

**WV GIS Technical Center**  
 (July 1, 2017 – June 30, 2018)  
 2018 Annual Report

**WV GIS Technical Center**

The West Virginia GIS Technical Center, located in the Department of Geology and Geography, West Virginia University, provides focus, direction, statewide coordination, and leadership to users of geographic information systems (GIS), digital mapping and remote sensing within the State of West Virginia. The Center was established by Executive Order 4-93 to provide coordination and technical support in the development and operation of geographic information systems (GIS) for the State.

**Geospatial Data Layers**

To reduce the duplication of costly data development efforts among organizations, the Center plays a crucial role in not only serving critical spatial data to state users but in updating and integrating local geospatial data within state and national geospatial databases. These framework data layers are utilized by almost all **state agencies, communities,** and the **general public** for emergency response, risk assessments, economic development, energy resource exploitation and management, transportation, natural resources, community planning, tax assessments, and health studies to name a few. This past year the Center focused on the development of the geospatial data layers listed in Table 1 to enhance the State’s Spatial Data Infrastructure. The continued development and publishing of GIS layers through the state clearinghouse node hosted by the Center supports the Mineral Lands Mapping Program and other vital programs in the State that depend on current and accurate base mapping layers.

Table 1: Statewide Data Services provided by Center

<b>DATA LAYER</b>	<b>PURPOSE</b>	<b>PARTNERS</b>
<b><i>Aerial Imagery</i></b>	Integrated hi-resolution aerial imagery from 20 counties into a statewide leaf-off imagery web map service	Counties
<b><i>Parcels</i></b>	Published parcel and assessment information for all 55 counties into a statewide parcel web layer	WV Property Tax Division & Counties
<b><i>Addresses</i></b>	Integrated addressing data for 47 counties into statewide addressing layers for address matching services and applications	WV DHSEM and County E-911 Offices
<b><i>Public Lands</i></b>	Finalized updates to state and local public land units for the Protected Areas Database of the United States (PAD-US)	USGS, State and local agencies
<b><i>Hydrography</i></b>	Updated nearly 28,000 stream segments of the National Hydrography Dataset (NHD) for all watersheds where streams have been altered due to mining, new roads, landfills, etc.	EPA, USGS, WV DEP
<b><i>Elevation</i></b>	Published new high-resolution elevation data and products	FEMA, USGS
<b><i>Other Layers</i></b>	Updated statewide recreational trails and flood hazard layers	WV DOT & WV DHSEM

## GIS Map Applications

In addition to developing and updating geospatial base layers for the State, the Center also supports multiple state agencies with e-governance applications to meet their regulatory, communication, and information exchange goals (Table 2). A new WV Property Viewer web application ([www.mapwv.gov/property](http://www.mapwv.gov/property)) was released that displays real estate assessment information for all 55 counties in West Virginia. The popular WV Flood Tool ([www.mapwv.gov/flood](http://www.mapwv.gov/flood)), a critical system that support the State’s floodplain management program, received a Special Achievement in GIS (SAG) Award and was recognized at the 2018 Esri User Conference. Additionally, during this fiscal year the Center modernized online web applications for the following state agencies: WV Division of Homeland Security and Emergency Management’s Statewide Addressing and Mapping System, State Historic Preservation Office’s Cultural Resources Map Viewer, and the Division of Natural Resources’ Hunting and Fishing Tool. The Center also supported federal initiatives for the Marcellus Shale Energy and Environment Laboratory ([www.mseel.org](http://www.mseel.org)) and terrestrial biosphere carbon ([www.carbonscapes.org](http://www.carbonscapes.org)).

Table 2: Statewide Map Applications supported by Center

APPLICATION	PURPOSE	SPONSOR
<b><i>WV Lidar Download Tool</i></b>	Download raw lidar point cloud elevation data ( <a href="http://www.mapwv.gov/lidar">www.mapwv.gov/lidar</a> )	WV VIEW
<b><i>WV Flood Tool</i></b>	Flood hazard determinations, building permits, building damage estimates ( <a href="http://www.mapwv.gov/flood">www.mapwv.gov/flood</a> )	WV DHSEM, FEMA
<b><i>SHPO Map Viewer</i></b>	Conduct Cultural Resource Section 106 reviews ( <a href="http://www.mapwv.gov/SHPO">www.mapwv.gov/SHPO</a> )	SHPO
<b><i>Statewide Addressing &amp; Mapping System (SAMS)</i></b>	Update address sites and road centerlines required for emergency response ( <a href="http://www.mapwv.gov/address">www.mapwv.gov/address</a> )	WV DHSEM, E-911 Address Coordinators
<b><i>Hunting and Fishing</i></b>	Search and identify hunting and fishing adventures ( <a href="http://www.mapwv.gov/huntfish">http://www.mapwv.gov/huntfish</a> )	WV DNR
<b><i>WV Trail Inventory</i></b>	View publicly accessible recreational trails in the State ( <a href="http://www.mapwv.gov/trails">http://www.mapwv.gov/trails</a> )	WV DOT
<b><i>Highway Plans Locator</i></b>	View and download archival highway plans ( <a href="http://www.mapwv.gov/dotplans">http://www.mapwv.gov/dotplans</a> )	WV DOT
<b><i>Conservation Planning Interagency Tool</i></b>	Determine conservation planning measures for endangered species in support of environmental site evaluations ( <a href="http://www.mapwv.gov/ICT">www.mapwv.gov/ICT</a> )	WV DNR, NRCS
<b><i>WV Property Viewer (NEW)</i></b>	Search and display property information for all 55 counties in West Virginia	WV Tax

## Web Portals

The Center maintains two major web portals to distribute spatial data and information in the State. The **WV GIS Clearinghouse** (<http://wvgis.wvu.edu>) catalogs over 325 unique datasets and 120 web services valued at more than \$60 million dollars, while **MapWV.gov** (<http://mapwv.gov>) provides a public gateway to online mapping resources in the Mountain State. These geospatial services are distributed through virtualized servers located at the Center with a storage capability of 150 TB. Web usage statistics reveal that over the last four quarters, the WV GIS Technical Center’s site hosted an average of 657 visitors a day for a total of 239,835 visits by 96,125 unique visitors. Its companion site, MapWV.gov, hosted 292,354 unique visitors for an average of 1,739 visits per day and a grand total of 634,949 visits. The WV Flood Tool accounts for 21% of total visits to MapWV.gov while the WV Hunting, Trapping and

Fishing Tool accounts for 19%. MapWV.gov's newest product, the WV Property Viewer, launched a few months before this report, already accounts for 5% of total visits. In June, to maintain a high-performance computing system for hosting these services, the Center purchased \$100,000 in new servers and storage devices to upgrade its hardware infrastructure.

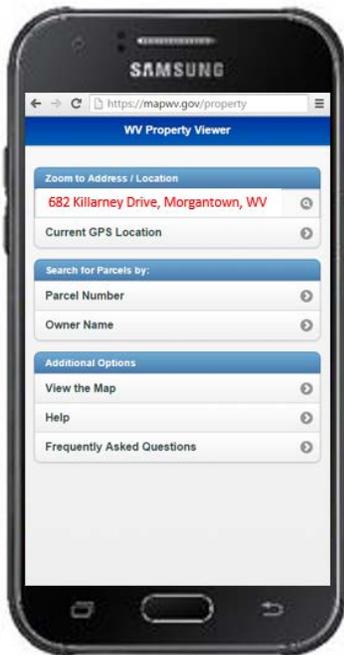
### Services

This past year the WV GIS Technical Center continued to assist the WV Geospatial Community with advisory, training, and outreach services. These services are coordinated with the WV Office of GIS Coordination and WV Association of Geospatial Professionals.

- Taught six instructor-led GIS training courses and provided technical presentations for the following organizations:
  - Local/Regional: Greenbrier County Health Alliance, Eastern Panhandle GIS User Group, and 2017 GIS Day activities for a local high school
  - State Conferences: WV Surveyors Conference, WV Floodplain Managers Conference, WV Tax Conference, WVDOT/MPO/FHWA Transportation Planning Conference, and WV GIS Conference
  - Federal: EPA Exchange Network and FEMA Region III Mitigation Division
- Delivered training for E-911 addressing coordinators in support of the Statewide Addressing and Mapping System
- Provided technical programming support to WV DEP for wetlands assessments
- Awarded a Hazard Mitigation Grant from FEMA to conduct statewide multi-hazard risk assessments for 287 communities in West Virginia to support local and state hazard mitigation plans

# WV Property Viewer (Mobile)

[www.mapwv.gov/property](http://www.mapwv.gov/property)



Mobile Home Page



Zoom to E-911 Address



Toggle Layers of Interest

# WV Property Viewer (Mobile)

[www.mapwv.gov/property](http://www.mapwv.gov/property)



Touch Parcel for More Info



View Parcel Attributes

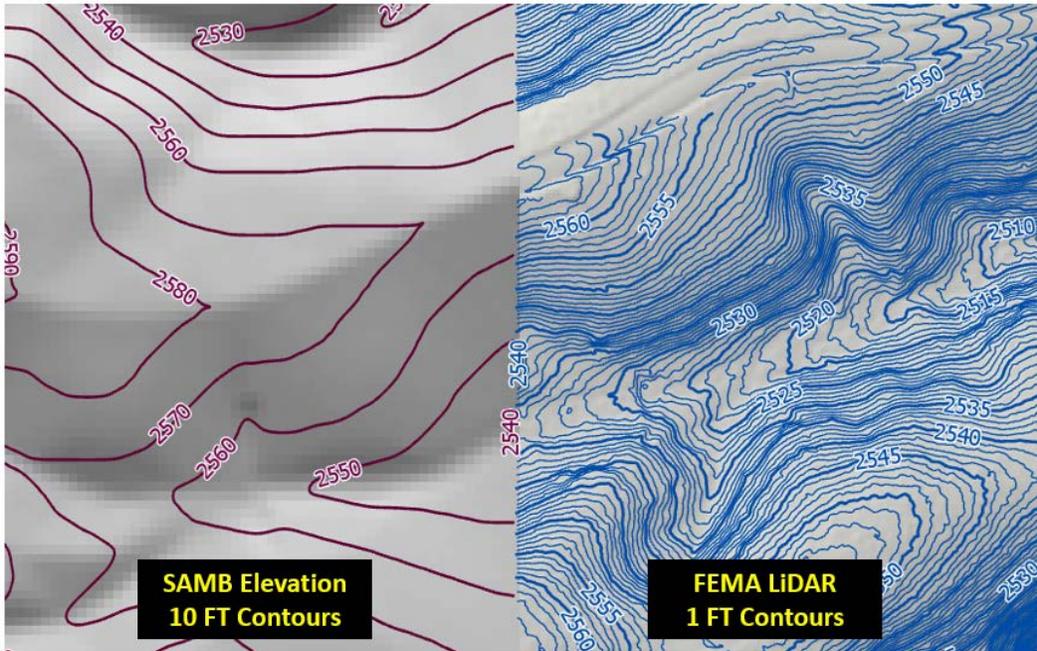


Link to Detailed Report

Figure 1. New WV Property Viewer that allows for searching and locating property and assessment records ([www.mapwv.gov/property](http://www.mapwv.gov/property) or [www.mapwv.gov/assessment](http://www.mapwv.gov/assessment))

# High Resolution Elevation

New FEMA LiDAR Elevation Data is 10x better than 2003 Statewide Elevation Data Set



# Statewide Elevation Layers

New Lidar Elevation data valued at \$10 million is being purchased by FEMA for the entire State

Layer	Source	Coverage
SAMB	2003 SAMB, 3-meter, 10-foot contours	Statewide
Lidar	Lidar, 2-foot or 1-foot contours	Select Areas

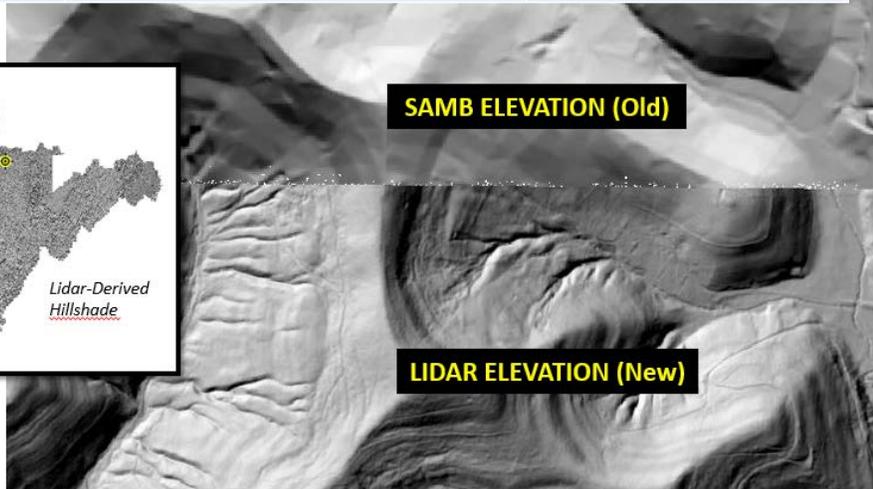
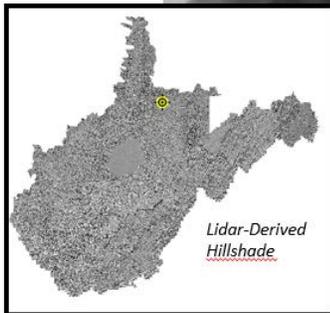


Figure 2. New high-resolution, lidar-derived elevation products for the Mountain State