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. In the future, most base layers will be based upon value-added products derived from the 1:4800-scale Statewide Addressing and Mapping Board (SAMB) mapping files captured in 2003.

MAPPING LAYER	PRINCIPAL STEWARDS			DATA DEVELOPMENT FOCAL ISSUES
	Local	State	Federal	
ORTHOPHOTOS	Individual county programs		USGS-NGA USDA	**PRESENT:** (1) 2003 statewide SAMB, 2-ft natural color, leaf off (2) 2007 statewide USDA/FSA NAIP, 1-meter, leaf on, natural color and CIR (CIR acquired as a secondary contract between NAIP contractor and state) (3) PARTIAL statewide coverage: County orthophoto programs (Berkeley, Brooke, Cabell, Hancock, Marion, etc.); USGS-NGA Charleston urban area (2006) 1-ft natural color **FUTURE:** (1) Summer 2009 - USDA NAIP 1 meter, leaf on, natural color, statewide (2) Spring 2009 - USGS-NGA 1 foot, leaf off, natural color, 1-ft. natural color; Charleston urban area; cost-share. **ISSUES:** (1) Establishment of coordinated statewide and national imagery programs. (2) Cost-share funding at state level for lead-off imagery. In September 2007, WVAGP adopted the following target specifications for "statewide" orthophoto and elevation collections: leaf-off imagery (natural color and CIR) at 2-foot or better GSR, and 5-foot or better elevation contours.
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 will be released once per year5. (2) USFS Roads: USFS made available in July 2008 1,500 miles of forest service roads collected at 1:24,000-scale. (3) 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. Link: http://gis.wvdot.com/ (4) E-911 Roads: SAMB E-911 road geometry available to authorized users; attribution/validation in progress. 5 counties completed. **FUTURE:** "All-roads" databases at 1:4800-scale or better which support linear referencing, address ranges, and routing. **ISSUES:** Integration of local and state road data into nationwide commercial (TeleAtlas, NAVTEQ) and federal (Census, USDOT) databases.
RAILROADS		WVDOT RTI SAMB	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 FGDC	**PRESENT:** 2005 statewide 100k State Trail Database; non-integrated trail databases from RTI, WVDNR, USFS, NPS, etc. **FUTURE:** Standardized, current and complete statewide trail database at 1:24,000 scale or better. **ISSUES:** Collection, storage, and management of trail-related data. Instituting federal and state standards for trails. In 2008 the FGDC released draft specifications of Federal Trail Data Standard.
AIRPORTS		WVDOT DHSEM	FAA USDOT	**PRESENT:** Federal point and polygon airport databases. In 2008 WV DHSEM digitized airport runways from 1:4800-scale imagery.

MAPPING LAYER	PRINCIPAL STEWARDS			DATA DEVELOPMENT FOCAL ISSUES
	Local	State	Federal	
				ISSUES: Completeness and validation of airplane footprints.
BRIDGES, TUNNELS		WVDOT		**PRESENT:** 7200 bridges maintained by WVDOT; SAMB data
PORTS		WVDOT		**PRESENT:** 700 ports
HYDROGRAPHY		DEP WVU	USGS EPA	**PRESENT:** (1) 1:24K National Hydrography Dataset (NHD) statewide; local resolution NHD for two pilot watersheds completed. (2) 1:4800 SAMB Local Resolution streams statewide **FUTURE:** Up-to-date and spatially accurate NHD stream layer which supports stream addressing and flow modeling at multiple map scales. **ISSUES:** Conflation and generalization of local resolution streams. State stewardship of NHD and NHD funding.
DAMS, LOCKS		SAMB	USGS	**PRESENT:** Databases: SAMB, state agencies, USGS, USACE, etc. **FUTURE:** Point events of local resolution NHD
ELEVATION			USGS	**PRESENT:** 3-meter National Elevation Dataset (NED) derived from SAMB elevation points and breaklines; supports 10-foot contours **FUTURE:** Lidar derived, higher-resolution elevation data **ISSUES:** (1) cartographic anomalies of elevation data; (2) spot elevation of old topographic maps don't correspond to new terrain surface.
STRUCTURES	E-911	SAMB DHSEM	Census USGS	**PRESENT:** (1) 2003 SAMB structures; centroids and polygons for building footprints greater than 7500 square feet. (2) Addressable structures for select counties (www.addressingwv.org) (3) HSIP Freedom Program - critical infrastructure data sharing program between federal and state agencies (e.g., prisons, police, fire, EMS). **FUTURE:** Statewide E-911 addressable structures file and point geo-coding service. Most point critical infrastructure databases can be created from addressable structures. **ISSUES:** Recording city-style address in agency databases
BOUNDARIES POLITICAL	County / municipal officials		Census	**PRESENT:** Census incorporated boundaries of municipalities. 1:24k state and county political boundaries derived from topographic maps. **FUTURE:** (1) 2008-2010 boundary and annexation surveys (BAS) re-aligned to spatially accurate Census TIGER. (2) Submission of digital boundary and annexation surveys (boundary change or correction)
PUBLIC LANDS		DNR	USDOI	**PRESENT:** Public land databases. National parks and forests include both proclamation and surface ownership boundaries. **FUTURE:** FLAIR Act authorizes DOI to compile a current, accurate inventory of federal land ownership. **ISSUES:** Coincidental boundary issues of certain datasets (vertical integration).
TAX	Assessors		USGS	**PRESENT:** 1:24K tax district boundaries
LAND COVER			USGS	**PRESENT:** 2001 USGS National Land Cover Dataset (NLCD) **FUTURE:** More current and higher land cover dataset derived from 4-band imagery.
GEOGRAPHIC NAMES		GISTC WVGES	USGS	**PRESENT:** USGS Geographic Names Information System (GNIS) is the official names layer for the U.S. (national gazetteer) **ISSUES:** (1) cultural features out of date; (2) GNIS not ideal for automatic label placement of linear features on maps.
PARCELS	Assessors	DTR	BLM?	**PRESENT:** 25 or more counties have digital parcels **FUTURE:** State parcel file **ISSUES:** Sale and access to county-generated digital parcel data.
GEODETIC CONTROL (Invisible Layer)		DOT DEP RTI	NGS	**PRESENT:** Horizontal and vertical control stations. New/upgraded GPS stations in Morgantown, Oak Hill, and Logan County **FUTURE:** (1) CORS densification program. (2) Height modernization **ISSUES:** (1) No state geodetic advisor. (2) Program earmark for height modernization.

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