Municipal GIS Uses and Applications

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City of Rockville

MSGIC Quarterly Meeting
16 July 2012
Overview

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

- Public Flex Map Applications
- Internal Flex Map Applications
- ArcGIS Online
- ArcGIS Desktop Tools
- Public GIS Data Downloads
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, 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. Alternatively, 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 'Identity' 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 easements, 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 "on-site". 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 301-354-9700.

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 2017 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

City of Rockville GIS Map Viewer

(Internal)

This general purpose GIS map viewer is intended for basic mapping, finding addresses, and retrieving information at locations including property parcels and places of interest within the City of Rockville. The map content consists of a combination of local Rockville information and worldwide street and aerial maps.

With this map viewer you can:

- Locate addresses.
- Get information at locations within Rockville.
- Search to find streets within Rockville.
- Search to find properties by owner or by tax account ID number.
- Find and open plots where available for property parcels.
- Highlight and locate Rockville parks, facilities, schools, neighborhoods, and historic districts.
- View Montgomery County traffic camera images.
- Use and create bookmarks to easily return to map locations.
- Create drawings, including text, to highlight map points and areas.
- Print and export map images.

To learn how to use this GIS map application, start with the Orientation and Quick Reference page or select a specific topic from the menu on the left.

This map viewer will evolve and improve as new features and functions become available. Please check the revision history for the latest news.
Rockville SWM Utility Fee Flex Map
Rockville SWM Fee Flex Map
Rockville SWM Fee Flex Map
<table>
<thead>
<tr>
<th>Maps</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General Purpose GIS Map</strong></td>
</tr>
<tr>
<td><strong>Mailing Label Generator</strong> (use with Internet Explorer browser only)**</td>
</tr>
<tr>
<td><strong>Streetlight Locator</strong></td>
</tr>
<tr>
<td><strong>Water Main Breaks</strong></td>
</tr>
<tr>
<td><strong>Storm Drain System</strong></td>
</tr>
</tbody>
</table>
Rockville Mailing Labels Flex Map
Rockville Mailing Labels Flex Map
| RESIDENT | 117 ANDERSON AVE  
|          | ROCKVILLE MD 20850 |
| RESIDENT | 735 ANDERSON AVE  
|          | ROCKVILLE MD 20850 |
| RESIDENT | 744 BEALL AVE  
|          | ROCKVILLE MD 20850 |
| RESIDENT | 770 BEALL AVE  
|          | ROCKVILLE MD 20850 |
| RESIDENT | 725 ANDERSON AVE  
|          | ROCKVILLE MD 20850 |
| RESIDENT | 724 BEALL AVE  
|          | ROCKVILLE MD 20850 |
| RESIDENT | 735 ANDERSON AVE  
|          | ROCKVILLE MD 20850 |
| RESIDENT | 724 BEALL AVE  
|          | ROCKVILLE MD 20850 |
| RESIDENT | 744 BEALL AVE  
|          | ROCKVILLE MD 20850 |
| RESIDENT | 725 ANDERSON AVE  
|          | ROCKVILLE MD 20850 |
| RESIDENT | 724 BEALL AVE  
|          | ROCKVILLE MD 20850 |
| RESIDENT | 735 ANDERSON AVE  
|          | ROCKVILLE MD 20850 |
Maps

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

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

More Maps
Additional maps on the City of Rockville website:
Bicycle Routes
Leaf Collection
Red Light Cameras
Speed Cameras
Water & Sewer Service Boundary
Rockville ArcGIS Online Content

<table>
<thead>
<tr>
<th>Title</th>
<th>Type</th>
<th>Modified</th>
<th>Shared</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010 Census and Demographics Data</td>
<td>Web Mapping Application</td>
<td>Dec 26, 2011</td>
<td>Everyone</td>
<td>1 KB</td>
</tr>
<tr>
<td>City Elections</td>
<td>Web Map</td>
<td>Jan 30, 2012</td>
<td>Everyone</td>
<td>2 KB</td>
</tr>
<tr>
<td>Development Review Projects</td>
<td>Web Map</td>
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<tr>
<td>Forest Conservation Easements (requires Flash)</td>
<td>Web Map</td>
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<td>Everyone</td>
<td>1 KB</td>
</tr>
<tr>
<td>General Purpose City Map (requires Flash)</td>
<td>Web Mapping Application</td>
<td>Dec 28, 2011</td>
<td>Everyone</td>
<td>1 KB</td>
</tr>
<tr>
<td>Historic Buildings Catalog</td>
<td>Web Map</td>
<td>Jan 30, 2012</td>
<td>Everyone</td>
<td>2 KB</td>
</tr>
<tr>
<td>Historic Districts</td>
<td>Web Map</td>
<td>Jan 30, 2012</td>
<td>Everyone</td>
<td>3 KB</td>
</tr>
<tr>
<td>Neighborhood Associations</td>
<td>Web Map</td>
<td>Feb 9, 2012</td>
<td>Everyone</td>
<td>2 KB</td>
</tr>
<tr>
<td>Parks and Facilities</td>
<td>Web Map</td>
<td>Jan 30, 2012</td>
<td>Everyone</td>
<td>2 KB</td>
</tr>
<tr>
<td>Recycle and Refuse Pickup Routes</td>
<td>Web Map</td>
<td>Jan 30, 2012</td>
<td>Everyone</td>
<td>2 KB</td>
</tr>
<tr>
<td>Stormwater Management Utility Fee (requires Flash)</td>
<td>Web Mapping Application</td>
<td>Dec 28, 2011</td>
<td>Everyone</td>
<td>1 KB</td>
</tr>
<tr>
<td>Streetsights</td>
<td>Web Map</td>
<td>Jan 30, 2012</td>
<td>Everyone</td>
<td>35 KB</td>
</tr>
<tr>
<td>Urban Tree Canopy (requires Flash)</td>
<td>Web Mapping Application</td>
<td>Dec 28, 2011</td>
<td>Everyone</td>
<td>1 KB</td>
</tr>
<tr>
<td>Zoning Map</td>
<td>Web Map</td>
<td>Jan 30, 2012</td>
<td>Everyone</td>
<td>6 KB</td>
</tr>
</tbody>
</table>
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, c chasteng@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, 240-314-8223, m hall@rockvillemd.gov
View Details
View Project Map

626 & 628 Great Falls Road (Chineee Jankowski Witnesses)
File #: STP2012-00114
Description: Proposed development
Status: Application Accepted as Complete
Project Planner: Cas Chasten, 240-
View Details
View Project Map

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

1900 Chapman Avenue
File #: STP2012-00412
Description: Proposed Mixed Use Development
Status: Development Review Comm.
Project Planner: Margaret Hall, 240-
View Details
View Project Map

12720 Twinbrook Parkway (Avenue)
File #: STP2009-00008
Description: Site Plan Application for a office development
Status: Post-Application Area Meeting
Project Planner: Jeremy Hurbutt, P
View Details
View Project Map

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

Map scale level
Location coordinates
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 Roebuck’s “Vailona” model.
Rockville Traffic Counts VBA Tool
Rockville Traffic Counts VBA Tool

Mechanical Traffic Count Setup Data Entry Form

- Count ID Number: S3635
- Count Street: Argyle Street
- A-Street: Monroe Street
- B-Street: S. Washington Street
- Select Directionality of the count: Bi-Directional
- Start Date of the count:
  - Month: 9
  - Day: 12
  - Year: 2005
- Posted Speed Limit: 25
- Notes:

[Enter] [Cancel]
Rockville Traffic Counts VBA Tool

Setup Data Summary

- Count ID: 33635
- Count Street: Aroyle Street
- Start Date: 9/12/2005
- A-Street: Monroe Street
- Speed Limit: 25
- B-Street: S. Washington Street
- Directionality: Bidirectional
- Notes: 

Results Data Summary

- AWD: 1866
- AM Peak Vol A>B: 161
- 85% Speed A>B: 24.4
- AM Peak Vol B>A: 34
- 85% Speed B>A: 25.3
- AM Peak Vol Tot: 193
- 85% Speed Tot: 24.2
- PM Peak Vol A>B: 102
- Peak Hr Vol A>B: 161
- PM Peak Vol B>A: 52
- Peak Hr Vol B>A: 52
- PM Peak Vol Tot: 143
- Peak Hr Vol Tot: 193

Retrieve Results  Accept Results  Cancel

View Excel Report (To close Excel, you must uncheck this box.)
Rockville Traffic Counts VBA Tool

**Traffic Count Data Summary**

- **Count ID:** S3033
- **Count Street:** Argyle Street
- **Start Date:** 9/12/2005
- **Speed Limit:** 25
- **Vehicles per day (avg):** 1866
- **Peak vehicles per hour (2-direct):** 193
- **Peak vehicles per hour (1-direct):** 161
- **85th percentile speed:** 24.2

**Eligibility Criteria for Residential Traffic Diversion Plans**

- **Street Classification:** Secondary Residential Street
- **Minimum # vehicles per day in both directions = 2000** Met? NO
- **Minimum # vehicles in any hour, both directions = 200** Met? NO
- **Minimum # vehicles in any hour, one direction = 150** Met? YES

**Eligibility Criteria for Residential Speed Control Plans**

- **Street Classification:** Secondary Residential Street
- **Minimum # vehicles per day in both directions = 500** Met? YES
- **85th percentile speed over speed limit by (mph) = 7** Met? NO
- **Minimum segment length of 600 feet.** Met? Separately determined.

[View Excel Report (To close Excel, you must uncheck this box.)]
Fire Flow Analysis
Storm Drain Structure Inspection
## 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.

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

All file geodatabase and shapefile data is in the NAD 1983 State Plane Maryland FIPS 1900 (Foot) 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, email gis@rockvillemd.gov.
Future

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