WEST VIRGINIA - Integrated Base Layer Development

West Virginia's Base Layer Development: Core geographic layers form the "framework" for most mapping applications and base map products. Data development of statewide geographic mapping layers requires defined stewardship roles, standards, data integration, and effective business processes for sharing and publishing data in seamless national databases and products.

Table 1. Base Layers: Table 1 lists the best available data and future data development activities.

MAPPING LAYER	PRINCIPAL STEWARDS			DATA DEVELOPMENT FOCAL ISSUES
	Local	State	Federal	
ORTHOPHOTOS	Individual county programs		USGS-NGA USDA USACE	**PRESENT:** ***Statewide Digital Imagery*** (1) 1996-99 USGS DOQQ, 1-meter CIR, leaf off (2) 2003 SAMB, 2-ft natural color, leaf off (3) 2007 USDA NAIP, 1-meter, leaf on, natural color and CIR (4) 2009 USDA NAIP, 1-meter, leaf on, natural color (5) 2011 USDA NAIP, 1-meter, leaf on, natural color and CIR (6) 2010-12 WV Sheriff Association (Pictometry), 1-ft (4" urban areas) natural color, mostly leaf-off, oblique and top down, license restrictions ***Statewide Leaf-Off Imagery Mosaic (Best Available Leaf Off)*** WVGISTC has created a Web service from multiple leaf-off datasets to create best leaf-off imagery. Available imagery for aggregated imagery: Bluestone Lake (USACE, 2009), Cabell (2009), Brooke (2007), Hancock (2007), Monongalia (2010), Raleigh (2011). Imagery usually collected and 6" resolution. Some counties make imagery available in the public domain, other counties for viewing as a Web map service only. **FUTURE:** (1) Fused imagery of different sources. GISTC has successfully mosaicked statewide leaf-off imagery with other partial coverage sources of higher temporal and spatial resolution imagery into an image map service. (2) Oblique imagery becoming more popular in use. **ISSUES:** (1) Obtaining leaf-off statewide imagery. (2) Obtaining newer county imagery for statewide image map services
TRANSPORTATION ROADS	E-911	WVDOT DHSEM	Census USDOT USFS	**PRESENT:** (1) Census TIGER: In December 2008, Census TIGER roads re-aligned to 1:4800-scale geometry released for 100% of State. Updated TIGER files were released in 2010. (2) WV DOT: 37,000 miles of major roads maintained by WV DOT. In 2008 major roads (Interstates, U.S. Highways, State Routes, & County Routes) of 1:4,800-scale or better released. An "all roads" database that supports linear referencing and routing will be available in 2013. WV DOT Link: http://gis.wvdot.com/ (3) E-911 Roads: SAMB E-911 addressable roads available to authorized users. 30 counties are at 80% or better with addressable roads; more addressable roads will be added by DHSEM in the near future. (4) USFS Roads: USFS made available in July 2008 1,500 miles of forest service roads collected at 1:24,000-scale. **FUTURE:** "All-roads" databases at 1:4800-scale or better which support linear referencing, address ranges, and routing. **ISSUES:** Integration of geometry and geometry of different road databases.
RAILROADS		WVDOT RTI	Census USDOT	**PRESENT:** (1) SAMB-derived railroad (state generated) database. (2) US-DOT Federal Rail Authority database. **FUTURE:** (1) Further integration of railroad data by state and federal rail authorities. (2) Incorporate recreational railroad lines.
TRAILS		WVDOT	NPS USDOI	**PRESENT:** WV DOT currently inventorying and creating a statewide trail database. The 2012 WV State Trail Database compiled from WVDNR,

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	Local	**State**	**Federal**	
			FGDC	USFS, NPS, etc. **FUTURE:** Standardized, current and complete interagency, statewide trail database at 1:4,800 scale or better (most trails are GPS accuracy). **ISSUES:** Collection, storage, and management of trail-related data. Instituting federal and state standards for trails.
AIRPORTS		WVDOT DHSEM	FAA USDOT	**PRESENT:** Federal point and polygon airport databases. In 2008 WV DHSEM digitized airport runways from 1:4800-scale imagery. **ISSUES:** Completeness and validation of airplane footprints.
BRIDGES, TUNNELS		WVDOT		**PRESENT:** 7200 bridges maintained by WVDOT; SAMB data
PORTS		WVDOT		**PRESENT:** 700 ports
HYDROGRAPHY		OSGC DEP WVU	USGS EPA	**PRESENT:** (1) <u>1:24K National Hydrography Dataset (NHD).</u> USGS funded maintenance for 74 miles across 143 NHD features within the Gauley River watershed. New NHD editing tools utilized. (2) <u>1:4800 SAMB Local Resolution (2003)</u> streams **FUTURE:** Up-to-date and spatially accurate NHD stream layer which supports stream addressing and flow modeling at multiple map scales. **ISSUES:** (1) 2,000 High Resolution NHD features with an estimated length of 800 miles have been impacted by surface mining and require editing. (2) Conflation and generalization of local resolution streams. (2) State stewardship of NHD and sustained funding for NHD maintenance.
DAMS, LOCKS		SAMB	USGS	**PRESENT:** Databases: SAMB, state agencies, USGS, USACE, etc. **FUTURE:** Point events of local resolution NHD
ELEVATION			USGS	**PRESENT:** (1) **2003 3-meter National Elevation Dataset (NED)** derived from SAMB elevation points and breaklines; supports 10-foot contours (2) **LiDAR collected by WVDEP/NRAC Program** LiDAR coverage and metadata: http://tagis.dep.wv.gov/lidar. 96% of southern coalfields collected. Available for download at WVVIEW: http://www.wvview.org. WVDEP has created an aggregated hillshade Web map service from best available elevation data. (3) **LiDAR collected Counties and made available to State** **FUTURE:** Statewide LIDAR coverage
STRUCTURES	E-911	SAMB DHSEM	Census USGS	**PRESENT:** (1) 2003 SAMB structures; centroids and polygons for building footprints greater than 7500 square feet. Statewide addressing and mapping system maintained by WV DHSEM with input from county 911 offices. Point geocoding serviced available. (2) HSIP Freedom Program - critical infrastructure data sharing program between federal and state agencies (e.g., prisons, police, fire, EMS).
BOUNDARIES POLITICAL	County / municipal officials		Census	**PRESENT:** Census incorporated boundaries of municipalities. 1:24k state and county political boundaries derived from topographic maps. WVAGP organized Census BAS training offered in January 2012. **FUTURE:** More spatially accurate incorporated boundaries using boundary and annexation surveys (BAS) program. **ISSUES:** Technical assistance to counties to submit accurate digital boundary updates to Census.
PUBLIC LANDS		DNR	USDOI	**PRESENT:** Public land databases. National parks and forests include both proclamation and surface ownership boundaries. **ISSUES:** Coincidental boundary issues of certain datasets (vertical integration).
TAX	Assessors		USGS	**PRESENT:** 1:24K tax district boundaries
LAND COVER			USGS	**PRESENT:** (1) 2006 USGS National Land Cover Dataset (NLCD). (2) 2011 NAIP Land Cover Dataset. Created by WVU NRAC for WV DNR. (http://wvgis.wvu.edu/conference/2012/Wednesday/Renamed_T1/Maxwell_Hi-Res.ppt)
GEOGRAPHIC NAMES		GISTC WVGES	USGS	**PRESENT:** USGS Geographic Names Information System (GNIS) is the official names layer for the U.S. (national gazetteer). Since 2010, USGS funded maintenance allowed for WVGISTC to update 20 feature classes, 3,773 feature identities.
	Assessors	DTR	BLM?	**PRESENT:**

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PARCELS				(1) 30 or more counties have digital parcels. (2) WVGISTC has created a "viewing-only" parcel Web map service for Cabell, Hampshire, Monongalia, and Wood Counties. Fayette County has provided data for viewing "selected parcel" only. **FUTURE:** State cadastral (parcel) file with limited use restrictions **ISSUES:** Sale and access to county-generated digital parcel data.
GEODETIC CONTROL (Invisible Layer)		DOT DEP RTI	NGS	**PRESENT:** CORS densification program **ISSUES:** (1) No state geodetic advisor. (2) Program earmark for height modernization.