemd.gov
View Details
View Project Map

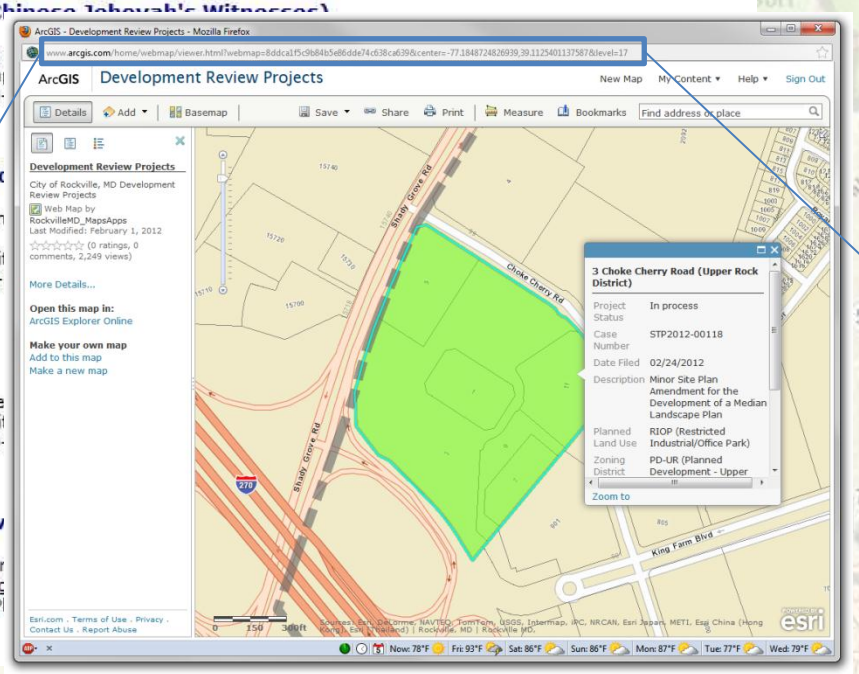
104 West Jefferson Street
File#: PLT2012-00517
Description: Final Record Plat to Subdivide into 2 Residential Lots
Status: Planning Commission Meeting Scheduled
Project Planner: Margaret Hall, 240-314-8226, mhall@rockvillemd.gov
View Details
View Project Map

626 & 628 Great Falls Road (Chinese Jehovah's Witnesses)
File #: STP2012-00114
Description: Proposed development
Status: Application Accepted as Com
Project Planner: Margaret Hall, 240-
View Details
View Project Map

1235 Potomac Valley Road (Pc
File #: SPX2012-00385
Description: Major Modification to an Home
Status: Development Review Commi
Project Planner: Cas Chasten, 240-
View Details
View Project Map

1900 Chapman Avenue
File #: STP2012-00112
Description: Proposed Mixed Use De
Status: Development Review Commi
Project Planner: Margaret Hall, 240-
View Details
View Project Map

12720 Twinbrook Parkway (Av
File #: STP2009-00008
Description: Site Plan Application for
Status: Post-Application Area Meeting
Project Planner: Jeremy Hurlbutt, Pl
View Details
View Project Map



Map scale level

ArcGIS Online Map ID URL

Location coordinates

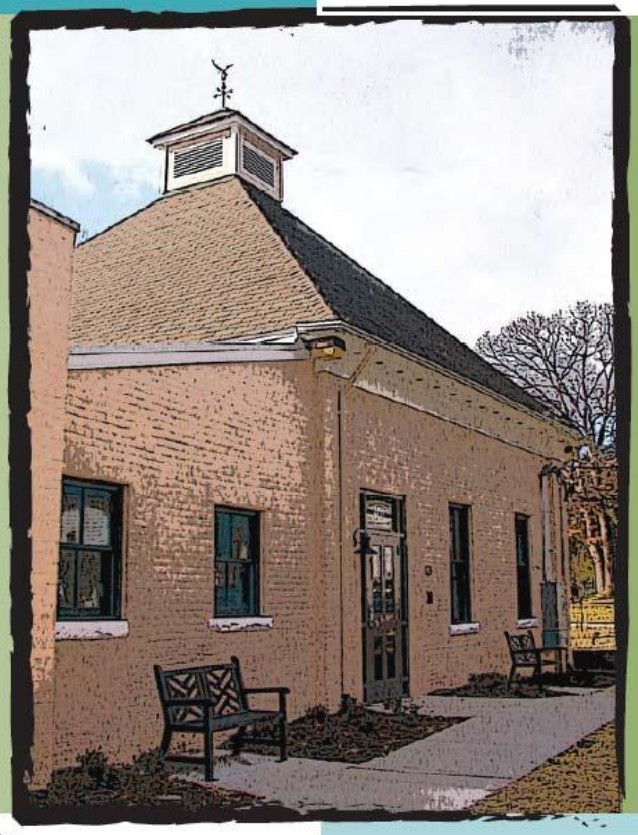
http://www.arcgis.com/home/webmap/viewer.html?webmap=8ddca1f5c9b84b5e86dde74c638ca639 &center=-77.1848724826939,39.1125401137587 &level=17

Get Into It

Department of Community Planning and Development Services

HISTORIC BUILDINGS CATALOG

ROCKVILLE



City of Rockville

Historic Preservation Section

Get Into It

BUNGALOW (1890-1930)

The most common form of the craftsman style in Rockville is the bungalow. Introduced in California at the turn of the twentieth century, bungalow designs were widely published in pattern books and mail order catalogs. Several of the bungalows in Rockville follow the intricately designed models in the Sears Roebuck Catalog. The house at 2 W. Argyle Street, built in 1927, is an example of Sears Roebucks' "Vallonia" model.

16 Williams St. ***1912***

201 N. Horners Ln. ***1922***

307 Baltimore Rd. ***1923***

117 S. Van Buren St. ***1923***

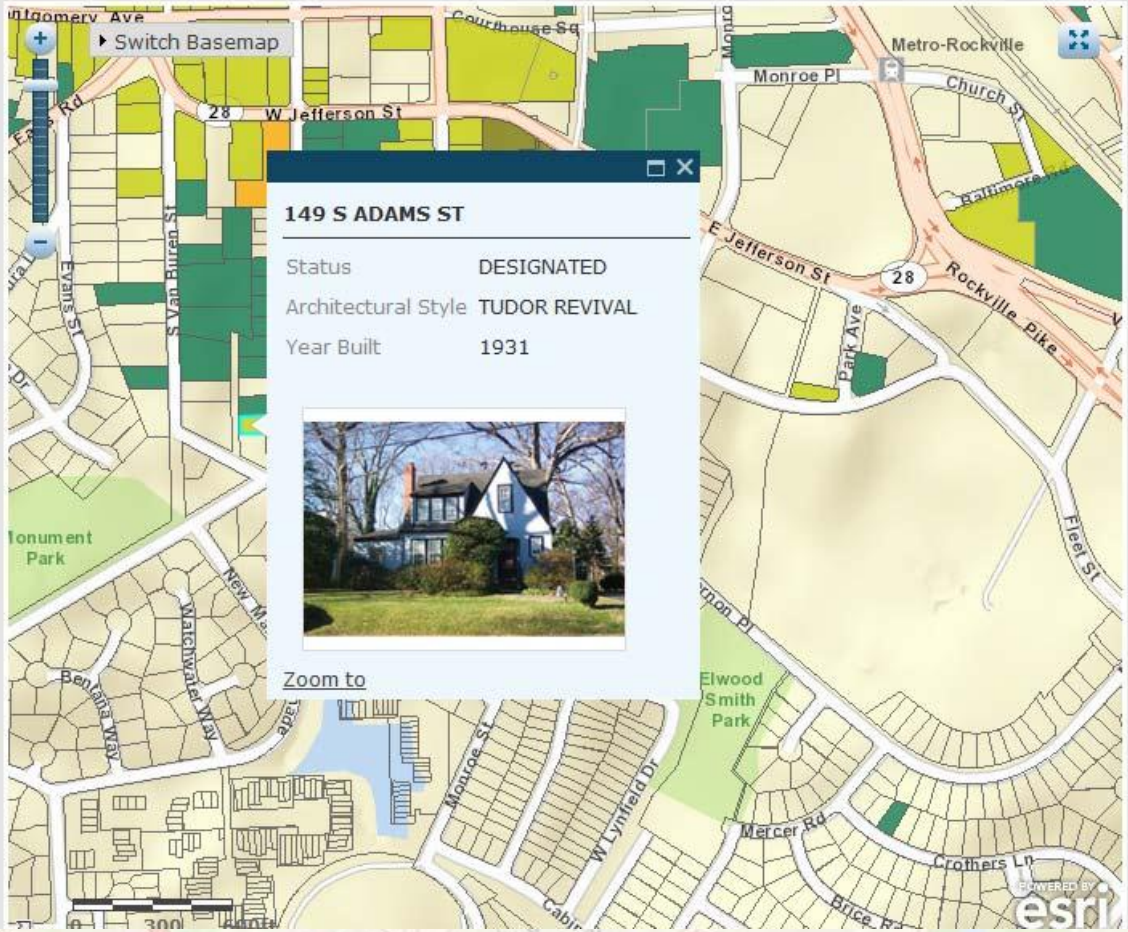
127 S. Adams St. ***1924***

Rockville Map Gallery

Historic Buildings Catalog

Historic Buildings Catalog of the City of Rockville, Maryland

Locate an address



Legend | About

Layers

- [x] Rockville City Limits
- [x] Rockville Property
- [x] Rockville Historic Bldgs

Legend

Rockville City Limits
Rockville City Limits

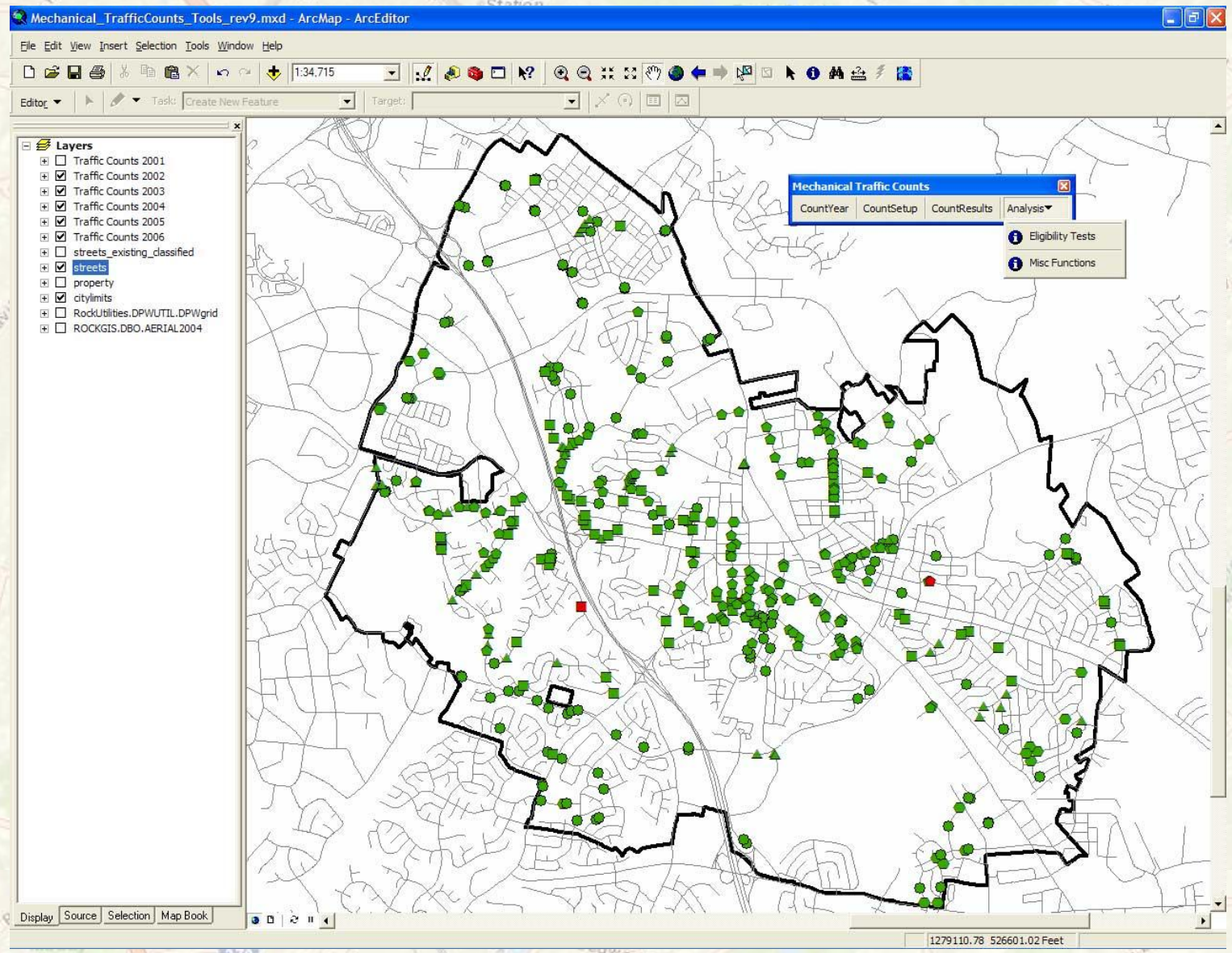
Rockville Property
Property

Property Display
Property 15k - 1k

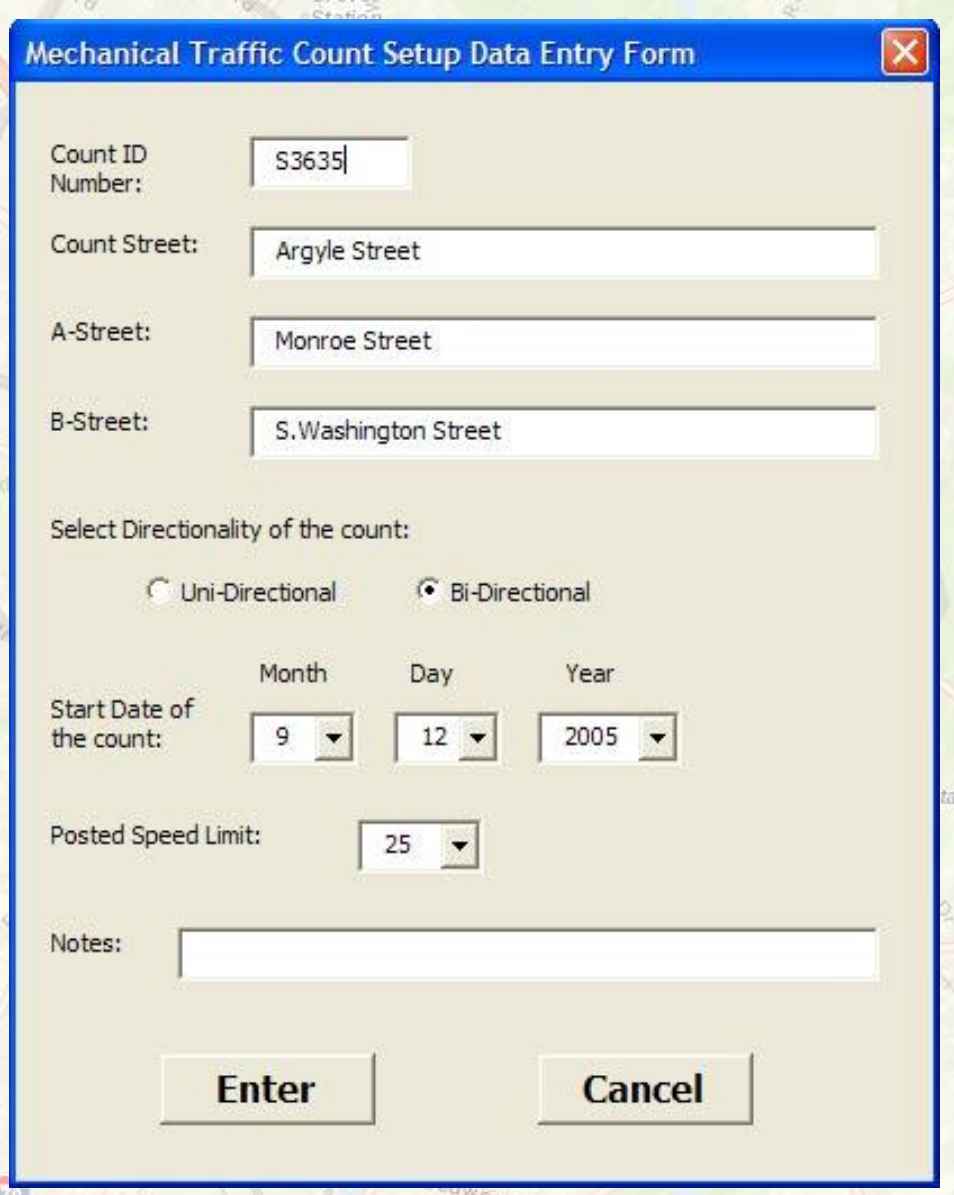
Rockville Historic Bldgs
Historic Building Catalog

- Designated
- Non-Designated
- Demolished
- National Register

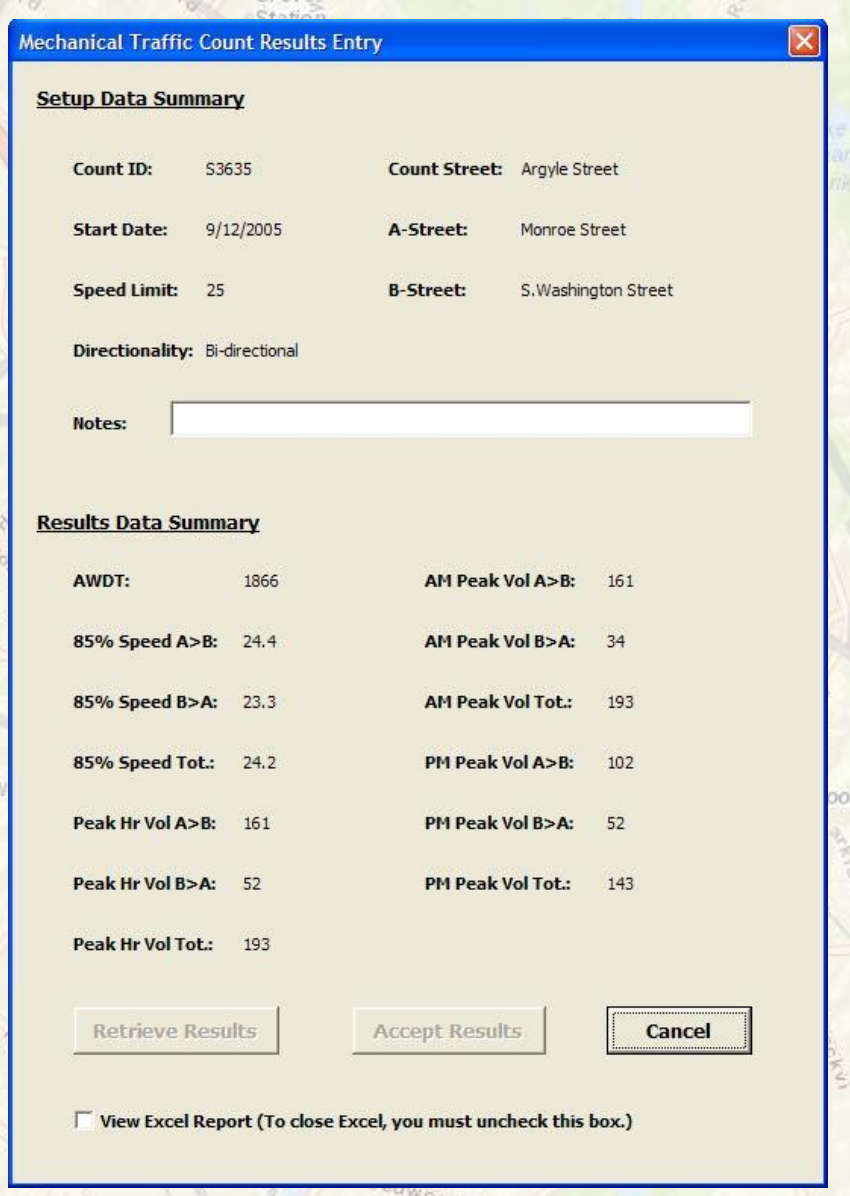
Rockville Traffic Counts VBA Tool



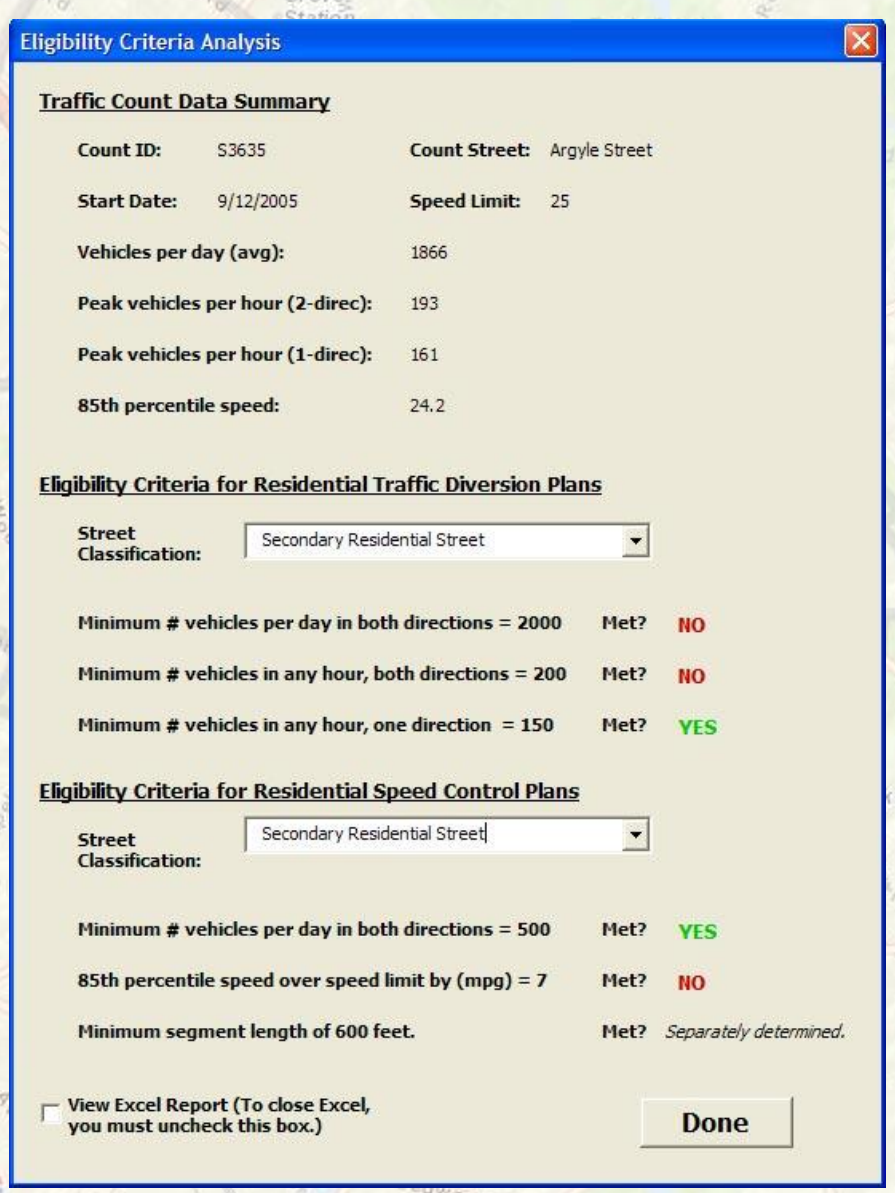
Rockville Traffic Counts VBA Tool



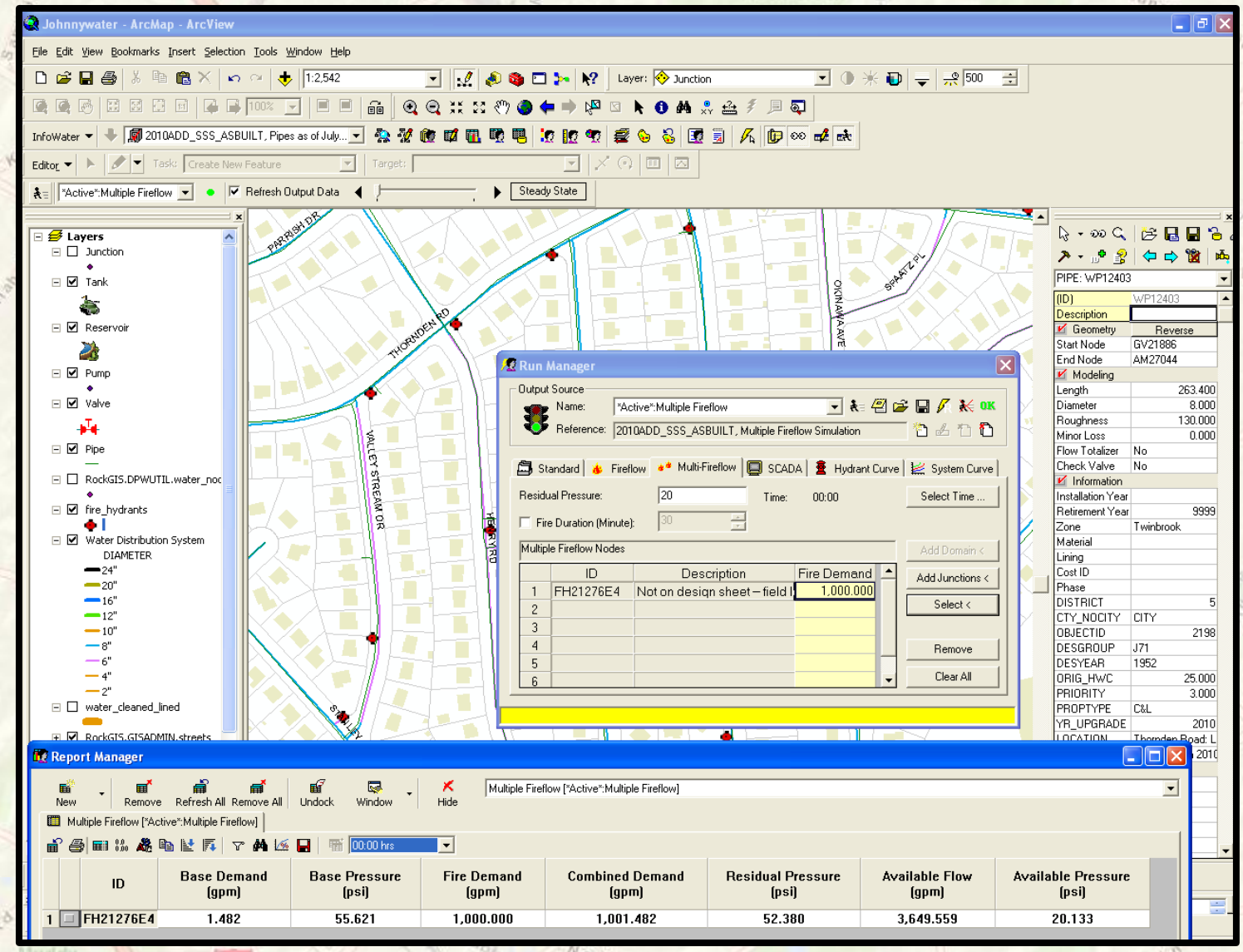
Rockville Traffic Counts VBA Tool



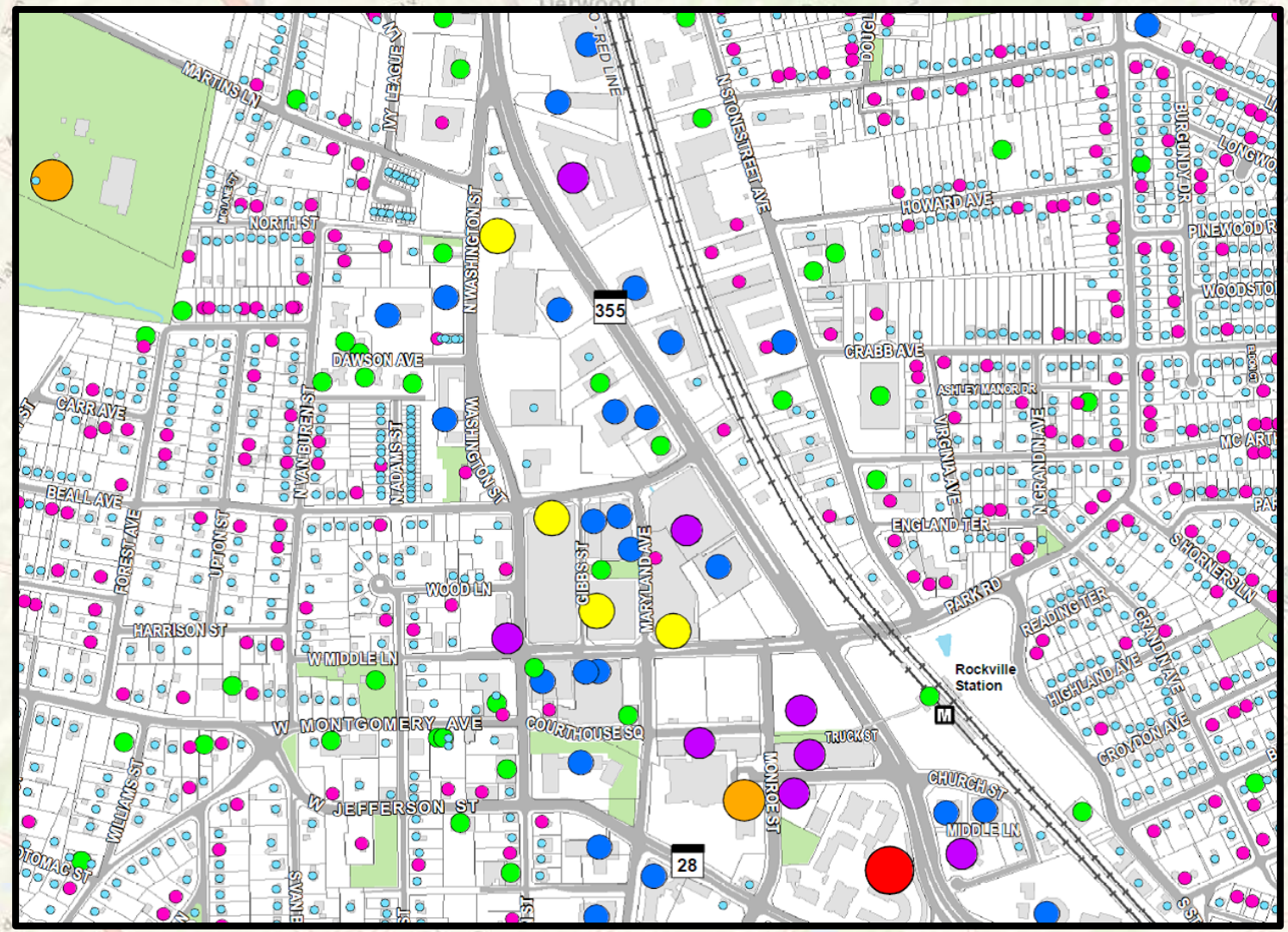
Rockville Traffic Counts VBA Tool



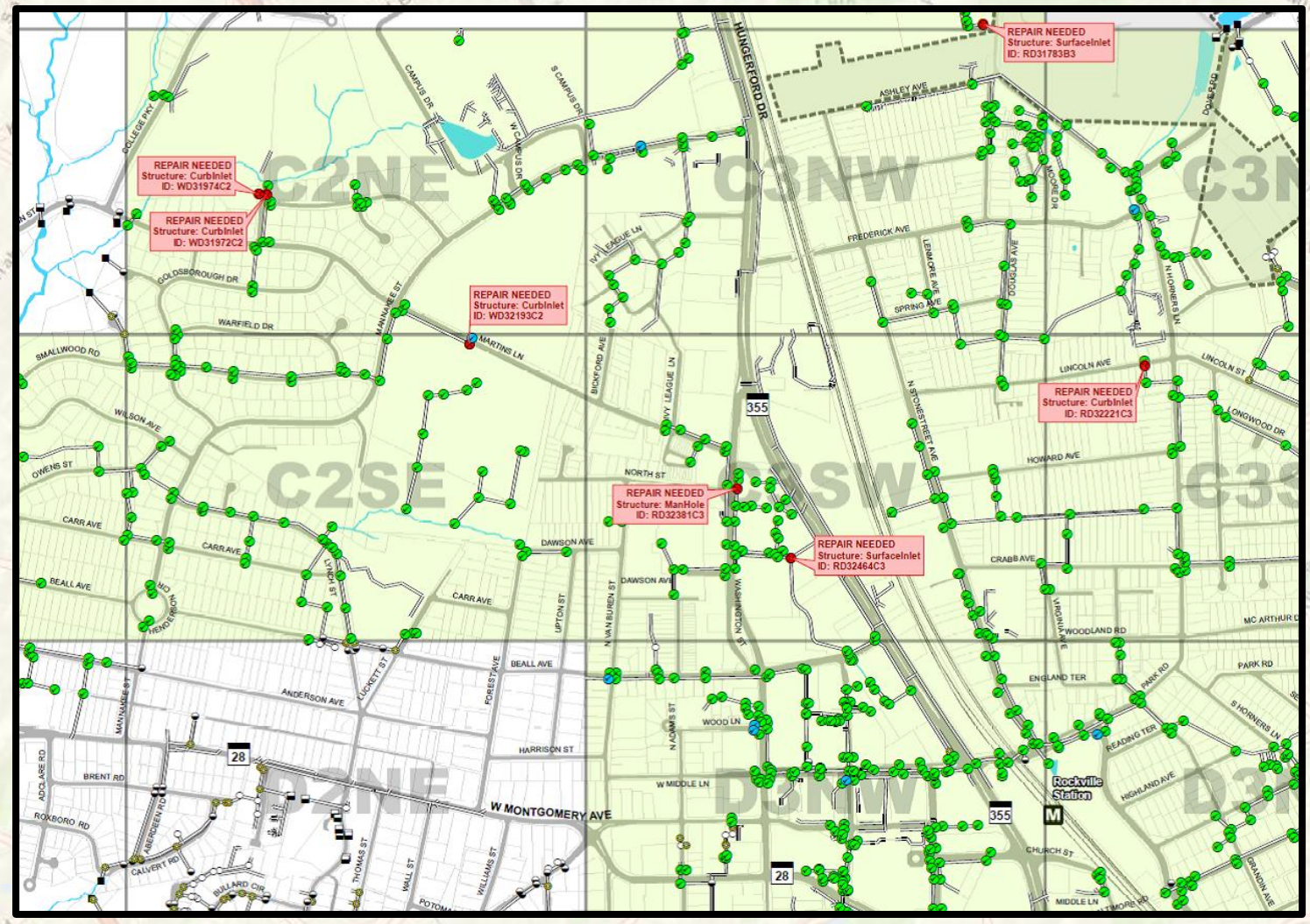
Fire Flow Analysis



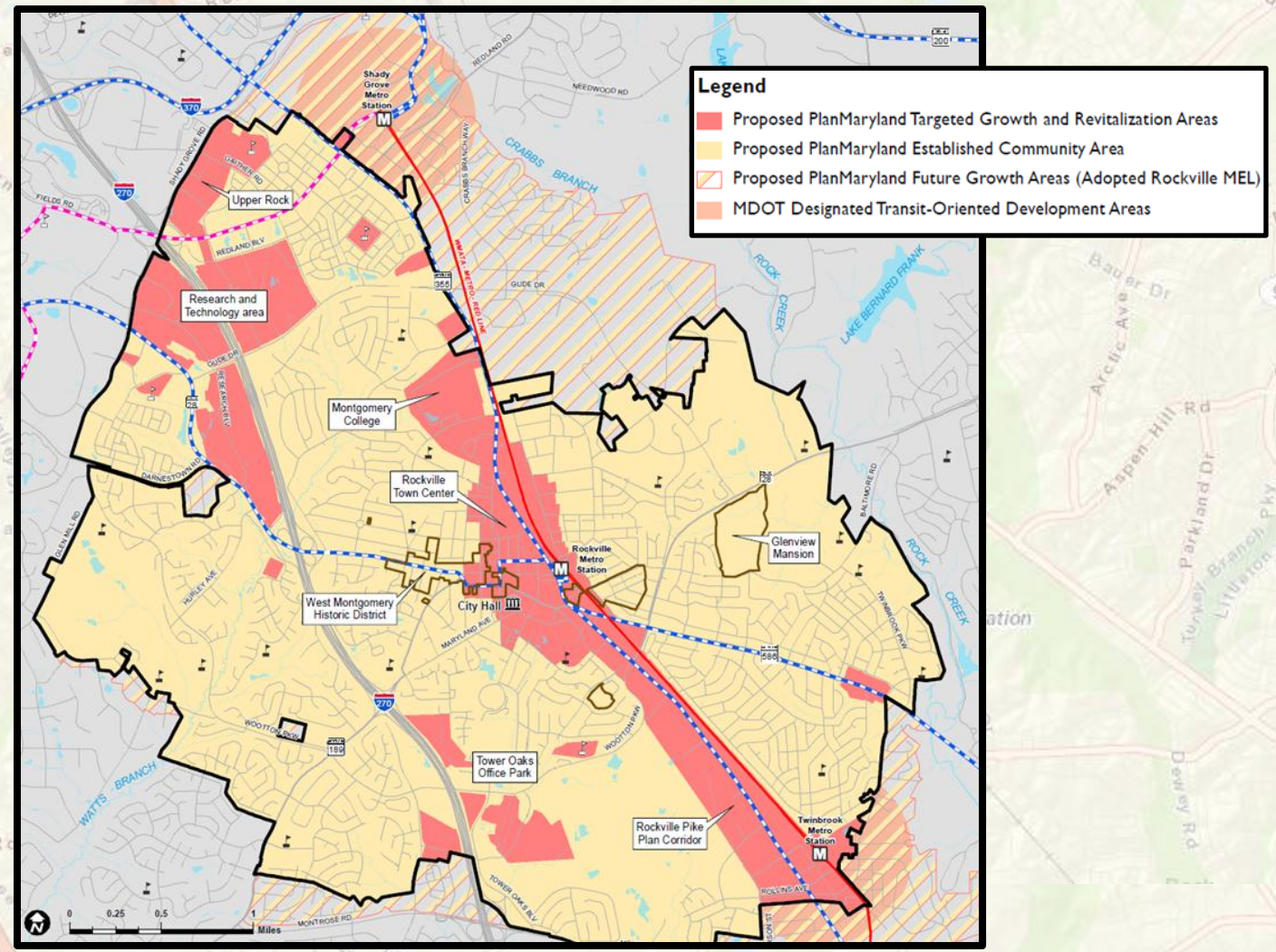
Average Daily Water Consumption



Storm Drain Structure Inspection



Proposed PlanMaryland Planning Areas



Rockville GIS Data Downloads Page

GIS Data Downloads

Terms of Use

By downloading and/or using the GIS data on this page you agree to these Terms of Use.

Rockville GIS Data

The table below presents the list of GIS data available for downloading. For each dataset there are downloads for metadata (data about the data) in XML format along with a choice of GIS data formats as described here.

- XML Download/view the metadata in XML format
- FGDB (9.3) Download the data in ESRI File Geodatabase format, version 9.3 (zipped)
- SHP Download the data in ESRI Shapefile format (zipped)
- KMZ Download the data in zipped KML (Keyhole Markup Language)

All file geodatabase and shapefile data is in the NAD 1983 State Plane Maryland FIPS 1900 (Feet) projected coordinate system. All KMZ files are in the WGS 1984 geographic coordinate system.

All data formats can be used in the ArcGIS for Desktop application or the free ArcGIS Explorer Desktop application, both from ESRI.

KMZ files can be used in the same ESRI applications as well as the free Google Earth application from Google.

The brief dataset description shows the geometry type of the data in parentheses. The date shown is the date the data was published here, and updates will be provided periodically.

To report problems, e-mail gis@rockvillemd.gov

Name	Description	Metadata	Download	Date
Bicycle Routes	Bicycle paths/routes. (Line)	XML	FGDB (9.3) SHP KMZ	7-Mar-2012
City Limits	Corporate limits of the City of Rockville. (Polygon)	XML	FGDB (9.3) SHP KMZ	13-Apr-2012
Historic Buildings	Sites of historic buildings. (Polygon)	XML	FGDB (9.3) SHP KMZ	17-Feb-2012
Hydrology	Streams and bodies of water. (Polygon)	XML	FGDB (9.3) SHP KMZ	7-Mar-2012
Metro Stations	Locations of Metro stations. (Point)	XML	FGDB (9.3) SHP KMZ	7-Mar-2012
Neighborhoods	Neighborhoods, associations, and neigborhood coordinators. (Polygon)	XML	FGDB (9.3) SHP KMZ	17-Feb-2012
Parks	Rockville park sites. (Polygon)	XML	FGDB (9.3) SHP KMZ	17-Feb-2012

Get Into It

Future

- Expanded web-based mapping
- HTML5 transition from Flex?
- Mobile solutions
- Enterprise integration (ERP and asset management)

Get Into It

Review

- Rockville as an example of a municipal GIS
- GIS resources and intergovernmental interaction
- GIS directives
- GIS application scope and strategies
- Application examples
- What's next