

WV GIS Technical Center
(July 1, 2018 – June 30, 2019)
2019 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. Statewide geospatial activities are coordinated through the WV Office of GIS Coordination, WV Geological and Economic Survey. *Below are selected highlights for GIS Data Development, GIS Map Applications, Web Portals, and GIS Services.*

GIS Data Development

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 data layers are utilized by **state agencies, communities, and the general public** for applications that include emergency response, risk assessments, economic development, energy resource exploitation and management, transportation, natural resources, community planning, tax assessments, and health studies. This past year the Center focused on the development of the geospatial data layers listed below 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 mapping layers.

- **Mineral Parcel Mapping:** The Mineral Parcels Map Project, a collaborative effort with the WV Property Tax Division and WV Geological and Economic Survey, mapped 4,672 mineral records for Brooke, Monongalia, Ohio, and Wirt counties.
- **E-911 Addresses and Digital Parcels:** A major state contract through WVU Procurement was awarded to a GIS professional services company to assist six communities in correcting deficiencies with their E-911 addresses and to convert six counties from paper to digital tax maps.
- **Aerial Imagery:** Another state contract executed through WVU Procurement allowed for 11 counties to capture spring 2019 leaf-off imagery at four-inch resolution.
- **Elevation:** Quality checked and organized FEMA-purchased QL2 LiDAR-derived elevation products for eastern West Virginia and reported errors to FEMA Region III to be corrected by the contractor. Created new statewide elevation and hill shade grids from the best available elevation data sources.
- **Landslides:** More than 100,000 landslide incident features were digitized from landslide studies and maps. In addition, over 9,000 landslides were mapped from LiDAR-derived DEMs to be used as inputs for predicting landslide hazards.
- **Flood-Risk Buildings:** Inventoried and mapped 10,000 at-risk structures in flood hazard areas.
- **Highway Plans:** Scanned over 7,000 highway plan sets for an ongoing project with the WV DOT.

GIS Map Applications

Continued application and web programming assistance was provided for state and federal agencies in support of West Virginia and its citizens. These applications support multiple state agencies via e-governance solutions to meet their regulatory and information exchange requirements. (Table 1). This past year, for example, the Center partnered with the Watershed Assessment Branch of DEP to complete an online tool for rapidly assessing some of the important natural functions of all types of wetlands present in West Virginia. Additionally, during this fiscal year the Center modernized online web applications for the WV Flood Tool, SHPO Viewer, and WV Elevation and LiDAR Download Tool. The Center also supported federal initiatives for the Marcellus Shale Energy and Environment Laboratory (www.mseel.org) and terrestrial biosphere carbon (www.carbonscapes.org). In July 2018, the Center received a Special Achievement in GIS (SAG) Award for its innovative web map applications.

Table 1: Statewide Map Applications supported by Center

APPLICATION	PURPOSE	SPONSOR
<i>WV Elevation & Lidar Download Tool</i>	Download LiDAR, digital elevation models, and contours (www.mapwv.gov/lidar)	WV VIEW
<i>WV Flood Tool</i>	Flood hazard determinations, building permits, flood risk layers (www.mapwv.gov/flood)	WV DHSEM, FEMA
<i>SHPO Map Viewer</i>	Conduct Cultural Resource Section 106 reviews (www.mapwv.gov/SHPO)	SHPO
<i>Statewide Addressing & Mapping System (SAMS)</i>	Update address sites and road centerlines required for emergency response (www.mapwv.gov/address)	WV DHSEM, E-911 Address Coordinators
<i>Hunting and Fishing</i>	Search and identify hunting and fishing adventures (http://www.mapwv.gov/huntfish)	WV DNR
<i>WV Trail Inventory</i>	View publicly accessible recreational trails in the State (http://www.mapwv.gov/trails)	WV DOT
<i>Highway Plans Locator</i>	View and download archival highway plans (http://www.mapwv.gov/dotplans)	WV DOT
<i>Conservation Planning Interagency Tool</i>	Determine conservation planning measures for endangered species in support of environmental site evaluations (www.mapwv.gov/ICT)	WV DNR, NRCS
<i>WV Property Viewer & Property Record Search</i>	Search and display property information for all 55 counties in West Virginia (www.mapwv.gov/parcel and www.mapwv.gov/assessment)	WV Tax, WV State Auditor
<i>Wetlands Functional Assessment</i>	A standardized tool for assessing wetlands (https://mapwv.gov/wetlands)	WV DEP

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 300 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 new virtualized servers and storage devices located at the Center with a storage capability of 150 TB. These servers are continuously tuned and configured to attain high-availability performance.

Web usage statistics reveal that MapWV.gov had a noteworthy increase in traffic for FY19. Average Page Views per day surpassed 50,000 for the first time since its creation for a total of 4,600,000 page views. Both the MapWV.gov and WV GIS Data Clearinghouse were accessed by over 300,000 and 94,000 unique visitors, respectively. The newly released WV Property Viewer and Assessment Search Tool have grown in popularity and now are used by many organizations performing multi-county property record searches.

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.

- The GIS Technical Center provided GIS Foundations training at the WVU Morgantown campus and WVU Tech campus in Beckley. ArcGIS Online, ArcGIS Pro Migration, and Geo-Statistical Analysis courses were also taught.
- Training and outreach services were provided on numerous occasions in support of the WV Flood Tool, an important web application used by floodplain managers and FEMA personnel.
- Delivered training for E-911 addressing coordinators in support of the Statewide Addressing and Mapping System
- Continued technical support for statewide multi-hazard risk assessments for 287 communities in West Virginia to support local hazard mitigation plans
- Presented on geospatial activities and projects at regional and state conferences
- Provided technical advisory services to the state geospatial community

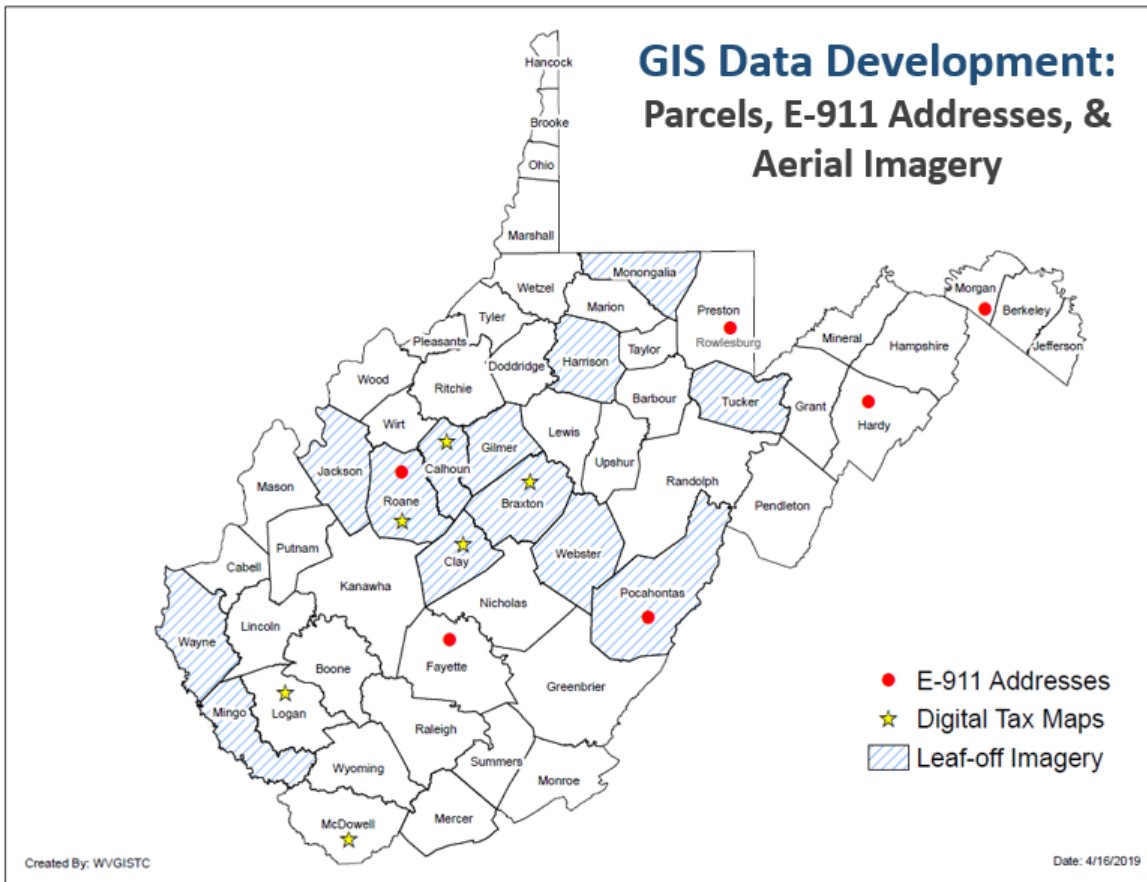


Figure 1. Two statewide GIS contracts through WVU Procurement currently support parcel, address, and aerial imagery data development for multiple communities in West Virginia

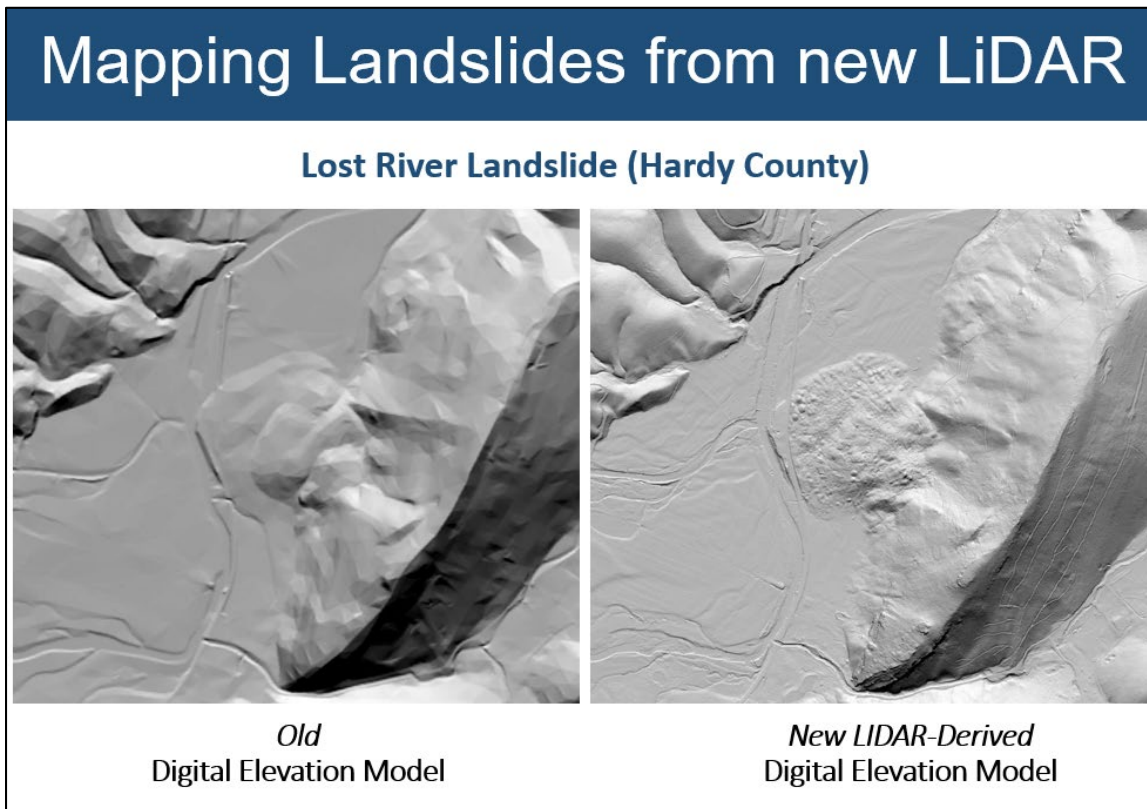


Figure 2. The new FEMA-purchased LiDAR allows for many elevation applications including the mapping of landslides (www.mapwv.gov/landslide)

WV Flood Tool Website Visits

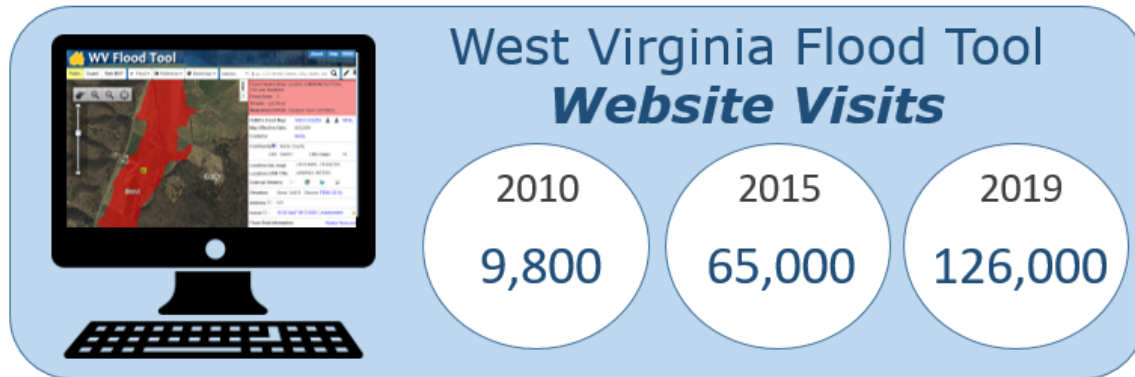
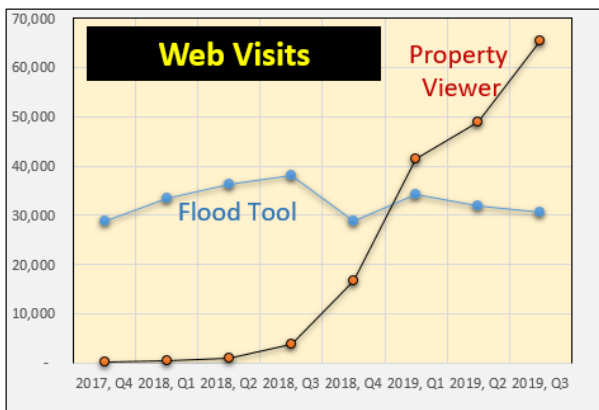


Figure 3. WV Flood Tool (www.mapwv.gov/Flood) web traffic growth since 2010

WV Property Application



WV Real Estate Assessment Data

Detailed Property Report

Physical Address: 11101 QUEEN ST
 8-911 Address: 11101 QUEEN ST 25430
 Parcel ID: 19-07-022B-0021-0000
 County: 19 - Jefferson
 District: 7 - Middleway District
 Map: 022B (Click for PDF tax map)
 Parcel No.: 0021
 Parcel Suffix: 0000
 Map View Link: <https://mapwv.gov/parcel/?id=19-07-022B-0021-0000>

General Information			
Tax Class	Block / Page	Deeded Acres	Calculated Acres
2	1192 / 126	0.700	0.82
Legal Description: 7170 AC RENINGER			

Cost Value		Appraisal Value	
Dwelling Value	\$269,300	Land Appraisal	\$16,500
Other Bldg/Inst Values	\$5,180	Building Appraisal	\$19,430
Commercial Value	---	Total Appraisal	\$311,000



WV Assessment ABOUT FAQ RESOURCES

Property Search Tool

Search Options: Hide Basic Appraisal/Sales Advanced (Hover over input fields to view help)

County: District: Full Parcel ID:

Owner Name: Map Number: Property Class:

Street Name: Parcel: Tax Class:

Sub-Parcel: Land Use:

Lines per page:

WV Property Viewer
www.mapwv.gov/parcel

WV Property Search
www.mapwv.gov/assessment

Figure 4. The popular WV Property Application allows for searching and locating property records (www.mapwv.gov/assessment)



Figure 5. In July 2018 the Center received a Special Achievement in GIS (SAG) Award for its innovative web map applications