

**IN THE UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF WEST VIRGINIA**

CHARLESTON DIVISION

JEFFERSON COUNTY COMMISSION, et al.,

Plaintiffs,

THORNTON COOPER,

Intervenor Plaintiff,

v.

CIVIL ACTION NO. 2:11-cv-00989
(Judges King, Bailey & Berger)

NATALIE TENNANT, et al.,

Defendants.

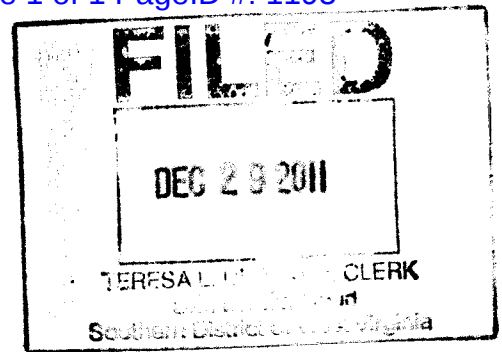
EXHIBIT LIST

Moving Party	No.	Date Identified	Date Admitted	Description	Location
Plaintiff	1	12/28/11	12/28/11	Mason County Flop Plan	Clerk's Office
Plaintiff	2	12/28/11	12/28/11	Communities of Interest in Redistricting	Clerk's Office
Plaintiff	3	12/28/11	12/28/11	WV - Core Bases Statistical Areas	Clerk's Office
Plaintiff	4	12/28/11	12/28/11	Upper Kanawha Valley Enterprise	Clerk's Office
Plaintiff	5	12/28/11	12/28/11	Karst map	Clerk's Office
Plaintiff	6	12/28/11	12/28/11	Employment in the Mining Industry	Clerk's Office
Plaintiff	7	12/28/11	12/28/11	Executive Order 13508	Clerk's Office
Plaintiff	8	12/28/11	12/28/11	Perfect Plan map	Clerk's Office
Plaintiff	9	12/28/11	12/28/11	Facemire Amendment map	Clerk's Office
Intervenor	1	12/28/11	12/28/11	Redistricting Exhibit	Clerk's Office

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West Virginia Congressional Redistricting

Mason County Flop Plan



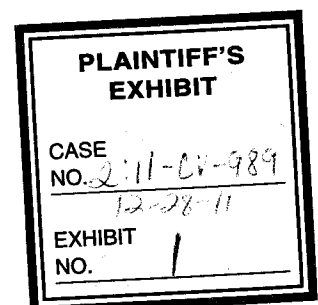
The current configuration of the West Virginia 2nd Congressional District is not in compliance with the "compact" requirement of the West Virginia Constitution, Article I Section 1-4. The plan to remove Mason County from the 2nd District does not alter its current non compliance status.

In the political geography literature geopolitical entities (nations, states, election districts, etc) are given five general qualitative designations; compact, elongated, protruded, fragmented, and perforated. The short definitions of the terms are: COMPACT - boundaries smooth and equal distant from common center; ELONGATED - drawn out in one direction; PROTRUDED - extension or bulge in one area; FRAGMENTED - divided, not all contiguous; and PERFORATED - geopolitical entity which completely encloses or surrounds another geopolitical entity or part of another geopolitical entity. Clearly, the visual map of the Mason County Flop Plan reconfiguration of the 2nd District falls into the elongated category, and is not compact.

More quantitative models of compactness have been devised by mathematicians, geographers, and political scientists. In my work in the history of congressional districts and the history of congressional redistricting I have examined many of these models. I have reviewed the "Measures of Compactness" calculations done by Jake Nicholas dated 7/28/2011, 11:56:39AM. The models are some of the standard ones used in measuring compactness. In addition, although I have not calculated the data myself, the numbers do seem consistent with the general shape of the districts. These numbers show, in seven of the eight models, that the proposed Mason Flop 2nd District scored low in compactness, especially with respect to the two remaining districts. Although shape and high compactness scores do not always preclude gerrymandering and manipulation of election districts for political or racial purposes, it does provide one technical measurement, and is the measurement enumerated in the state constitution.

The history of the 2nd District, from the admission of the state into the Union in 1863 to the present, has been always based in the eastern panhandle and extended westward to adhere to general population figures of the time. The 2nd District historically has at one time or the other comprised eastern panhandle counties, mountain counties and some in north central West Virginia. It was not until the redistricting of the 1990s that the 2nd District assumed an extreme elongated shape stretching from Jefferson County to the Ohio River. The history of the 2nd District, and West Virginia congressional districts in general, show a general adherence to regional districts until the redistricting of 1990s when West Virginia's congressional delegation was reduced from four to three. Prior to the 1990s the last time West Virginia had three members in the U.S. House was from admission the 1880s. From 1863 through 1883 the three West Virginia districts generally had the configuration of; 1st District northern panhandle, Ohio River counties and some north central counties; 2nd District eastern panhandle extending westward to some mountain counties and some north central counties; and 3rd District encompassing the southern counties. I have attached to this report four maps of historical West Virginia congressional districts to give a sample of the history of the 2nd District in particular and West Virginia districts in general. The four maps cover the periods: 1863-1883; 1903-1917; 1917-1935; and 1969-1973.

Kenneth C. Martis
Professor of Geography
West Virginia University



Communities of Interest in Redistricting

A Practical Guide

Douglas Johnson
National Demographics Corporation

For a copy of this presentation, email djohnson@NDCresearch.com

April 24, 2008

www.NDCresearch.com

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PLAINTIFF'S EXHIBIT	
CASE NO. <u>2:11-cv-989</u>	EXHIBIT NO. <u>2</u>

Agenda

- Who cares about communities?
- Pros and Cons of Community Definitions
- Usage / Implementation
- Wrap-Up
- Quickly: 18 slides in 15 minutes!

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Who Cares? Two Reasons.

- Reason 1: Districts are for effective representation of people
 - People live and organize in communities
 - Even in the MoveOn.org era, most political activism is community-based
 - “Homogenous districts facilitate effective representation because community sentiments are more clearly defined and consistent policy positions are more likely. Intergroup conflict is tempered.”
 - Janet K. Boles and Dorothy K. Dean, “Communities of Interest’ in Legislative Redistricting”, State Government 58, 3, p. 102 (Fall 1985)

Communities & Representation

- Ideally, redistricting enhances participation and representation
 - Equal-population districts
 - Federalism at work: scaled community integration into districts
 1. School Districts
 2. Cities
 3. Counties
 4. State Legislative
 5. Congressional

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Redistricting Laws

- Reason 2:
The U.S. Supreme Court recognizes
“Traditional Good Government Criteria,” including:
 - Communities of Interest
 - Natural & man-made feature boundaries
 - Compactness & Contiguity
 - Public Input
 - Population Growth
- After Georgia decision, “good government” justifications
needed to defend any significant population deviation
- Texas decision adds import in Voting Rights cases

Community Considerations

1. Identify communities
2. Keep communities together
3. (*often unforeseen*) Decide what communities to link together or separate
 - Sometimes getting this right is even more important than keeping a community together!
4. Avoid “astroturf” or “code” communities

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What is a community?

- Definition is a policy choice:
 - Consider *all* types of communities?
 - Consider only communities with legislative issues at that plan's level:
 - For example, a designated historic neighborhood probably has city and possibly state concerns, but not Congressional
 - A school district probably has concerns at all levels
- Policy decision:
 - Not adopting a definition retains flexibility
 - Adopting a definition increases accountability and transparency

The Basic Definition

- Government-designated communities:
 - School districts
 - City development/planning zones
 - City
 - County/Parish/Township
 - Multi-County regional planning agencies
- Geographic (and Economic?) regions

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Loose Rule of Thumb

- A “community of interest” is whatever the people living in a specific area define it to be
- Similar to compactness: the best definition is still case by case analysis

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“Protected Class” Communities

- Race may be a factor in district development, but not the “predominate” factor
- Examples of other factors used:
 - Income, language, education level
 - relatively recent immigrants
 - preponderance of children
 - Past election results, in particular for initiatives and propositions
 - Party registration
- “Direct Proxy” not allowed – need to show some non-racial connection

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Academic

- “recognition and maintenance of patterns of geography, social interaction, trade, political ties, and common interests.”
 - Bernard Grofman, “Criteria for Districting: A Social Science Perspective”, UCLA Law Review, 33 UCLA L. Rev. 77, 1985

Restrictive

Community with Legislative Interest:

1. “A geographic area whose residents have a history of coordinated efforts aimed at influencing elections or votes at the level of jurisdiction in question.”
2. “A group of people in a defined geographic area with common concerns about issues (such as religion, political ties, history, tradition, geography, demography, ethnicity, culture, social economic status, trade or other common interest) that would benefit from common representation.”
 - This one was adopted by the Arizona Independent Redistricting Commission during the Court-ordered adoption of definitions (later overturned)

Detailed, but not very restrictive

- “A geographic area comprised of residents who share similar interests, including, but not limited to, social, cultural, ethnic, geographic or economic interests, or formal government or quasi-governmental relationships”

Qualifications / Restrictions

- “... not to include regard for advantage or disadvantage to incumbents or challengers”
- “... not to include advantage or disadvantage to any political party”
- Difficult to justify exclusion consideration of initiative votes
- Probably wise to exclude consideration of candidate election results and party registration
 - Those are potential considerations, but not really definitions of “community” concerns

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Implementation

- Gather data
- Hold hearings
- Identify and map communities
- Create a layer or layers in the GIS system
- Run split reports
 - Just like with cities and counties
 - Large communities may have to be split, but splits can still be minimized
- Compare plans

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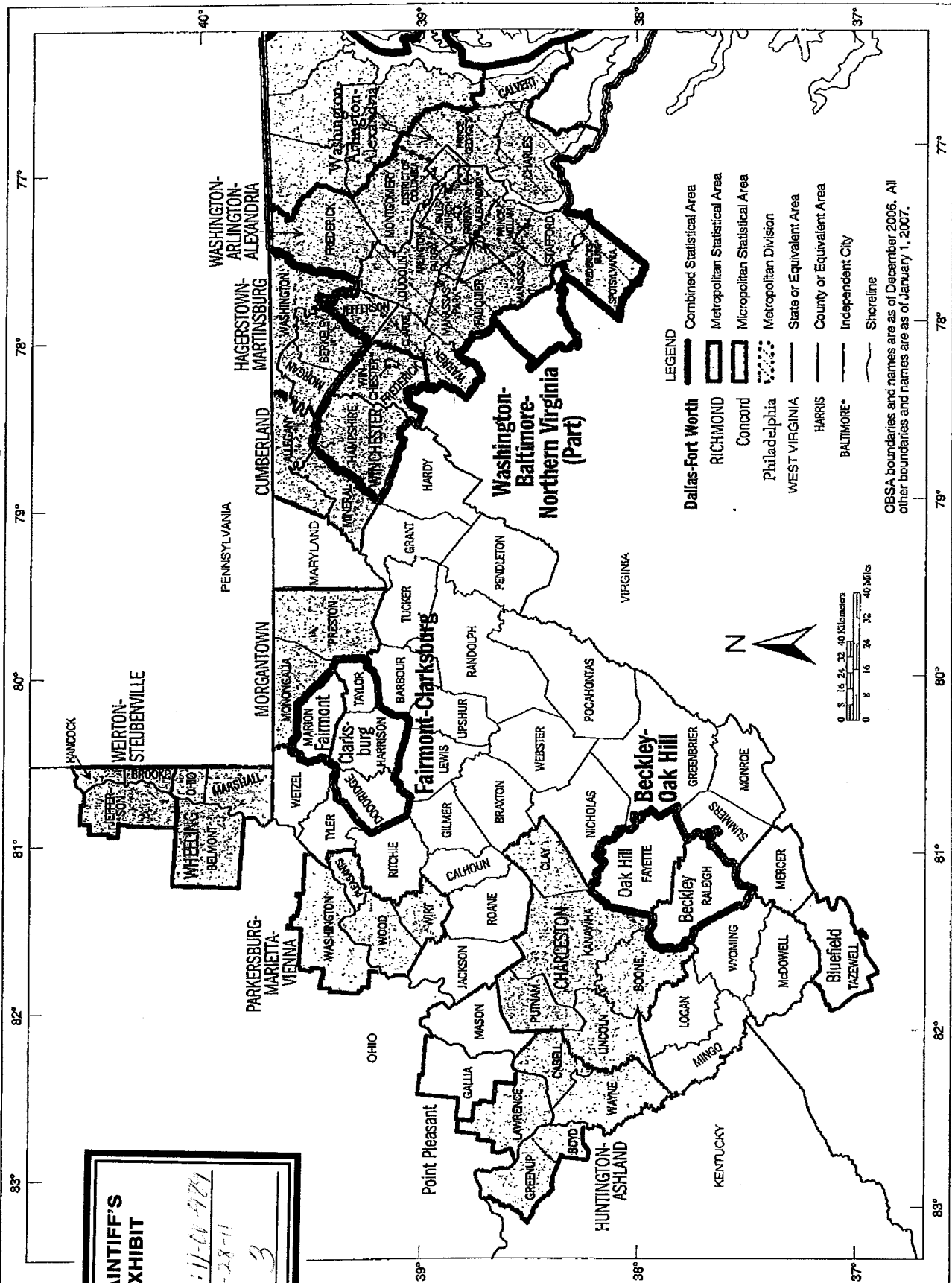
More Implementation

- Create separate layers for different sized communities:
 - Larger than a district
 - More than one-third of a district (exact fraction could vary)
 - (The most useful communities to identify) Less than one-third, and preferably 10% or less, of a district's population
 - Splitting large layers is probably inevitable, splitting tiny ones is not
- Cities and other governmental units probably are a separate consideration and thus a separate layer

Wrap-Up

- Communities have new legal importance
 - Georgia, Texas case decisions draw “community” definitions into population deviation and Voting Rights Act cases
- No perfect approach
 - Every definition has positives and negatives
 - Definitions are useful for clarity, accountability, and transparency
 - Definitions limit flexibility

WEST VIRGINIA - Core Based Statistical Areas, District of Columbia, Counties, and Independent Cities



Upper Kanawha Valley Enterprise Community



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Welcome

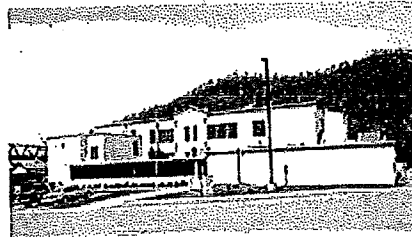
The mission of the Upper Kanawha Valley Enterprise Community is to restructure, restore and revitalize the social and economic climate that makes this area an attractive place to live, learn, work and play.

[Monthly Meeting
Schedule for Upper
Kanawha Valley
Organizations](#)

[What's New](#)

[Directions to UKVEC
Business Center](#)

The UKVEC Business Center is housed in the former Chelyan Elementary School on the bank of the Kanawha River, located just off I-64/77, U.S. Route 60 and WV Route 61. It is approximately 15 miles east of Charleston and 45 miles west of Beckley. This location is within 500 miles of 60% of the United States' population, and one third of the population of Canada.



[UKVEC Business Center](#)

[Real Time Visual](#)

[Click here to download the DVR Client](#)

HISTORY of UKVEC

On December 24, 1998, the Upper Kanawha Valley area was designated by the U.S. Department of Agriculture (USDA) as a Federal Enterprise Community. The nomination leading to this event was sponsored by the Kanawha and Fayette County Commissions and co-sponsored by the towns of Chesapeake, East Bank, Handley, Montgomery, and Pratt. The UKVEC is one of 20 Enterprise Communities designated for Round II funding under the Taxpayer Relief Act of 1997 and was chosen to receive \$2.5 million from the USDA over a ten-year period. This designation entitles the Upper Kanawha Valley area to a comprehensive package of grants, loans and tax incentives potentially worth millions of dollars in new community

PLAINTIFF'S EXHIBIT

CASE

NO. 2:11-cv-989

12-28-11

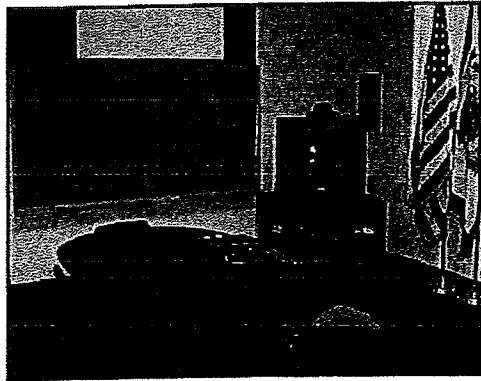
EXHIBIT

NO. 4

investment.

The UKVEC is located in both Kanawha and Fayette Counties, measures 221 miles in area, and is home to nearly 20,000 people. The UKVEC objectives and goals focus on helping residents, business owners, and other stakeholders in the Upper Kanawha Valley in constructing a strategy for future community planning and development activities. Numerous citizen input meetings were held throughout eastern Kanawha County and Fayette County. County and local officials as well as citizens and community-based organizations submitted a wide array of proposals for solving the many pressing problems of the area.

UKVEC Video Teleconferencing Facility



The UKVEC Now has Self-Storage Units available for rent!

Click [HERE](#) to see more information and pricing!

Community Billboard

UKVEC Board Meetings will be held every other month on the second Monday starting at 10:00 AM.

Board Meeting Schedule For 2011

February 14th

April 11th

June 13th

August 8th

October 17th

December 12th

UKVEC
200 Upper Kanawha Valley Way
P.O. Box 309
Cabin Creek, WV 25035
1-304-595-5991
1-866-278-5832
1-866-27UKVEC

Website Maintained by - Don Hatfield
Contact Webmaster

00004124

Upper Kanawha Valley Enterprise Community



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Mission Statement

Before goals were developed by the participants in the strategic planning process, vision and mission statements were drafted and adopted.

ARTS & CULTURE MISSION STATEMENT

BUILDING, HOUSING, LAND USE & DEVELOPMENT/ PLANNING, MANAGEMENT & GOVERNANCE MISSION STATEMENT

COMMUNICATION & TRANSPORTATION/UTILITIES & INFRASTRUCTURE MISSION STATEMENT

ECONOMIC DEVELOPMENT MISSION STATEMENT

EDUCATION & TRAINING MISSION STATEMENT

HUMAN & FAMILY SERVICES/PUBLIC HEALTH, FITNESS, & SAFETY MISSION STATEMENT

NATURAL RESOURCES, ENVIRONMENT & CONSERVATION /FARMS & AGRICULTURE MISSION STATEMENT

RECREATION, ENTERTAINMENT & TOURISM MISSION STATEMENT

ARTS & CULTURE MISSION STATEMENT: To inspire greater appreciation for cultural activities. [back to top of page](#)

BUILDING, HOUSING, LAND USE & DEVELOPMENT/ PLANNING, MANAGEMENT & GOVERNANCE MISSION STATEMENT: To protect, preserve, and enhance both the natural and built environments; to accomplish both environmental and land development objectives, as well as to promote informed and sound decision making at the neighborhood, local, and regional levels. [back to top of page](#)

COMMUNICATION & TRANSPORTATION/UTILITIES & INFRASTRUCTURE MISSION STATEMENT: To improve the economic and environmental performance of the transportation and communication systems; to maintain and modernize these vital connections (people and goods) in a global economy, as well as to foster community and economic growth by providing adequate utilities and infrastructure.

[back to top of page](#)

ECONOMIC DEVELOPMENT MISSION STATEMENT: To promote and

advance the business prosperity and economic welfare of the region. [back to top of page](#)

EDUCATION & TRAINING MISSION STATEMENT: To prepare our workforce for life in the next millenium.

[back to top of page](#)

HUMAN & FAMILY SERVICES/PUBLIC HEALTH, FITNESS, & SAFETY MISSION STATEMENT: To protect, nurture, teach and serve families, individuals, and children as well as to create and sustain an collaborative effort between individuals, business, industry, government and service providers to protect, preserve, and enhance the public's health and safety. [back to top of page](#)

NATURAL RESOURCES, ENVIRONMENT & CONSERVATION /FARMS & AGRICULTURE MISSION STATEMENT: To manage and balance the needs of environmental, economic and land development objectives, as well as to balance the economic growth of the community with preservation of one of our oldest existing institutions: the family farm. [back to top of page](#)

RECREATION, ENTERTAINMENT & TOURISM MISSION STATEMENT: To constructively occupy our youth, provide a wide array of leisure activities for adults, families, and seniors, and create a lively environment for enjoyment by residents and visitors alike.

**Upper Kanawha Valley
Enterprise Community**



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Planning Process

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- [Basic Living Needs](#)
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- [New Economic Opportunities](#)
- [Families and Neighborhoods](#)
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Development of the Strategic Plan

The strategic planning process for the Upper Kanawha Valley Enterprise Community was coordinated with existing plans for the county and region. An inventory of documents and ongoing programs within and around the Enterprise Community was taken at the outset of the planning process.

Participants developed the Strategic Plan through twelve Consolidated Plan Element Committees (CPECs), which were formed to begin the task of visioning, composing mission statements, and drafting goals and benchmarks for the UKVEC. The all-volunteer citizen committees were organized into the following focus groups:

- Arts & Culture
- Communication & Transportation/Utilities & Infrastructure
- Education & Training
- Human & Family Services/Public Health, Fitness & Safety
- Recreation, Entertainment & Tourism
- Building, Land Use & Development/Planning, Management & Governance
- Economic Development
- Natural Resources, Environment & Conservation/Farms & Agriculture

The planning work was an incremental process. Initially, each committee worked independently, with little exposure to the other eight focus groups.

Next, the committees reviewed the work of the other groups to coordinate and prioritize projects. The elements of the Upper Kanawha Valley strategic plan were developed jointly by the CPEC Committees as they discussed personal experiences and

compared their own problems to community initiatives that have worked elsewhere. In many instances, the committees targeted "cross-cutting" issues, goals, objectives, and proposed actions accordingly. The resulting plan synthesizes the efforts of many community members who, facing the manifestations of economic downside in their region, have decided to take responsibility for strategies that can realize their vision for the Upper Kanawha Valley.

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Community Participation in Determining EC Area

Census tracts eligible to be considered in the EC application were first identified by the Kanawha County Planning Development staff and were grouped into alternative boundary configurations. The staff then convened meetings with residents in each proposed census tract to determine their interest and willingness to participate in the intensive EC planning process.

Residents of the Upper Kanawha Valley living in census tracts 121, 122, and 207 reported they were aware their area is stuck "between counties". Tracts 121 and 122 are Kanawha County while the adjacent CT 207 is in Fayette County. The counties share the City of Montgomery, a community long neglected by regional development efforts due to its remote location. Community members in these three census tracts said they desperately need a "jump start" to improve basic living conditions and community infrastructure necessary to approach a level of prosperity evident elsewhere in their counties and state. The residents' eagerness and determination settled the matter of where to pursue the designation. [back to top of page](#)

Location of the Upper Kanawha Valley Enterprise Community

The Enterprise Community is located in West Virginia, the second most rural state in the nation. Rugged topography and expansive floodplains restrict the development potential of the region. Portions of both Kanawha and Fayette counties are included in the UKVEC.

Kanawha and Fayette are two of the 55 counties in West Virginia. Their 1990 populations were 207,619 and 47,952, respectively.

Fayette County is east of Kanawha County, in the south central region of the state.

Kanawha County is one of two urbanized counties which make up the Charleston, WV Metropolitan Statistical Area (MSA). However, 89% of the total area of the county and its neighboring Fayette County is undeveloped forest land.

The Upper Kanawha Valley is the southeastern portion of Kanawha County, and includes the western part of Fayette County.

Kanawha and Fayette counties are located within 500 highway miles of these major US cities:

Atlanta 499
Baltimore 361
Charlotte 285
Chicago 470
Cincinnati 205
Columbus 170
Detroit 399
Indianapolis 317
Nashville 419
Philadelphia 482
Pittsburgh 237
Washington, DC 342

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Threshold Requirements

The Upper Kanawha Valley is an area of pervasive poverty, unemployment, and general distress. Both the housing stock and resident population have suffered significant losses during the past forty years. The extractive industries of coal mining and timber operations have grown in output while diminishing in employment levels as both become increasingly mechanized.

According to the 1990 Census, more than 4,354 persons in the EC were living at or below the poverty level in 1989. This represents 25.1% of the resident population. Many surrounding census tracts, including the contiguous Central Appalachia Enterprise Community, have poverty rates ranging between 20% and 25%, with some as high as 56%. [back to top of page](#)

Proposed Major Benchmarks

The strategic plan enumerates a comprehensive list of benchmarks-projects designed to address all the needs of the community

and take advantage of emerging opportunities, including these major categories of benchmark projects:

Basic Living Needs

- Provide safe, potable drinking water to existing and future rural development areas
- Eliminate immediate threats to public health (i.e., outbreaks of Enterovirus Encephalitis)
- Protect water quality by expansion of the sanitary sewerage collection and treatment systems
- Improve local Insurance Service Office (ISO) fire classifications to a 5 or less
- Create new, decent, safe, sanitary and affordable housing opportunities
- Establish an emergency shelter and transitional housing for those in crisis
- Provide individual and family support services for at-risk households
- Expand basic prenatal, primary health, dental and vision care. [back to top of page](#)

Enhanced Living Environment

- Recruit providers of essential community goods and services
- Revitalize the historic commercial district(s) of the Upper Kanawha Valley
- Expand health education, preventive care, primary health and mental health care
- Establish community policing programs to improve public safety
- Target substance abuse, juvenile crime, delinquency and vandalism for enforcement
- Expand access to and sustain family planning, reproductive health, childbirth training and parenting classes, as well as prenatal and early childhood care programs
- Establish adolescent health services in community schools
- Expand and sustain community-based primary health care clinics
- Establish a centralized family resource center for coordinated delivery of social services
- Establish outreach services based from the family resource center
- Expand child daycare and youth development programs to increase opportunities for parents to reenter the labor force
- Expand adult daycare and assisted-living programs to increase opportunities for elderly to remain independent [back to top of page](#)

New Economic Opportunities

- Restructure the regional economy to reduce and eventually eliminate continued dependence upon the extractive industries of coal mining and timber operation
- Identify, protect and develop suitable sites for future industrial, commercial, residential and recreational land uses
- Redevelop existing brownfield sites to host new investment and employment opportunities
- Develop new greenfield sites for light industrial, commercial, and residential land uses
- Establish a port authority to manage new investment in multi-modal development sites
- Initiate a shell building program and other "turn-key" employer recruitment projects
- Create an eco-industrial, automotive component or technology park
- Revitalize existing commercial districts to provide essential community goods and services
- Build a small business incubator to serve the needs of start-up businesses in the Upper Kanawha Valley
- Initiate job retention and recruitment programs
- Train and financially support (RLF) small business entrepreneurs
- Train and promote candidate businesses for entering the world of electronic commerce
- Develop vacant sites for construction of infill housing
- Reduce air pollutants, with particular emphasis on ozone precursors (VOC and NOX)
- Preserve historic resources, sites and structures throughout the region
- Create new opportunities for outdoor recreation, exercise, and alternative transportation (i.e., athletic fields, bikeways, trails)
- Recruit all-season recreational and entertainment activities (i.e., movie theater, health club) [back to top of page](#)

Families and Neighborhoods

- Establish a conveniently located public facility for hosting a broad range of cultural events and programs
- Reestablish the "Community Schools Program" to constructively expand the role of existing educational facilities and programs in the daily lives of UKVEC residents
- Adopt and enforce minimum performance, quality and safety standards for new land development and the built environment
- Develop, adopt and enforce a master land use plan for the UKVEC
- Upgrade US Route 60 - the Midland Trail Scenic Highway - to improve access to the Enterprise Community and develop new opportunities for tourism attractions

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Community Empowerment

<input checked="" type="checkbox"/>	Establish community-based citizen action groups to engage in decisions affecting their lives
<input checked="" type="checkbox"/>	Provide technical assistance and staff support for the Enterprise Community governing board
<input checked="" type="checkbox"/>	Establish Community Development Corporations (CDC's) within each neighborhood
<input checked="" type="checkbox"/>	Create a venture capital fund for major new investments in the community
<input checked="" type="checkbox"/>	Establish a local Community Learning and Information Network (CLIN) site and computer learning center for public use
<input checked="" type="checkbox"/>	Create a "Welfare to Work Advisory Council" to monitor progress and recommend action
<input checked="" type="checkbox"/>	Provide affordable transportation from home to work, school and shopping
<input checked="" type="checkbox"/>	Establish a scholarship program for at-risk students and displaced workers
<input checked="" type="checkbox"/>	Establish volunteer recruitment and training programs (i.e., SCORE, home repair) back to top of page

Communication & Transportation

- Sponsor a program of events that offers "something for everyone" and promotes widespread participation by Enterprise Community residents
- Inform Enterprise Community members directly about community affairs, issues, alternatives, and pending actions
- Publish an Enterprise Community Newsletter and establish a corresponding web page [back to top of page](#)

Planning, Management & Governance

- Conduct and maintain an inventory and assessment of economic, natural, and human resources
- Apply Total Quality Management (TQM) principals to the implementation of Enterprise Community projects and programs based upon a comprehensive development plan and performance standards [back to top of page](#)

Resource Analysis

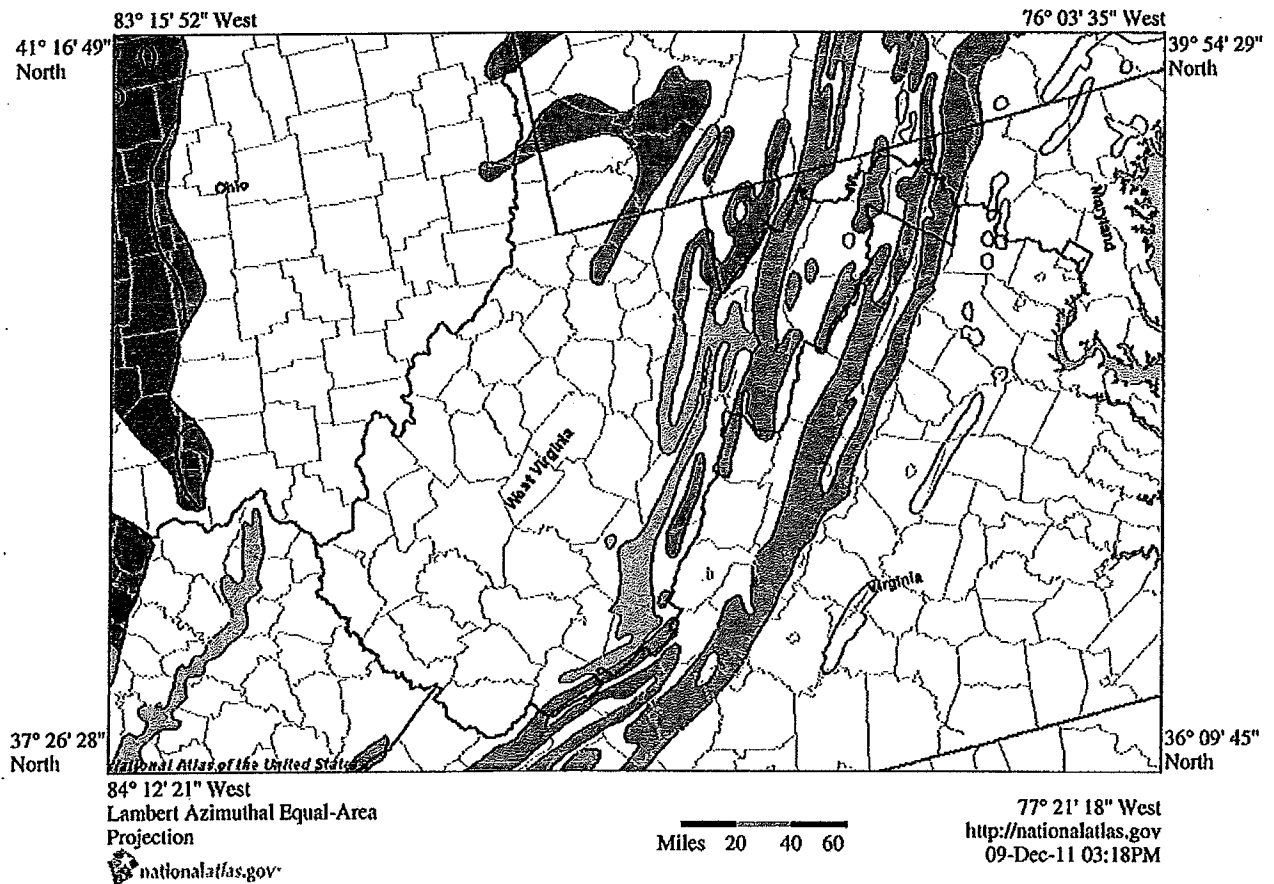
The Upper Kanawha Valley is fortunate to have several substantial institutions to assist in implementation of the strategic plan. The following is a short-list of the most active and capable of those community resources:

- West Virginia University Institute of Technology - Montgomery, WV
The faculty and resources of this state university will provide technical assistance and other resources
- Montgomery General Hospital - Montgomery, WV
Medical, mental health, and skilled care residential facilities for seniors are among the specialized services available

through Montgomery General Hospital

- Upper Kanawha Valley Economic Development Corporation - Montgomery, WV.
This community-based nonprofit corporation was instrumental in recruitment of a \$60 million State correctional complex and will assist in implementation of several benchmark projects
- Upper Kanawha Valley Chamber of Commerce - Montgomery, WV
A 501(c)(4) business corporation, the UKVCOC will be a partner in governance of the EC Business and Industrial Development Corporation (BIDCO) 8-county area. This public-private regional economic and jobs development organization has been very successful in recruiting new employers and retaining existing industries
- City National Bank - Montgomery, WV
- United National Bank - Montgomery, WV
- Upper Kanawha Valley Rotary International - Montgomery, WV
This community service organization is one of several that will assist in the implementation process.
- Lions Club of the Upper Kanawha Valley - Montgomery, WV
Volunteers from this organization are very active in the community.
- Lower Paint Creek Watershed Association - Paint Creek, WV
Incorporated only a few years ago, this group has already cleaned up several environmental hazards
- Lower Paint Creek Trail Association - Paint Creek, WV
Incorporated in 1997, this 501(c)(3) is dedicated to building recreational trails

Additional community resources are available; many of which are based outside the Upper Kanawha Valley. Nevertheless, they have pledged their support of efforts within the UKVEC.



Boundaries

Counties

Source: U.S. Geological Survey

☒ Counties

States

Source: U. S. Geological Survey

☒ States

Geology

Karst, Engineering Aspects

Source: U.S. Geological Survey

**PLAINTIFF'S
EXHIBIT**

CASE

NO. 2:11-cv-989







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EXHIBIT











NO. 5

Kart, Engineering Aspects




Fissures, tubes and caves over 1,000 ft (300m) long; 60 ft (15m) to over 260 ft (75m) vertical extent

-  In metamorphosed limestone, dolostone, and marble
-  In moderately to steeply dipping beds of carbonate rock
-  In gently dipping to flat-lying beds of carbonate rock
-  In gently dipping to flat-lying beds of carbonate rock beneath an overburden of noncarbonate material 10 ft (3 m) to 200 ft (60 m) thick
-  In moderately to steeply dipping beds of gypsum
-  In gently dipping to flat-lying beds of gypsum





Fissures, tubes, and caves generally less than 1,000 ft (300 m) long; 60 ft (15 m) or less vertical extent

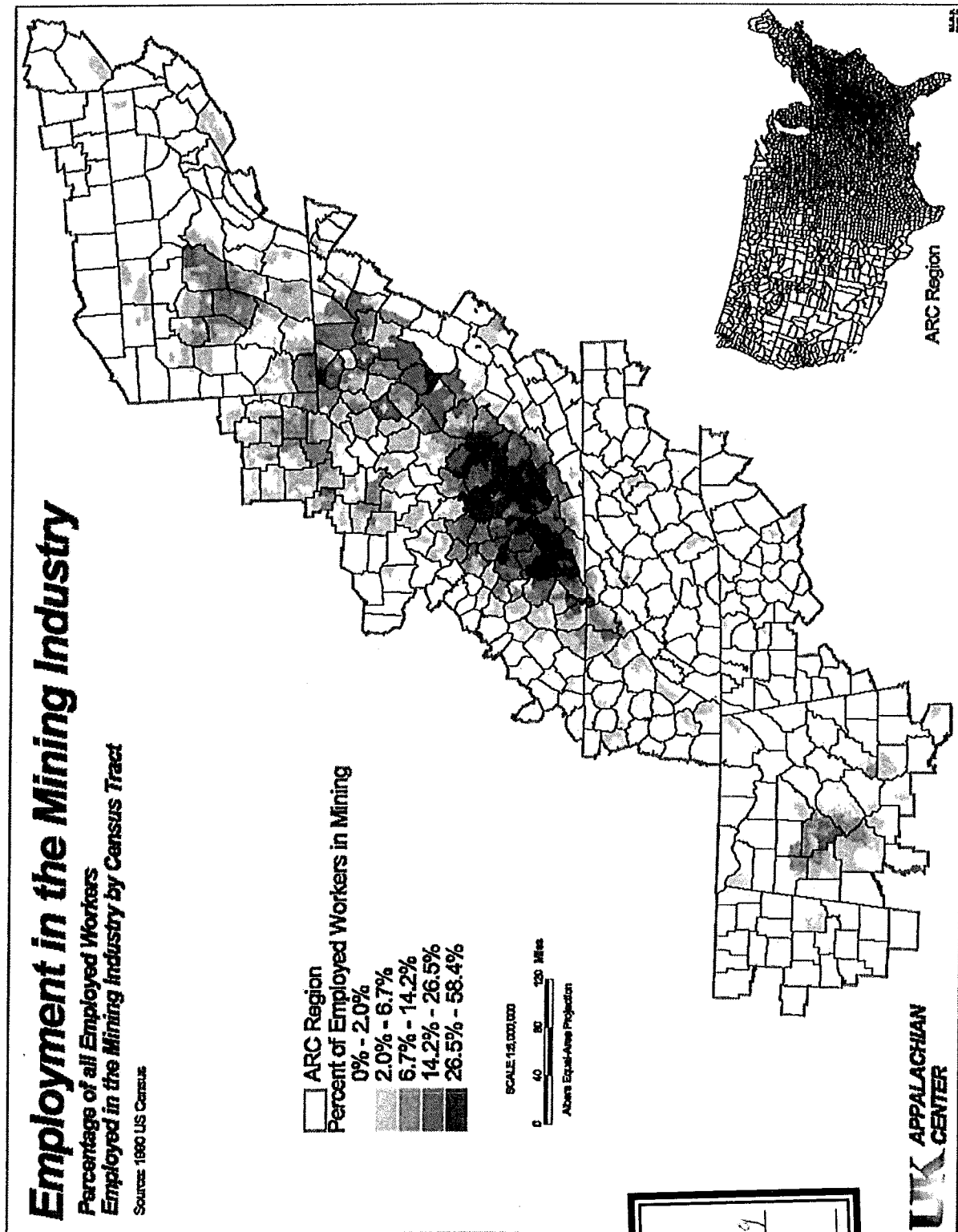
-  In metamorphosed limestone, dolostone, and marble
-  In crystalline, highly siliceous intensely folded carbonate rock
-  In moderately to steeply dipping carbonate rock
-  In gently dipping to flat-lying carbonate rock
-  In gently dipping to flat-lying beds of carbonate rock beneath an overburden of noncarbonate material 10 ft (3 m) to 200 ft (60 m) thick
-  In moderately to steeply dipping beds of gypsum
-  In gently dipping to flat-lying beds of gypsum
-  In gently dipping to flat-lying beds of gypsum beneath an overburden of non-gypsiferous material 10 ft (3 m) to 200 ft (60 m) thick
-  In carbonate zones in highly calcic granite (Alaska only)
-  In moderately to steeply dipping beds of carbonate rock with a thin cover of glacial till and frost-derived residual soil (Alaska only)

Fissures, tubes, and caves generally absent; where present in small isolated areas, less than 10 ft (3 m) vertical extent

-  In crystalline, highly siliceous intensely folded carbonate rock
-  In moderately to steeply dipping beds of carbonate rock
-  In gently dipping to flat-lying beds of rock

Features analogous to kart

-  Fissures and voids present to a depth of 250 ft (75 m) or more in areas of subsidence from piping in thick unconsolidated material
-  Fissures and voids present to a depth of 50 ft (15 m) in areas of subsidence from piping in thick unconsolidated material
-  Fissures, tubes, and funnels present to a depth of 250 ft (75 m) or more in lava
-  Fissures, tubes, and funnels present to a depth of 60 ft (15 m) in lava



PLAINTIFF'S EXHIBIT	
CASE NO.	2:11-cv-00989
EXHIBIT NO.	12-28-11

Appendix A - Executive Order 13508

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Federal Register

Vol. 74, No. 93

Friday, May 15, 2009

Presidential Documents

Title 3—

Executive Order 13508 of May 12, 2009

The President

Chesapeake Bay Protection and Restoration

PLAINTIFF'S
EXHIBIT

CASE

NO. 2:11-cv-989

12-28-11

EXHIBIT

NO. 7

By the authority vested in me as President by the Constitution and the laws of the United States of America and in furtherance of the purposes of the Clean Water Act of 1972, as amended (33 U.S.C. 1251 *et seq.*), and other laws, and to protect and restore the health, heritage, natural resources, and social and economic value of the Nation's largest estuarine ecosystem and the natural sustainability of its watershed, it is hereby ordered as follows:

PART 1—PREAMBLE

The Chesapeake Bay is a national treasure constituting the largest estuary in the United States and one of the largest and most biologically productive estuaries in the world. The Federal Government has nationally significant assets in the Chesapeake Bay and its watershed in the form of public lands, facilities, military installations, parks, forests, wildlife refuges, monuments, and museums.

Despite significant efforts by Federal, State, and local governments and other interested parties, water pollution in the Chesapeake Bay prevents the attainment of existing State water quality standards and the "fishable and swimmable" goals of the Clean Water Act. At the current level and scope of pollution control within the Chesapeake Bay's watershed, restoration of the Chesapeake Bay is not expected for many years. The pollutants that are largely responsible for pollution of the Chesapeake Bay are nutrients, in the form of nitrogen and phosphorus, and sediment. These pollutants come from many sources, including sewage treatment plants, city streets, development sites, agricultural operations, and deposition from the air onto the waters of the Chesapeake Bay and the lands of the watershed.

Restoration of the health of the Chesapeake Bay will require a renewed commitment to controlling pollution from all sources as well as protecting and restoring habitat and living resources, conserving lands, and improving management of natural resources, all of which contribute to improved water quality and ecosystem health. The Federal Government should lead this effort. Executive departments and agencies (agencies), working in collaboration, can use their expertise and resources to contribute significantly to improving the health of the Chesapeake Bay. Progress in restoring the Chesapeake Bay also will depend on the support of State and local governments, the enterprise of the private sector, and the stewardship provided to the Chesapeake Bay by all the people who make this region their home.

PART 2—SHARED FEDERAL LEADERSHIP, PLANNING, AND ACCOUNTABILITY

Sec. 201. Federal Leadership Committee. In order to begin a new era of shared Federal leadership with respect to the protection and restoration of the Chesapeake Bay, a Federal Leadership Committee (Committee) for the Chesapeake Bay is established to oversee the development and coordination of programs and activities, including data management and reporting, of agencies participating in protection and restoration of the Chesapeake Bay. The Committee shall manage the development of strategies and program plans for the watershed and ecosystem of the Chesapeake Bay and oversee their implementation. The Committee shall be chaired by the Administrator of the Environmental Protection Agency (EPA), or the Administrator's designee, and include senior representatives of the Departments of Agriculture

(USDA), Commerce (DOC), Defense (DOD), Homeland Security (DHS), the Interior (DOI), Transportation (DOT), and such other agencies as determined by the Committee. Representatives serving on the Committee shall be officers of the United States.

Sec. 202. Reports on Key Challenges to Protecting and Restoring the Chesapeake Bay. Within 120 days from the date of this order, the agencies identified in this section as the lead agencies shall prepare and submit draft reports to the Committee making recommendations for accomplishing the following steps to protect and restore the Chesapeake Bay:

(a) define the next generation of tools and actions to restore water quality in the Chesapeake Bay and describe the changes to be made to regulations, programs, and policies to implement these actions;

(b) target resources to better protect the Chesapeake Bay and its tributary waters, including resources under the Food Security Act of 1985 as amended, the Clean Water Act, and other laws;

(c) strengthen storm water management practices at Federal facilities and on Federal lands within the Chesapeake Bay watershed and develop storm water best practices guidance;

(d) assess the impacts of a changing climate on the Chesapeake Bay and develop a strategy for adapting natural resource programs and public infrastructure to the impacts of a changing climate on water quality and living resources of the Chesapeake Bay watershed;

(e) expand public access to waters and open spaces of the Chesapeake Bay and its tributaries from Federal lands and conserve landscapes and ecosystems of the Chesapeake Bay watershed;

(f) strengthen scientific support for decisionmaking to restore the Chesapeake Bay and its watershed, including expanded environmental research and monitoring and observing systems; and

(g) develop focused and coordinated habitat and research activities that protect and restore living resources and water quality of the Chesapeake Bay and its watershed.

The EPA shall be the lead agency for subsection (a) of this section and the development of the storm water best practices guide under subsection (c). The USDA shall be the lead agency for subsection (b). The DOD shall lead on storm water management practices at Federal facilities and on Federal lands under subsection (c). The DOI and the DOC shall share the lead on subsections (d), (f), and (g), and the DOI shall be lead on subsection (e). The lead agencies shall provide final reports to the Committee within 180 days of the date of this order.

Sec. 203. Strategy for Protecting and Restoring the Chesapeake Bay. The Committee shall prepare and publish a strategy for coordinated implementation of existing programs and projects to guide efforts to protect and restore the Chesapeake Bay. The strategy shall, to the extent permitted by law:

(a) define environmental goals for the Chesapeake Bay and describe milestones for making progress toward attainment of these goals;

(b) identify key measureable indicators of environmental condition and changes that are critical to effective Federal leadership;

(c) describe the specific programs and strategies to be implemented, including the programs and strategies described in draft reports developed under section 202 of this order;

(d) identify the mechanisms that will assure that governmental and other activities, including data collection and distribution, are coordinated and effective, relying on existing mechanisms where appropriate; and

(e) describe a process for the implementation of adaptive management principles, including a periodic evaluation of protection and restoration activities.

Appendix A - Executive Order 13508

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The Committee shall review the draft reports submitted by lead agencies under section 202 of this order and, in consultation with relevant State agencies, suggest appropriate revisions to the agency that provided the draft report. It shall then integrate these reports into a coordinated strategy for restoration and protection of the Chesapeake Bay consistent with the requirements of this order. Together with the final reports prepared by the lead agencies, the draft strategy shall be published for public review and comment within 180 days of the date of this order and a final strategy shall be published within 1 year. To the extent practicable and authorized under their existing authorities, agencies may begin implementing core elements of restoration and protection programs and strategies, in consultation with the Committee, as soon as possible and prior to release of a final strategy.

Sec. 204. *Collaboration with State Partners.* In preparing the reports under section 202 and the strategy under section 203, the lead agencies and the Committee shall consult extensively with the States of Virginia, Maryland, Pennsylvania, West Virginia, New York, and Delaware and the District of Columbia. The goal of this consultation is to ensure that Federal actions to protect and restore the Chesapeake Bay are closely coordinated with actions by State and local agencies in the watershed and that the resources, authorities, and expertise of Federal, State, and local agencies are used as efficiently as possible for the benefit of the Chesapeake Bay's water quality and ecosystem and habitat health and viability.

Sec. 205. *Annual Action Plan and Progress Report.* Beginning in 2010, the Committee shall publish an annual Chesapeake Bay Action Plan (Action Plan) describing how Federal funding proposed in the President's Budget will be used to protect and restore the Chesapeake Bay during the upcoming fiscal year. This plan will be accompanied by an Annual Progress Report reviewing indicators of environmental conditions in the Chesapeake Bay, assessing implementation of the Action Plan during the preceding fiscal year, and recommending steps to improve progress in restoring and protecting the Chesapeake Bay. The Committee shall consult with stakeholders (including relevant State agencies) and members of the public in developing the Action Plan and Annual Progress Report.

Sec. 206. *Strengthen Accountability.* The Committee, in collaboration with State agencies, shall ensure that an independent evaluator periodically reports to the Committee on progress toward meeting the goals of this order. The Committee shall ensure that all program evaluation reports, including data on practice or system implementation and maintenance funded through agency programs, as appropriate, are made available to the public by posting on a website maintained by the Chair of the Committee.

PART 3—RESTORE CHESAPEAKE BAY WATER QUALITY

Sec. 301. *Water Pollution Control Strategies.* In preparing the report required by subsection 202(a) of this order, the Administrator of the EPA (Administrator) shall, after consulting with appropriate State agencies, examine how to make full use of its authorities under the Clean Water Act to protect and restore the Chesapeake Bay and its tributary waters and, as appropriate, shall consider revising any guidance and regulations. The Administrator shall identify pollution control strategies and actions authorized by the EPA's existing authorities to restore the Chesapeake Bay that:

- (a) establish a clear path to meeting, as expeditiously as practicable, water quality and environmental restoration goals for the Chesapeake Bay;
- (b) are based on sound science and reflect adaptive management principles;
- (c) are performance oriented and publicly accountable;
- (d) apply innovative and cost-effective pollution control measures;
- (e) can be replicated in efforts to protect other bodies of water, where appropriate; and
- (f) build on the strengths and expertise of Federal, State, and local governments, the private sector, and citizen organizations.

Sec. 302. *Elements of EPA Reports.* The strategies and actions identified by the Administrator of the EPA in preparing the report under subsection 202(a) shall include, to the extent permitted by law:

(a) using Clean Water Act tools, including strengthening existing permit programs and extending coverage where appropriate;

(b) establishing new, minimum standards of performance where appropriate, including:

(i) establishing a schedule for the implementation of key actions in cooperation with States, local governments, and others;

(ii) constructing watershed-based frameworks that assign pollution reduction responsibilities to pollution sources and maximize the reliability and cost-effectiveness of pollution reduction programs; and

(iii) implementing a compliance and enforcement strategy.

PART 4—AGRICULTURAL PRACTICES TO PROTECT THE CHESAPEAKE BAY

Sec. 401. In developing recommendations for focusing resources to protect the Chesapeake Bay in the report required by subsection 202(b) of this order, the Secretary of Agriculture shall, as appropriate, concentrate the USDA's working lands and land retirement programs within priority watersheds in counties in the Chesapeake Bay watershed. These programs should apply priority conservation practices that most efficiently reduce nutrient and sediment loads to the Chesapeake Bay, as identified by USDA and EPA data and scientific analysis. The Secretary of Agriculture shall work with State agriculture and conservation agencies in developing the report.

PART 5—REDUCE WATER POLLUTION FROM FEDERAL LANDS AND FACILITIES

Sec. 501. Agencies with land, facilities, or installation management responsibilities affecting ten or more acres within the watershed of the Chesapeake Bay shall, as expeditiously as practicable and to the extent permitted by law, implement land management practices to protect the Chesapeake Bay and its tributary waters consistent with the report required by section 202 of this order and as described in guidance published by the EPA under section 502.

Sec. 502. The Administrator of the EPA shall, within 1 year of the date of this order and after consulting with the Committee and providing for public review and comment, publish guidance for Federal land management in the Chesapeake Bay watershed describing proven, cost-effective tools and practices that reduce water pollution, including practices that are available for use by Federal agencies.

PART 6—PROTECT CHESAPEAKE BAY AS THE CLIMATE CHANGES

Sec. 601. The Secretaries of Commerce and the Interior shall, to the extent permitted by law, organize and conduct research and scientific assessments to support development of the strategy to adapt to climate change impacts on the Chesapeake Bay watershed as required in section 202 of this order and to evaluate the impacts of climate change on the Chesapeake Bay in future years. Such research should include assessment of:

(a) the impact of sea level rise on the aquatic ecosystem of the Chesapeake Bay, including nutrient and sediment load contributions from stream banks and shorelines;

(b) the impacts of increasing temperature, acidity, and salinity levels of waters in the Chesapeake Bay;

(c) the impacts of changing rainfall levels and changes in rainfall intensity on water quality and aquatic life;

(d) potential impacts of climate change on fish, wildlife, and their habitats in the Chesapeake Bay and its watershed; and

(e) potential impacts of more severe storms on Chesapeake Bay resources.

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PART 7—EXPAND PUBLIC ACCESS TO THE CHESAPEAKE BAY AND CONSERVE LANDSCAPES AND ECOSYSTEMS

Sec. 701. (a) Agencies participating in the Committee shall assist the Secretary of the Interior in development of the report addressing expanded public access to the waters of the Chesapeake Bay and conservation of landscapes and ecosystems required in subsection 202(e) of this order by providing to the Secretary:

(i) a list and description of existing sites on agency lands and facilities where public access to the Chesapeake Bay or its tributary waters is offered;

(ii) a description of options for expanding public access at these agency sites;

(iii) a description of agency sites where new opportunities for public access might be provided;

(iv) a description of safety and national security issues related to expanded public access to Department of Defense installations;

(v) a description of landscapes and ecosystems in the Chesapeake Bay watershed that merit recognition for their historical, cultural, ecological, or scientific values; and

(vi) options for conserving these landscapes and ecosystems.

(b) In developing the report addressing expanded public access on agency lands to the waters of the Chesapeake Bay and options for conserving landscapes and ecosystems in the Chesapeake Bay, as required in subsection 202(e) of this order, the Secretary of the Interior shall coordinate any recommendations with State and local agencies in the watershed and programs such as the Captain John Smith Chesapeake National Historic Trail, the Chesapeake Bay Gateways and Watertrails Network, and the Star-Spangled Banner National Historic Trail.

PART 8—MONITORING AND DECISION SUPPORT FOR ECOSYSTEM MANAGEMENT

Sec. 801. The Secretaries of Commerce and the Interior shall, to the extent permitted by law, organize and conduct their monitoring, research, and scientific assessments to support decisionmaking for the Chesapeake Bay ecosystem and to develop the report addressing strengthening environmental monitoring of the Chesapeake Bay and its watershed required in section 202 of this order. This report will assess existing monitoring programs and gaps in data collection, and shall also include the following topics:

(a) the health of fish and wildlife in the Chesapeake Bay watershed;

(b) factors affecting changes in water quality and habitat conditions; and

(c) using adaptive management to plan, monitor, evaluate, and adjust environmental management actions.

PART 9—LIVING RESOURCES PROTECTION AND RESTORATION

Sec. 901. The Secretaries of Commerce and the Interior shall, to the extent permitted by law, identify and prioritize critical living resources of the Chesapeake Bay and its watershed, conduct collaborative research and habitat protection activities that address expected outcomes for these species, and develop a report addressing these topics as required in section 202 of this order. The Secretaries of Commerce and the Interior shall coordinate agency activities related to living resources in estuarine waters to ensure maximum benefit to the Chesapeake Bay resources.

PART 10—EXCEPTIONS

Sec. 1001. The heads of agencies may authorize exceptions to this order, in the following circumstances:

(a) during time of war or national emergency;

(b) when necessary for reasons of national security;

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(c) during emergencies posing an unacceptable threat to human health or safety or to the marine environment and admitting of no other feasible solution; or

(d) in any case that constitutes a danger to human life or a real threat to vessels, aircraft, platforms, or other man-made structures at sea, such as cases of *force majeure* caused by stress of weather or other act of God.

PART 11—GENERAL PROVISIONS

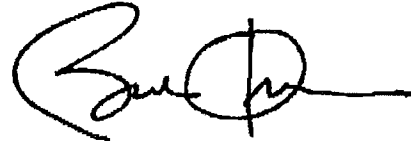
Sec. 1101. (a) Nothing in this order shall be construed to impair or otherwise affect:

(i) authority granted by law to a department, agency, or the head thereof; or

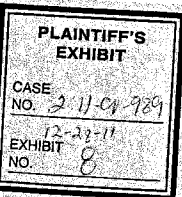
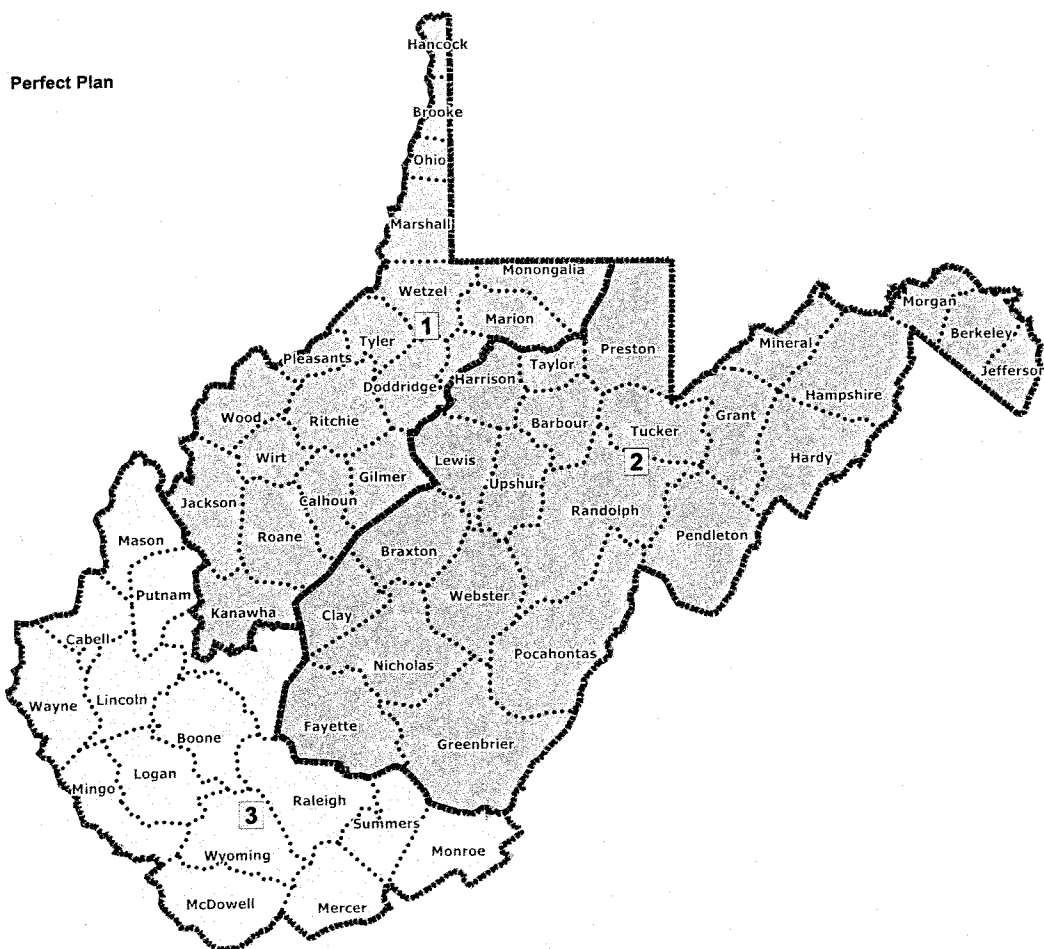
(ii) functions of the Director of the Office of Management and Budget relating to budgetary, administrative, or legislative proposals.

(b) This order shall be implemented consistent with applicable law and subject to the availability of appropriations.

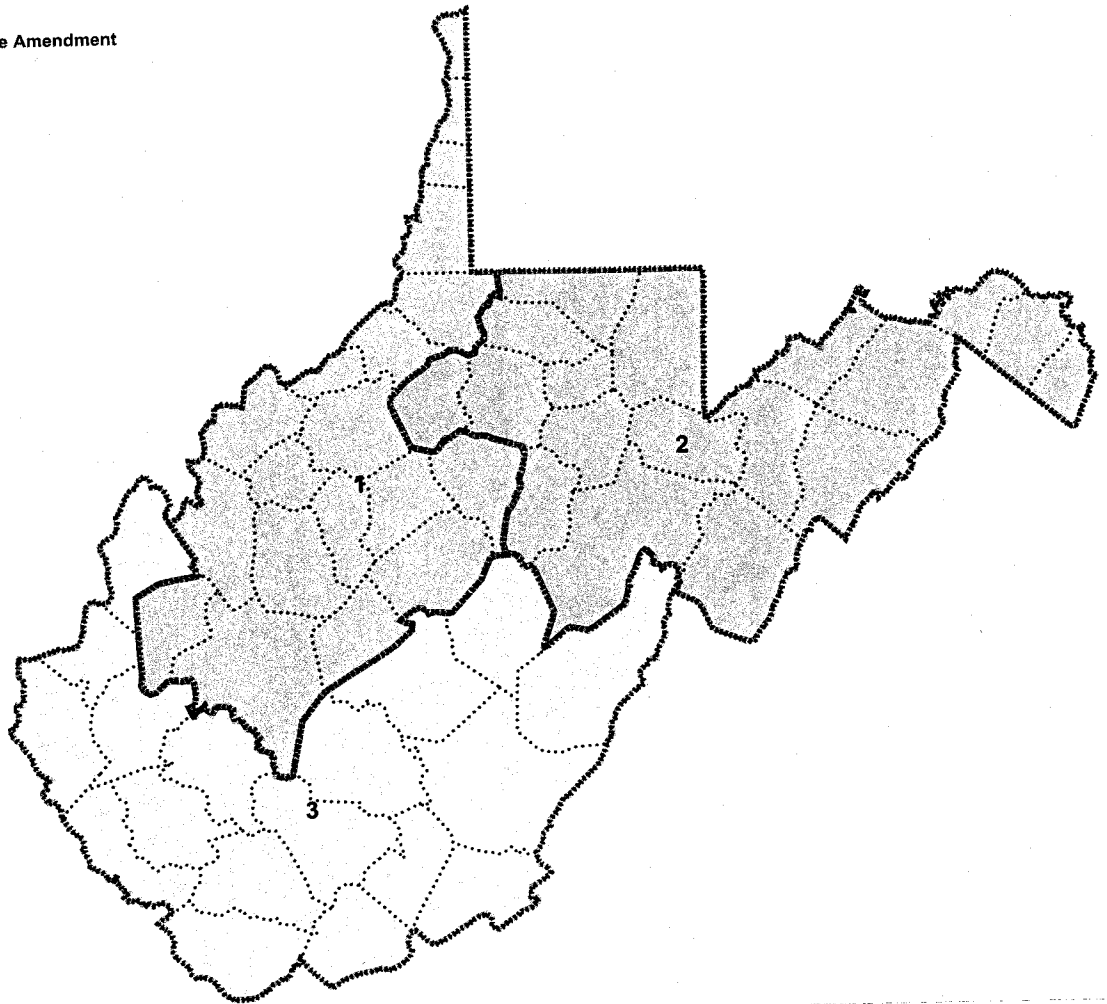
(c) This order is not intended to, and does not, create any right or benefit, substantive or procedural, enforceable at law or in equity, by any party against the United States, its departments, agencies, or entities, its officers, employees, or agents, or any other person.



THE WHITE HOUSE,
May 12, 2009.



Facemire Amendment



**PLAINTIFF'S
EXHIBIT**

CASE
NO. 2:11-cv-989
12-28-11
EXHIBIT
NO. 9

State	Status	Cong Deviation	Litigation	
Alabama	SB484 signed by gov, awaiting preclearance	0% (1 person)	N	www.legislature.state.al.us/reapportionment/reap.html
Arkansas	HB1836 signed by gov	Just under 1% (7200 people)	N	
California	Commission passed plan	0.0% (2 people)	Y	
Colorado	Court adopted plan			
Illinois	SB1178 signed by gov	0.0% (exact)	Y	http://isenateredistricting.com/phocadownload/releases/SB1178-CongressionalComparison.pdf
Indiana	H1602 signed by gov	0.0% (1 person)	N	
Iowa	HF682 signed into law	0.01% (76 people)	N	
Louisiana	Signed by gov, and precleared	0.03% (162 people)	N	
Maine	LD 1590	0.0% (1 person)	Y	Passed by two-thirds
Minnesota	HF1425 vetoed by Gov	0.0% (1 person)	Y	The legislative passed plan did not become law.
Missouri	HB193	0.0% (1 person)	Y	
Nebraska	LB704 signed by Gov	0.0% (1 person)	N	http://nebraskalegislature.gov/FloorDocs/Current/PDF/SI/LB704.p df
Nevada	Adopted by court special master	0.0% (1 person)	N	
North Carolina	Session Law 2011-403	0.0% (1 person)	Y	Precleared by DoJ
Oklahoma	HB1527 signed by Gov	0% (1 person)	N	http://www.oklegislature.gov/BillInfo.aspx?Bill=hb1527
Oregon	Signed by Gov and Complete (SB990)	0.0% (1 person)	N	

**PLAINTIFF'S
EXHIBIT**

CASE
NO. 2:11-cv-989
EXHIBIT
NO. 10

Texas	Pending preclearance	0.0% (1 person)	Y	This was the deviation of the legislative passed plan that is pending preclearance in DC district court. http://gis1.tlc.state.tx.us/download/Congress/PLANC185r100.pdf
Utah	SB3002 signed by gov	0.0% (1 person)	N	
West Virginia		0.79% (4871 people)		
Wisconsin	SB 149 signed by gov	0.0% (1 person)	Y	



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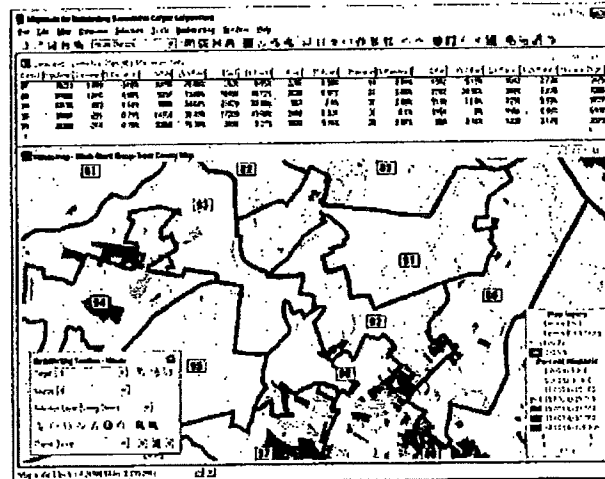
UK Boundary Revisions

We would like to welcome all of our new clients for this decade of redistricting, including the states of Idaho, Iowa, Mississippi, Montana, North Carolina, and North Dakota, and many counties and cities around the country including Fairfax (VA), Orange (CA), and San Diego. [Click here](#) for a more complete client list.

Mapitude for Redistricting is the professional tool for political redistricting. It is used by a supermajority of the state legislatures, political parties, and public interest groups. Designed with the help of redistricting professionals, state legislatures, and political parties, Mapitude for Redistricting has the features redistricters want and is easy to learn and use.

Caliper Corporation has continued to improve Mapitude for Redistricting. The newest version represents a major leap forward with advanced features, the latest Census geography and data, one-button conversion of existing plans to the latest TIGER geography, new and enhanced reports, a state-of-the-art interface, open access to industry-standard file formats, interoperability with Google Maps and Google Earth, an updated manual, video tutorials, context-sensitive Help, web solutions, and more. Whether you are a current user or new to Mapitude for Redistricting, you will welcome this new version of the software as you prepare for the upcoming round of redistricting.

Mapitude for Redistricting includes all of the features in Caliper's Mapitude Geographic Information System (GIS) software. Mapitude is full-featured mapping and GIS software that has established new standards for performance and value for over a decade. It provides a complete set of mapping and spatial analysis functions, sophisticated geocoding, tools for complex data manipulation, and a large collection of nationwide geographic data.



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**PLAINTIFF'S
EXHIBIT**

CASE
NO. 2:11-cv-00989
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NO. 11



Maptitude For Redistricting



Maptitude for Redistricting Features

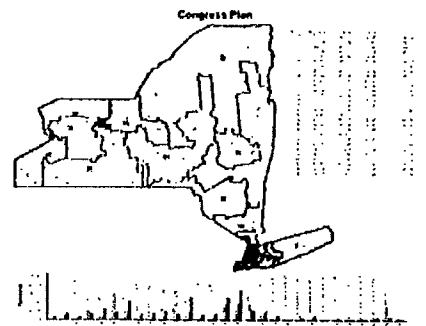
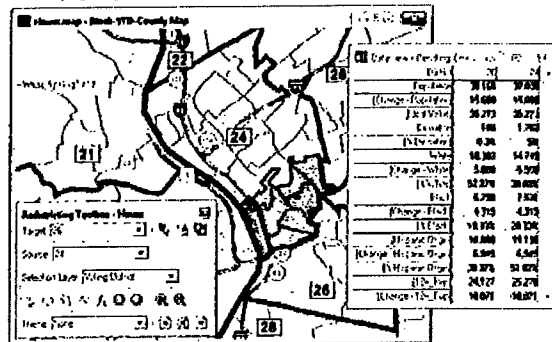
Maptitude for Redistricting includes everything you need to build and analyze redistricting plans. The custom menus and redistricting toolbox let you:

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More Information

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UK Boundary Revisions

- ✧ **Organize plans, create any number of plan types, and save them as Plan Templates**
To create a plan, simply choose a template or an existing plan and enter a new name. Organize plans in libraries by plan type, user, security access, etc.
- ✧ **Create a new plan from a map, template, or existing plan**
You only have to enter the settings once. From then on, you can create a new plan by picking the appropriate template or existing plan
- ✧ **Import and merge plans created by Maptitude for Redistricting or other redistricting software**
You can also automatically convert a plan based on a previous version of TIGER geography to a plan using the latest version of TIGER geography without the need to first export to an equivalency file.
- ✧ **Add political data and election results**
Use the Disaggregation/Aggregation Wizard to quickly disaggregate election data (usually reported at the precinct or VTD level of geography) down to Census Block geography and aggregate it up to higher levels of geography. You can join in tables of data or overlay area layers (e.g., historic precincts) that contain the data.
- ✧ **Designate the control field, number of districts, ideal value, and summary fields**
You can also set other plan properties including plan type, creation date, password protection, and backup strategy. You can also include any number of data fields.
- ✧ **Add areas to a target district using feature selection tools**
Select by pointing, by circle, by lasso, by pointing, by line, or by attribute values. Select features in any geographic layer, such as Census block, voting district, county, or town. Limit the selection to unassigned areas, one district, or the entire jurisdiction. As you add areas to a district, Maptitude for Redistricting redraws the district boundaries and updates the control and summary fields to reflect the changes to the current plan.
- ✧ **Easily manage districts**
Rename districts, handle multi-member districts, assign both an ID and a long name to districts, lock districts, and mark them completed.
- ✧ **Capture the current status of a plan as a snapshot**
Each plan can have one or more snapshots organized by date and time under the same plan name. Return to any snapshot, and use it as a departure point in the evolution of the plan or as the starting point for a new plan.
- ✧ **Display attributes for any layer using labels, themes, or dataviews**
Create color, pattern, dot-density, scaled-symbol, or chart themes. Display summary information in a table that contains the district identifier, control field totals, deviation from the ideal value, and the totals and percentages for summary fields.
- ✧ **Identify communities of interest**
Keep geographically cohesive areas, such as cities, neighborhoods, or racial or ethnic enclaves that tend to have similar interests and vote as a bloc, intact within the same district. Alternatively, for communities that you do split into multiple districts, run the Communities of Interest reports to calculate the total and percent population of the community in each district.
- ✧ **Easily find unassigned areas**
Automatically assign unassigned areas that are completely surrounded by the same district.
- ✧ **List all noncontiguous portions of districts**
Zoom to each noncontiguous portion and easily assign them to the correct district
- ✧ **Compute measures of compactness to assess or defend the districts in a plan**
Maptitude for Redistricting computes all of the recognized measures of geographic compactness including the Reock, Schwartzberg, Perimeter, Polsby-Popper, Length-Width, Population Polygon, Population Circle, and Ehrenburg metrics.
- ✧ **Export a plan to standard equivalency file formats**
Transfer a plan to the Department of Justice or to other redistricting software with no possibility of a mis-assignment.
- ✧ **Create a map book for some or all of the districts**
Display either a single district or the district and all adjoining districts, labeled with the district name, plan name, plan type, administrator, date created, and date last modified based on your settings.
- ✧ **Integrate your plans with Google Maps and Google Earth**
Save your plans in the Google format (.KML or .KMZ) and add them to Google Maps or Google Earth. Use the built-in Google Earth toolbox to display Google Earth in Maptitude as part of your plan or display your plan in Google Earth.
- ✧ **Generate and print over 35 reports and group reports together in report sets**
Create reports including population summary, error check, political subdivision splits, incumbents, plan statistics, plan components, plan comparison, communities of interest, measures of compactness, and more. Create custom reports and add them to the report menu.
- ✧ **Print a completed plan**
Use page layouts to combine maps, data tables, and charts to illustrate your plan.



Works with Most Other GIS and Mapping Software

Maptitude supports over 50 file types and more than 100 GIS and CAD file formats allowing you to easily migrate your existing geographic data. You can map Esri Shapefiles, Geodatabases, MapInfo TAB files, and Oracle Spatial tables directly, or use the built-in translators to import geographic data from a variety of other software packages and public sources. This extensive library of importers and exporters is one

of the largest in the industry and comes at no additional charge. You can export plans (geography and data) to these other formats if your GIS department uses one of these other products.

You can use raster images such as satellite or aerial photographs directly in your maps. MapItude includes toolboxes for quickly accessing online images from TerraServer-USA and Google Earth. You can use the images as a means of reference or in conjunction with the redistricting tools to draw your districts.

Easy to Learn and Use

MapItude for Redistricting includes online help and detailed manuals packed with step-by-step instructions and tutorials. The Plan Manager leads you through the process of creating your first plan and speeds the creation of all additional plans. Other wizards help you create maps, display data using meaningful themes, and geocode information based on street address. In addition, Caliper offers training at your site or at our headquarters in Newton, Massachusetts.

Complete Organizational Solution

With the MapItude for Redistricting Plan Manager you can easily manage an unlimited number of plans stored on a computer network. You can quickly find a plan by type, creator, date, key word, etc. The Plan Manager lets you distribute plans for viewing and perform plan management functions across your organization. Data and plans can be stored on individual machines or on one central server with access controlled by both MapItude for Redistricting and the network administration software.

System Requirements

MapItude for Redistricting runs on Microsoft Windows XP, Vista, or Windows 7. Minimum hardware includes a DVD-ROM drive and 1GB of memory. Disk space requirements vary by jurisdiction (200MB-1GB).

Other Redistricting Services

Caliper provides database development, hands-on training, software customization, web design, telephone support, on-site support, priority support, and other related consulting services on a time and materials basis.

Caliper is the developer of the U.S. Census Bureau's MAF/TIGER Partnership Software that has been used by Census Bureau partners to update the geography for the 2010 Census.

Ordering

Please contact Howard Simkowitz, Director, Government Services, at 202-652-1024 or [by email](#) for pricing information or call Caliper at 617-527-4700 to place your order.

[<<Previous](#) [Next>>](#)

"It's light years ahead. The software can do so much more, so much more quickly."

Earl Ara
Director, Maryland Dept. of
Legislative Services

"(Previously) we did redistricting with software that was bulky, difficult to use, and extraordinarily expensive. Today, MapItude software provides us far more flexibility, ease of use, and capability at a fraction of the cost."

Russell T. Larson
Delaware Controller General

"The difference between MapItude and similar products is that it is shockingly easy to use."

Trudy Walsh
Government Computer News

"MapItude for Redistricting has immense capability - it's done everything we've asked and more. Plus, our web site, which uses MapItude for the Web, will provide an easy way for the public to access the redistricting process. The staff at Caliper has been responsive and helpful when we've had questions."

Becky Lennahan
Chair, Colorado Redistricting
Task Force

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[See a partial list of our clients](#)



Maptitude For Redistricting



Maptitude for Redistricting Clients

		Maptitude for Redistricting is being used by a majority of the <u>state legislatures</u> , both political parties, <u>county and regional governments</u> , <u>city and local governments</u> , <u>educational institutions</u> , and many <u>public interest groups and corporations</u> . Partial list:	<u>What our clients have to say</u>
ArcGIS Extension			
Maptitude for Redistricting Software	National Government & Party Organizations		
Online Edition	Democratic National Committee		National Republican Congressional Committee
Custom Reports	Department of Justice, Civil Rights Division		Republican National Committee
Other Products & Services	National Committee for an Effective Congress		
Our Clients	State Government & Party Organizations		
Partial List of Clients	Alabama Democratic Party		
Testimonials	Alabama House Majority		
	Alaska Division of Elections		
	Arizona Democratic Party		
	Arizona House of Representatives		
	Arizona Independent Electoral Commission		
Video Tutorials	Arizona Redistricting Commission		
Training	Arizona Republican Party		
Tech Corner	Arizona Senate Democrats		
	California Assembly Rules Committee		
	California Governor's Office		
	California Legislative Data Center		
	California Senate Office of Research		
	California Senate Minority Reapportionment		
	California State Assembly		
	Colorado Department of State		
	Colorado Governor's Office		
	Colorado House of Representatives		
	Colorado Reapportionment Commission		
	Colorado Republican Party		
	Delaware Commissioner of Elections		
	Delaware Legislature		
	District of Columbia Republican Party		
	Georgia Democratic Party		
	Georgia General Assembly		
	Georgia Office of Planning and Budget		
	Georgia Redistricting Services		
	Georgia Republican Party		
	Idaho Legislative Services		
	Illinois House Republican Caucus		
	Illinois Senate Republican Caucus		
	Kansas Legislative Research Department		
	Kentucky Legislative Research Commission		
	Kentucky Republican Party		
	Louisiana Democratic Party		
	Louisiana House of Representatives		
	Louisiana Senate		
	Maine Democratic Party		
	Maine Judicial Center		
	Maine Legislature		
	Maryland Department of Legislative Services		
	Maryland General Assembly		
	Maryland Governor's Census 2000		
	Maryland Office of Planning		
	Maryland Republican Party		
	Massachusetts House of Representatives		
	Massachusetts Senate		
	Massachusetts Senate Clerk's Office		
	Massachusetts Speakers Office		
	Michigan Democratic Party		
	Minnesota DFL		
	Minnesota Governor's Office		
	Minnesota Land Management Information Center		
	Minnesota Legislative Coordinating Commission		
	Minnesota Office of Planning		
	Minnesota Republican Party		
	Minnesota Secretary of State		
	County Government & Regional Planning Organizations		
	Acadiana LA Regional Development District		
	Alabama Association of County Commissioners		
	Alameda County CA, Community Development		
	Alamosa County CO, County Clerk		
	Anne Arundel County MD		
	Anoka County MN		
	Assateague Island MD National Seashore		
	Barton County KS		
	Becker County MN		
	Benton County MN		
	Blount County AL, County Commission		
	Boone County WV Commission		
	Louisiana Acadiana Regional Development District		
	Louisiana Central Regional Planning District		
	Louisiana Kisatchie-Delta Planning and Development		
	Louisiana North Delta Regional Development		
	Louisiana Rapides Area Planning Commission		
	Louisiana South Central Planning and Development		
	Lyon County MN		
	Madison County AL Board of Education		
	Madison County AL Commission		
	Marion County WV		
	Marshall County WV, County Clerk		
	McCracken County KY		

Brooke County WV, County Commission
 Butte County CA
 Calvert County MD
 Capitol Region LA Planning Commission
 Cerro Gordo County IA
 Chambers County AL Commission
 Chambers County AL, Board of Education
 Chaffee County CO
 Champaign County IL, County Clerk
 Chisago County MN
 Clark County NB Manager's Office
 Clay County WV, County Commission
 Cobb County GA Elections
 Comal County TX
 Contra Costa CA, Water District
 Coweta County GA
 Cumberland County ME
 Elbert County CO
 Forsyth County GA
 Glenn County CA, Elections Department
 Grand County CO
 Hardee County FL
 Hardin County KY, County Clerk
 Hardy County WV Clerk
 Harris County TX, Tax Office
 Harris County TX, Republican Party
 Hennepin County MN
 Hennepin County MN Elections
 Hood County TX
 Inyo County CA, Planning Department
 Jackson County MN
 Kanawha County WV, Clerk/Elections
 Kent County DE
 Kent County MI
 Kent County MN
 Jackson County MO, Election Board
 Jefferson County CO, County Clerk and Recorder
 Jefferson County WV Clerk
 Johnson County KS, Election Office
 Kitchichie-Delta LA Regional Planning and Development
 Lewis County WV Clerk
 Liberty County GA Board of Commissioners
 Lincoln County MT
 Logan County CO Clerk and Recorder
 Los Angeles CA Superior Court
 City Government

Educational Institutions

Alabama State University Center for Leadership and Public Policy
 Benedict College
 Claremont McKenna College Rose Institute
 Cronkite School of Journalism
 CUNY Graduate Center
 CUNY, Medgar Evers College
 George Mason University
 Georgia Institute of Technology
 Georgia State University
 Jefferson State Community College
 MARIS MS
 Mississippi State University/Stennis Institute
 Norfolk State University
 Queens College

Interest Groups and Corporations

Aboussie & Associates
 Advance Policy Institute
 American Civil Liberties Union
 American Public Dialogue
 Analytica Research Corp.
 Applied Research Coordinates
 Arizona State AFL-CIO
 Asian American Legal Defense Fund
 Asian Law Alliance

Miami-Dade County FL, Board of County Commissions
 Mobile County AL, Engineer's Office
 Monongalia County WV, Clerk's Office
 Nassau County NY
 Navajo Nation AZ
 Nevada County CA
 New Castle County DE
 North Delta LA RFDD
 Nowata County OK, Clerk
 Pasco County FL, Supervisor of Elections
 Pierce County WA, Elections
 Pipestone County WV
 Pocahontas County WV Commission
 Polk County FL, Supervisor of Elections
 Putnam County FL, Supervisor of Elections
 Putnam County WV, County Clerk
 Ramsey County MN
 Roane County WV 911
 Rapides Area Planning Commission
 Saint Louis County MN
 Saint Lucie County FL, Community Development
 Saint Lucie County FL, Supervisor of Elections
 San Benito County CA
 San Diego Community College District
 San Diego County Data Processing
 Sanford/Lee County NC, County Commission
 Santa Barbara County CA
 Santa Cruz County CA, ISD Department
 South Central LA Planning
 Stillwater County MT GIS
 Summit County NJ Board of Elections
 Summit County OH, Republican Party
 Sumter County FL, Supervisor of Elections
 Tate County MS
 Three Rivers MN Park District
 Tippecanoe County IN, Republican Party
 Trinity County CA
 Trinity County TX
 Valley Transportation Authority (CA)
 Vigo County IN
 Walton County FL, Board of Commissioners
 Westchester County NY
 Westchester County NY Republicans
 Wicomico County MD
 Wood County WV

New York NY City Council
 New York NY Redistricting Commission
 Pasadena CA
 Pensacola FL, Planning and Neighborhood Development
 Phoenix AZ
 Pocomoke MD
 Pueblo y Salud CA
 Richfield MN
 Robbinsdale MN
 Saint Louis Park MN
 San Francisco CA, Department of Elections
 San Leandro CA
 Shorewood MN
 Temple TX
 Villages FL
 Westport CT

Paul Quinn College Urban Institute
 Princeton University Woodrow Wilson School
 Rice University
 San Diego Community College
 Southern Illinois University
 University of Alabama, Dept. of Geography
 University of California, Berkeley, Statewide Database
 University of California, Los Angeles, Department of Urban Planning
 University of Florida
 University of Georgia Redistricting Services
 University of New Orleans
 University of Pennsylvania Law School
 University of Texas, Pan American

Jewish Community Relations Council
 Joe Shumate and Associates
 John Stennis Institute at Mississippi State University
 Jones, Cork, and Miller LLP
 KVUE-TV
 Lapkoff & Gobalet Demographic Research
 Law Offices of Darryl Piggee
 Law Offices of James C. Belt
 Law Offices of Rolando Rios

Asian Pacific American Legal Center
 Assateague Island National Seashore
 Barney L. Knight and Associates
 Baselica & Associates
 Beaton Blue, LLC
 Benedict College
 BonData
 Boyer & Associates
 Brock, Clay, Calhoun, Wilson, and Rogers
 Capitol Campaign Strategies
 CAUSE
 CBC Policy and Leadership Institute
 Cedric Floyd
 Centre d'Entreprises d'Idelux (Luxembourg)
 Citizens for Fair Redistricting
 Colorado Hispanic Bar Association
 Community Cartography
 Conservative Opportunities
 Coordinating and Development Corporation
 Databascs
 Datatrends
 DCI Group
 DeBello Donellan Weingarth Tartaglia
 Dellums, Barauer, Halterman, and Assoc.
 Delta Consulting Association
 Democratic Project
 DFS Associates
 Electoral Geodemographics
 EPIC/MRA
 ERF and Associates
 Fields Communications
 Food Research & Action Center
 Friends of Dennis Cardoza
 Frontier International Electoral Consulting
 Gathings, Kennedy and Associates
 Geopolitical Solutions
 Gillard Blanning & Associates
 Gilmore and Monahan
 Girl Scouts of San Jacinto Council
 Gunn and Morrison
 Harris, Shelton
 Heffley & Associates
 Hispanic Leadership Institute
 Holland and Rigby
 Hong Kong Geomatics Consultants
 Infinkly Group
 Integrated Demographic Profiles
 James Blacksher

Law Offices of Samuel L. Walters
 Lawyers' Committee for Civil Rights Under Law
 Legislative Demographic Services
 Levine McEvoy
 Louisiana Coordinating and Development Corporation
 Matrix
 MALDEF
 Map Applications
 McNally Temple Associates
 Metro Consulting
 Metropolitan Area Research
 Metro-Rent, Inc.
 Mexican-American Legal Defense Fund (MALDEF)
 NAACP Legal Defense Fund
 National Demographics
 Navajo Nation
 Nielson Media Research
 Nielson, Merksamer
 Oxford Systematics
 Pactech Data and Research
 Panacea Consulting
 PBS&J
 PDQ GeoDemographics
 Phillips McFall
 Polidata
 Precision Cartographics
 Reapportionment Group 2000
 Redistricting LLC
 Research Advisory Services
 Romero Molina
 Sacks Tierney
 Shephard and Staats
 Smith and Mahoney, PC
 Smith, Ellis, & Stuckey
 South Carolina Fair Share
 Southern Policy Law Center
 Southern Regional Council
 Teaching That Works
 Texans Against Gerrymandering
 Texans for Fair Redistricting
 Texas Trial Lawyers Association
 Tharrington Smith, LLP
 USHUI
 Voter Solutions
 W. Haywood Burns Environmental E.C.
 Whitman Soule
 William C. Velasquez Institute
 Xerox Corporation

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PLAINTIFF'S EXHIBIT <i>Intervenor</i>
CASE NO. <u>2:11-CV-989</u>
<u>12-28-11</u>
EXHIBIT NO. <u>1</u>

**IN THE UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF WEST VIRGINIA
AT CHARLESTON**

**JEFFERSON COUNTY COMMISSION;
PATRICIA NOLAND, *as an individual
and behalf of all others similarly situated*;
and DALE MANUEL, *as an individual and
behalf of all others similarly situated*,**

Plaintiffs, and

THORNTON COOPER,

Intervening Plaintiff,

v.

**Civil Action No. 2:11-CV-989
(KING, BAILEY, BERGER)**

**NATALIE E. TENNANT, *in her capacity as
the Secretary of State*; EARL RAY TOMBLIN,
*in his capacity as the Chief Executive Officer
of the State of West Virginia*; JEFFREY
KESSLER, *in his capacity as the Acting
President of the Senate of the West Virginia
Legislature*; and RICHARD THOMPSON, *in
his capacity as the Speaker of the House of
Delegates of the West Virginia Legislature*,**

Defendants.

REDISTRICTING EXHIBIT PREPARED BY THORNTON COOPER.

This exhibit demonstrates the congressional redistricting plans that were in effect in West Virginia in the 1950's, the 1960's, and the 1970's.

Pages 3, 4, and 5 of this exhibit are, respectively, copies of page 283 of the 1956 **West Virginia Blue Book**, page 473 of the 1963 **West Virginia Blue Book**, and page 449 of the 1974 **West Virginia Blue Book**.

*WEST VIRGINIA DELEGATION IN CONGRESS

UNITED STATES SENATORS

William R. Laird, III, (D); term expires 1957 Fayetteville
 Matthew M. Neely, (D); term expires 1961 Fairmont

MEMBERS HOUSE OF REPRESENTATIVES

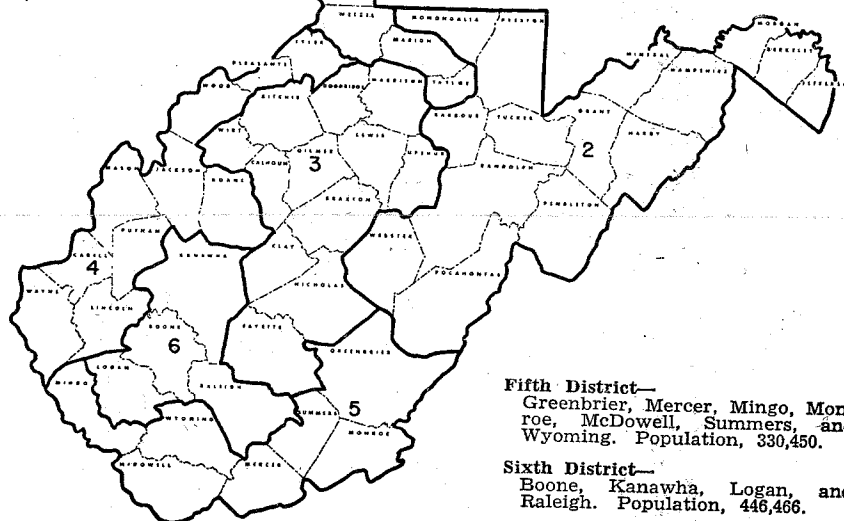
First District: Robert H. Mollohan, (D) Fairmont
Second District: Harley O. Staggers, (D) Keyser
Third District: Cleveland M. Bailey, (D) Clarksburg
Fourth District: M. G. Burnside, (D) Huntington
Fifth District: Elizabeth Kee, (D) Bluefield
Sixth District: Robert C. Byrd, (D) Sophia

MAP, WEST VIRGINIA CONGRESSIONAL DISTRICTS

First District—
 Brooke, Hancock, Marion,
 Marshall, Ohio, Taylor, and
 Wetzel. Population, 279,954.
Second District—
 Barbour, Berkeley, Grant,
 Hampshire, Hardy, Jefferson,
 Mineral, Monongalia, Mor-
 gan, Pendleton, Pocahontas,
 Preston, Randolph, Tucker,
 and Webster. Population,
 302,297.

Third District—
 Braxton, Calhoun, Clay, Doddridge, Fayette,
 Gilmer, Harrison, Lewis, Nicholas, Ritchie,
 Upshur, and Wirt. Population, 315,479.

Fourth District—
 Cabell, Jackson, Lincoln, Mason, Pleasants,
 Putnam, Roane, Tyler, Wayne, and Wood.
 Population, 330,906.



Fifth District—
 Greenbrier, Mercer, Mingo, Mon-
 roe, McDowell, Summers, and
 Wyoming. Population, 330,450.

Sixth District—
 Boone, Kanawha, Logan, and
 Raleigh. Population, 446,466.

*Terms of all Representatives expire in January, 1957.

ES

Term of Service	Expiration of Term	Salary
4	Jan. 1959	\$ 12,000
2	Jan. 1957	15,000
2	Jan. 1957	10,000
4	Jan. 1959	25,000
2	Jan. 1957	10,000
4	Jan. 1959	15,000
4	Jan. 1957	12,000
4	Jan. 1957	15,000
4	Jan. 1959	12,000
4	Jan. 1959	7,500
4	Jan. 1957	25,000
4	Jan. 1957	15,000
2	Jan. 1957	12,000
2	Jan. 1957	10,000
4	Dec. 1959	15,000
4	May 1960	18,000
2	Jan. 1957	10,000
4	Jan. 1959	4,500
2	Jan. 1957	20,000
2	Jan. 1957	22,500
2	Jan. 1957	15,000
4	Jan. 1960	15,000
4	Jan. 1957	10,000
4	Jan. 1957	10,000
2	Jan. 1957	11,000
4	Jan. 1959	9,100
2	Jan. 1957	12,000
4	Jan. 1958	30,000
2	Jan. 1957	15,000
4	Jan. 1959	25,000
4	Jan. 1957	15,000
2	Jan. 1957	9,000
2	Jan. 1957	20,000
4	Jan. 1959	15,000
4	Dec. 1956	15,000
4	Jan. 1959	25,000
2	Jan. 1957	15,000
4	Jan. 1959	12,000
2	Jan. 1957	9,500
2	Jan. 1957	12,000
2	Jan. 1957	12,000
4	Jan. 1957	10,000
2	Jan. 1957	11,000
4	Jan. 1958	17,500
4	Jan. 1957	15,000
4	Jan. 1957	12,500
2	Jan. 1957	14,000
4	Jan. 1959	10,000

Term of Service	Expiration of Term	Salary
4	Apr. 1957	15,000
4	Mar. 1957	13,125
4	Feb. 1957	16,000
4	Jan. 1957	10,600
**		15,000

MAP, WEST VIRGINIA CONGRESSIONAL DISTRICTS

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WEST VIRGINIA DELEGATION IN CONGRESS

UNITED STATES SENATORS

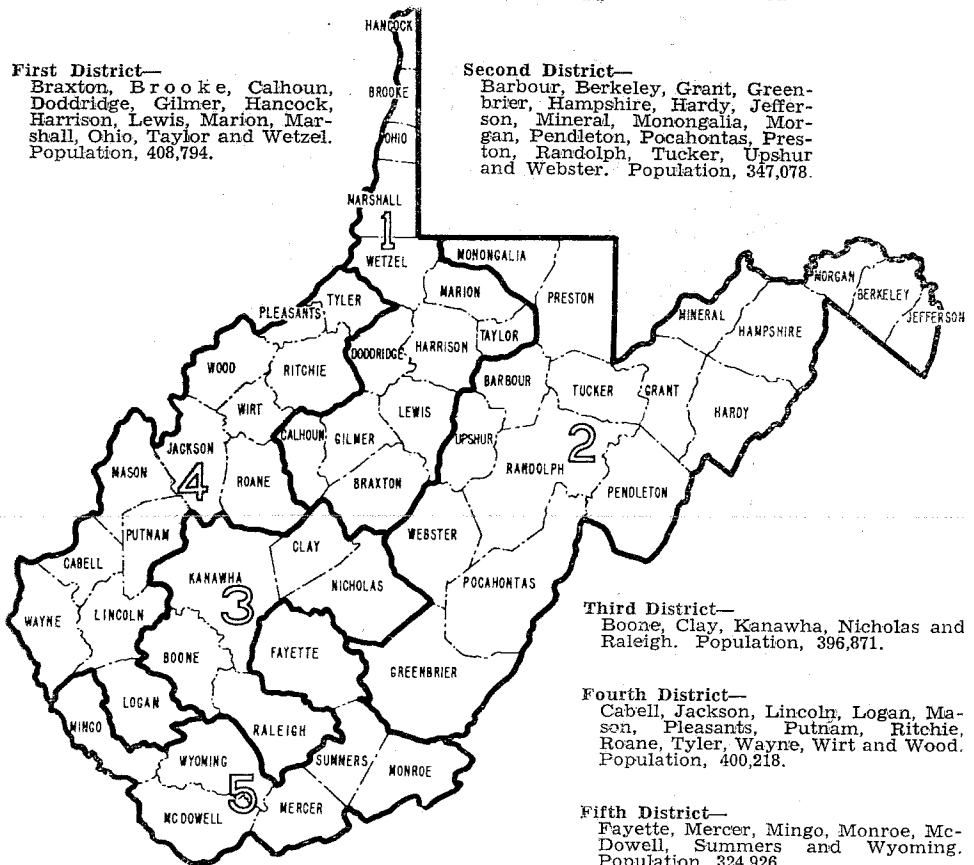
Jennings Randolph, (D); term expires 1967 Elkins
 Robert C. Byrd, (D); term expires 1965 Sophia

* MEMBERS HOUSE OF REPRESENTATIVES

First District: Arch A. Moore, Jr., (R) Moundsville
 Second District: Harley O. Staggers, (D) Keyser
 Third District: John M. Slack, Jr., (D) Charleston
 Fourth District: Ken Hechler, (D) Huntington
 Fifth District: Elizabeth Kee, (D) Bluefield

MAP, WEST VIRGINIA CONGRESSIONAL DISTRICTS

Effective January 1, 1963, under apportionment 1961



* Terms of all Representatives expire in January, 1965.

ES

Term of Service	Expiration of Term	Salary
4	Jan. 1967	\$25,000
4	Jan. 1967	25,000
2	Jan. 1965	22,500
2	Jan. 1965	10,000
4	Jan. 1967	44,100
4	Dec. 1967	20,000
4	Jan. 1967	15,000
4	Jan. 1965	17,500
4	Jan. 1965	22,500
4	Jan. 1967	12,000
4	Dec. 1968	27,500
4	Jan. 1967	15,000
4	Jan. 1965	30,000
4	Jan. 1965	15,000
2	Jan. 1965	17,500
2	Jan. 1965	20,000
4	Dec. 1963	18,000
4	May 1964	20,000
4	Jan. 1967	15,000
4	Jan. 1967	15,000
2	Jan. 1965	20,000
2	Dec. 1964	27,500
4	Jan. 1967	19,000
4	Jan. 1964	25,000
4	Jan. 1965	25,000
4	Jan. 1965	14,000
2	Jan. 1965	14,000
4	Jan. 1967	20,000
2	Jan. 1965	16,587
4	Jan. 1966	35,000
2	Dec. 1964	17,500
4	Jan. 1966	50,000
4	Jan. 1965	25,000
2	Jan. 1965	10,000
4	Jan. 1967	25,000
4	Jan. 1967	25,000
4	Jan. 1967	22,000
2	Jan. 1965	15,500
4	Jan. 1967	18,500
2	Jan. 1964	25,000
4	Jan. 1965	13,200
2	Jan. 1965	13,750
4	Jan. 1966	25,000
4	Jan. 1965	22,500
4	Jan. 1965	17,500
2	Jan. 1967	20,000
4	Jan. 1967	20,000

E BOOK

WEST VIRGINIA DELEGATION IN CONGRESS

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STATES

	Party	Term Years	Term Expires	Annual Salary
.....	D.	4	Jan. 1975	\$25,000
.....	D.	4	Jan. 1975	40,000
Williams	R.	4	Jan. 1975	35,000
.....	D.	2	Jan. 1975	10,000
.....	R.	4	Jan. 1975	49,100
t.....	R.	4	Jan. 1975	40,000
.....	R.	4	Jan. 1975	35,000
itt.....	D.	4	Jan. 1977	35,000
.....	D.	4	Jan. 1975	40,000
.....	D.	4	Jan. 1975	42,500
.....	D.	4	Dec. 1974	42,000
.....	D.	4	Jan. 1975	30,000
.....	D.	4	Jan. 1977	45,000
.....	R.	4	Jan. 1977	25,000
.....	R.	2	Jan. 1975	30,000
.....	D.	2	Jan. 1975	20,000
.....	D.	4	Dec. 1975	30,000
.....	D.	4	May 1976	28,374
.....	D.	4	Jan. 1975	20,000
.....	D.	4	Jan. 1975	25,000
nt.....	R.	4	Jan. 1975	40,000
en.....	R.	4	Jan. 1975	45,000
son.....	D.	4	Jan. 1975	35,000
.....	D.	4	Jan. 1976	35,000
nd.....	R.	4	Jan. 1977	37,500
.....	D.	4	Jan. 1977	25,000
.....	D.	4	Jan. 1975	25,000
.....	D.	4	Jan. 1975	30,000
Jr.....	R.	2	Jan. 1975	31,500
.....	D.	4	Jan. 1978	50,000
.....	D.	4	Jan. 1975	26,000
.....	R.	4	Jan. 1975	85,000
ser, Jr.	R.	4	Jan. 1977	42,500
.....	D.	4	Jan. 1977	18,000
.....	D.	4	Jan. 1975	40,000
.....	D.	4	Jan. 1975	35,000
.....	R.	4	Jan. 1975	29,500
.....	D.	4	Jan. 1975	45,000
.....	D.	2	Jan. 1975	30,000
.....	D.	4	Jan. 1975	35,000
ip.....	D.	2	Jan. 1975	25,000
.....	R.	4	Jan. 1975	30,000
.....	D.	2	Jan. 1975	68,000
.....	D.	4	Jan. 1977	30,000
.....	D.	2	Jan. 1975	30,000
.....	R.	4	Jan. 1978	35,000
.....	R.	4	Jan. 1977	32,500
Jr.....	R.	4	Jan. 1977	35,000
.....	D.	4	Jan. 1975	25,000
haway.....	R.	4	Jan. 1975	25,000

WEST VIRGINIA DELEGATION IN CONGRESS

UNITED STATES SENATORS

Jennings Randolph, (D); term expires 1979..... Elkins
 Robert C. Byrd, (D); term expires 1977..... Sophia

* MEMBERS HOUSE OF REPRESENTATIVES

First District: Robert H. Molloyhan, (D)..... Fairmont
 Second District: Harley O. Staggers, (D)..... Keyser
 Third District: John M. Slack, Jr., (D)..... Charleston
 Fourth District: Ken Hechler, (D)..... Huntington

MAP, WEST VIRGINIA CONGRESSIONAL DISTRICTS
Under apportionment 1971

DISTRICT 1

Hancock 39,749
 Brooke 29,685
 Ohio 64,197
 Marshall 37,598
 Wetzel 20,314
 Marion 61,356
 Harrison 73,028
 Doddridge 6,389
 Tyler 9,929
 Pleasants 7,274
 Wood 86,818
 Total 436,337

DISTRICT 2

Jefferson 21,280
 Berkeley 36,356
 Morgan 8,547
 Hampshire 11,710
 Mineral 23,109
 Grant 8,607
 Hardy 8,855
 Tucker 7,447
 Preston 25,455
 Monongalia 63,714
 Taylor 13,878
 Barbour 14,030
 Pendleton 7,031
 Randolph 24,596
 Upshur 19,092
 Lewis 17,847
 Pocahontas 8,870
 Webster 9,809
 Greenbrier 32,090
 Monroe 11,272
 Summers 13,213
 Fayette 49,332
 Total 436,140

DISTRICT 3

Ritchie 10,145
 Wirt 4,154
 Gilmer 7,782
 Calhoun 7,048
 Mason 24,306
 Jackson 20,903
 Roane 14,111
 Braxton 12,666
 Putnam 27,625
 Clay 9,330
 Kanawha 229,515
 Nicholas 22,552
 Lincoln 18,912
 Boone 25,118
 Total 434,165

DISTRICT 4

Cabell 106,918
 Wayne 37,581
 Mingo 32,780
 Logan 46,269
 Wyoming 30,095
 McDowell 50,666
 Raleigh 70,080
 Mercer 63,206
 Total 437,595

all Representatives expire in January, 1975.

5

PLAINTIFF'S EXHIBIT	
<i>Intervenor</i>	
CASE NO.	2:11-CV-989
12-28-11	
EXHIBIT NO.	2

IN THE UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF WEST VIRGINIA
AT CHARLESTON

JEFFERSON COUNTY COMMISSION;
PATRICIA NOLAND, *as an individual
and behalf of all others similarly situated*;
and DALE MANUEL, *as an individual and
behalf of all others similarly situated*,

Plaintiffs, and

THORNTON COOPER,

Intervening Plaintiff,

v.

Civil Action No. 2:11-CV-989
(KING, BAILEY, BERGER)

NATALIE E. TENNANT, *in her capacity as
the Secretary of State*; EARL RAY TOMBLIN,
*in his capacity as the Chief Executive Officer
of the State of West Virginia*; JEFFREY
KESSLER, *in his capacity as the Acting
President of the Senate of the West Virginia
Legislature*; and RICHARD THOMPSON, *in
his capacity as the Speaker of the House of
Delegates of the West Virginia Legislature*,

Defendants.

CONGRESSIONAL DISTRICT NO. 2 EXHIBIT PREPARED BY
THORNTON COOPER.

This exhibit shows changes in the area of the Second Congressional District after the enactment of congressional redistricting bills in 1991, 2001, and 2011.

Under the redistricting bill enacted in 1991, the areas of the twenty (20) counties of the Second Congressional District were as follows:

<u>County</u>	<u>Area (square miles)</u>
Berkeley	322
Braxton	517
Calhoun	280
Clay	346
Gilmer	340
Hampshire	645
Hardy	585
Jackson	471
Jefferson	212
Kanawha	908
Lewis	390
Mason	445
Morgan	230
Nicholas	654
Pendleton	698
Putnam	350
Randolph	1,040
Roane	484
Upshur	355
Wirt	235
<hr/> Total	<hr/> 9,507

Thus, under the 1991 congressional redistricting act, which was reviewed in *Stone v. Hechler*, 782 F. Supp. 1116 (N. D. W. Va.1992), the total area of those twenty counties was 9,507 square miles. A map of that district is included with the opinion. *Id.* at 1130.

Under the redistricting bill enacted in 2001, the area of the Second Congressional District was reduced as it lost two counties – Gilmer County, with an area of 340 square miles, and Nicholas County, with an area of 654 square miles – to the

First and Third Congressional Districts, respectively. Thus the areas of the eighteen (18) counties under that bill were as follows:

<u>County</u>	<u>Area (square miles)</u>
Berkeley	322
Braxton	517
Calhoun	280
Clay	346
Hampshire	645
Hardy	585
Jackson	471
Jefferson	212
Kanawha	908
Lewis	390
Mason	445
Morgan	230
Pendleton	698
Putnam	350
Randolph	1,040
Roane	484
Upshur	355
Wirt	235
Total	8,513

Accordingly, the area of that district dropped from 9,507 square miles to 8,513 square miles.

Under the redistricting bill (Enrolled Senate Bill No. 1008) enacted in 2011, the area of the Second Congressional District was again reduced as it lost another county – Mason County, with an area of 445 square miles – to the Third Congressional District.

Thus the areas of the seventeen (17) counties under that bill were as follows:

<u>County</u>	<u>Area (square miles)</u>
Berkeley	322
Braxton	517
Calhoun	280
Clay	346
Hampshire	645
Hardy	585
Jackson	471
Jefferson	212

Kanawha	908
Lewis	390
Morgan	230
Pendleton	698
Putnam	350
Randolph	1,040
Roane	484
Upshur	355
Wirt	235
<hr/> Total	<hr/> 8,068

Accordingly, the area of that district dropped from 8,513 square miles to 8,068 square miles.

However, the radius of the smallest circle that enclosed the Second Congressional District did not measurably decrease because the southwestern end of the district remained at the southwestern boundary of Putnam County.

By Mr. Cooper's measurement, the area of the smallest circle that circumscribes the Second Congressional District is 45,200 square miles.

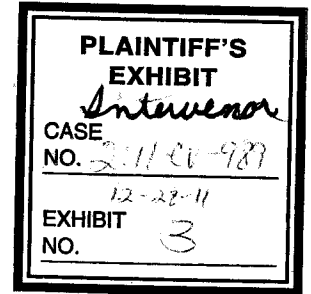
Accordingly, the Reock score for the Second Congressional District under the 1991, 2001, and 2011 redistricting bills dropped as follows:

$$1991: \quad 9,507 \div 45,200 = 0.21$$

$$2001: \quad 8,513 \div 45,200 = 0.19$$

$$2011: \quad 8,068 \div 45,200 = 0.18$$

Accordingly, the compactness of the Second Congressional District, under the Reock test, dropped from 0.21 in 1991 to 0.18 in 2011.



IN THE UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF WEST VIRGINIA
AT CHARLESTON

JEFFERSON COUNTY COMMISSION;
PATRICIA NOLAND, *as an individual
and behalf of all others similarly situated*;
and DALE MANUEL, *as an individual and
behalf of all others similarly situated*,

Plaintiffs, and

THORNTON COOPER,

Intervening Plaintiff,

v.

Civil Action No. 2:11-CV-989
(KING, BAILEY, BERGER)

NATALIE E. TENNANT, *in her capacity as
the Secretary of State*; EARL RAY TOMBLIN,
*in his capacity as the Chief Executive Officer
of the State of West Virginia*; JEFFREY
KESSLER, *in his capacity as the Acting
President of the Senate of the West Virginia
Legislature*; and RICHARD THOMPSON, *in
his capacity as the Speaker of the House of
Delegates of the West Virginia Legislature*,

Defendants.

COMPACTNESS EXHIBIT PREPARED BY THORNTON COOPER.

This exhibit demonstrates another way to measure compactness of West Virginia's congressional districts, in addition to any other tests offered into evidence by the various parties in this proceeding. This exhibit compares the congressional redistricting plan set forth in Enrolled Senate Bill No. 1008 with five (5) other plans with population variances of less than 600 between the most populous congressional district and the least populous congressional district under each plan. These five (5) plans are the two-split-counties plan, and Cooper Plans Nos. 1, 2, 3, and 4.

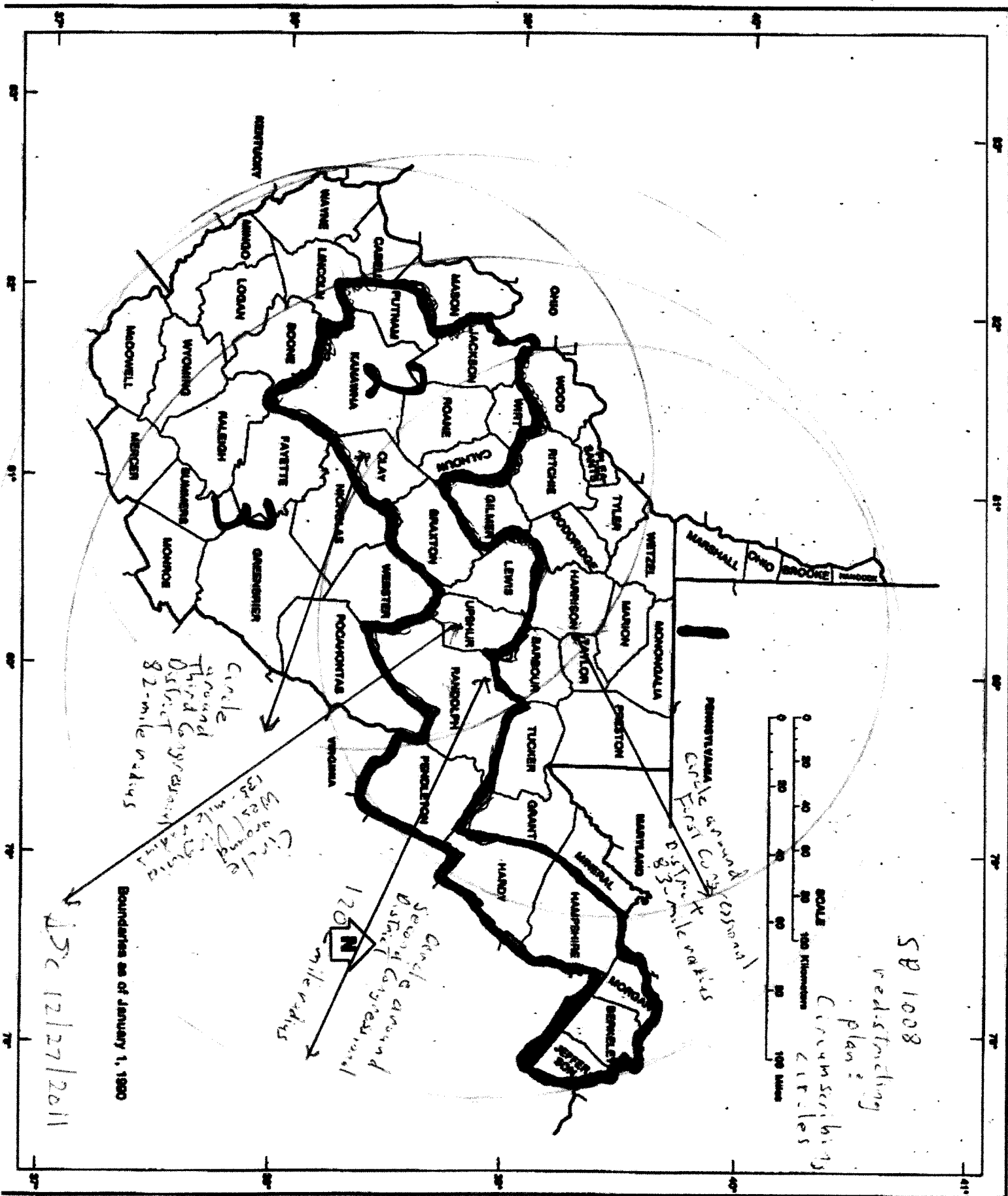
This test for measuring overall compactness under each of these six (6) plans is what Intervening Plaintiff Cooper refers to as the **"weighted Reock test"**. The term "Reock test" is a test for compactness in which the area of a particular proposed district is divided by the area of the smallest circle that circumscribes that district. The highest Reock score that a district could receive is 1.00, the score for a district that consists of the territory that is enclosed by a perfect circle. The test is named for Dr. Ernest C. Reock, Jr., Professor Emeritus at Rutgers University.

Under the "weighted Reock test" described herein, for each congressional redistricting plan, the area of West Virginia would be divided by the sum of the areas of the smallest circles circumscribing each of the three districts in that plan. Mr. Cooper made the measurements of the smallest circle circumscribing each congressional district under each plan. This test measures the overall elongation of districts in a particular congressional redistricting plan.

Page 4 of this exhibit is a map of the congressional districts under the plan set forth in Enrolled Senate Bill No. 1008. The smallest circle circumscribing each of the congressional districts under that plan, the smallest circle circumscribing the state of

West Virginia, and the radius of each of those circles, as measured by Intervening Plaintiff Cooper, are marked on that exhibit.

Page 5 of this exhibit begins the discussion of the **weighted Reock test**.



WEIGHTED REOCK TEST.

The following part of this exhibit lists the radius and area of the smallest circle that circumscribes each of the three congressional districts under each plan. The area of West Virginia (24,231 square miles) is then divided by the sum of the areas circumscribed by those three circles in that plan. The result is called the "weighted Reock score".

The higher the weighted Reock score, the greater the overall compactness is under a particular redistricting plan.

A. CONGRESSIONAL REDISTRICTING PLAN SET FORTH IN ENROLLED SENATE BILL NO. 1008.

	Radius (in miles)	Area (in square miles)
First Congressional District	83	21,600
Second Congressional District	120	45,200
Third Congressional District	82	21,100
Total Area	--	87,900

Weighted Reock Score 0.28

B. TWO-SPLIT-COUNTIES PLAN.

	Radius (in miles)	Area (in square miles)
First Congressional District	88	24,300
Second Congressional District	109	37,300
Third Congressional District	71	15,800
Total Area	--	77,400

Weighted Reock Score 0.31

C. COOPER PLAN NO. 1

	Radius (in miles)	Area (in square miles)
First Congressional District	108	36,600
Second Congressional District	112	39,400
Third Congressional District	54	9,200
Total Area	--	85,200

Weighted Reock Score 0.28

D. COOPER PLAN NO. 2

	Radius (in miles)	Area (in square miles)
First Congressional District	99	30,800
Second Congressional District	88	24,300
Third Congressional District	54	9,200
Total Area	--	64,300

Weighted Reock Score 0.38

E. COOPER PLAN NO. 3

	Radius (in miles)	Area (in square miles)
First Congressional District	99	30,800
Second Congressional District	67	14,100
Third Congressional District	90	25,400
Total Area	--	70,300

Weighted Reock Score 0.34

F. COOPER PLAN NO. 4

	Radius (in miles)	Area (in square miles)
First Congressional District	97	29,600
Second Congressional District	67	14,100
Third Congressional District	96	29,000
Total Area	--	72,700

Weighted Reock Score 0.33