

# Exhibit 2

IN THE UNITED STATES DISTRICT COURT  
SOUTHERN DISTRICT OF OHIO  
EASTERN DIVISION

OHIO STATE CONFERENCE OF THE	:	Case No. 2:14-cv-00404
NATIONAL ASSOCIATION FOR THE	:	
ADVANCEMENT OF COLORED	:	
PEOPLE, et al.,	:	Judge Peter C. Economous
	:	Magistrate Norah McCann King
Plaintiffs,	:	
	:	
v.	:	
	:	
JOHN HUSTED, et al.,	:	
	:	
Defendants.	:	

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**DECLARATION OF**  
**MARK J. SALLING**

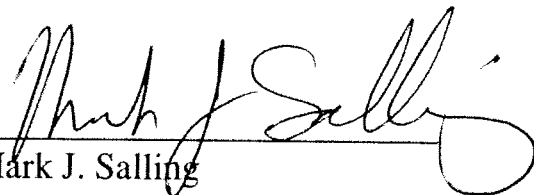
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Mark J. Salling, under 28 U.S.C. 1746, declares as follows:

1. I have personal knowledge of all facts recited herein.
2. I am currently a Senior Research Associate at Cleveland State University Maxine Goodman Levin College of Urban Affairs, and Director of Northern Ohio Data and Information Service.
3. Cuyahoga County retained me to independently examine the impact of the State of Ohio's voting restrictions imposed in Senate Bill 238 and Directive 2014-17.
4. Attached as Exhibit A is a true and accurate copy of my curriculum vitae.
5. Attached as Exhibit B is a true and accurate copy of the report I prepared, summarizing the methodology utilized and the results of my examination.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Executed on this 8<sup>th</sup> day of July, 2014.

  
Mark J. Salling

**MARK J. SALLING, Ph.D., GISP<sup>1</sup>**  
May 2014

**EDUCATION**

Ph.D. (Geography) 1982, Kent State University

Dissertation: Poverty and the Decision to Move: An Analysis of Public Housing for the Poor

M.A. (Geography) 1974, University of Cincinnati

B.A. (Geography) 1970, Kent State University

**ACADEMIC & PROFESSIONAL POSITIONS**

1982-present--- Director, Northern Ohio Data & Information Service, Senior Research Associate, and College Fellow, Maxine Goodman Levin College of Urban Affairs, Cleveland State University (<http://urban.csuohio.edu/nodis/>)

2002-2012 Williamson Family Fellow and Director of Research, The Center for Community Solutions, Cleveland, OH (<http://communitysolutions.com/>)

1981-1982----- Director, Base Resource Division, Graphco, Cleveland, OH.

1979-1982----- Research Consultant/Methods & Data Specialist, Capone-White & Associates, Cleveland Heights, OH.

1976-1981----- Planner and Senior Data Specialist, Northeast Ohio Areawide Planning Agency, Cleveland, OH.

1976----- Planning Assistant, Medina County Planning Commission, Medina, OH.

1976----- Temporary Instructor, Geography, Kent State University, Trumbull Branch.

1975-1976----- Teaching Fellow, Department of Geography, Kent State University.

**PROFESSIONAL AFFILIATIONS, AWARDS, SERVICE**

Urban & Regional Information Systems Association (URISA - <http://www.urisa.org/>):

- Managing Editor, Proceedings of the annual conference 1986-2004.
- Past member, URISA Board of Directors, 2002-2005
- Member, Core Committee, GISCorps (<http://www.giscorps.org/>)
- Recipient, URISA 1988 and 2000 Service Awards

Member, Ohio Geographically Referenced Information Program Council, representing universities (<http://ogrip.oit.ohio.gov/>)

Ohio's Liaison to the U.S. Census Bureau's Redistricting Data Program

Chairman and Key Person, Cleveland Census Statistical Areas Committee (CenSAC)

Member, Association of Public Data Users (APDU - <http://apdu.org/>)

Past Recipient, Visiting Fellowship, National Center for Geographic Information and Analysis (NCGIA), 1994.

Affiliated Scholar, Center for Election Integrity, Cleveland State University (<http://urban.csuohio.edu/cei>)

**PRIMARY AREAS OF RESEARCH AND TEACHING EXPERIENCE**

Urban Social Geography	Research/Computer Methods
Urban Poverty, Mobility	Geographic Information Systems (GIS)
Demography	Demographic Forecasting
Redistricting	

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<sup>1</sup> Geographic Information System Professional, certified by the GIS Certification Institute (<http://www.gisci.org/>).

## **RESPONSIBILITIES**

### **NODIS Director**

Management- staff consisting of professional programmers, researchers, GIS specialists, information specialist, and several students; provide research, data, and GIS services to University and community data users.

Teaching----- courses taught: Urban Spatial Structure, Urban Geography, Graduate Research Methods, Introduction to Geographic Information Systems, GIS Capstone Seminar, Demography, and Computers for Urban Studies Students.

Research----- demographic and urban analysis; research includes analyses of redistricting outcomes and the use of GIS in the process, urban neighborhood economic structure, environmental equity (spatial association of toxic releases and demographic populations), the application of GIS to urban land redevelopment, and the use of GIS for social indicators and related areas.

Technical Assistance---- presentations on GIS, demographic trends, urban issues; employed GIS methods to provide a common database for redistricting in the State of Ohio; provide leadership in local Census data and geography issues.

## **PUBLICATIONS and PRESENTATIONS**

### **Written:**

**Salling**, Mark, "Redistricting Congressional Districts in Ohio, An Example of a Partisan Process with Long-Lasting Consequences," in Miller, William J. and Jeremy D. Walling, eds. 2013, The Political Battle over Congressional Redistricting. Lanham, MD: Lexington Books.

Stephanie Ryberg, Mark **Salling**, and Gregory Soltis, "Putting Artists on the Map: The Geography of Artists in Cuyahoga County, Ohio," Journal of Urban Affairs, Vol. 35, Issue 2, May 2013, pp. 219-245. Online at <http://onlinelibrary.wiley.com/doi/10.1111/j.1467-9906.2012.00623.x/pdf>.

**Salling**, Mark and Norman Robbins, "Do White, African American, and Hispanic/Latino EIP Voters Differ from Election Day and Vote by Mail Voters in Income?" Northeast Ohio Voter Advocates, August 2012.

Norman Robbins and Mark **Salling**, "Racial and Ethnic Proportions of Early In-person Voting in Cuyahoga County, General Election 2008, and Implications for 2012," Northeast Ohio Voter Advocates, July 2012.

**Salling**, Mark, "Public Participation Geographic Information Systems for Redistricting A Case Study in Ohio," Journal of the Urban and Regional Information Systems Association, Vol. 23: Issue 1, 2011, pp. 33-40.

**Salling**, Mark, "GIS Will Affect the Political Landscape for the Next Decade and Beyond," GIS Professional, Issue 242, March/April 2011, pp. 1-3.

Joe Ahern and Mark **Salling**, "Racial/Ethnic Health Disparities in Northeast Ohio," Planning & Action, The Center for Community Solutions, Vol. 63, No. 4 (July), 2010, pp. 12-15.

**Salling**, Mark, "Ohio's Use of Geographic Information Systems to Demonstrate Public Participation in the Redistricting Process," Duke Journal of Constitutional Law & Public Policy, Vol. 5, 2010, pp.112-123.

**Salling**, Mark, and Jenita McGowan, "Census 2010 and Human Services and Community Development," Planning & Action, The Center for Community Solutions, Vol. 63, No. 2 (March), 2010, pp. 1-4.

Xiaoxing Z. He, Ellen Cyran, and Mark **Salling**, "National trends in the United States of America physician assistant workforce from 1980 to 2007," Human Resources for Health. Vol. 7:86, November 26, 2009.

Joe Ahern and Mark **Salling**, "A Statewide FBO/NPO Digital Inventory: Is it Feasible?" Planning & Action, The Center for Community Solutions, Vol. 62, No. 3 (August), 2009, pp. 9-10.

Joe Ahern and Mark **Salling**, "Survey Provides Insights into the Health of Ohioans," Planning & Action, The Center for Community Solutions, Vol. 62, No. 2 (May), 2009, pp. 15-16.

James Wyles and Mark **Salling**, "Districting Competition Tutorial Using ArcGIS 9.3 and Districting Wizard," Prepared for Ohio Secretary of State Jennifer Brunner, <http://www.sos.state.oh.us/SOS/Upload/redistrict/tutorial.pdf>, April 2009.

Mark **Salling**, Joe Ahern, George Coulter, and Rich Marountas, "New Study Shows County's Workforce Characteristics," Planning & Action, The Center for Community Solutions, Vol. 62, No. 1 (February), 2009, pp. 7-11.

Mark **Salling**, Ellen Cyran, Sharon Bliss, and Rich Marountas, "The Changing Face of Socioeconomic Conditions in Northeast Ohio," Planning & Action, The Center for Community Solutions, Vol. 61, No. 6 (November/December), 2008, pp. 14-17.

Mark **Salling**, "Beware of the Data. New Data from the Census Bureau's 2007 American Community Survey are Out and Still Coming," Planning & Action, The Center for Community Solutions, Vol. 61, No. 5 (September/October), 2008, p. 14.

Mark **Salling**, "More Persons Attending College and Getting Degrees, 2000 to 2007 The Cleveland-Akron-Elyria Region Doing Well," unpublished report available at <http://nodisnet1.urban.csuohio.edu/nodis/publications.shtml>, September 23, 2008.

Mark **Salling**, "Changes in Poverty and Educational Attainment, 2000 to 2007 Poverty Rates Increasing for those with College Education, Too," unpublished report available at <http://nodisnet1.urban.csuohio.edu/nodis/publications.shtml>, September 2, 2008.

Coulter, George, Mark **Salling**, and Rich Marountas, "A Major Study of the County's Workforce is in Progress," Planning & Action, The Center for Community Solutions, Vol. 61, No. 4 (July/August), 2008, pp. 6-9.

Brudney, Jeffery, Mark **Salling**, and Kym Hemley, "The Point – and Counterpoint -- of Agency Collaboration: A Critical Review and a Local Funder's Experience," Planning & Action, The Center for Community Solutions, Vol. 61, No. 3 (May/June), 2008, pp. 6-9.

Marountas, Richard, and Mark **Salling**, "New Economic Indicators Report: Employment and Productivity in Northeast Ohio, 2000-2007, Indicators of Industry Sustainability," Planning & Action, The Center for Community Solutions, Vol. 61, No. 2 (April), 2008, pp. 5-9.

**Salling**, Mark, and M. Egan, "Health Needs Analysis, Assessment Looks at the Region," Planning & Action, The Center for Community Solutions, Vol. 61, No. 1 (February), 2008, pp. 9-14.

Mark **Salling**, "Ohio Continues to Lag in Population Growth and Comments on Prospects for the Future: An Analysis of 2007 State Population Estimates," unpublished report available at <http://nodisnet1.urban.csuohio.edu/nodis/publications.shtml>, January 2, 2008.

Mark **Salling**, "Hispanics and Asians Increase in Numbers in Cuyahoga County An Analysis of 2007 County Population Estimates," unpublished report available at <http://nodisnet1.urban.csuohio.edu/nodis/publications.shtml>, August 7, 2008.

Mark **Salling**, "Brief Description and Analysis of the Census Bureau's 2006 Population Estimates for Incorporated Places: Cleveland and Other Ohio Cities," unpublished report available at <http://nodisnet1.urban.csuohio.edu/nodis/publications.shtml>, June 28, 2008.

**Salling**, Mark, E. Cyran, S. Bliss, R. Marountas, "The Changing Face of Socioeconomic Conditions in Northeast Ohio," Planning & Action, The Center for Community Solutions, Vol. 60, No. 6 (November/December), 2007, pp. 14-17.

Mark **Salling**, "An Analysis of Services Provided by Faith-Based Organizations to Cleveland's Ward 17 Community," unpublished report available at <http://nodisnet1.urban.csuohio.edu/nodis/publications.shtml>, January 30, 2007.

**Salling**, Mark, George Zeller, and Rich Marountas, "The State Of Poverty in Ohio, 2007," Ohio Association of Community Action Agencies and The Center for Community Solutions, June 2007.

**Salling**, Mark, "GISCorps Helps United Nations High Commission for Refugees Map Resources for Refugees in Cairo, Egypt," URISA News, Urban and Regional Information Systems Association, No. 219 (May/June), 2007, p. 10.

**Salling**, Mark, "The Role of Faith-Based Organizations in Providing Social and Health Services to Cleveland's Ward 17 Community," Planning & Action, The Center for Community Solutions, Vol. 60, No. 3 (April), 2007, pp. 1-4.

Walton, B.M., M. **Salling**, and J. Wolin. "Biological Integrity of Urban Streams: Toward Resolving Multiple Dimensions of Urbanization," Landscape and Urban Planning, 2007, 79, pp. 110-123.

**Salling**, M., and E. Cyran. "Using the Census Bureau's Public Use Microdata for Migration Analysis," Proceedings of the annual conference of the Urban and Regional Information Systems Association, Vancouver, BC, Canada, September 2006, pp.336-348.

**Salling**, M., and E. Cyran. "Estimates of the Number of Voters Whose Driver's License Address May Differ from Their Voting Address," Cleveland State University, Center for Election Integrity, Research Series, August 2, 2006.  
[<http://moritzlaw.osu.edu/electionlaw/litigation/documents/Moore-Reply-3-28-08-Ex3.pdf>]

**Salling**, Mark, "Applied Research Speaks to the Region's Issues in Human Capital," Planning & Action, The Center for Community Solutions, Vol. 59, No. 5 (July/August), 2006, p. 3.

Lenahan T. and M. **Salling**. "Persons with Disabilities by Race, Cuyahoga County, 2000," Public Health GIS News and Information, Centers for Disease Control, May 2006 (No. 70), pp. 23-25.

**Salling** Mark, "Children Living in Severely Distressed Neighborhoods and Poor Housing". Public Health GIS News and Information, Centers for Disease Control, January 2006 (No. 68), pp. 19-22.

Lenahan, Terry, Mark **Salling**, , Richard Marountas, Joe Ahern, and George Weiner, 2004/2005 Social Indicators: Youth Development, The Center for Community Solutions, March 2005.

Croner C.M., T.L. Lenahan, M.J. **Salling**, and G.D. Weiner, "Geographic Information Systems and Public Health: Accomplishments and Horizons," Proceedings GeoHealth 2004 [eds. Skelly C, White P], Institute of Environmental Science & Research, Porirua, New Zealand, November 2004, pp. 22-31.

**Salling** M.J., Lenahan T. Inadequate Prenatal Care: Summit County, Ohio, 1996 to 2001. Public Health GIS News Information, Centers for Disease Control, September 2004, Vol. 60, pp. 21-22.

**Salling**, Mark, "Where is the Prison Population in Ohio?" Planning & Action, The Center for Community Solutions, Vol. 57, No. 6 (September), 2004, pp. 8-10.

**Salling**, Mark, James Williamson, and Elton Turnage, "Some Factors Considered in Teen Pregnancy Rates in Cuyahoga County," Planning & Action, The Center for Community Solutions, Vol. 57, No. 5 (July/August), 2004, pp. 11-14.

Lenahan, Terry, George Weiner, Mark **Salling**, Richard Marountas, and Joe Ahern, 2003/2004 Social Indicators: Older Persons, The Center for Community Solutions, June 2004.

**Salling**, Mark, "New Housing Indicators Report Highlights Challenges and Opportunities," Planning & Action, The Center for Community Solutions, Vol. 57, No. 3 (April), 2004, pp. 16-20.

**Salling**, Mark, Richard Marountas, Terry Lenahan, George Weiner, and Joe Ahern, 2003/2004 Social Indicators: Housing, The Center for Community Solutions, April 2004.



**Salling**, Mark, Michael J.S. Tevesz, Roberta Steinbacher, Sharon Bliss, and Brian McNamara, "Sacred Landmarks as a Resource for Community Empowerment and Regional Development," Proceedings of the annual conference of the Urban and Regional Information Systems Association, Atlanta, GA. October 2003.

Weiner, George, Lucy Malakar, Terry Lenahan, Joe Ahern, Mark **Salling**, and Richard Marountas, 2003 Social Indicators: Community Health, Federation for Community Planning, December 2003.

Lenahan, Terry, Lucy Malakar, George Weiner, Joe Ahern, Mark **Salling**, and Richard Marountas, 2003 Social Indicators: Children and Families, Federation for Community Planning, October 2003.

**Salling**, Mark, "2003 Social Indicators: Education, Employment, and Income," Planning & Action, Federation for Community Planning, Vol. 56, No. 4 (May/June), 2003, pp. 16-18.

**Salling**, Mark, and Sharon Bliss, "Older Adult Profile: A Census Demographic Profile Report," prepared for Western Reserve Area Agency on Aging, May 2003.

**Salling**, Mark, Rich Marountas, Terry Lenahan, Joe Ahern, and George Weiner, 2003 Social Indicators: Education, Employment, and Income, Federation for Community Planning, April 2003.

**Salling**, Mark, "Cleveland Neighborhood Conditions and Trends," prepared for Cleveland City Council, May 2001.

**Salling**, Mark, "Estimating Low and Moderate Income Persons at the Census Block Level in the City of Cleveland," prepared for City of Cleveland, Department of Community Development, July 24, 2000.

Simons, Robert, and Mark **Salling**, "Using GIS to Make Parcel-Based Real Estate Decisions for Local Government: A Financial and Environmental Analysis of Residential Lot Redevelopment in a Cleveland Neighborhood," URISA Journal, Vol. 7, No. 1 (Spring), 1995, pp. 7- 19.

Bowen, William, Mark **Salling**, Kingsley Haynes, and Ellen Cyran, "Toward Environmental Justice: Spatial Equity in Ohio and Cleveland," Annals of the Association of American Geographers, Vol. 85, No. 4, 1995, pp. 641-663.

**Salling**, Mark, et.al., A Guide to State and Local Census Geography, U.S. Department of Commerce, Bureau of the Census, June 1993.

**Salling**, Mark, and William L. Mumbleau, "Introduction: A New Era for GIS in URISA," Proceedings, Volume II, Urban and Regional Information Systems Association Conference, Washington, D.C. July, 1992.

Tobin, J., and Mark **Salling**, "NODIS Procedures for Demographic Analysis," Proceedings, SAS Users Group International, Ninth Annual Conference, Hollywood, FL. March 1984.

Henry, N.H., J.W. Frazier, M. Budin, and Mark **Salling**, "Applications of Geography to Housing Problems," Chapter 5 in Applied Geography, Selected Perspectives, (J. Frazier, ed.), Prentice-Hall, Inc. Englewood Cliffs, N.J. 1982.

**Salling**, Mark, and M.E. Harvey, "Poverty, Personality, and Sensitivity to Residential Stressors," Environment and Behavior, Vol. 13, No. 2 (March), 1981, pp.131-163.

**Salling**, Mark, and T. Bier, "Factors Affecting the Geographic Distribution of Mortgage Loans in Cuyahoga County, Ohio," Proceedings, Applied Geography Conference, (J.W. Frazier and B.J. Epstein, eds.), Vol. 3, Kent, Ohio. 1980.

**Salling**, Mark, "Regionalization at the Areawide Planning Level: the Merger of Subjective and Objective Methods," Proceedings, Applied Geography Conference, (J. Frazier and B.J. Epstein, eds.), Vol. 1, Binghamton, N.Y. 1978.

**Salling**, Mark, "Residential Preferences in Three Neighborhoods of Different Racial Composition," East Lakes Geographer, Vol. 11, June, 1976, pp. 91-109.

Presented:

“Community Mapping Initiatives in Cleveland, Ohio,” presented with Wansoo Im at GIS-Pro 2013, the annual conference of the Urban and Regional Information Systems Association, Providence, RI, September 17, 2013.

“Urban Geography 101: What do you know about Cleveland and the Region?” presented at the Community Forum of First Unitarian Church of Cleveland, Shaker Heights, Ohio, March 3, 2013.

“GIS and Democracy, How GIS Affects the Political Landscape,” presented at GIS-Pro 2012, the annual conference of the Urban and Regional Information Systems Association, Portland, OR, October 2, 2012.

“Some Data on Representational Fairness, One Person, One Vote, and Public Participation Redistricting,” presented at the Symposium on Baker v. Carr After 50 Years: Appraising the Reapportionment Revolution, Case Western Reserve University School of Law, Cleveland, Ohio, November 4, 2011

“Putting Artists on the Map: A Study of Artists’ Housing and Neighborhoods in Cuyahoga County, Ohio,” with Kristin L. Tarajack-Puch. presented at the Urban Affairs Association annual conference. New Orleans, LA., March 19, 2011.

“How Will Geographic Information Systems be Used for Redistricting: A Case Study in Ohio,” presented at presented at GIS-Pro 2010, the annual conference of the Urban and Regional Information Systems Association, Orlando, FL, September 29, 2010.

“An Analysis of Health Disparities in Northeast Ohio Using the 2008 Ohio Family Health Survey,” with Joseph Ahern and Terese Lenahan. presented at presented at GIS-Pro 2010, the annual conference of the Urban and Regional Information Systems Association, Orlando, FL, September 29, 2010.

“Anticipating Census 2010...Some Data on Population Change Affecting Redistricting in Ohio.” presented at the “Redistricting Forum Redrawing the Boundaries: An Ohio Discussion,” March 1, 2010. Columbus, Ohio.

“The Uses of Geographic Information Systems for Redistricting and a Case Study in Ohio,” presented at the “Symposium on Drawing Lines: The Future of Redistricting in America,” February 26, 2010. Duke University School of Law, Durham, NC.

“The 2008 Ohio Family Health Survey: Initial Analyses of Cuyahoga County,” with Joe Ahern, presented to the Community Partners and Friends of The Center for Community Solutions, Cleveland, Ohio, July 15, 2009.

“The 2008 Ohio Family Health Survey: Initial Analyses of Ohio and Cuyahoga, Lorain, and Summit Counties,” with Timothy Sahr, Heather Beaird, and Joe Ahern, presented to the Summit County Healthy Connections Network, Akron, Ohio, April 23, 2009.

“Ohio Redistricting Competition: Competition Rules and Scoring,” with James Wyles, presented for Ohio Secretary of State Jennifer Brunner’s Districting Competition, Columbus, Ohio, April 10, 2009.

"2008 Ohio Family Health Survey: Profile of the Uninsured in Cuyahoga, Lorain, and Summit Counties," with Joe Ahern, presented to The Center for Community Solutions Human Services Institute, Cleveland, Ohio, March 13, 2009.

"Using Social Indicators and Related Data for Grant Applications," presented to The Center for Community Solutions Human Services Institute, Cleveland, Ohio, March 13, 2009.

"Challenges Related to Multiple Estimates of the Census Bureau's American Community Survey," presented at the 2009 annual conference of the National Association of Planning Councils, Austin Texas, March 2, 2009.

"Cuyahoga County Workforce Indicators," with Joe Ahern and George Coulter, presented to The Center for Community Solutions - Partners and Friends, Cleveland, Ohio, February 27, 2009.

"The Point of Partnering? Achieving Service Outcomes through Agency Collaboration," annual conference of The Center for Community Solutions' Human Services Institute, Cleveland, Ohio, March 28, 2008.

"Income of Older Persons in Ohio," Ohio AARP Conference on Sensible Solutions for Retirement Security: A Public Policy Discussion, New Philadelphia, Ohio, March 20, 2008.

"Some Recent Data on the Economic Health of the Region," with George Zeller, Partners and Friends of The Center for Community Solutions, Cleveland, Ohio, November 15, 2007.

"Some Recent Data on the Economic Outlook for Cuyahoga County Based on the American Community Survey," presented to Cuyahoga County Commissioners and department heads, Cleveland, Ohio, September 19, 2008.

"Implications of Geocoding Methods, Geographic Reference Files, And Population Estimates for Community Health Indicators," with Chris Kippes, David Bruckman, Ellen Cyran, and Urban and Elizabeth Larkin, Centers for Disease Control and Prevention 2007 Assessment Initiative Annual Conference, Atlanta, Georgia, August 23, 2007.

"Implications of Geocoding Methods, Geographic Reference Files, And Population Estimates for Community Health Indicators," with Chris Kippes, David Bruckman, Ellen Cyran, and Urban and Elizabeth Larkin, Urban and Regional Information Systems Association conference on GIS in Public Health, New Orleans, Louisiana, May 21, 2007.

"Foreign Migration: What Census Data Tell Us," annual conference of The Center for Community Solutions' Human Services Institute, Cleveland, Ohio, March 23, 2007.

"GIS as a Tool for Political Geography and Analysis," Conference on Computer-Assisted Reporting, Cleveland, Ohio, March 9, 2007.

"What We Are Learning from Recent Census Data," with Michael Finney, New Member Orientation, Ohio Legislative Service Commission, Columbus, Ohio, November 29, 2006.

"Sprawl, Taxes and the Cost of Ohio's Competitiveness," presented to New Member Orientation, Ohio Legislative Service Commission, Columbus, Ohio, November 29, 2006.

"Using the Census Bureau's Public Use Microdata for Migration Analysis," with Ellen Cyran, annual conference of the Urban and Regional Information Systems Association, Vancouver, BC, Canada, September, 2006.

"The Use of Geographic Information Systems (GIS) to Reveal Inordinate Public Health Burden in Cleveland's African American Neighborhoods," with C.M. Croner, T.L. Lenahan, G.D. Weiner, and C. Kippes, American Public Health Association 133<sup>rd</sup> Annual Meeting, Philadelphia PA., December 13, 2005.

"The Use of GIS for Social and Health Community Indicators," presented at the annual conference of the Urban and Regional Information Systems Association, Kansas City, Missouri, October, 2005.

"The Public Health Burden of Cleveland's African American Community," with C.M. Croner, and T.L. Lenahan Annual Meeting of the Association of American Geographers, Denver CO., April 6, 2005.

"What Have We Learned about Ohio from Recent Census Data?," with Michael Finney, presented to the New Member Orientation of the Ohio Legislature, Columbus, Ohio, November 17, 2004.

"Ecological Quality of Urban Streams: Resolving Multiple Dimensions of Urbanization," with B.M. Walton and J. Wolin. Symposium on Great Lakes Water Quality, Headwater Streams Section. Cleveland Museum of Natural History. October 2004.

"Updating the Census Bureau's School District Boundaries Using Geocoded Voter Registration Addresses," presented to the 2004 Ohio GIS Conference, Columbus, Ohio, September 30. 2004.

"Social Indicators Data for Community Development Corporations," workshop presentation at the Ohio CDC Association, 2004 annual conference, Cleveland, Ohio. September 29, 2004.

"Visualizing Health Inequalities with GIS: Exploring Geospatial Issues with IHS Area Planning Officers and Statisticians," with C.M. Croner, D. Taylor, T.L. Lenahan, and E. Arias DHHS Indian Health Service Area Planning Officers/Statisticians Conference, Washington, D.C., September 23, 2004.

"Geographic Information Systems: Revealing Public Health Inequalities in African American Communities," with C.M. Croner, T.L. Lenahan, and G.D. Weiner, 1<sup>st</sup> Annual Conference on Race, Ethnicity and Place, Howard University, Washington D.C., September 17, 2004.

"Using Social Indicators for Grantmaking," with Edwin Balzerzak, workshop sponsored by the Ohio Grantmakers Forum, Cleveland, Ohio. September 28, 2004.

"Geographic Information Systems and Public Health: Accomplishments and Horizons," with C.M. Croner, T.L. Lenahan, and G.D. Weiner, GeoHealth 2004: Surveillance and Intervention, Wellington, New Zealand, November 23-25, 2004.

"Geographic Information Systems: Revealing Public Health Inequalities in African American Communities," with C.M. Croner, T.L. Lenahan, 1st Annual Conference on Race, Ethnicity and Place, Howard University, Washington D.C. September 17, 2004.

"Geographic Information Systems and African American Health: Visualizing Disease Burden," with C.M. Croner, T.L. Lenahan, E. Cyran, B. McNamara, L. Malakar, C. Kippes, and R. Marountas, 21st Annual Historical Black Colleges and Universities Summer Faculty GIS Workshop, National Capital Planning Commission, Washington, D.C., July 21, 2004.

"Assessing Biological Integrity within Substantially Urbanized Catchments," with B. M. Walton and J. Wolin, presented at the Symposium on Urbanization and Stream Ecology, Melbourne, Australia. December, 2003.

"Sacred Landmarks as a Resource for Community Empowerment and Regional Development," presented at the annual conference of the Urban and Regional Information Systems Association, Atlanta, Georgia. October, 2003.

"Using Geographic Information Systems to Target Elevated Lead Blood Levels in Children," presented at the annual conference of the Urban and Regional Information Systems Association, Atlanta, Georgia. October, 2003.

"GIS Certification: A Status Report," presented to the 2003 Ohio GIS Conference, Columbus, Ohio. September 18, 2003.

"Some Thoughts on Social Indicators," presented to the National Association of Planning Councils, Monterey, California. May 10, 2003.

"Census 2000: Good News for Northeast Ohio's Economy?," presented at the Census 2003 Forum, Maxine Goodman Levin College of Urban Affairs, Cleveland State University, Cleveland, Ohio. May 2, 2003.

"Race, Hispanic/Latino Ethnicity, Ancestry, and the Foreign-born Population, Some Demographic Data from the Census," presented to the 2003 Health and Human Services Institute, Federation for Community Planning, Cleveland, Ohio. March 21, 2003.

"Changing Demography of Ohio's House Districts," with Mittie Olion Chandler, presented to the Ohio Urban University Program Annual Forum, Columbus, Ohio. March 27, 2003.

"Demographic Change in Ohio: What Have We Learned for the 2000 Census?," with Michael Finney, presented to the New Member Orientation of the Ohio Legislature, Columbus, Ohio. October 18, 2002.

"Application of Geographic Information Systems and a Street-length-based Estimation Methodology to Develop a Redistricting Database," presented to the annual conference of the Urban and Regional Information Systems Association, Long Beach, California. October 2001.

"Use of Geographic Information Systems in the Analysis and Reporting of Child Mortality Statistics," with Cindie Carroll-Pankhurst, presented to the National Conference of County Boards of Health, Cleveland, Ohio. July 2001.

"GIS Customization of a Water Distribution Model Application for Hydraulic Modeling," with Ellen Cyran, Lindle Wilnow, and Pierre Haddad, presented at the conference on Public Works/Geographic Information Systems, Chicago, Illinois. May 7, 2001.

"What Can the 2000 Census Tell You About Your Community?," presented to The Neighborhood & Community Press Association (NCPA) of Greater Cleveland, Cleveland, Ohio. April 28, 2001.

"Using Geographic Information Systems for Community Economic Development," presented at the Emerging Leadership conference of the National Coalition of Community Economic Development, Washington, D.C. February 18, 2001.

"Demographic Trends and Patterns in Ohio," presented to the New Member Orientation Program of the Ohio General Assembly, Columbus, Ohio. November 28, 2000.

"Geographic Information Systems," in "Electronic Records: Access and Use" panel discussion at Midwest Archives and Mid-Atlantic Regional Archives Conference, Cleveland, Ohio. October 21, 2000.

"A Progress Report on Using Geographic information Systems to Prepare for Elections in the 21<sup>st</sup> Century," presented at the Ohio GIS annual conference, Columbus, Ohio. October 28, 1999.

"Modeling Neighborhood Economic Transformation," presented at the annual conference of the Urban and Regional Information Systems Association, Chicago, Illinois. August 11, 1999.

"Using Geographic information Systems to Prepare for Elections in the 21<sup>st</sup> Century," presented at the GIS/LIS annual conference, Cincinnati, Ohio. November 29, 1997.

"Applying Geographical Information Systems (GIS) Technology in Devising Effective Student Recruitment Strategies," panel at the 36th annual forum of the Association for Institutional Research, Albuquerque, New Mexico. May 6, 1996.

"Development of an Implementation Plan for Sharing Geographic Information in Greater Cleveland," presented to the Applied Geography Conference, Akron, Ohio. October 14, 1994.

"Using GIS to Make Micro-Level Real Estate Decisions: A Financial and Environmental Analysis of Residential Lot Redevelopment in a Cleveland Neighborhood," with Robert Simons, presented at the annual conference of the Urban and Regional Information Systems Association, Milwaukee, Wisconsin. August 11, 1994.

"Census 2000: Saving the Data - For Whom?" presented at the annual conference of the Urban and Regional Information Systems Association, Atlanta, Georgia. July 26, 1993.



"The Geography of Environmental Equity in Ohio: A Descriptive Analysis," with W. Bowen, presented at the annual conference of the Association of American Geographers, Atlanta, Georgia. April 9, 1993.

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**The Use of Early In-Person Voting Opportunities  
In the 2008, 2010, and 2012 General Elections  
In Ohio's Largest Urban Counties  
Comparisons by Race and Hispanic/Latino Ancestry**

July 7, 2014

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**Purpose of Study**

Data on voters from five of Ohio largest counties in 2008, 2010, and 2012 general elections are used to estimate the use of early in-person voting (EIP), voting by mail, and voting on Election Day for racial and Hispanic groups of voters. Comparisons of when voting occurred are made for Election Day, in-person voting the Sunday before the election, in person voting during the so-called "Golden Week", other early-in person voting, and early voting by mail. These are referred to as methods of voting in this analysis.

To estimate the race and ethnicity of voters it is assumed that African Americans, Whites, other races, and Hispanics voted in proportion to their percentage of voting age population in the census block in which they live. Data for Cuyahoga, Franklin, Hamilton, Lucas, and Summit counties are analyzed. These counties account for 36.8 percent of the state's 2010 voting-age population.<sup>1</sup>

**Findings**

Data from the following tables are discussed:

1. Table 1: Votes by Race/Ethnicity, Election, Method, and County – provides estimated votes by race and Hispanic ethnicity, election year, method, and county.
2. Table 2: Percentage of Votes by Race and by Election Day, Early In-Person, and Mail Voting - shows the percentage distributions of these votes for all 5 counties and all early in-person methods combined.
3. Table 3: Percentage of Votes by Race/Ethnicity, Method, and County, Three Elections Combined (2008 Franklin excluded) - provides percentages by method and race/ethnicity for each county.
4. Table 4: Percentage of Votes by Race and Election Day, Early In-Person, and Mail Voting, Three Elections Combined (2008 Franklin excluded) - includes racial/ethnicity percentages

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<sup>1</sup> Though the author hoped to include Montgomery County, which is larger in voting-age population than Lucas County, the data could not be obtained in time to include it. In addition, data for the 2008 general election in Franklin County was also not available for this analysis.

for Election Day, EIP, and voting by mail for each of the three elections, with the 5 counties combined.

5. Table 5: Percentage of Votes by Race/Ethnicity and Method, Three Elections Combined (2008 Franklin excluded) - provides the same percentage distribution as in Table 4, but lists each of the individual EIP methods (Sunday before Election Day, Golden Week, and other EIP).
6. Table 6: Test of Proportions – addresses the question of whether the percent of votes for each racial minority group is different than for White voters using each method.
7. Table 7: Voter Participation Rates (based on voters used in the analysis and persons age 18 and older in the 2010 Census of Population)

Overall, excluding unavailable results for 2008 in Franklin County, the analysis shows that African Americans are more likely to vote in-person, whether on Election Day or in early voting opportunities, than by mail.<sup>2</sup> While they composed 22 percent of voting-age population and an estimated 20.3 percent of voters in the combined three elections in those five counties (again excluding the 2008 election in Franklin County), African American voters accounted for 38.0 percent of all early in-person voting (Table 4).<sup>3</sup> They took particular advantage of voting the first week of early voting when persons could both register and vote on the same day, commonly referred to as “Golden Week”. Voting that week by African Americans comprised almost half (48.3%) of all early in-person votes (Table 5). Only 18.1 percent of votes by mail were made by African Americans. Their preference for, or dependence on, early voting opportunities is reflected in the fact that, while an estimated 66 percent of all votes by Whites were cast on Election Day in these three elections (excluding Franklin in 2008), only 61.7 percent of voting African Americans went to the polls that day. A disproportionate number of African Americans used early voting --- 13.5 percent versus 7.2 percent for all voters (Table 4).

Other non-White voters also took advantage of early in-person voting. While White voters accounted for only 5.3 percent of all such voters in those elections, early in-person voting non-White, non-Black voters accounted for 8.6 percent. And nine percent (9.0%) were Hispanic/Latino voters (regardless of race). Overall, 65 percent of all voters voted on Election Day, 7.2 percent used in-person early voting, and 27.8 percent voted by mail (Table 4).

The results from the 2008 and 2012 presidential elections are very similar.<sup>4</sup> However, the 2010 election had many fewer voters and far fewer early in-person votes in particular (Table 1). The 2008 and 2012 elections had 9.1 and 9.0 percent of votes cast in early in-person periods,

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<sup>2</sup> All noted differences in percentages are statistically different at the 0.05 or 0.01 confidence level. Table 6 provides a summary of comparisons between White and minority voting groups.

<sup>3</sup> Differences between total counts of votes between the official counts reported by the Ohio Secretary of State and those reported here are presumably largely due to non-geocoded voter addresses (locating addresses by census block) in this analysis. Other possible minor differences are likely due to different data provided by the BOEs to the SOS and for this study. Table A1 provides geocoding results and Table A2 compares total votes reported by the SOS and those used in this analysis. Overall, excluding the 2008 results for Franklin County, there is a 6.9 percent difference between the SOS total votes in the three combined elections and the total votes used in the analysis.

<sup>4</sup> Again, these results exclude data for Franklin County in 2008.

respectively, compared to only 2.4 percent of the votes in 2010 (Table 2). Absentee voting by mail in 2008 and 2012 accounted for roughly a quarter of the votes (24.2% and 27.3%, respectively), while nearly a third (32.4%) were cast by mail in 2008.

Racial differences between the 2008 and 2012 presidential elections and the midterm 2010 are also apparent (Table 6). African American voters heavily used early in-person voting opportunities in both 2008 and 2012 (17.3% and 16.1% of their votes, respectively), but only 4.1 percent of Black votes were cast early and in-person in 2010. The use of early in-person voting among other non-White and Hispanic voters also exceeded that of White voters in the presidential elections. Differences were substantially less in the 2010 election (though still statistically significantly different).

These results vary only moderately by county. The pattern of African Americans disproportionately using early in-person voting is found consistently across counties and elections (2008 election in Franklin County unknown). Non-African American and Hispanic minority voters also used early in-person voting more than White voters in all five counties overall.

#### Specific Early In-Person Voting Periods

Ohio Senate Bill 238, passed in February 2014, changes early in-person voting for the 2014 general election in Ohio. This change includes the elimination of voting on the Sunday before the election and reduces the early voting period from 35 days to 29 days before Election Day. In addition, the bill also eliminates the so-called Golden Week, the first week of voting in which voters can register and vote on the same day. Therefore, this analysis also examines the potential effect of those changes on voting in the five urban counties, and finds that, on an average daily basis, there was more voting by all groups in Golden Week and the Sunday before the election than on other early voting days. Not including the 2008 election in Franklin County (and using only geocoded addresses), there was an average of 23,794 votes cast on the Sunday before the election and 12,280 cast on the average day of Golden Week, compared to an average of 8,512 ballots cast in person during other early voting days.

In Cuyahoga County, voter participation rates, when measured as the percentage of 2010 persons age 18 and older, are similar for African American and White voters – 53.4 percent and 55.7 percent, respectively – when all three election years are combined (Table 7). Participation rates were higher for both groups in the presidential election years - approximately 61 percent in 2012 and approximately 62 percent in 2008. The 2010 rates were 36.3 percent for African Americans and 43.2 percent for Whites.

The non-White, non-Black voters in the county had higher participation rates than Whites and African Americans in all three elections, averaging 59.2 percent overall. Hispanics, on the other hand, voted less, averaging 41.5 percent for the combined three elections.

With that as context, we compare when these populations voted.

African Americans in Cuyahoga County used absentee voting by mail far less than their White counterparts. They clearly prefer to cast ballots in person, whether early or on Election Day.

Overall, 58.2 percent of their votes were cast on Election Day, significantly greater than the 56.2 percent of Whites who cast votes in those three elections (Table 3). Proportionally, African Americans used the Sunday before Election Day more than Whites (0.6% versus 0.2%), Golden Week (6.6% versus 1.7%), and other early voting days (4.9% versus 1.3%). Whites, on the other hand, extensively used the mail to cast votes. Two out of three White ballots were cast in this way, compared to less than 30 percent (29.7%) for African Americans, 36.2 percent for other races, and 33.0 percent for Hispanic voters, all of which are statistically less than the White percentage using the mail.

Statistically different proportions of when Whites and other minority groups voted in Cuyahoga County are found for each of the three elections (Table 6). Non-White, non-African American voters and Hispanic voters used Golden Week and other early in-person voting more than White voters in all three elections. Non-White, non-African American voters also disproportionately voted on the Sunday before Election Day in 2012 and 2008 when compared to White voters. They also used other early in-person voting days proportionately more than White voters in 2010.

Statistically significant differences with White voting are not found for Hispanics in the Sunday before Election Day voting in 2012 and 2010, though there is such a difference in the 2008 election. None of the minority groups used voting by mail more than White voters did in any of the elections.

Similar findings can be noted for the other urban counties examined in this study (see Table 6).

#### Additional Analysis for Cuyahoga County

The correlation between early voting opportunities taken by African Americans can be seen visually in Maps 1 and 2. Map 1 shows the percentage of the 2010 voting age population in Cuyahoga County that was African American (1 race category) by census block and the geographic distribution of voters casting in person votes on the Sunday before the election in 2012. Map 2 shows the African American (AA) population again, but with the distribution of voters voting in person during Golden Week. Map 3 shows the distribution of voters using the mail to cast votes.

Maps 1 and 2 provide a clear visualization of the geographic correlation between the residential concentration of African Americans of voting age and the use of both Sunday before Election Day and Golden Week during the 2012 election in the county. Map 3 clearly shows that the use of voting by mail was largely wide-spread across the county, but is relatively absent in the areas of higher percentages of African Americans, given the large numbers of such persons in such areas.

The conclusions from this visual analysis are confirmed using statistical correlation analysis. Using the census block summary level, we find that the correlation (Pearson's  $r$ ) between percent African American population 18 and older (1 race) and percent of votes cast that were made in person on the Sunday before Election Day in 2012 is 0.118 ( $p < 0.0001$ ). The correlation between percent AA and percent using Golden Week to vote is even stronger at 0.267 ( $p < 0.0001$ ). Meanwhile, correlations between percent White voting age population (18 and older, 1 race) and percent of votes on the Sunday before the election and during Golden Week are negative and highly statistically significant (-0.118 and -0.263, respectively; both with  $p < 0.0001$ ).

Correlations between neighborhood racial composition and use of balloting by mail show that census blocks with higher proportions of White voters are more likely to also have higher

proportions of voters using the mail to cast ballots (Whites:  $r = 0.344$ ,  $p < 0.0001$ ; AA:  $r = -0.317$ ,  $p < 0.0001$ ).

Hispanic neighborhoods also see few mail-in votes ( $r = -0.146$ ,  $p < 0.0001$ ). Voters in Hispanic neighborhoods also apparently do not use Golden Week or the Sunday before the election to cast in person votes, since correlations between percentage Hispanic and percent using these opportunities are negative ( $r = -0.035$  with  $p < 0.0001$  and  $-0.023$  with  $p < 0.0124$ , respectively).

The correlation analysis confirms the earlier conclusion that voters living in largely African American neighborhoods disproportionately use early in person voting, including Golden Week and the Sunday before the election. Those in White neighborhoods are more likely to cast their votes by mail than are those living in largely African American neighborhoods.

### **Conclusions**

This analysis clearly (and statistically significantly) shows that minorities, especially African Americans, disproportionately use early in-person voting opportunities compared to White voters. This is true for all five counties, though the results for counties other than Cuyahoga are more mixed for comparisons of Hispanics and other minorities to White voter balloting.

On the other hand, White voters disproportionately use absentee voting by mail.

Therefore, Ohio House Senate Bill 238, in reducing early in-person voting days and eliminating Golden Week and the Sunday before Election Day, will disproportionately affect and disadvantage racial and Hispanic minority voters.

Table 1: Votes by Race/Ethnicity, Election, Method, and County

		2012 Election					2010 Election					2008 Election (excludes Franklin)					All 3 Elections				
		Black	White	Other race	Hispanic	Total	Black	White	Other race	Hispanic	Total	Black	White	Other race	Hispanic	Total	Black	White	Other race	Hispanic	Total
Cuyahoga	Election Day	99,025	229,676	17,188	11,749	357,639	58,156	141,564	9,552	5,911	215,183	98,275	247,535	18,121	12,681	376,611	255,456	618,775	44,861	30,342	949,434
	Sunday before	1,574	1,344	152	81	3,151	118	86	10	4	218	1,003	626	84	49	1,762	2,695	2,057	246	134	5,131
	Golden Week	2,531	1,255	179	109	4,074	68	83	7	6	165	26,217	17,219	2,167	1,182	46,785	28,816	18,557	2,354	1,297	51,024
	Other in-person early	19,354	13,185	1,639	947	35,125	1,935	1,479	170	91	3,675	44	26	4	2	76	21,334	14,689	1,813	1,040	38,876
	Mail	46,825	156,125	9,940	5,747	218,637	38,966	141,838	8,519	4,862	194,184	44,499	149,740	9,551	5,544	209,334	130,289	447,703	28,010	16,153	622,155
	Total	169,309	401,585	29,099	18,633	618,626	99,244	285,050	18,257	10,874	413,425	170,037	415,146	29,927	19,458	634,568	438,590	1,101,781	77,283	48,966	1,666,620
Franklin	Election Day	47,751	230,233	20,630	8,920	307,533	32,773	162,531	13,395	5,637	214,336	NA					80,524	392,763	34,025	14,557	521,869
	Sunday before	1,127	2,035	286	149	3,597	182	384	39	18	624						1,309	2,419	326	167	4,221
	Golden Week	3,515	5,719	736	396	10,366	192	658	67	28	945						3,706	6,378	803	425	11,312
	Other in-person early	14,931	34,115	3,840	1,829	54,715	1,345	3,931	378	158	5,812						16,276	38,046	4,218	1,987	60,527
	Mail	24,493	117,598	9,878	4,127	156,096	19,938	103,292	8,120	3,380	134,730						44,431	220,890	17,998	7,508	290,827
	Total	91,816	389,700	35,370	15,421	532,307	54,430	270,797	21,999	9,222	356,448						146,246	660,497	57,370	24,643	888,755
Hamilton	Election Day	64,319	217,552	11,477	5,144	298,492	42,107	161,159	8,037	3,483	214,786	65,594	225,578	11,801	5,313	308,286	172,020	604,288	31,315	13,939	821,563
	Sunday before	522	508	46	20	1,097	No voting on Sunday before election					No voting on Sunday before election					522	508	46	20	1,097
	Golden Week	1,768	1,879	162	77	3,886	359	412	35	15	820	1,920	2,320	210	89	4,540	4,047	4,612	406	181	9,246
	Other in-person early	6,983	10,132	780	344	18,239	2,008	3,292	226	94	5,620	8,705	11,311	927	409	21,352	17,695	24,735	1,933	847	45,211
	Mail	16,989	63,856	3,198	1,379	85,422	10,803	44,453	2,089	904	58,249	14,757	59,818	2,961	1,272	78,808	42,549	168,127	8,248	3,555	222,479
	Total	90,581	293,928	15,663	6,965	407,137	55,277	209,315	10,387	4,495	279,474	90,976	299,027	15,899	7,083	412,986	236,834	802,271	41,949	18,542	1,099,596
Lucas	Election Day	19,384	108,661	6,293	5,592	139,930	13,035	79,357	4,262	3,627	100,281	17,759	105,967	6,027	5,447	135,201	50,178	293,986	16,583	14,666	375,412
	Sunday before	308	470	45	33	855	115	233	19	13	380	2,229	2,229	2,229	2,229	8,916	2,651	2,932	2,293	2,275	10,151
	Golden Week	1,401	1,892	168	141	3,603	143	380	23	19	565	400	610	58	46	1,114	1,944	2,882	250	206	5,282
	Other in-person early	5,156	9,624	775	617	16,172	1,225	2,591	181	143	4,140	5,880	9,566	818	629	16,893	12,260	21,782	1,774	1,389	37,205
	Mail	4,966	26,757	1,449	1,201	34,372	3,482	21,244	1,076	880	26,681	4,398	24,749	1,301	1,050	31,498	12,845	72,750	3,825	3,131	92,551
	Total	31,214	147,404	8,729	7,584	194,932	17,998	103,805	5,562	4,682	132,047	30,666	143,122	10,433	9,401	193,622	79,879	394,331	24,725	21,666	520,600
Summit	Election Day	17,818	148,379	5,886	1,933	174,016	13,172	114,352	4,353	1,405	133,282	15,665	143,233	5,475	1,810	166,183	46,655	405,964	15,714	5,147	473,480
	Sunday before	330	752	55	18	1,155	134	317	21	6	478	461	1,014	65	22	1,562	925	2,082	142	46	3,195
	Golden Week	1,722	2,699	194	66	4,682	183	768	32	11	994	1,105	2,131	136	50	3,422	3,010	5,599	362	127	9,098
	Other in-person early	5,383	13,865	796	269	20,313	2,032	6,100	313	105	8,550	7,588	18,579	1,099	376	27,642	15,003	38,544	2,208	749	56,504
	Mail	6,367	45,278	1,901	596	54,142	2,625	18,599	760	239	22,223	3,904	32,117	1,275	404	37,700	12,896	95,994	3,936	1,239	114,065
	Total	31,620	210,973	8,833	2,882	254,308	18,146	140,136	5,479	1,765	165,526	28,722	197,074	8,050	2,662	236,509	78,489	548,183	22,362	7,309	656,343
All 5 Counties	Election Day	248,297	934,501	61,474	33,337	1,277,609	159,244	658,962	39,600	20,063	877,868	197,293	722,313	41,424	25,251	986,281	604,833	2,315,775	142,498	78,650	3,141,757
	Sunday before	3,860	5,109	585	300	9,854	549	1,020	90	41	1,700	3,693	3,869	2,378	2,300	12,240	8,102	9,998	3,053	2,641	23,794
	Golden Week	10,937	13,445	1,440	790	26,612	944	2,302	165	78	3,488	29,642	22,280	2,571	1,367	55,861	41,523	38,027	4,176	2,236	85,962
	Other in-person early	51,807	80,921	7,830	4,006	144,564	8,545	17,393	1,268	591	27,797	22,217	39,482	2,848	1,416	65,963	82,569	137,796	11,946	6,012	238,323
	Mail	99,640	409,614	26,365	13,051	548,670	75,812	329,426	20,563	10,264	436,066	67,558	266,425	15,088	8,270	357,340	243,010	1,005,465	62,016	31,586	1,342,077
	Total	414,541	1,443,590	97,695	51,484	2,007,309	245,094	1,009,103	61,685	31,038	1,346,920	320,402	1,054,370	64,310	38,604	1,477,685	980,037	3,507,062	223,689	121,126	4,831,914

Table 2: Votes by Race/Ethnicity and by Election Day, Early In-Person, and Mail Voting

		2012 Election					2010 Election					2008 Election (excludes Franklin)					All 3 Elections				
		Black	White	Other race	Hispanic	Total	Black	White	Other race	Hispanic	Total	Black	White	Other race	Hispanic	Total	Black	White	Other race	Hispanic	Total
All 5 Counties	Early In-Person	66,604	99,475	9,855	5,097	181,031	10,038	20,715	1,522	710	32,985	55,551	65,632	7,798	5,083	134,064	132,194	185,822	19,175	10,890	348,080
	Percent Election Day	59.9%	64.7%	62.9%	64.8%	63.6%	65.0%	65.3%	64.2%	64.6%	65.2%	61.6%	68.5%	64.4%	65.4%	66.7%	61.7%	66.0%	63.7%	64.9%	65.0%
	Percent EIP	16.1%	6.9%	10.1%	9.9%	9.0%	4.10%	2.05%	2.47%	2.29%	2.45%	17.3%	6.2%	12.1%	13.2%	9.1%	13.5%	5.3%	8.6%	9.0%	7.2%
	Percent Mail	24.0%	28.4%	27.0%	25.3%	27.3%	30.9%	32.6%	33.3%	33.1%	32.4%	21.1%	25.3%	23.5%	21.4%	24.2%	24.8%	28.7%	27.7%	26.1%	27.8%



Table 3: Percentage of Votes by Race/Ethnicity, Method, and County, Three Elections Combined (2008 Franklin excluded)

		Percent of Period/Method				Percent of Race/Ethnicity Votes				
		Black	White	Other race	Hispanic	Black	White	Other race	Hispanic	Total
Cuyahoga	Election Day	26.9%	65.2%	4.7%	3.2%	58.2%	56.2%	58.0%	62.0%	57.0%
	Sunday before	52.5%	40.1%	4.8%	2.6%	0.6%	0.2%	0.3%	0.3%	0.1%
	Golden Week	56.5%	36.4%	4.6%	2.5%	6.6%	1.7%	3.0%	2.6%	1.1%
	Other in-person early	54.9%	37.8%	4.7%	2.7%	4.9%	1.3%	2.3%	2.1%	0.8%
	Mail	20.9%	72.0%	4.5%	2.6%	29.7%	40.6%	36.2%	33.0%	12.9%
	Total	26.3%	66.1%	4.6%	2.9%	100.0%	100.0%	100.0%	100.0%	34.5%
Franklin	Election Day	15.4%	75.3%	6.5%	2.8%	55.1%	59.5%	59.3%	59.1%	58.7%
	Sunday before	31.0%	57.3%	7.7%	4.0%	0.9%	0.4%	0.6%	0.7%	0.5%
	Golden Week	32.8%	56.4%	7.1%	3.8%	2.5%	1.0%	1.4%	1.7%	1.3%
	Other in-person early	26.9%	62.9%	7.0%	3.3%	11.1%	5.8%	7.4%	8.1%	6.8%
	Mail	15.3%	76.0%	6.2%	2.6%	30.4%	33.4%	31.4%	30.5%	32.7%
	Total	16.5%	74.3%	6.5%	2.8%	100.0%	100.0%	100.0%	100.0%	100.0%
Hamilton	Election Day	20.9%	73.6%	3.8%	1.7%	72.6%	75.3%	74.7%	75.2%	74.7%
	Sunday before	47.6%	46.3%	4.2%	1.8%	0.2%	0.1%	0.1%	0.1%	0.1%
	Golden Week	43.8%	49.9%	4.4%	2.0%	1.7%	0.6%	1.0%	1.0%	0.8%
	Other in-person early	39.1%	54.7%	4.3%	1.9%	7.5%	3.1%	4.6%	4.6%	4.1%
	Mail	19.1%	75.6%	3.7%	1.6%	18.0%	21.0%	19.7%	19.2%	20.2%
	Total	21.5%	73.0%	3.8%	1.7%	100.0%	100.0%	100.0%	100.0%	100.0%
Lucas	Election Day	13.4%	78.3%	4.4%	3.9%	62.8%	74.6%	67.1%	67.7%	72.1%
	Sunday before	26.1%	28.9%	22.6%	22.4%	3.3%	0.7%	9.3%	10.5%	1.9%
	Golden Week	36.8%	54.6%	4.7%	3.9%	2.4%	0.7%	1.0%	0.9%	1.0%
	Other in-person early	33.0%	58.5%	4.8%	3.7%	15.3%	5.5%	7.2%	6.4%	7.1%
	Mail	13.9%	78.6%	4.1%	3.4%	16.1%	18.4%	15.5%	14.5%	17.8%
	Total	15.3%	75.7%	4.7%	4.2%	100.0%	100.0%	100.0%	100.0%	100.0%
Summit	Election Day	9.9%	85.7%	3.3%	1.1%	59.4%	74.1%	70.3%	70.4%	72.1%
	Sunday before	28.9%	65.2%	4.4%	1.4%	1.2%	0.4%	0.6%	0.6%	0.5%
	Golden Week	33.1%	61.5%	4.0%	1.4%	3.8%	1.0%	1.6%	1.7%	1.4%
	Other in-person early	26.6%	68.2%	3.9%	1.3%	19.1%	7.0%	9.9%	10.3%	8.6%
	Mail	11.3%	84.2%	3.5%	1.1%	16.4%	17.5%	17.6%	17.0%	17.4%
	Total	12.0%	83.5%	3.4%	1.1%	100.0%	100.0%	100.0%	100.0%	100.0%
All 5 Counties	Election Day	19.3%	73.7%	4.5%	2.5%	61.7%	66.0%	63.7%	64.9%	65.0%
	Sunday before	34.1%	42.0%	12.8%	11.1%	0.8%	0.3%	1.4%	2.2%	0.5%
	Golden Week	48.3%	44.2%	4.9%	2.6%	4.2%	1.1%	1.9%	1.8%	1.8%
	Other in-person early	34.6%	57.8%	5.0%	2.5%	8.4%	3.9%	5.3%	5.0%	4.9%
	Mail	18.1%	74.9%	4.6%	2.4%	24.8%	28.7%	27.7%	26.1%	27.8%
	Total	20.3%	72.6%	4.6%	2.5%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 4: Percentage of Votes by Race and Election Day, Early In-Person, and Mail Voting, Three Elections Combined (2008 Franklin excluded)

		Percent of Period/Method				Percent of Race/Ethnicity Votes				
		Black	White	Other race	Hispanic	Black	White	Other race	Hispanic	Total
All 5 Counties	Percent Election Day	19.3%	73.7%	4.5%	2.5%	61.7%	66.0%	63.7%	64.9%	65.0%
	Percent EIP	38.0%	53.4%	5.5%	3.1%	13.5%	5.3%	8.6%	9.0%	7.2%
	Percent Mail	18.1%	74.9%	4.6%	2.4%	24.8%	28.7%	27.7%	26.1%	27.8%
	Total	20.3%	72.6%	4.6%	2.5%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 5: Percentage of Votes by Race/Ethnicity and Method, Three Elections Combined (2008 Franklin excluded)

		Percent of Period/Method				Percent of Race/Ethnicity Votes				
		Black	White	Other race	Hispanic	Black	White	Other race	Hispanic	Total
All 5 Counties	Election Day	19.3%	73.7%	4.5%	2.5%	61.7%	66.0%	63.7%	64.9%	65.0%
	Sunday before	34.1%	42.0%	12.8%	11.1%	0.8%	0.3%	1.4%	2.2%	0.5%
	Golden Week	48.3%	44.2%	4.9%	2.6%	4.2%	1.1%	1.9%	1.8%	1.8%
	Other in-person early	34.6%	57.8%	5.0%	2.5%	8.4%	3.9%	5.3%	5.0%	4.9%
	Mail	18.1%	74.9%	4.6%	2.4%	24.8%	28.7%	27.7%	26.1%	27.8%
	Total	20.3%	72.6%	4.6%	2.5%	100.0%	100.0%	100.0%	100.0%	100.0%



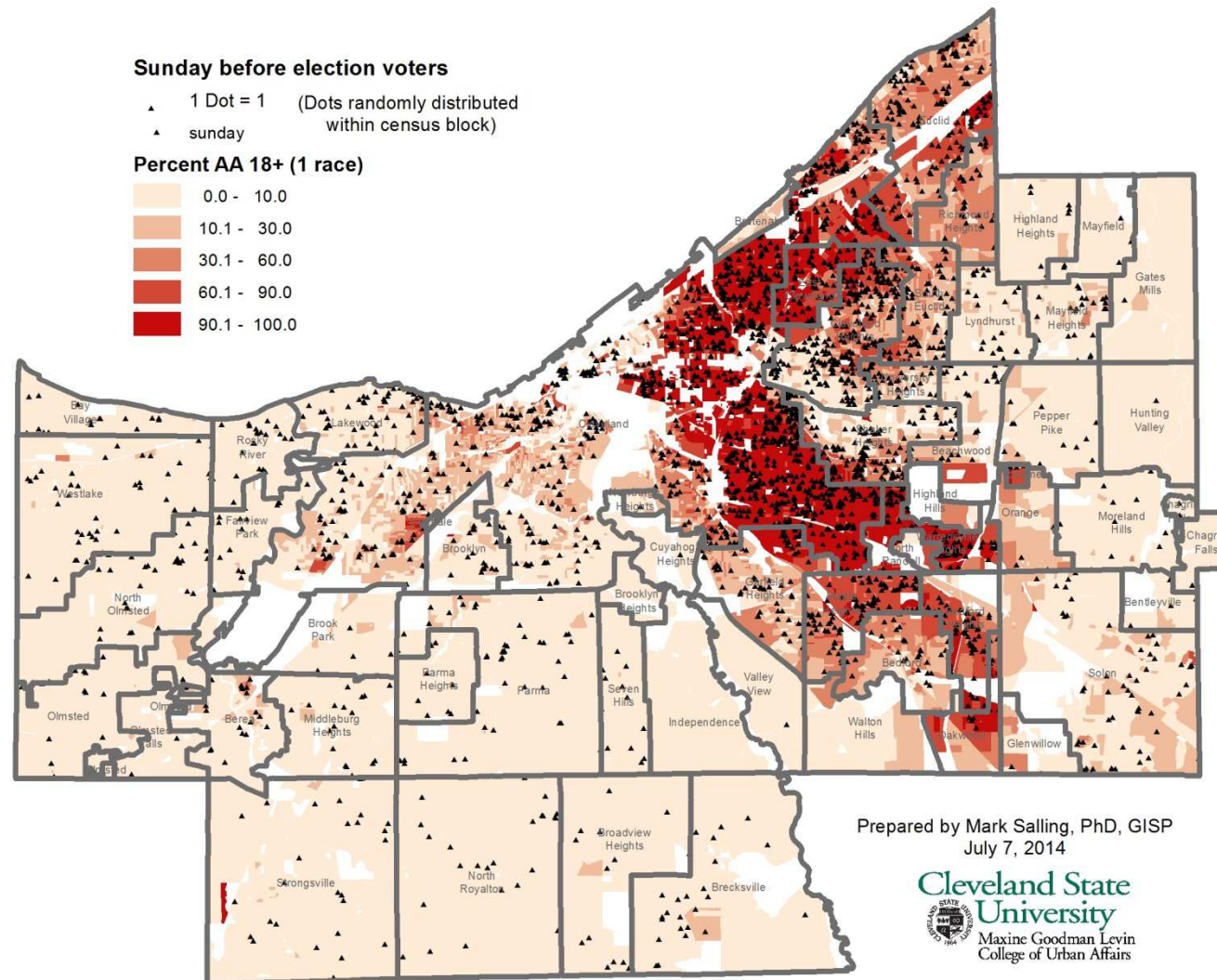
Table 6: Table 6: Test of Proportions (Is the percent of votes for that group, in that period, different than for White voters in that period?)

		2012 Election			2010 Election			2008 Election		
Compared to White Voting Proportion:		Black	Other race	Hispanic	Black	Other race	Hispanic	Black	Other race	Hispanic
Cuyahoga	Election Day	**	**	**	**	**	**			**
	Sunday before	**	**		**			**	**	**
	Golden Week	**	**	**	**			**	**	**
	Other in-person early	**	**	**	**	**	**	**	**	**
	Mail									
Franklin	Election Day					*	*	NA	NA	NA
	Sunday before	**	**	**	**			NA	NA	NA
	Golden Week	**	**	**	**			NA	NA	NA
	Other in-person early	**	**	**	**	**		NA	NA	NA
	Mail							NA	NA	NA
Hamilton	Election Day									
	Sunday before	**	**		No voting on Sunday before election			No voting on Sunday before election		
	Golden Week	**	**	**	**	**	*	**	**	**
	Other in-person early	**	**	**	**	**	**	**	**	**
	Mail									
Lucas	Election Day									
	Sunday before	**	**		**			**	**	*
	Golden Week	**	**	**	**			**	**	**
	Other in-person early	**	**	**	**	**		**	**	**
	Mail									
Summit	Election Day									
	Sunday before	**	**		**	*		**	**	*
	Golden Week	**	**	**	**			**	**	**
	Other in-person early	**	**	**	**	**	**	**	**	**
	Mail									
Note:		** =	Statistically significant at the 0.01 level							
		* =	Statistically significant at the 0.05 level							
		NA =	Data not available for analysis							

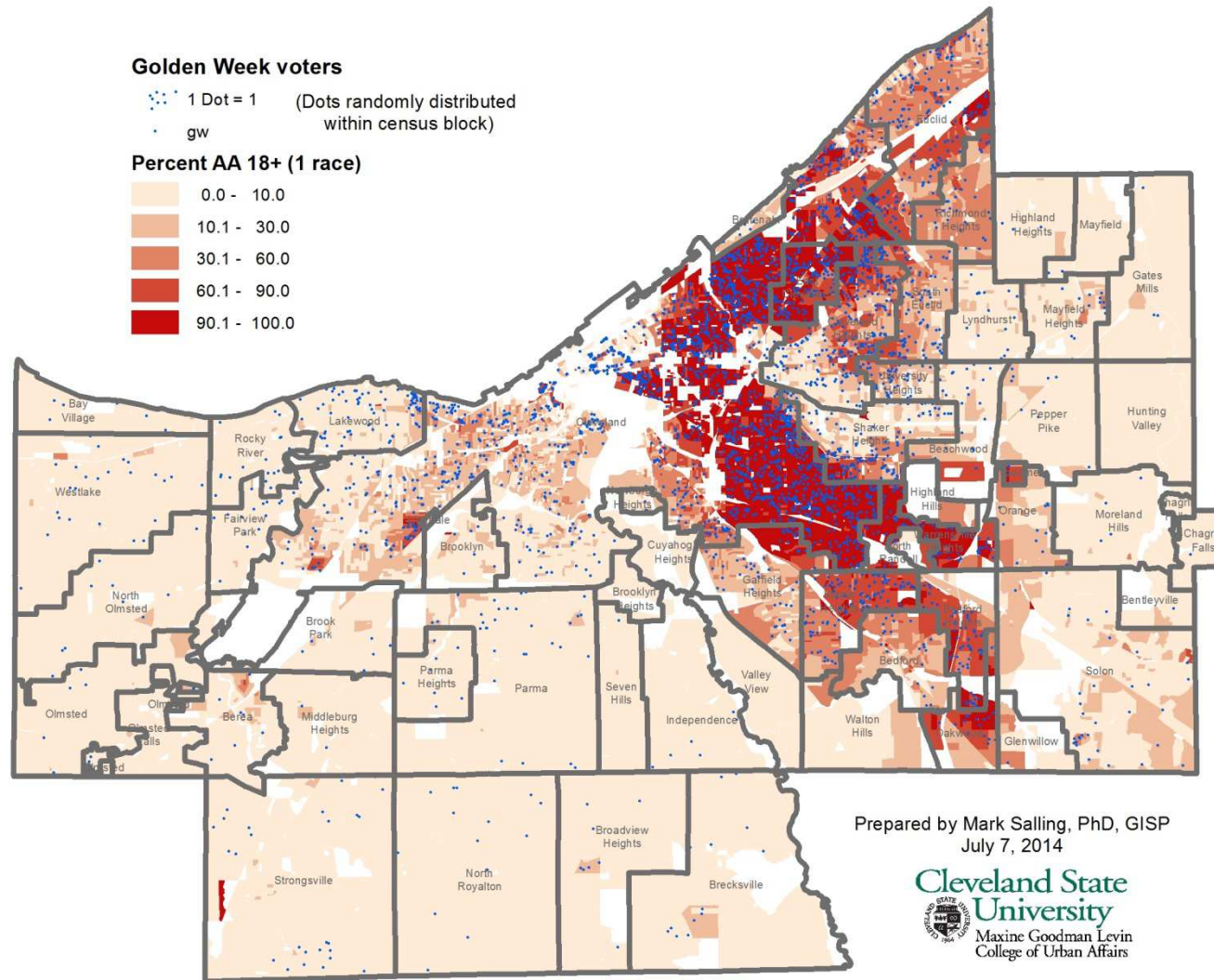
Table 7: Voter Participation Rates (based on voters used in the analysis and persons age 18 and older in the 2010 Census of Population)

	2012					2010					2008					Average				
	Black	White	Other race	Hispanic	Total	Black	White	Other race	Hispanic	Total	Black	White	Other race	Hispanic	Total	Black	White	Other race	Hispanic	Total
<b>Cuyahoga</b>	61.9%	60.9%	66.8%	47.4%	63.3%	36.3%	43.2%	41.9%	27.6%	42.3%	62.1%	62.9%	68.7%	49.5%	65.0%	53.4%	55.7%	59.2%	41.5%	56.9%
<b>Franklin</b>	53.9%	60.6%	64.6%	44.0%	61.3%	31.9%	42.1%	40.2%	26.3%	41.0%	NA	NA	NA	NA	NA	42.9%	51.3%	52.4%	35.1%	51.2%
<b>Hamilton</b>	62.3%	66.8%	79.3%	52.3%	67.3%	38.0%	47.6%	52.6%	33.7%	46.2%	62.6%	68.0%	80.5%	53.2%	68.3%	54.3%	60.8%	70.8%	46.4%	60.6%
<b>Lucas</b>	52.9%	57.0%	71.6%	47.9%	59.1%	30.5%	40.1%	45.6%	29.6%	40.0%	52.0%	55.3%	85.6%	59.4%	58.7%	45.1%	50.8%	67.6%	45.6%	52.6%
<b>Summit</b>	57.4%	60.8%	79.1%	53.3%	61.6%	32.9%	40.4%	49.0%	32.6%	40.1%	52.1%	56.8%	72.1%	49.2%	57.3%	47.5%	52.7%	66.7%	45.1%	53.0%
<b>Total</b>	58.9%	61.5%	69.1%	47.2%	62.9%	34.8%	43.0%	43.6%	28.5%	42.2%	45.5%	44.9%	45.5%	35.4%	46.3%	46.4%	49.8%	52.7%	37.1%	50.4%

Map 1: Geographic Distribution of Percent African American, Age 18 and Older and Votes Cast In Person on the Sunday before Election Day, 2012



Map 2: Geographic Distribution of Percent African American, Age 18 and Older and Votes Cast In Person During Golden Week, 2012





Map 3: Geographic Distributions of Percent African American, Age 18 and Older and Votes Cast by Mail, 2012

