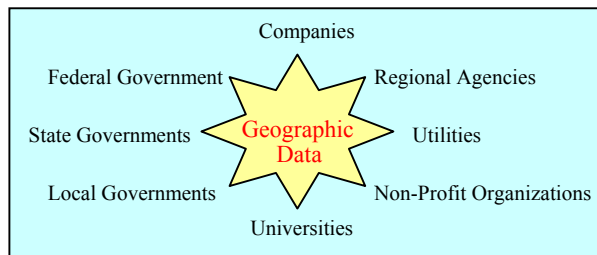




WV Framework Data – August 2002 Status Report

OVERVIEW: Spatial data is a valuable resource. The National Spatial Data Infrastructure (NSDI) encompasses policies, standards, and procedures for organizations to cooperatively produce and share the “best” available geographic data throughout all levels of government, the private and non-profit sectors, and the academic community. Originated by the Federal Geographic Data Committee (FGDC), framework is a national initiative to develop a readily available set of basic geographic data (http://www.fgdc.gov/). Creating digital data can cost millions of dollars, but when there is a network for data sharing via partnerships, an organization’s individual costs are substantially reduced. Framework data forms the foundation for both the West Virginia and National Spatial Data Infrastructures in which valuable geographic information is accessed through data clearinghouses and uniform data standards are promoted.




Data Sharing Saves Money \$\$\$\$\$\$\$\$\$\$

DATA THEMES: Framework data are divided into two categories: core data and applications data. Core data are used and shared by most everyone to create digital mapping products, whereas applications data are combined usually with core data for specific mapping projects.

- Core Data: Hydrography, Transportation, Orthoimagery, Elevation, Cadastral, Geodetic Control, Governmental Units, Topographic Maps

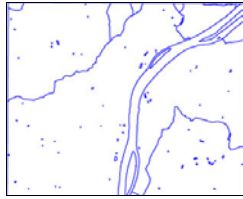
- Applications Data: Soils, Geology, Land Cover, Critical Structures, Economic Development, Health Care, Cultural and Demographics, Natural Resources, Environment

Below is the framework status of eight core themes (hydrography, transportation, orthoimagery, elevation, cadastral, geodetic control, governmental units, topographic maps) used by most GIS applications and six applications-specific data themes (soils, geology, land cover, critical structures, flood mapping, and economic development). For each framework data theme there is a brief description, mapping status, ultimate mapping goal, and data producer information, including originator(s) of data, resolution, currency, and data availability.

TRANSPORTATION					
	DESCRIPTION: Transportation networks and facilities to include roads, trails, railroads, waterways, airports, bridges and tunnels. Road centerlines should incorporate street address ranges for geocoding applications and a linear referenced system for routing applications.				
	COORDINATION: Coordination between WV DOT and other transportation data producers in the state are necessary to establish core content standards and business relationships. Through such coordination will foster formal/informal agreements for sharing, creating, and maintaining statewide transportation data.				
MAPPING STATUS:					
<p>1) Environmental Systems Research Institute (ESRI): ESRI, a geographic information software company, is sponsoring a transportation data model consortium that will enable geographic information system (GIS) users to take greater advantage of ArcGIS 8 and the new geodatabases. http://www.esri.com/news/releases/00_4qtr/unetrans.html</p> <p>2) Federal Geographic Data Committee (FGDC): The Ground Transportation Subcommittee (GTS) promotes the coordination of geo-spatial data for ground transportation related activities. The Subcommittee is sponsoring the development of a conceptual data model standard (NSDI Framework Transportation Identification Standard) for identifying road segments as unique geo-spatial features independent of cartographic or analytic representation. http://199.79.179.77/gis/fgdc/</p> <p>3) National Park Service (NPS): The Rivers & Trails Program of the National Park Service is in the process of compiling state trails at a nominal scale of 1:100,000. http://wvgis.wvu.edu/data/data.php (search on trails)</p> <p>4) U.S. Census Bureau (Census): Harris Corporation has been awarded an eight-year contract, valued in excess of \$200 million, by the U.S. Census Bureau for the Master Address File/Topologically Integrated Geographic Encoding and Referencing Accuracy Improvement Project (MAF/TIGERâ AIP). The objectives of this program are to align existing 1:100,000-scale roads, hydrography, railroads, structures, landmarks, pipelines, power lines and other TIGER database features to a much greater locational accuracy (3-meter horizontal accuracy) for all of the nation's 3,232 counties by FY 2008. http://www.census.gov/geo/mod/maftiger.html</p> <p>5) U.S. Department of Transportation (US DOT): The Federal Highway Administration (FHWA) is in the process of enhancing the National Highway Planning Network (NHPN), a comprehensive network database of the nation's major highway system. The current 1:100,000-scale geographic database consists of over 400,000 miles of the nation's highways comprised of Rural Arterials, Urban Principal Arterials and all National Highway System routes (http://wwwcf.fhwa.dot.gov/hep10/gis/gis.html). The National Transportation Atlas Data (NTAD) is a set of transportation-related geospatial data for the United States compiled by the Bureau of Transportation Statistics (BTS). The data consist of transportation networks such as the NHPN, transportation facilities, and other spatial data used as geographic reference. http://www.bts.gov/gis/ntatlas/index.html</p> <p>6) U.S. Geological Survey (USGS): The USGS partnerships with the WV GIS Technical Center to collect digital vector representations of roads, trails, bridges, exit ramps, tunnel portals and other detailed transportation features derived from USGS 1:24,000-scale topographic maps. A USGS unit compiles information from state and local agencies for map revisions. USGS Digital Line Graph (DLG) road attribute data is limited to road classification and federal/state highway route numbers. http://wvgis.wvu.edu/data/data.php (search on roads)</p> <p>7) U.S. Forest Service (USFS): The Monongahela National Forest maintains a trail and road geographic database for 3,300 miles of roads (http://wvgis.wvu.edu/data/data.php, search on roads). The spatial databases originated from 1:24,000-scale USFS Cartographic Feature Files and are linked to Oracle INFRA attribute tables which include linear referencing measures for event themes. http://www.fs.fed.us/eng/road_mgt/documents.shtml</p> <p>8) WV Department of Transportation (WV DOT): The Division of Highways plans, designs, builds and maintains more than 34,000 miles of state roads. Only paper maps of transportation data are accessible to the public from WVDOT. Refer to http://www.wvdot.com/7_tourists/7d1_availablemaps.htm. The Appalachian Transportation Institute (ATI) at Marshall University and the WV GIS Technical Center at WVU are developing a GIS-Transportation strategic plan for WV DOH. Project Number TRP 99-32 (http://www.marshall.edu/ati/research/projects.htmlx).</p> <p>9) Statewide Addressing and Mapping Program: Governor Wise has appointed a Street Addressing and Mapping Board to implement a statewide E-911 mapping project funded by Verizon. The goal is to provide a city-style address for every identifiable structure in the rural areas of West Virginia to improve delivery of emergency services.</p>					
DATA PRODUCERS:					
<i>DATASET NAME</i>	<i>ORIGINATOR(S)</i>	<i>SCALE</i>	<i>MAP UNIT</i>	<i>% WV</i>	<i>CURRENCY</i>
TIGER	U.S. Census	1:100,000	County	100	2000
National Transportation Atlas	U.S. DOT	1:100,000	State	100	2001
County Highway Maps (Not Vector)	WV DOT	1:63,500	County	100	Variable
Digital Line Graphs (DLG)	USGS	1:24,000	7.5 Min. Quad	70	1950-1997
Cartographic Feature Files (CFF)	USFS	1:24,000	7.5 Min. Quad	15	1995
E-911 Road Centerlines & Addresses	WV E-911 Council	1:1200 to 1:100,000	County	5(?)	1999-present
Local Road Databases	County/City Govts.	1:1200 to 1:4800	Jurisdiction	?	Variable
New Roads	WV DOT / Contractors	Survey-scale	Planned Route	N/A	Variable
Major Trails	NPS, WV DNR, USFS	GPS to 1:100,000	Jurisdiction	90	Variable
ULTIMATE GOAL: Statewide 1:24,000 or larger scale mapping database of core transportation features.					

HYDROGRAPHY

DESCRIPTION: The National Hydrography Dataset (NHD) is a comprehensive set of digital spatial data that contains information about surface water features such as lakes, ponds, streams, rivers, springs and wells. Within the NHD, surface water features are combined to form "reaches," which provide the framework for linking water-related data to the NHD surface water drainage network. These linkages enable users to access information about the connectivity and flow direction of stream networks as well as to provide a system for a linear referencing. The Watershed Boundary Dataset is a national geospatial database containing the hydrologic unit boundaries for the 1st through 6th level units.



MAPPING STATUS:

- Statewide coverage of 1:24,000-scale USGS Hydrography DLGs completed <http://wvgis.wvu.edu/data/data.php> (search on streams and rivers).
- High resolution (1:24,000-scale or larger) NHD mapping is completed for 2 sub-basins (8-digit HUC) and has been initiated for another 16 sub-basins by conflating 1:24,000-scale hydrography USGS DLGs/USFS CFFs. Status graphic at <http://nhd.usgs.gov/data.html>. Projected statewide completion date: spring 2003
- An interagency team is trying to develop a standard for delineating 1:24,000-scale hydrologic unit boundaries for WV as part of the National Watershed Boundary Dataset (WBD) (http://www.ftw.nrcs.usda.gov/huc_data.html).

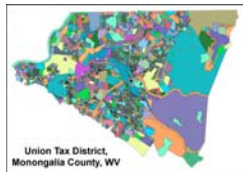
DATA PRODUCERS:

<i>DATASET NAME</i>	<i>ORIGINATOR(S)</i>	<i>SCALE / RESOLUTION</i>	<i>MAPPING SYSTEM UNIT</i>	<i>% WV</i>	<i>CURRENT-NESS</i>
National Hydrography Dataset	USGS / EPA	1:100,000 1:24,000	Watershed Watershed	100 7	2000 2000-2002
Digital Line Graphs (DLG)	USGS	1:24,000	7.5 Min. Quad	100	1950-1997
Cartographic Feature Files (CFF)	USFS	1:24,000	7.5 Min. Quad	15	1995
WV DNR Watershed Files	WV DNR	GPS	Watershed	7	2000
Local Government Databases	County/Municipal Governments	1:1200 to 1:4800	Jurisdiction	?	Variable

ULTIMATE GOAL: Statewide high resolution (1:24,000 or larger scale) National Hydrography Dataset (NHD) and Watershed Boundary Dataset (WBD).

CADASTRAL

DESCRIPTION: Cadastral information refers to land ownership. Other framework data such as orthoimagery, transportation, hydrographic, and coordinate geometry are required to create a seamless digital tax parcel district file from hundreds of hardcopy maps or deed surveys. Vector-based cadastral data should be geometrically and topologically clean and linked to a single, comprehensive parcel database.



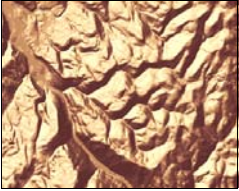
MAPPING STATUS:


- Currently no digital parcel mapping guidelines exist for WV. The Property Valuation Training and Procedures Commission or other appropriate authority should revise the procedural regulations, *The Statewide Procedures for the Manual Maintenance of Surface Tax Maps*, Title-Series 189-04 (<http://www.wvsos.com/csrdocs/worddocs/189-04.doc>), to provide necessary guidance and clarification procedures for the "digital" collection, maintenance, and electronic display of surface tax parcels.
- To reduce independent data collection, the Mineral Lands Mapping Program (MLMP) and assessors' mapping procedures and standards should be made similar.
- WV DTR evaluation of CAMA parcel database integration with GIS.
- Meeting at Senator Byrd's office on 10 July 2001 discussed the possibility of securing a grant in order to create a statewide Land Records Modernization Program on behalf of the County Assessors throughout West Virginia.


DATA PRODUCERS:

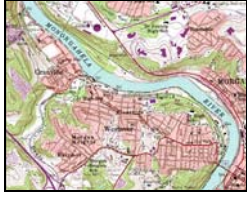
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Surface Tax Parcels	County Assessors, WV DTR	Survey scale to 1:24,000	Tax District	25	Variable


ULTIMATE GOAL: Statewide, seamless, vector-based surface tax parcel mapping system periodically updated with higher resolution and more current tax data.

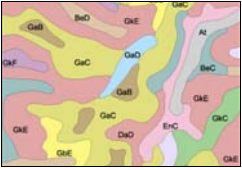
ELEVATION					
DESCRIPTION: Terrain represented by contour lines or by a Digital Elevation Model (DEM), an array of elevations for ground positions at regularly spaced intervals.					
	MAPPING STATUS:				
	<ul style="list-style-type: none"> • DOI high-priority program revising sixteen USGS 1:24,000-scale topographic maps with contour updates in mountaintop mining areas of southern WV. • USGS creating 10-meter, Level 2 DEMs at State border and New River Valley. USGS and NRCS cost sharing development of 39 10-meter DEMs • Mineral Lands Mapping Program (MLMP) creating 10-meter, Level 2 DEMs using the ArcInfo TOPOGRID command. Coordination is necessary between the state and USGS to derive similar 10-meter products. See status graphic at http://wvgis.wvu.edu/stateactivities/dem10m_status.html • USGS 1:24,000-scale hypsography DLGs will continue to be created at WVU until superceded by new technologies. • USGS State Liaison Bruce Bach leading a regional elevation group (WV, KY, TN) to coordinate affordability, reliability, and licensing policies of emerging technologies like IFSAR and LIDAR. • Enhanced elevation data (IFSAR and LIDAR) becoming available from FEMA flood mapping projects and possible State Mapping and Address project. Standard DEM products accessible to the public need to be developed from new elevation sources. 				
DATA PRODUCERS:					
<i>DATASET NAME</i>	<i>ORIGINATOR(S)</i>	<i>SCALE / RESOLUTION</i>	<i>MAPPING SYSTEM UNIT</i>	<i>% WV</i>	<i>CURRENT-NESS</i>
National Elevation Dataset	USGS	30 meter	Seamless Nationwide	100	2000
Digital Line Graph (DLG) Contours and Spot Elevations	USGS	1:24,000	7.5 Min. Quad	60	1950-1997
10-meter DEMs (MLMP)	USGS,WVGES	10 meter	7.5 Min. Quad	30	Variable
10-meter DEMs (USGS)	USGS	10 meter	7.5 Min. Quad	15	Variable
Local Government Databases	County/Municipal Governments	1:1200 to 1:4800	Jurisdiction	?	Variable
ULTIMATE GOAL: Statewide higher resolution (10 meters or smaller) surface elevation data.					

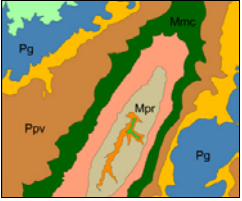
GOVERNMENTAL UNITS					
DESCRIPTION: Governmental unit boundaries for counties, incorporated places, and minor civil divisions. Each of these features includes the attributes of name and the applicable Federal Information Processing Standard (FIPS) code.					
	MAPPING STATUS:				
	<ul style="list-style-type: none"> • Statewide 1:24,000-scale county boundary file completed by WV DEP. • Coordination needed with U.S. Census and local governments to collect current, higher resolution boundaries for incorporated areas and other minor civil division boundaries. 				
DATA PRODUCERS:					
<i>DATASET NAME</i>	<i>ORIGINATOR(S)</i>	<i>SCALE / RESOLUTION</i>	<i>MAPPING SYSTEM UNIT</i>	<i>% WV</i>	<i>CURRENT-NESS</i>
Digital Line Graphs (DLG)	USGS	1:24,000	7.5 Min. Quad	100	1950-1997
Cartographic Feature Files (CFF)	USFS	1:24,000	7.5 Min. Quad	15	1995
Local Government Databases	County/Municipal Governments	1:1200 to 1:4800	Jurisdiction	?	Variable
ULTIMATE GOAL: Current statewide 1:24,000-scale governmental unit boundaries.					


ORTHOIMAGERY					
<p>DESCRIPTION: An orthoimage is a georeferenced image prepared from a aerial photograph or other remotely sensed data from which displacements of images caused by sensor orientation and terrain relief have been removed. An orthoimage has the same metric properties as a map and has a uniform scale. Orthoimages with pixel resolution one meter or finer are most useful for collecting detailed framework features.</p>					
	MAPPING STATUS:				
	<ul style="list-style-type: none"> • 1996-99 one-meter CIR orthophotos are accessible from either the WV Department of Environmental Protection or the WV GIS Technical Center. • A WV Remote Sensing Cooperative was established in September 2001 to catalog and share remote sensing inventories. • State Addressing and Mapping Project RFP for statewide hi-resolution (1:4800 scale or larger) orthophotography to be awarded winter 2003. 				
DATA PRODUCERS:					
<i>DATASET NAME</i>	<i>ORIGINATOR(S)</i>	<i>SCALE / RESOLUTION</i>	<i>MAPPING SYSTEM UNIT</i>	<i>% WV</i>	<i>CURRENT-NESS</i>
Landsat 7	USGS	1:40,000 (30 meter)	Path / Row	100	2000-present
USA Select SPOT	SPOT	1:24,000 (10 meter pan)	Path / Row	100	2000
USGS DOQQs (CIR)	USGS	1:12,000 (1 meter)	7.5 Min. Quad	100	1996-99
Local Government Databases	County/Municipal Governments	1:1200 to 1:4800 (1 foot)	Jurisdiction	?	Variable
<p>ULTIMATE GOAL: Statewide multiple resolution digital orthoimagery ranging from 30-meter to 1-foot pixels.</p>					


TOPOGRAPHIC MAPS					
<p>DESCRIPTION: A scanned topographic map provides useful background GIS information. A Digital Raster Graphic (DRG) is a scanned image of a U.S. Geological Survey (USGS) topographic map, whereas a Softcopy Primary Base Series (PBS) is a raster image of the published U.S. Forest Service (USFS) topographic map. An unclipped scanned image includes all marginal information, while a clipped or seamless scanned image clips off the collar information.</p>					
	MAPPING STATUS:				
	<ul style="list-style-type: none"> • A revised DRG product standard released in May 2001 allows for higher scan and color resolutions. http://wvgis.wvu.edu/stateactivities/toporevisions.html • A USGS DOI mapping initiative is creating basic revision/contour updates for approximately 44 quads in WV: 2000 Mud DOI (16 quads), 2001 Tioga (14 quads), and 2002 Panther (14 quads). • A Joint Funding Agreement (JFA) between the USGS and WV created DRGs for 75 FS Single-Edition quads using non-standard colors at 400 dpi. • WV GIS Technical Center has published NAD83 DRGs on the Data Clearinghouse. • A 1:24,000-scale USGS Topographic Map Series status graphic is posted at http://wvgis.wvu.edu/statusgraphics/toporevisions.html. 				
DATA PRODUCERS:					
<i>DATASET NAME</i>	<i>ORIGINATOR</i>	<i>SCALE / RESOLUTION</i>	<i>MAPPING SYSTEM UNIT</i>	<i>% WV</i>	<i>CURRENT-NESS</i>
Digital Raster Graphic (DRG)	USGS	1:24,000 to 1:250,000	USGS Quad Series Index	100	1950-1997
Single-Edition	USFS / USFS	1:24,000	7.5 Min. Quad	15	1995
Primary Base Series (PBS) Soft-copy	USFS	1:24,000	7.5 Min. Quad	15	1995
<p>ULTIMATE GOAL: Consistent and current scanned topographic maps.</p>					

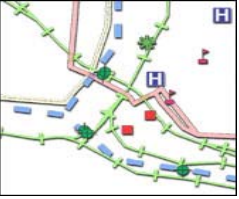
GEODETTIC CONTROL					
DESCRIPTION: Geodetic control provides a common reference system for establishing the coordinate positions of all geographic data.					
	MAPPING STATUS:				
	<ul style="list-style-type: none"> • WV High Accuracy Reference Network (HARN) for Federal Base Network (FBN) and Cooperative Base Network (CBN) Stations completed in Year 2000. • In August 2002 the GIS Steering Committee approved Standards for WV Coordinate Systems. It recommends that all agencies mapping geographic data within West Virginia utilize one of the following three coordinate systems: Geographic Coordinate System, Universal Transverse Mercator, or State Plane Coordinate System, all referenced to the North American Datum of 1983. 				
DATA PRODUCERS:					
<i>DATASET NAME</i>	<i>ORIGINATOR(S)</i>	<i>SCALE / RESOLUTION</i>	<i>MAPPING SYSTEM UNIT</i>	<i>% WV</i>	<i>CURRENT-NESS</i>
Geodetic Control Stations	NGS, WVVALS	Survey Scale	Point Location	N/A	N/A
ULTIMATE GOAL: Very high-accuracy network of permanently monumented geodetic control points.					

SOILS					
DESCRIPTION: The Soil Survey Geographic Database (SSURGO) is a detailed field verified inventory of the kinds and distribution of soils on the landscape, whereas the State Soil Geographic Database (STATSGO) is a generalized soils database.					
	MAPPING STATUS:				
	<ul style="list-style-type: none"> • SSURGO mapping in progress for Monongalia, Marion, and Greenbrier Counties. 				
DATA PRODUCERS:					
<i>DATASET NAME</i>	<i>ORIGINATOR(S)</i>	<i>SCALE / RESOLUTION</i>	<i>MAPPING SYSTEM UNIT</i>	<i>% WV</i>	<i>CURRENT-NESS</i>
STATSGO	NRCS	1:250,000	State	100	1994
SSURGO	NRCS	1:24,000 or larger scale	7.5 Min. Quad	40	1997-present
ULTIMATE GOAL: Statewide SSURGO maps.					

GEOLOGY					
DESCRIPTION: Bedrock and surficial geology, coal-bed mapping, oil and gas exploration.					
	MAPPING STATUS:				
	<ul style="list-style-type: none"> • WVGES interactive web site provides information about the geologic features, structure, thickness, and mining status for 39 minable coalbeds in 9 WV Counties. • The North American Geologic Map Data Model Steering Committee is developing mapping standards for digital geological mapping data for inclusion into the National Geologic Map Database as required by the National Geologic Mapping Act. • STATEMAP 1:24k mapping progress (1993-present) http://ncgmp.usgs.gov/statemap/WESTVIRG.pdf 				
DATA PRODUCERS:					
<i>DATASET NAME</i>	<i>ORIGINATOR(S)</i>	<i>SCALE / RESOLUTION</i>	<i>MAPPING SYSTEM UNIT</i>	<i>% WV</i>	<i>CURRENT-NESS</i>
Coal Bed Mapping Program	WVGES	1:24,000	7.5 Min. Quad	16	1999-present
Bedrock Geology	WVGES	1:24,000	7.5 Min. Quad	1	1999-present
Oil and Gas	WVGES / WVDEP / PTTC	Variable	Point Location	N/A	N/A
ULTIMATE GOAL: Statewide geologic maps at 1:24,000 scale.					

FLOOD MAPPING			
DESCRIPTION: Flood mapping involves such aspects as delineating accurate floodplains and mitigating flood hazards.			
 <p>Q3 Flood Data Kanawha County Source: Federal Emergency Management Agency</p>	<p style="text-align: center;">MAPPING STATUS:</p> <ul style="list-style-type: none"> • The Federal Emergency Management Agency (FEMA) is modernizing its flood-mapping program. • The WV Soils Conservation Agency (SCA) is the lead agency to develop a final WV Flood Protection Plan. • Digital flood data exists for 37 counties (67%). • A statewide Q3/DFIRM composite floodplain coverage is needed. The U.S. Army Corps of Engineers (Pittsburgh District) and WV SCA are exploring the possibilities of creating a statewide GIS floodplain coverage to identify at-risk structures located within 100-year floodplains. The WV DEP already has created a 21-county, Q3 composite floodplain coverage. 		
	<p style="text-align: center;">DATA PRODUCERS:</p> <p>Data producers include federal, state, local government and private companies.</p>		
<i>PRODUCT</i>	<i>STATUS</i>	<i>COUNTY</i>	
Q3	Q3 Completed	Barbour Braxton Brooke Cabell Calhoun Clay Gilmer Grant Greenbrier Hardy Harrison Jackson Kanawha Lewis Lincoln Logan Marshall Mason McDowell Mingo Ohio Putnam Raleigh Randolph Roane Summers Tucker Tyler Upshur Wayne Wetzel Wirt Wood Wyoming	
DFIRM	DFIRM Proposed	Summers	
	DFIRM Mapping	Cabell Fayette Jackson McDowell Putnam Raleigh Wyoming	
	DFIRM Final Modifications	Mercer	
	DFIRM QC	Hampshire Monroe	
	DFIRM Completed	None	
ULTIMATE GOAL: Develop a statewide, GIS-based Floodplain Mapping Information System that adheres to state and federal mapping guidelines.			

LAND COVER					
DESCRIPTION: Land cover relates to the type of feature present on the surface of the earth. Both land cover datasets, WV-USGS Gap Analysis Program (GAP) and National Land Cover Dataset (NLCD), were created from classified 1992-94 Landsat TM imagery purchased as part of the Multi-Resolution Land Characteristics Consortium (MRLC) program.					
 <p>Land Cover West Virginia GAP Source: National Resource Analysis Center</p>	<p style="text-align: center;">MAPPING STATUS:</p> <ul style="list-style-type: none"> • The U.S. Forest Service and Westvaco Corporation maintain their own land cover data sets for timber management. • WV Division of Forestry, WV Division of Natural Resources, and WVU's Appalachian Hardwood Center are conducting GIS mapping for all eight State Forests. GIS data layers include management compartments, forest cover, timber stands, and recreational data. • The Natural Resource Analysis Center (NRAC) at WVU will release a more current WV-GAP Land Cover dataset in FY 2003. • Rahall Transportation Institute (RTI) creating master land cover plans for 8 southern counties 				
	DATA PRODUCERS:				
<i>DATASET NAME</i>	<i>ORIGINATOR(S)</i>	<i>SCALE / RESOLUTION</i>	<i>MAPPING SYSTEM UNIT</i>	<i>% WV</i>	<i>CURRENT-NESS</i>
WV-GAP	WVU-USGS	1:40,000 (30 meter)	State	100	1992-94
NLCD	USGS	1:40,000 (30 meter)	State	100	1992-93
ULTIMATE GOAL: Current and higher resolution statewide land cover data sets.					

CRITICAL STRUCTURES				
DESCRIPTION: Critical structures are human-built systems that are essential to the safety, security, health and economic well-being of our modern society. Transportation networks such as rail lines, navigable waterways, along with utility and telecommunication systems, are an integral part of the State's critical infrastructure. Critical facilities and infrastructure are vulnerable to disruption by natural or technological disasters.				
MAPPING STATUS:				
		<ul style="list-style-type: none"> • WV Office of Emergency Services applying for ESRI Homeland Security Grant (Crisis and Response Center Program). • Coordination needed to collect utility and telecommunication networks. • Certain datasets need to be collected at higher spatial accuracies and validated by the appropriate agency or by emergency management officials at the local level. • U.S. Army Corps of Engineers, Pittsburgh District, is working on the statewide identification of at-risk structures located within 100-year flood plains. • State GIS Coordinator is purchasing churches from a national business directory. 		
DATASETS REQUESTED BY WV OFFICE OF EMERGENCY SERVICES:				
SA = spatial accuracy (1:24,000-scale or better) CO = Completeness (geometry and attributes) CU = Currency Y = Yes N = No U = Unknown ? = No Data Available				
<i>DATASET NAME</i>	<i>ORIGINATOR(S) / DATA SOURCE</i>	<i>SA</i>	<i>CO</i>	<i>CU</i>
Airports (Public)	U.S. Department of Transportation	N	Y	Y
Communications Transmitter Sites	Emergency Medical Services, State Police, WV Public Broadcasting, WV Division of Highways	N	Y	Y
Courthouses	Federal and county registers	Y	Y	Y
Dams (federal, state and local)	U.S. Corps of Engineers, WV Department of Environmental Protection	Y	N	Y
Electric Power Systems / Facilities (trans. lines, plants, substations)	U.S. Environmental Protection Agency, Public Service Commission, American Electric Power, Allegheny Power	N	U	Y
Fire Stations	WV State Fire Marshal's Office	N	Y	Y
Gasoline Bulk Plants		?	?	?
Hospitals	WV Health Care Authority	Y	Y	Y
Intermodal Terminal Facilities	U.S. Department of Transportation	N	Y	Y
Landfills	WV Department of Environmental Protection	Y	U	Y
Major Chemical Facilities		U	Y	Y
Major Natural Gas Compressors	WV Public Service Commission	Y	Y	Y
Major Natural Gas Pipelines	U.S. DOT, Utility Companies	Y	N	N
Municipal Water Reservoirs	WV Bureau of Public Health	Y	U	Y
National Guard Armories	WV Army National Guard	Y	Y	Y
Nursing Homes	WV Health Care Authority	N	Y	Y
Ports / Navigable Waterways	U.S. Department of Transportation	N	Y	Y
Prisons (state)	WV Division of Corrections	Y	Y	Y
Regional Jails	WV Regional Jail Authority	N	Y	Y
Schools (PK-12 and college)	WV Department of Education, WV Higher Education Policy Commission	N	N	Y
Sewer Treatment Plants	WV Division of Water Resources	N	Y	N
Significant Critical Structures (communications, military, energy)	WV Office of Emergency Services	Y	Y	Y
Significant Critical Bridges (Rail and Highway)	WV Division of Highways, WV Public Service Commission	U	Y	Y
Sports Arenas		Y	U	Y
State Police Detachments	WV State Police	N	Y	Y
Telephone Central Offices	Verizon, Citizen	Y	Y	Y
Water Treatment Plants	WV Bureau of Public Health	Y	U	Y
ULTIMATE GOAL: Statewide critical facilities and infrastructure mapping files that are spatially accurate, complete, and current.				

ECONOMIC DEVELOPMENT

DESCRIPTION: Economic development facilitates business opportunities and growth throughout the state. It focuses on enhancing the factors of productive capacity - land, labor, capital, and technology.



MAPPING STATUS:

- The WV Development Office (WV DO) is developing an online GIS based Economic Development Information System similar to Kentucky's and South Carolina's. The core of this system will consist of a user friendly, browser-accessible, layer-selectable, zoomable GIS database consisting of key information layers of concern to state and local developers, businesses and site location consultants, mapped at a suitable scale.
- The WV DO can link spatial data to DEP's Environmental Resource Information System (ERIS) to obtain surface mine status

DATASETS REQUESTED BY WV DEVELOPMENT OFFICE:

Italics = sensitive dataset

GIS coverage available (Y = Yes, N = No, P = Partial, U = Unknown)

#	DATASET NAME	ORIGINATOR(S) / DATA SOURCE	GIS
1	State, county and municipal boundaries	U.S. Geological Survey (USGS), U.S. Census	Y
2	Public lands	U.S. Forest Service, USGS-WV GAP, WV Division of Natural Resources (DNR)	Y
3	Metropolitan Statistical Areas and Urbanized Areas	U.S. Census, Office of Management and Budget	Y
4	Regional Economic Development and Workforce Development boundaries	Governor's Workforce Investment Office	Y
5	Federal Empowerment Zones, Enterprise Communities, Foreign Trade Zones	U.S. Department of Agriculture, U.S. Department of Housing and Urban Development (HUD), WV Development Office (DO)	Y
6	Street, road and highway network, including proposed major highways	U.S. Department of Transportation (DOT), WV DOT	Y
7	Rail network, including rail spurs by type/frequency of service	US DOT, USGS	Y
8	Existing and proposed airports and ports	US DOT	Y
9	Streams, lakes, wetlands, navigable waterways and 100 year floodplains (67% coverage)	USGS, U.S. Fish & Wildlife Service, US DOT, FEMA, USACE, WV Soil Conservation Service	P
10	Known industrial sites (168), parks (79) and buildings (82)	WV Development Office (WV DO)	P
11	<i>Water, sewer, gas, electric and fiber optic communications lines (by size, condition, capacity)</i>	U.S. DOT, WV Public Service Commission, Utility Companies, Miss Utility	P
12	Existing, proposed and reclaimed surface mines (updated annually)	WV Geological Survey (27% coverage), WV Department of Environmental Protection (88% open permits, 40% closed permits)	P
13	Air pollution non-attainment areas and <i>endangered streams</i>	WV DEP, WV DNR	Y
14	Brownfield sites	WV DEP	U
15	<i>Major highway and rail underpasses and clearance height</i>	WV DOT	N
16	Vo-tech schools, colleges and universities	WV Department of Education, WV Higher Education Policy Commission	P
17	Large employers	WV DO, WV Bureau of Employment Programs	P
18	Major recreation and resort facilities (public and private)	Public land databases, national business directories	P
19	Generalized Land Use	USGS, RTI, satellite imagery	Y
20	Parcel Boundaries	WV Department of Tax and Revenue, Assessors	P

ULTIMATE GOAL: Develop a GIS-based Economic Development Information System for the state.

FRAMEWORK PRINCIPLES: Approved mapping standards, along with cooperative efforts of local, state, federal, and private organizations, are necessary to create reliable, consistent framework data. West Virginia framework data should adhere to the following principles:

- *Data Access:* Framework data must be widely accessible through data clearinghouses that standardize the systematic collection and management of information.
- *Data Charges:* Charges for access to framework data are limited to the costs of providing access and dissemination.
- *Data Certification:* Framework data are complete, quality checked, and geometrically and topologically clean.
- *Standards:* Framework data must conform to approved technical and administrative standards.
- *Metadata:* FGDC metadata is preferred for all framework data, but abbreviated metadata is acceptable if it includes the following summary information: description, scale, location, attribute documentation, source lineage, coordinate system, and file format.
- *Coordinate Referencing System:* The use of longitude and latitude is encouraged for framework data, although the following coordinate systems are acceptable: (1) Universal Transverse Mercator (UTM), Zone 17 North, map units in meters, for statewide GIS data sets, and (2) WV State Plane Coordinate System (SPCS), North and South Zones, map units in U.S. feet, for countywide data sets. Horizontal coordinate information is referenced to the North American Datum of 1983 (NAD 83) and vertical coordinate information is referenced to the North American Vertical Datum of 1988 (NAVD 88).
- *GIS File Format:* Framework data are in a digital format that can easily import into a Geographic Information System.
- *Seamless:* Framework data are seamless across political or other collection area boundaries
- *Coincidental Boundaries:* Framework data are consistent among themes, such as coincidental alignment of a stream and political boundary.
- *Multiple Resolutions and Generalization:* Framework data consists of multiple resolutions to satisfy different users' needs. To avoid independent data collection, more detailed and complete data sets are generalized for those agencies requiring less detailed data that cover a large area.

FRAMEWORK STATUS: Leadership, cooperation, and coordination are required among numerous agencies for framework to mature in West Virginia. Presently, framework for the State is progressing on four fronts: (1) development of new digital mapping standards; (2) creation of communicative networks and business partnerships to coordinate data sharing; (3) collection of more current, higher resolution data; and (4) promotion of GIS to the statewide community. For most framework data layers, the ultimate goal is to achieve statewide coverage and integration of more current, higher-resolution thematic data. In the future, most framework data will be collected at mapping scales of 1:24,000 or larger.

If you have any questions or remarks about this report or want to participate in framework, please contact Kurt Donaldson of the WV GIS Technical Center or the State GIS Coordinator, Craig Neidig.

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