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Racial Bias and Interstate Highway Planning: A Mixed Methods Approach

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Abstract

This paper is an analysis of highway alignments based on the census tracts that surround them. First, I perform a quantitative analysis of the tracts with highways and the percentage of non-white and African-Americans in these tracts as opposed to in the state and region in general. In areas where the T-Tests noted a significant difference, a case study approach was employed to conjecture as to the reasoning for these suspect alignments.

Keywords

highways, racial bias, prejudice, racism, mixed methods, quantitative, qualitative, mapping, Political Science, Adolph Reed, Reed, Adolph

Disciplines

American Politics | Infrastructure | Transportation | Urban Studies

Political Science Honors Thesis

Racial Bias and Interstate Planning: A Mixed Methods Approach

Bradford Sherman, Adviser: Professor Adolph Reed

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Preface

This paper is the result of several consecutive semesters of working towards the same overall goal. First, the lion's share of my gratitude goes to Professor Adolph Reed for his countless hours, both consoling me about Florida State's (recently improved) poor sports performance and my pursuit of understanding this idea about the aspects of transportation that intermingle so prominently with race.

Another professor who has had an immeasurable impact on this piece has been Ariel Ben-Amos. His class opened my eyes to the field of planning's imperfections, leading me to question these seemingly immortal planners' judgment and teaching the incredible value of primary sources in the analysis of these actions.

This task at hand has been facilitated by countless other classes and experiences here at Penn, including Harold Dibble's Quantitative Analysis of Anthropologic Data and Ira Goldstein's Urban Research Methods, each of which reinforced the quantitative section and methods that form the bedrock of this paper.

Furthermore, the data's processing has been facilitated by the College of Arts and Sciences' ESRI ArcGIS and IBM SPSS licenses, using data from the United States Department of Transportation, United States Department of Commerce, and the National Historical Geographic Information System's TIGER Files and 1960 Data Sets. Without any one of these factors working together so seamlessly, this project could not have come to fruition.

On a personal note, I'd like to take a moment and thank my parents for facilitating my education at this estimable institution and allowing me the leeway to develop my own course of study here, as well as leading into my next step towards graduate school. Truly, they have been inspirational throughout my academic career, and I am fortunate that they have been such a consistent source of support. I would also take a second to thank my charming sister for her color commentary and upbeat discussions on those long evenings after data crunching, and the perfect pets Chevy, Lady, and Peanut. With this consistent support at home, I have been able to pursue this goal with project with the dedication it deserved and required.

Introduction

Few programs have as indelibly shaped the American canvas the interstate highway system. Originally conceived as a method of movement for soldiers in time of war, the highway system has morphed into a sprawling series of roads, largely aligned with one another, to facilitate the speedy movement of large numbers over large distances. These roads function daily to move millions of vehicles to their destinations, whether that be across the county or country, yet they create a distinctive impact on the areas that directly surround them through their various environmental and desirability impacts.

This essay, however, will not examine the nature of these consequences. Rather, we will discuss the process that has led to their arrival, the interstate highway planning process. Our examination will be centered on assessing the impact of neighborhood racial composition on interstate highway planning. This will be done through both the use of qualitative and quantitative methods, as are explained in the Structure section. However, this will require shedding light on the inner nature of these highways, and it requires us to look at these behemoths in different roles, though they fundamentally block, they also convey. These roles are examined in the case studies with great detail, and it appears that both roles were manipulated in different situations by the respective authorities.

Structure

This essay will divide itself into a few readily apparent pieces. The first section, will be discussing both the historical legacy and planning processes of highways. This is then followed by a brief literature review which addresses the rather scant literature on this topic.

After a discussion of this history, the essay will enter the territory of a quantitative analysis, where a t-test will be conducted in various urban areas, where the race as reported in 1960 will be compared to the presence or lack of a highway in the tract. This will be used to see if the sample represents a proportional portion of the overall population of census tracts in the area on the basis of race.

From these results, several of the states that had significant results were chosen for further study. These states will be examined in the form of a miniature case study which attempts to answer with a degree of cross comparability why the test came back as it did, and what factors may have caused this in the local political and planning environment.

Historical Background

Originally, highways were thought of primarily as easing intra-city traffic, as a replacement for the main arteries that cities felt were overburdened. In this system, much of the nation's commerce travels over these roads that stitch together the various parts of the nation into one cohesive and relatively fluid market.¹ Between 1921 and 1939, annual highway expenses more than doubled to excess of \$2 billion annually.² Until the 1940's, the vast majority of this spending on highways was from the coffers of the states themselves, not the Federal government. However, with the Highway Act of 1956, the Federal Bureau of Public Road was given the task of determining the routing for new freeways in America, a dramatic shift from the earlier state-controlled protocols.³ This dramatically increased the standardization of the highways, as well as increasing the scale of the projects to an exceptional extent.

This federal protocol was singlehanded focused on inexpensive methods for ameliorating automobile congestion in cities. However, these federally mandated methods shifted a large degree of control from the city itself to federal and state transportation planners, which may have contributed to the unique, and often culturally insensitive routes that the freeways created.⁴ With a federal subsidy of 90% of the freeway's cost, many cities jumped at the opportunity to accept

¹ Charles L Dearing, *American Highway Policy*, (Washington, D.C.: Brookings Institution, 1942), 3.

² Ibid.

³ Susan S Fainstein, *Restructuring the City: The Political Economy of Urban Redevelopment* (New York: Longman, 1983), 13.

⁴ Ibid., 14.

federal funds for these highways, wherever the planners in Washington saw fit to place them, rendering much of the feedback mechanisms put into place useless.

Concurrently with this time period, there was a shift toward suburbanization in the cities. During the period from 1950-1960, the standard metropolitan statistical areas (SMSAs) around Atlanta, Baltimore, Dallas, Cleveland, Houston, San Diego, and Passaic all experienced growth in excess of 20%.⁵ While there was this major SMSA growth, the central cities in that list grew by a factor much smaller than the overall SMSA growth.⁶ This outside growth required cities to shift their transportation planning focus on intra-city arteries to inter-community road networks that would alleviate the strain on the city's roads created by people who were simply passing through the area in order to reach their destinations.

Especially notable about this trend was the sharp uptick in car ownership in many overall MSA, while the center cities' citizens' car ownership remained relatively flat, resulting in a net increase of long distance commuters which further strained central transportation amenities.⁷ For cities like Atlanta, Cleveland, Dallas, and Milwaukee, nearly half of the SMSA residents live in the suburbs but work in the center cities themselves by 1960.⁸ This demographic shift with so many commuters heading into the city on a daily basis changes the overall requirement from the roads being a local concern to a regional issue.

This dependence on motor vehicles has only worsened over time. In 1960, as the interstate highway system was first being constructed, only 64% of commuters did so by car;

⁵ General Research Corporation and United States. Dept. of Housing and Urban Development, *Systems Analysis of Urban Transportation* (Santa Barbara, Ca.: General Research Corp., 1968), 15.

⁶ Ibid.

⁷ Ibid., 18.

⁸ Ibid.

however, by 1990, that number had jumped to 86.5%, of which 73.2% drove exclusively alone, and the remaining portion carpooled occasionally (which was a percentage that had fallen rather precipitously from its height in 1980 when it was first asked).⁹

It is the unique confluence of these two situations, the availability of federal funds and the heightening stress on the public road systems that prompted the explosion of the interstate highway network across America.

⁹ *Means of Transportation to Work for the US* (United States Census, 1990), <http://www.census.gov/hhes/commuting/files/1990/mode6790.txt>.

Highway Planning Process

Planning for urban highways is theoretically done as pieces of a long-term plan, usually a published roadmap outlining overall goals that the area seeks to achieve through new transportation construction.¹⁰ These overall plans should allow for the construction of a “grand narrative” of sorts for the region’s transportation planning, and it is a requirement imposed by the legislation that grants federal aid for transportation funds.

The federal stipulations state that the plans must both take into account all of the relative inputs for the travel needs and systems as well as the potential costs and benefits of the designed system.¹¹ However, this second prong is not as inclusive as it might seem.

Primarily, the legislation requires the plan to focus on the aspects of the transportation system’s overall costs, for example the increased stress on the roads that are the route’s exits that is imposed by backtracking from the exit to the desired roads or the retiming of lights due to changes in throughput. Very little emphasis was placed on the cultural significance or other intangibles that affected the construction process.¹²

Federal Bureau of Public Roads (BPR) regulations required that every urbanized area larger than 50,000 people have some form of centralized planning body in order to be eligible for federal aid.¹³ This centralization led to the creation of the artifice of a “balanced system.”¹⁴ The balanced system concept dictated that all regions, and sub-regions have the ability to provide as

¹⁰ Anthony R. Tomazinis, *An Introduction to Urban Transportation Planning, Emerging Techniques and Theories* (Philadelphia, 1967), 19.

¹¹ *Ibid.*, 20.

¹² *Ibid.*

¹³ RJ Henson and WL Grecco, “An Information Manual On the Urban Transportation Planning Process for Technical Committees in Smaller Urban Areas” (Joint Highway Research Project, February 1970), 2, http://ia700401.us.archive.org/19/items/informationmanua00hens/informationmanua00hens_bw.pdf.

¹⁴ Tomazinis, *An Introduction to Urban Transportation Planning, Emerging Techniques and Theories*, 23–4.

much transportation as the area demands.¹⁵ In practice, however, there is an emphasis on reaching as many of these equilibria as possible due to strained resources precluding complete balancing of the system.¹⁶

This dictates that the policy makers must either create a few major policy objectives to complete or balance the transportation only in a certain few areas. Frequently, when routing these highways socio-economic and racial distribution is heavily figured into the mix through several different implicit mechanisms, such as property valuation or limited access roads.¹⁷

¹⁵ Ibid., 24.

¹⁶ Ibid., 25.

¹⁷ Ibid.

Openness in Planning

The Federal Highway Administration has outlined the exact provisions for the openness in highway planning. In it, the Federal Highway Administration assures that “Public involvement processes shall be proactive and provide complete information, timely public notice, full public access to key decisions, and opportunities for early and continuing involvement.”¹⁸

In practice, however, this guarantee is less serviceable. When discussing his role at the California Division of Highways, Robert J. Datel essentially boiled it down to a two-step process.¹⁹ First, the FHA would find the elected leaders of the area and ask their opinions, then the FHA would go about locating the “leaders of every facet” of the area, such as the bishops, pastors, editors, anybody of considerable influence. After these two steps were completed, the FHA would make its decision. In the same report, the FHA memorandum specifies that “the planner must remember that he is a public servant whose job it is to reflect the public’s values in his technical decisions.”²⁰

An area of note, however, is that the formal FHA regulations permit, and often encourage, the combining of the design and location public hearings on the construction of new routes.²¹ On one hand, this is reasonable, as the design stage is largely vetted in the environmental impact survey, and its mandatory hearing, long before the location stage can begin; however, there is also the competing notion that often times this second hearing is geared towards a much less technical audience than the environmental impact survey’s hearing, which

¹⁸ *Public Involvement*, 23 CFR 450.212

¹⁹ Desoto Jordan and United States. Federal Highway Administration, *Effective Citizen Participation in Transportation Planning* □: *Final Report* (Washington: U.S. Dept. of Transportation, Federal Highway Administration, Socio-Economic Studies Division, 1976), 10.

²⁰ *Ibid.*

²¹ *Ibid.*, 14.

generally requires a strong background in engineering and environmental issues to be understood.²² This renders many planning work products difficult to understand to the average interested citizen, serving as an implicit form of discrimination against less educated people.

²² Ibid.

New Regionalism

In the past few decades, a phenomenon known as “New Regionalism” has taken hold in the country, asserting that because of the interdependence of the cities and their suburbs, they should be served by the same planning agencies.²³ Agencies such as the Tennessee Valley Authority, the Appalachian Regional Commission, and numerous sub-state and metropolitan planning authorities have sprung up in recent years to provide a more cohesive overall plan for these areas.²⁴

The majority of metropolitan regional councils were established in the delicate timeframe between 1966 and 1971.²⁵ The role for a regional planning in metropolitan regions began in the interwar period, but this was generally of an advisory role, without a public structure.²⁶ However, from 1954 onward, federal funds were made available to facilitate regional planning bodies, but by 1960, only 36 of the eventual 659 had been formed. In 1965, however, a critical shift happened in the federal government whereupon the regional planning council-type of government was also awarded funding.²⁷ This was a major shift as it incentivized the elected officials inside of the region to create a regional planning board in order to receive funding for it (and their potential service on it).

²³ J. B Cullingworth, *The Political Culture of Planning*: *American Land Use Planning in Comparative Perspective* (New York: Routledge, 1993), 162.

²⁴ Frank S So et al., *The Practice of State and Regional Planning* (Chicago, Ill.: Published in cooperation with the International City Management Association by the American Planning Association, 1986).

²⁵ United States. Advisory Commission on Intergovernmental Relations, *State and Local Roles in the Federal System*. (ACIR, 1982).

²⁶ *Ibid.*, 268.

²⁷ *Ibid.*

Upon the receipt of this funding, the paradigm for transportation planning shifted from the macroscopic state level, as in Virginia, to the metropolitan area level.²⁸ This shift, however, most adversely affected the cities, which were held to be the most multifunctional units of government. These metropolitan planning organizations are frequently encouraged through federal block grants and the like in order to consolidate health planning and social services distribution over the region.²⁹

²⁸ Herrington J. Bryce, *Urban Governance and Minorities* (New York; [Washington]: Praeger Publishers; published in cooperation with the Joint Center for Political Studies, 1976).

²⁹ *Ibid.*

Caveats of New Regionalism

Continuing to blur the lines between strata of government is difficult enough; however when it is constantly shifting, the MPO's provide even more overlap and concurrent planning power.³⁰ The black-letter job of the MPO's is to "coordinate and supervise" their districts; however, what degree of work each of those roles entails varies substantially with the shifting interests and desires of the relevant parties in the states' politics. Some of these organizations were largely toothless and dependent on their constituent municipalities, while others were a dissenting voice from their underlying planning regimes.

An issue which further makes these MPO's distinctive is that, instead of relying on the coercive power of government, the MPO often has to settle for coordinating cooperation among different governments, even at different levels.³¹ This combination of overlapping jurisdictions greatly increases the number of times when possible biases could be induced into the system. These different levels magnified the scope of the issues at hand, diluting the power, and it served to increase dramatically the number of different entities involved in the planning process, complicating the task of assigning ownership or responsibility for any given idea, as well as opening up a can of worms insofar as the social harm caused by a given project through the increased degree of insularity of these new organizations. With a more complete understanding of the history or the patchwork organizations and legislations that created the present highway planning system, this paper now enters the discussion at hand.

³⁰ Ronald K. Vogel and Norman Nezelkewicz, "Metropolitan Planning Organizations and the New Regionalism: The Case of Louisville," *Publius* 32, no. 1 (January 1, 2002): 107–129, doi:10.2307/3331076.

³¹ *Ibid.*

Review of Relevant Literature

This is a piece of work which is relatively unprecedented in scale, but the greater field has a distinct appreciation for the effect on the urban fabric that these massive infrastructure projects have wreaked. Though these largely sociologic roots have dictated many of the processes that have been used in the field, they are generally eschewing quantitative metrics in favor of qualitative case studies as well as normative logic.

During the early parts of the designing of formalized transportation planning, Alfred Aman has voiced that there needs to be legislative protections guaranteed to affected parties in planning disputes for interstate highways.³² To an extent, the issue was exacerbated by itself, as Kuswa argues, because the interstates enabled and accelerated the pace of suburbanization, making a daily commute viable for an increasingly large portion of the workforce.³³

Rabin voices most clearly the discrimination that this paper assumes is the correct response, that the highways are functioning both to enable suburbanization as well as prevent the inner-city minorities from being able to reap the benefits from this process.³⁴ In a nature this is the discrimination of the vehicular enabled majority over those who are less able to utilize the freedom of movement granted by the interstate highways.

³² Alfred C. Jr Aman, "Urban Highways: The Problems of Route Location and a Proposed Solution," *Journal of Urban Law* 47 (1970 1969): 817.

³³ Kevin Douglas Kuswa, "Suburbification, Segregation, and the Consolidation of the Highway Machine," *Journal of Law in Society* 3 (2002): 31.

³⁴ Yale Rabin, "Highways as a Barrier to Equal Access," *The ANNALS of the American Academy of Political and Social Science* 407, no. 1 (May 1, 1973): 63–77, doi:10.1177/000271627340700106.

Part of the assertion of this paper rests upon the literature of sprawl. Sprawl has become “a fact of life in urban America.”³⁵ Much of this phenomenon has come at the expense of the urban cores, which were made less hospitable by virtue of their accessibility from the interstates.

On the other hand, Leavitt takes a more cynical view of citizen participation in planning politics. Leavitt’s argument is based on the idea of a risk-reward tradeoff for interstate construction.³⁶ Leavitt sees the primary reason for political participation in blocking a project is the lack of a vested interest in its success. For example, Leavitt discusses the extension of the Massachusetts Turnpike into the heart of Boston, which was spearheaded by three of the city’s largest developers and contractors: John Volpe³⁷, Mayor John Collins, and Louis Perini.³⁸ All three of these major actors were able to successfully “buy off” various constituencies through horse trading with other concessions in Boston and Cambridge, allowing the turnpike extension to come to fruition and greatly benefit all three.

Wright discusses the caveats of placing the Interstate 10 extension through the heart of the Treme neighborhood in New Orleans.³⁹ This placement came after the initial idea to route the highway down the Vieux Carre was successfully resisted by a committed coalition of local residents of the French Quarter, largely enabled through widespread mobilization throughout the community.⁴⁰ As a response to this, it was decided to relocate the I-10 project to the northern

³⁵ Robert D Bullard, Glenn S Johnson, and Angel O Torres, *Sprawl City: Race, Politics, and Planning in Atlanta* (Washington, D.C.: Island Press, 2000).

³⁶ Helen Leavitt, *Superhighway--Superhoax*. (Garden City, N.Y.: Doubleday, 1970).

³⁷ This is the same John Volpe who would later rise to be Secretary of Transportation. He was also a former president of the Associated General Contractors of America.

³⁸ Leavitt, *Superhighway--Superhoax*.

³⁹ Beverly H. Wright, “New Orleans Neighborhoods Under Siege,” in *Just Transportation: Dismantling Race and Class Barriers to Mobility*, ed. Robert D. Bullard and Glenn S. Johnson (Gabriola Island, BC; Stony Creek, CT: New Society Publishers, 1997), 120–44.

⁴⁰ Richard O Baumbach and William E Borah, “The Second Battle of New Orleans a History of the Vieux Carré Riverfront Expressway Controversy,” 1980, 241, <http://books.google.com/books?id=6KEqAQAAMAAJ>.

edge of the city, and this would run directly down Claiborne Avenue, in the heart of the Black Business District.⁴¹ This avenue was the “heart” of the Black Mardi Gras celebration in the city, and the routing down the middle of the avenue in its “neutral ground,” a strip one-hundred feet wide that was used widely for walking and other community activities was highly controversial.⁴² Ford attributes this willful negligence to the Housing Acts of 1949 and 1954 which allowed cities to hire consultants to draft these plans to open up space and improve accessibility to the urban core.⁴³

However, Los Angeles, and to a lesser extent many other Western cities grew from the embrace of the freeways.⁴⁴ These cities have used the freeway to facilitate the low density urban fabric that has become their trademark characteristic. These cities eschew the traditional urban spoke and hub system of suburbanization, instead favoring to have a relatively equal density development throughout a given area, with expressways providing the connective tissue among them.⁴⁵ Part of the issue with this type of development that Brodsky notes is there is generally poor integration of the freeway with the surrounding community. Often times, people are unable to locate freeways without their signage indicating it, and very seldom are people on freeways fully cognizant of the neighborhoods through which they are passing.⁴⁶ However, even in the west, these projects were often routed through the most indigent areas of the city both to mitigate potential blowback on the project as well as right of way acquisition costs.⁴⁷ For example, the Harbor Freeway in Los Angeles, California was routed directly through the Watts section of the

⁴¹ Wright, “New Orleans Neighborhoods Under Siege.”

⁴² Ibid.

⁴³ Kristina Ford, *The Trouble with City Planning: What New Orleans Can Teach Us* (New Haven: Yale University Press, 2010), 85.

⁴⁴ David Brodsky, *L.A. Freeway, an Appreciative Essay* (Berkeley: University of California Press, 1981).

⁴⁵ Ibid., 23.

⁴⁶ Brodsky, *L.A. Freeway, an Appreciative Essay*.

⁴⁷ Ibid., 39.

city, which was largely done at a depressed grade, with a few overpasses for local streets.⁴⁸

Many original plans, however, saw these freeways as being a “functional sculpture” in the area, creating an enhancement to the surrounding communities.⁴⁹ This was a fundamental dichotomy present in many of the early highways, their role as a utilitarian form of architectural art as well as their function to aid in movement.

Otherwise, though much has been made of this distinction and the perception of racial bias in the locations of interstate highways, few scholarly reports have risen above the anecdotal level in analyzing their placement. This paper seeks to address this gap.

⁴⁸ Brodsky, *L.A. Freeway, an Appreciative Essay*.

⁴⁹ *Ibid.*, 49.

Quantitative Section

Detailed Methods

As discussed earlier, the quantitative discussion of the country centers on a combination of various mapping and statistical techniques to examine if there is a macroscopic correlation between the racial composition of a census tract and the presence of a highway. Firstly, the 1960 Census data from NHGIS⁵⁰ was mapped into tracts. This created a series of clusters around the major urban areas of the country.

The mapping software used was ArcMap. This software is able to associate the spatial relations among different data sets, as well as create maps of each based on the various attributes of it, many of which will be used later in this paper.

On top of these tracts, the Federal Highway Administration's National Highway Planning Network was overlaid. This is the FHA's own method of cataloguing the highways throughout the country. Furthermore, this overlay includes differentiators to eliminate the many new highways built since the Eisenhower Interstate Highway was largely planned during its namesake President's administration.

After filtering many of the newer highways and spurs, the urban tracts were examined to qualify the ones that were intersecting or within fifty meters of one of these interstate's centerline. This additional fifty meter buffer is critical as each of these interstate is drawn as a single line, without any inherent width in the GIS mapping projection. Thus, the 50 meters is

⁵⁰ Minnesota Population Center. National Historic Geographic Information System: Version 2.0. Minneapolis, MN: University of Minnesota 2011.

used as a rough approximation, 100 meters on either side, of the width of the interstate highway itself. This allows our highway presence variable to indicate the presence of a highway, even if it straddles or borders two or more tracts.

Both of these samples were clipped to the lower forty-eight United States and the District of Columbia. The reasoning for this is twofold: we have insufficient census data to justify inclusion of the territories and Alaska, as well as there are relatively few tracts without an interstate highway in Hawaii, which hindered the ability to statistically analyze those tracts. Thus, both of these states and the US territories were discarded from the studied data set, which corresponds closely with the original Eisenhower Interstate system otherwise.

The key aspect to this quantitative analysis is its exploration from an objective standpoint, without any perceptible bias introduced other than the. However, this method does not do any justice for areas with geographic barriers or other methods that differentiate the tracts from one another, such as rivers or the like, which may affect the contiguity of the maps. However, on this macroscopic scale, it is an incredibly effective tool for this purpose of studying the placement of the highways in relation to the demographics of the surrounding communities.

This attributing was then used to examine by way of an Independent Samples t-test if the tracts were randomly distributed into one group or another, or if there were patterns of discrimination occurring that biased the selection into hosting a highway or not. This t-test grouping was then stratified based on the states, as well as grouped into several regions, to examine if there was a consistent pattern amongst the states in an area.

Overall Results⁵¹

The t-tests had mixed results in the study, but often times these were the results of individual states affecting disproportionately the overall means.⁵² For example, when one studies the traditional core of the southeast, the results are as follows:

Core Southeast (FL, GA,AL, MS, NC,SC,TN) Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Proportion Non-White	Equal variances assumed	.225	.635	-2.199	1657	.028	-.03653226	.01661532	-.06912150	-.00394302
	Equal variances not assumed			-2.192	1175.008	.029	-.03653226	.01666397	-.06922671	-.00383781
Proportion Black	Equal variances assumed	.193	.660	-2.323	1656	.020	-.03885267	.01672281	-.07165275	-.00605259
	Equal variances not assumed			-2.322	1180.831	.020	-.03885267	.01672973	-.07167597	-.00602936

However, these data are not as clear as the probabilities may initially indicate, and if we exclude Florida, the results shift to become an insignificant difference with the two samples differing by mere tenths of a percentage which paints a dramatically different picture of the state of the interstate system in the Southeast and its intersection with the racial composition of the area.

Part of this is a demonstration of the incredible power of a single state, Florida, with an exceptionally strong correlation in the two categories, largely as a result of the pull that Tampa, Florida has on the state's overall results.

⁵¹ For the full results of each state studied, see the appendix. This section will only include a subset of the data tables, and it will focus on regional combinations and outliers.

⁵²The significance level used for our examination was $p > .10$.

Modified Southeast (GA,AL, MS, NC,SC,TN) Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Proportion Non-White	Equal variances assumed	4.92	0.027	-0.005	1240	0.996	-0.00009821	0.019335	-0.038032	0.0378356
	Equal variances not assumed			-0.005	1046.775	0.996	-0.00009821	0.019102	-0.037582	0.0373853
Proportion Black	Equal variances assumed	5.297	0.022	-0.025	1239	0.98	-0.00049582	0.019496	-0.038744	0.0377522
	Equal variances not assumed			-0.026	1052.133	0.979	-0.00049582	0.019213	-0.038196	0.037204

Florida Independent Samples Test										
		Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	of the Difference	
									Lower	Upper
Proportion Non-White	Equal variances assumed	31.846	.000	-3.324	415	.001	-.10124459	.03045793	-.16111565	-.04137353
	Equal variances not assumed			-2.814	139.199	.006	-.10124459	.03598205	-.17238661	-.03010258
Proportion Black	Equal variances assumed	35.709	.000	-3.620	415	.000	-.10961273	.03028339	-.16914069	-.05008477
	Equal variances not assumed			-3.050	138.452	.003	-.10961273	.03594219	-.18067930	-.03854615

This assortment of exceptional states is not in itself an exception, and each of these calls for a heightened degree of scrutiny, both of the state’s planning mechanisms, as well as the processes that led to the creation of these roads on a more localized level.

If we are to look outside of Florida, we can see a handful of other states which achieve statistical significance in a similar fashion. These varied states warrant further inquiry into their patterns and an examination of why these results occurred.

However, many of the Northeastern states had the opposite effect as Florida, where there were statistically fewer non-white people in the tracts where highways ran. For example, in New York and Pennsylvania, this effect was particularly striking.

New York Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Proportion Non-White	Equal variances assumed	39.259	.000	3.354	3382	.001	.03437175	.01024690	.01428100	.05446250
	Equal variances not assumed			4.308	855.513	.000	.03437175	.00797808	.01871284	.05003066
Proportion Black	Equal variances assumed	46.708	.000	3.645	3378	.000	.03681800	.01010007	.01701514	.05662086
	Equal variances not assumed			4.891	913.895	.000	.03681800	.00752722	.02204535	.05159065

Pennsylvania Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Proportion Non-White	Equal variances assumed	31.292	.000	3.219	1982	.001	.03679054	.01142824	.01437791	.05920317
	Equal variances not assumed			4.236	746.702	.000	.03679054	.00868482	.01974096	.05384012
Proportion Black	Equal variances assumed	34.543	.000	3.402	1982	.001	.03874915	.01139125	.01640907	.06108924
	Equal variances not assumed			4.506	756.638	.000	.03874915	.00859903	.02186836	.05562995

Mid-Atlantic (MD, DC, DE, NJ, NY, PA, VA, WV) Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Proportion Non-White	Equal variances assumed	8.488	.004	1.204	7551	.229	.00797834	.00662904	-.00501642	.02097310
	Equal variances not assumed			1.264	2287.004	.206	.00797834	.00631283	-.00440113	.02035781
Proportion Black	Equal variances assumed	7.744	.005	1.016	7184	.309	.00707382	.00695972	-.00656927	.02071691
	Equal variances not assumed			1.071	2135.346	.285	.00707382	.00660786	-.00588469	.02003234

This region is an excellent example of the pitfalls of examining these patterns on a macroscopic scale that can make a given region appear to be more or less exceptional than it actually is. Even though this region includes both of these states which are singularly exceptional, the combined means are not.

Part of this lies in the manner in which each is composed. For example, in New York, the expected pattern where the non-white population should be higher in highway tracts is reversed, markedly.

New York Group Statistics

	Binary Highway Presence	N	Mean	Std. Deviation	Std. Error Mean
Proportion Non-White	No Highway Present	2899	.0958299	.21695977	.00402954
	Highway Present	485	.0614582	.15164147	.00688568
Proportion Black	No Highway Present	2895	.0913307	.21485084	.00399312
	Highway Present	485	.0545127	.14052158	.00638076

If we look at these means, they are almost 3% lower in the non-white and 4% lower in the black areas that have highways than the general non-highway tract in New York State. This is an interesting correlation among the tracts that causes a reversal of the expected difference, and it is this reversal which prompts a line of further inquiry about the different rationales that led to the choices of where to construct a highway.

Data Based Conclusions

First off, the patterns of states tend not to be regionally based but rather a state and even locality centric process. These different results tend to indicate that there are, in many areas, patterns of racial inequality in the highway servicing of the area; however, these patterns are not as simple or coherent as initially suggested by the literature.

The data makes clear the degree to which the former Jim Crow strongholds of Dixie were not the hotbeds of unabashed governmental prejudice as was initially suggested and presumed by the literature, with all of these states, save Florida, failing to have a significantly unequal distribution of the highway amenity. Thus, we are now prompted to look more closely at the individual situations that have led to these patterns to exist as they are reflected in the data.

Data Driven Case Studies

With the understanding gained from analyzing the data, there were several cities that appeared to be prime candidates for further examination. Each of these cities will first entail a brief discussion of the legislative and planning mechanisms of the area, as well as a study of the maps that caused the data's conclusion to be reached.

These conclusions may shed some light onto the issues at hand in this discussion through the comparison of several small scale case studies with information gathered on each of them in a similar fashion, largely through the contemporary media, that may be useful when looking at other examples that were outside of the scope of this study.

Many of the states which had significant t-tests did have a city which, when examined by hand, appeared to demonstrate an interesting pattern in their city's highway arrangement with respect to race. Thus, it is the combination of the data and the evidence that led to the case selection for this qualitative report.

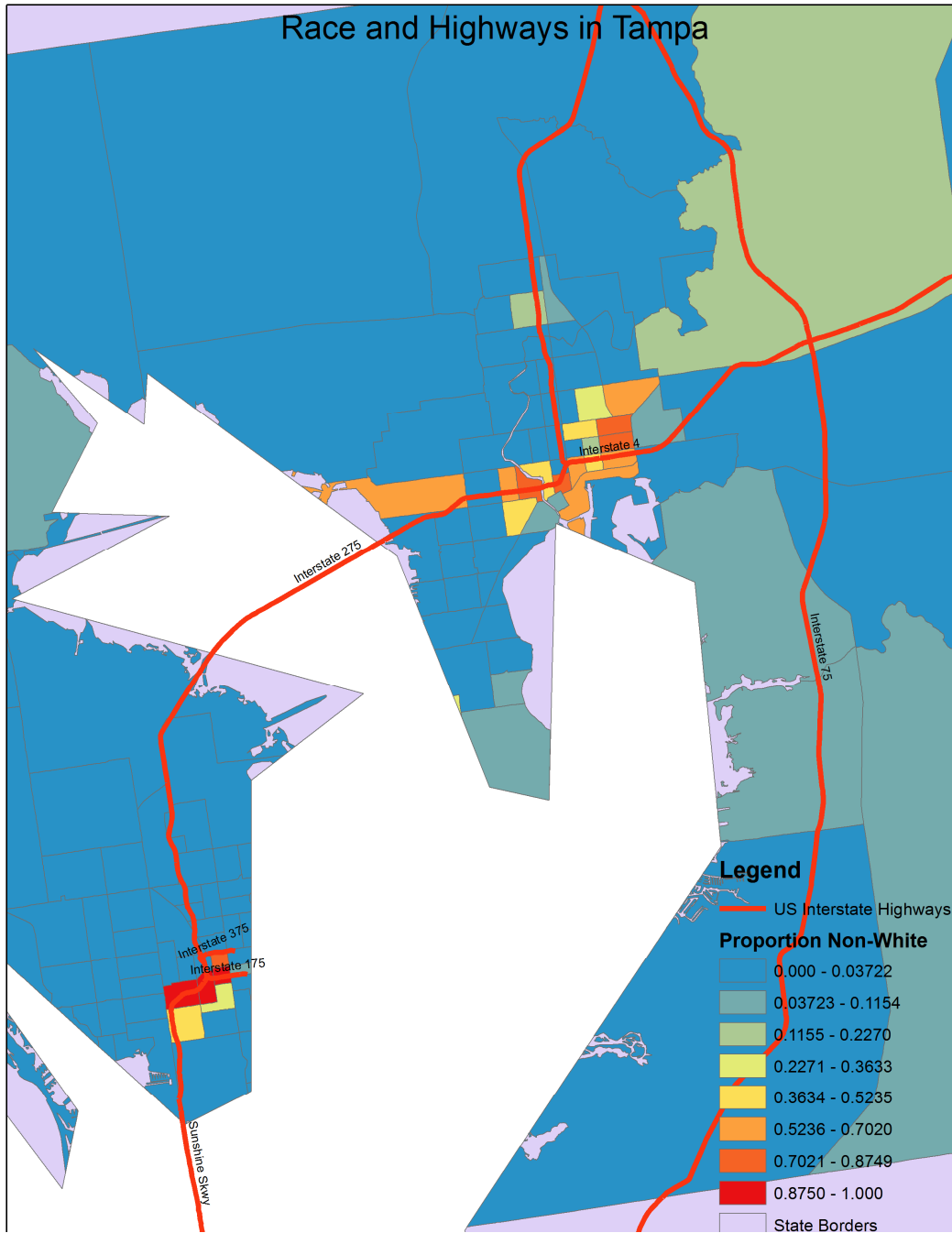
Tampa, Florida

Florida Group Statistics

Binary Highway Presence		N	Mean	Std. Deviation	Std. Error Mean
Proportion Non-White	No Highway Present	313	.1077828	.24137876	.01364353
	Highway Present	104	.2090274	.33954447	.03329507
Proportion Black	No Highway Present	313	.1026129	.23903510	.01351106
	Highway Present	104	.2122256	.33965631	.03330604

Florida Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Proportion Non-White	Equal variances assumed	31.846	.000	-3.324	415	.001	-.10124459	.03045793	-.16111565	-.04137353
	Equal variances not assumed			-2.814	139.199	.006	-.10124459	.03598205	-.17238661	-.03010258
Proportion Black	Equal variances assumed	35.709	.000	-3.620	415	.000	-.10961273	.03028339	-.16914069	-.05008477
	Equal variances not assumed			-3.050	138.452	.003	-.10961273	.03594219	-.18067930	-.03854615



Judging from the statistics, Florida has one of the most inequitable distributions in the country as far as the racial allocation of its interstate highway miles; however, this effect is largely dictated by a few cores of

non-white population, in an otherwise sparsely populated state.

Florida I-4, which cut through the heart of downtown Tampa opened in 1963, in a quick buildout by the Florida Department of Transportation, which coordinated the building efforts throughout the state.⁵³

To serve these initial roads, the planners sought to buttress the urban arterial networks that had existed in these cities with increased expansion and lane growths, which displaced many urban residents.⁵⁴ As the map clearly demonstrates, these urban roads also tended to have the most non-white residents, and if we look at the sizable area that exists at the intersection of Interstates 275 and 4 in the heart of Tampa, we can witness the degree to which planners disregarded the interests of the historically immigrant, non-white communities of downtown Tampa to create these megaliths of massive proportions through the heart of the city, uprooting the area's residents.

Much of the city's growth stemmed from its proximity to the interstate highway and connectivity with the rest of the state and the country.⁵⁵ In the wake of these vast intrusions into the urban core, the suburban nature that Florida now professes began to take shape, leading to the vast acres of cookie cutter houses and golf courses that tarnish the otherwise hardy nature of the south.⁵⁶

⁵³ WRIGHT, "FLORIDA CROSSROAD."

⁵⁴ C.E.W, "FLORIDA HIGHWAYS: Link of Tampa Expressway Opens -- U.S. 1 Is Four-Laned at Stuart," *New York Times*, October 11, 1964, sec. RESORTS TRAVEL.

⁵⁵ Martha Weinman Lear, "Look at All That Growth Fanning out There from Orlando," *New York Times*, August 12, 1973, sec. SM.

⁵⁶ *Ibid.*

However, this suburbanization also benefited one of the perennially major lobbies in Florida, the phosphate industry.⁵⁷ This was an industry with thousands of acres of “blighted” land formerly used for phosphate mining that had extended past its usable life. To enable this development, the traditional cities in Florida needed to be made both accessible from these former mines and less desirable than the city centers they were replacing. The erection of highways through the heart of numerous Florida cities achieved both of these goals in an alarmingly blatant and state-supported fashion.⁵⁸

Florida had a unique mixture of ingredients that made the prejudicial nature of highway planning in the state both clear and remarkably appalling. Florida had a need – to convey tourists and residents to the centers of cities as speedily as possible, but it also saw a need to develop the vast tracts of ecologically tarnished land that lay outside of these centers. With the intrusions of the interstate system, it was able to accomplish both of these goals with remarkable precision. Interstate 4 in Tampa is the result of this clear desire for the interstates to both run into, and in many ways lead to the obsolescence of the state’s major cities.

⁵⁷ C. E. WRIGHT, “Industry Miracle in Florida: Phosphate Companies in Polk County Mend Their Ways, Reclaim Blighted Areas for Recreation, Beautify Land,” *New York Times*, March 5, 1967, sec. Travel And Resorts, <http://proxy.library.upenn.edu:2095/docview/117566816/abstract/FE3C3AE0F9EF46B9PQ/3?accountid=14707>.

⁵⁸ C.E. Wright, “FLORIDA PUSHES \$200,000,000 HIGHWAY PROGRAM,” *New York Times*, May 7, 1961, <http://proxy.library.upenn.edu:2095/docview/115413371/FE3C3AE0F9EF46B9PQ/11?accountid=14707>.

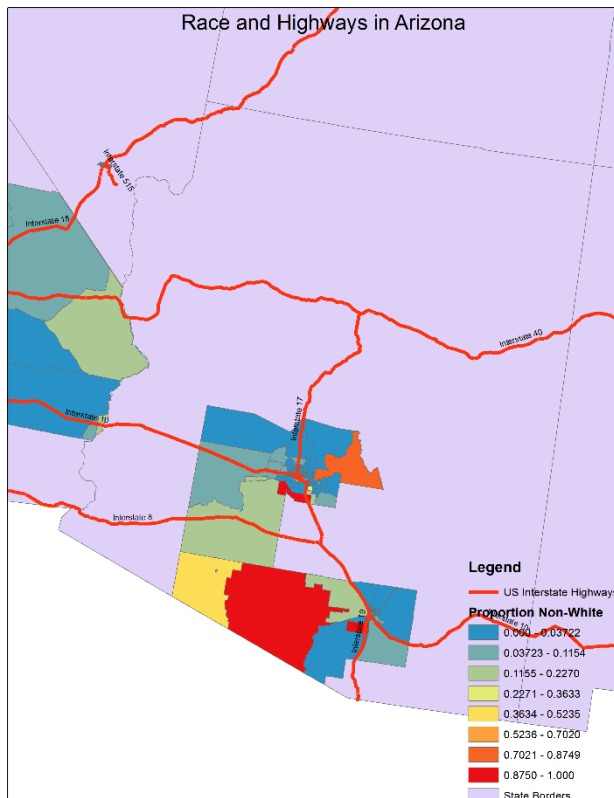
Phoenix, Arizona

Arizona Group Statistics

Binary Highway Presence		N	Mean	Std. Deviation	Std. Error Mean
Proportion Non-White	No Highway Present	126	.0598591	.15048594	.01340635
	Highway Present	53	.1264579	.22322252	.03066197
Proportion Black	No Highway Present	126	.0291728	.09767620	.00870169
	Highway Present	53	.0652186	.14785428	.02030935

Arizona Independent Samples Test

		Levene's Test for Equality of Variances		t-Test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Proportion Non-White	Equal variances assumed	8.193	.005	-2.324	177	.021	-.06659874	.02865427	-.12314672	-.01005076
	Equal variances not assumed			-1.990	72.677	.050	-.06659874	.03346471	-.13329880	.00010132
Proportion Black	Equal variances assumed	7.079	.009	-1.919	177	.057	-.03604576	.01878165	-.07311053	.00101902
	Equal variances not assumed			-1.631	71.837	.107	-.03604576	.02209500	-.08009304	.00800152



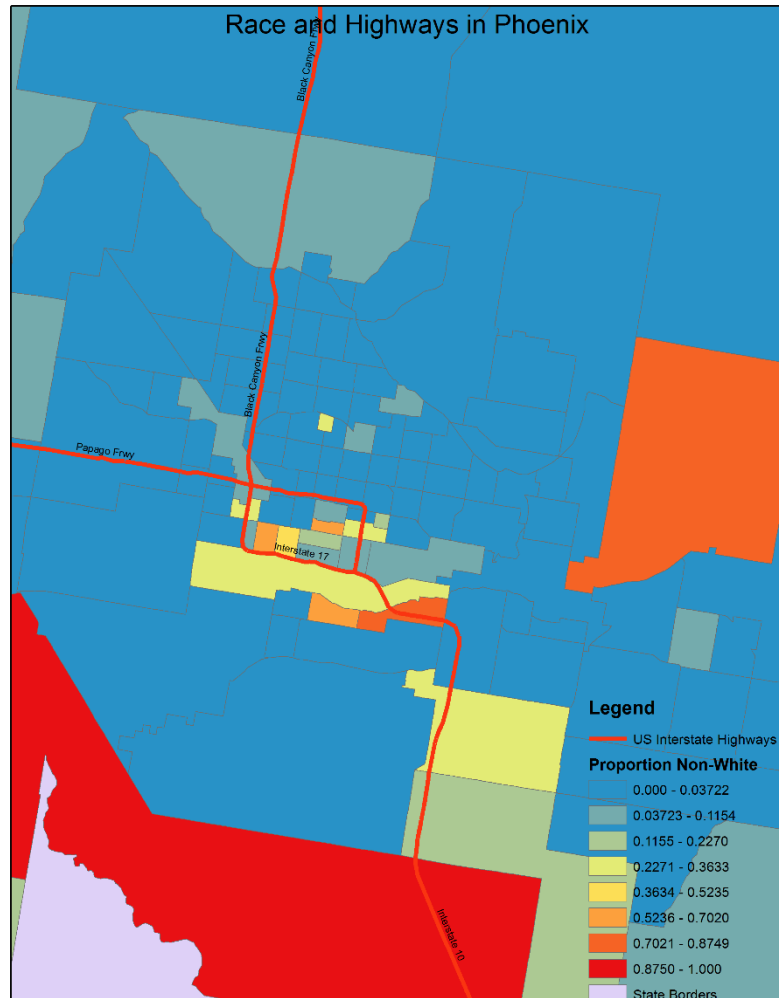
Arizona is the next state in the list with a significant difference between the two groups. Another Sunbelt state, Arizona seems to have a similar urban profile to Florida, with a few large cities, in this case centered on Tucson and Phoenix, and a vast expanse of land outside of the borders of these two large cities.

Prior to the construction of Interstate 17 through its core, Phoenix was seen as an “infant” city in the Southwest, but this allowed it to compete successfully with the likes of Los Angeles for building prices and commercial headquarters touting the interests of the landed gentry to turn their plot of desert into a sprawling mecca.⁵⁹

Phoenix was the centerpiece of the Arizona Department of Transportation’s

plan for connecting the state via interstate highways, and the city of Phoenix has its center belted by two of them, Interstate 17, which would continue onwards to the North, and Interstate 10, the massive road spanning the south of the United States from Florida to California.⁶⁰

In order to plan this, the state worked by dividing the downtown corridor into segments, focused on Central Avenue, which lays in the heart of the city and runs north-south. Central



⁵⁹ Don G. Campbell, “Phoenix Growth Considered Unique in Stagnant Market: PHOENIX: Surprising Growth Curve,” *Los Angeles Times*, May 30, 1982, <http://proxy.library.upenn.edu:2095/docview/153135979/82BE87354D5F4A4FPQ/3?accountid=14707>.

⁶⁰ Thomas Lesure, “Construction Splurge Reflects Arizona’s Confidence: Record Breaking Year Forecast,” *Chicago Tribune*, November 15, 1959, <http://proxy.library.upenn.edu:2095/docview/182405300/6C73721EE3D442BPQ/11?accountid=14707>.

Avenue intersects both the Interstate 10 section of the loop to the north as well as the Interstate 17 section to the south.

However, this belt runs largely through traditionally black and neglected areas of southeastern Phoenix. In these areas, the highway was an at-grade strip, running with a wide right-of-way, while in the northern, and whiter part of the city it ran as a hybrid of a tunnel and sunken highway. The different forms of these highways, which are in all other respects virtually identical other than the neighborhoods through which they pass, demonstrate how a highway's effect on the surrounding community can either be mitigated by its form or exacerbated by it.

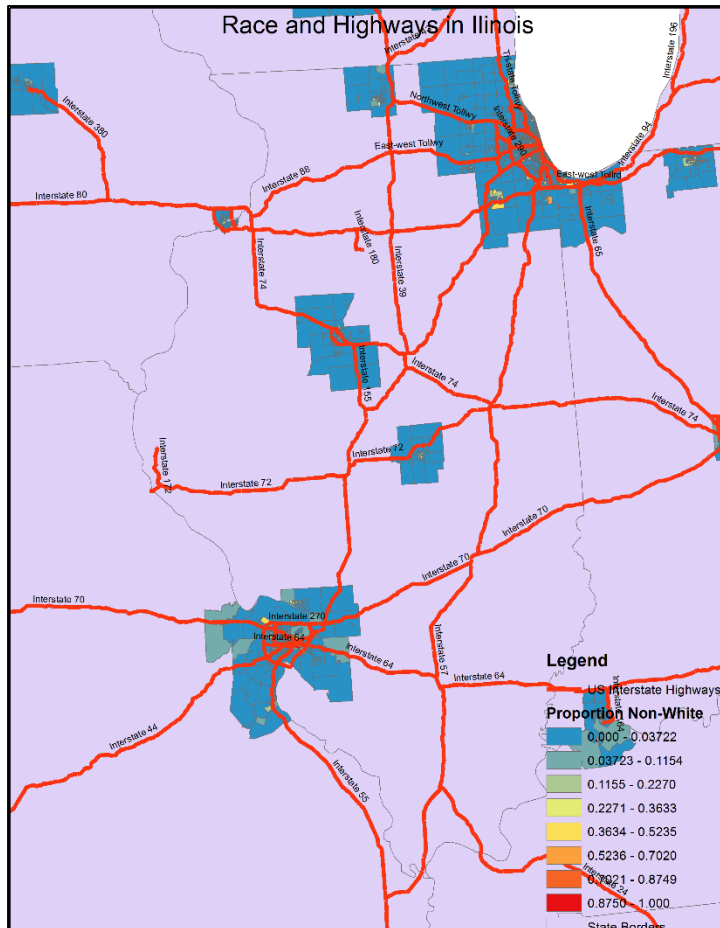
Illinois

Illinois Group Statistics

	Binary Highway Presence	N	Mean	Std. Deviation	Std. Error Mean
Proportion Non-White	No Highway Present	1211	.1523095	.31514903	.00905616
	Highway Present	310	.1218329	.27287064	.01549801
Proportion Black	No Highway Present	1211	.1469587	.31428795	.00903141
	Highway Present	310	.1192423	.27252714	.01547850

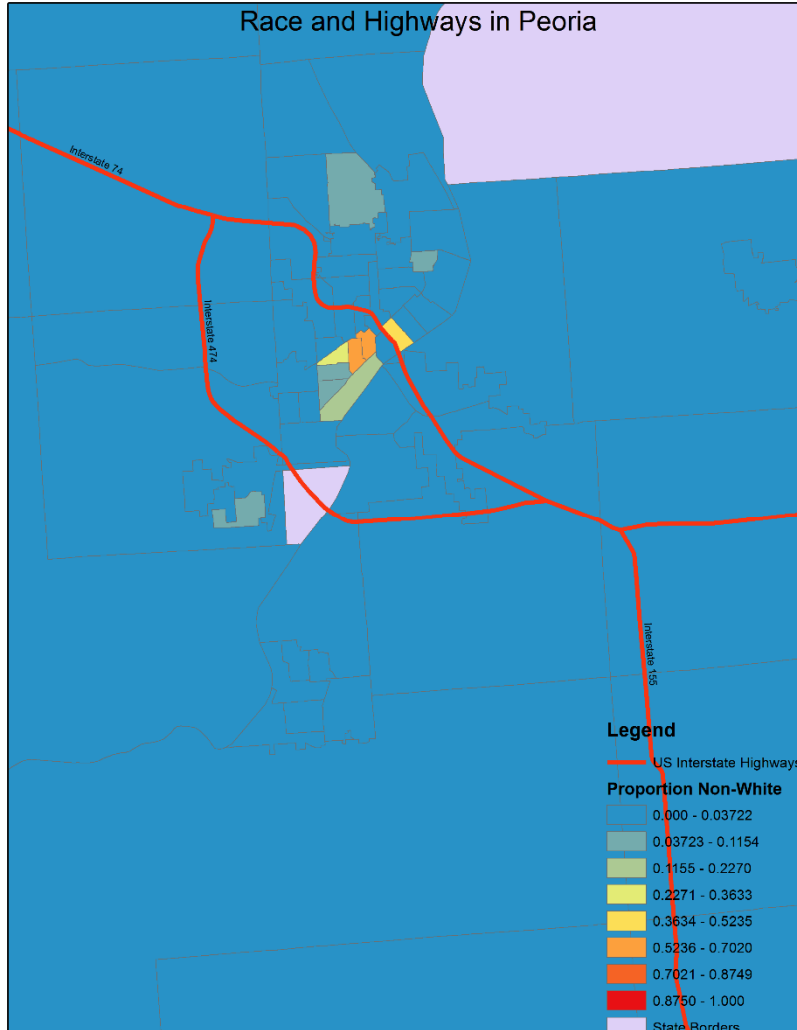
Illinois Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Proportion Non-White	Equal variances assumed	9.486	.002	1.560	1519	.119	.03047661	.01954246	-.00785646	.06880968
	Equal variances not assumed			1.698	539.970	.090	.03047661	.01794999	-.00478377	.06573699
Proportion Black	Equal variances assumed	9.348	.002	1.422	1519	.155	.02771639	.01949370	-.01052102	.06595381
	Equal variances not assumed			1.547	539.252	.123	.02771639	.01792067	-.00748648	.06291927



Illinois is a state which is, to an extent, at odds with itself. Racially, Chicago and its suburbs are the most non-white portions of the state, with the other metropolitan areas demonstrating an almost aversion to disrupting the tracts that are predominantly minority. Three cities, Peoria, Joliet, and Chicago exist that have routings that appear to have racially motivated components, and these will be examined in the coming sections.

Peoria



Unlike many of the cities we have discussed, heretofore, Peoria did not have a large minority at the time of the 1960 Census. This third largest city in Illinois, had a few tracts with a significant minority population, but largely, as this map clearly demonstrates, the city itself was white and non-minority.⁶¹ Thus, it comes to little surprise that even though there were significant minority tracts along the Illinois River, much of the city's downtown had developed far to the North, along Route 150 or War Memorial Drive.⁶²

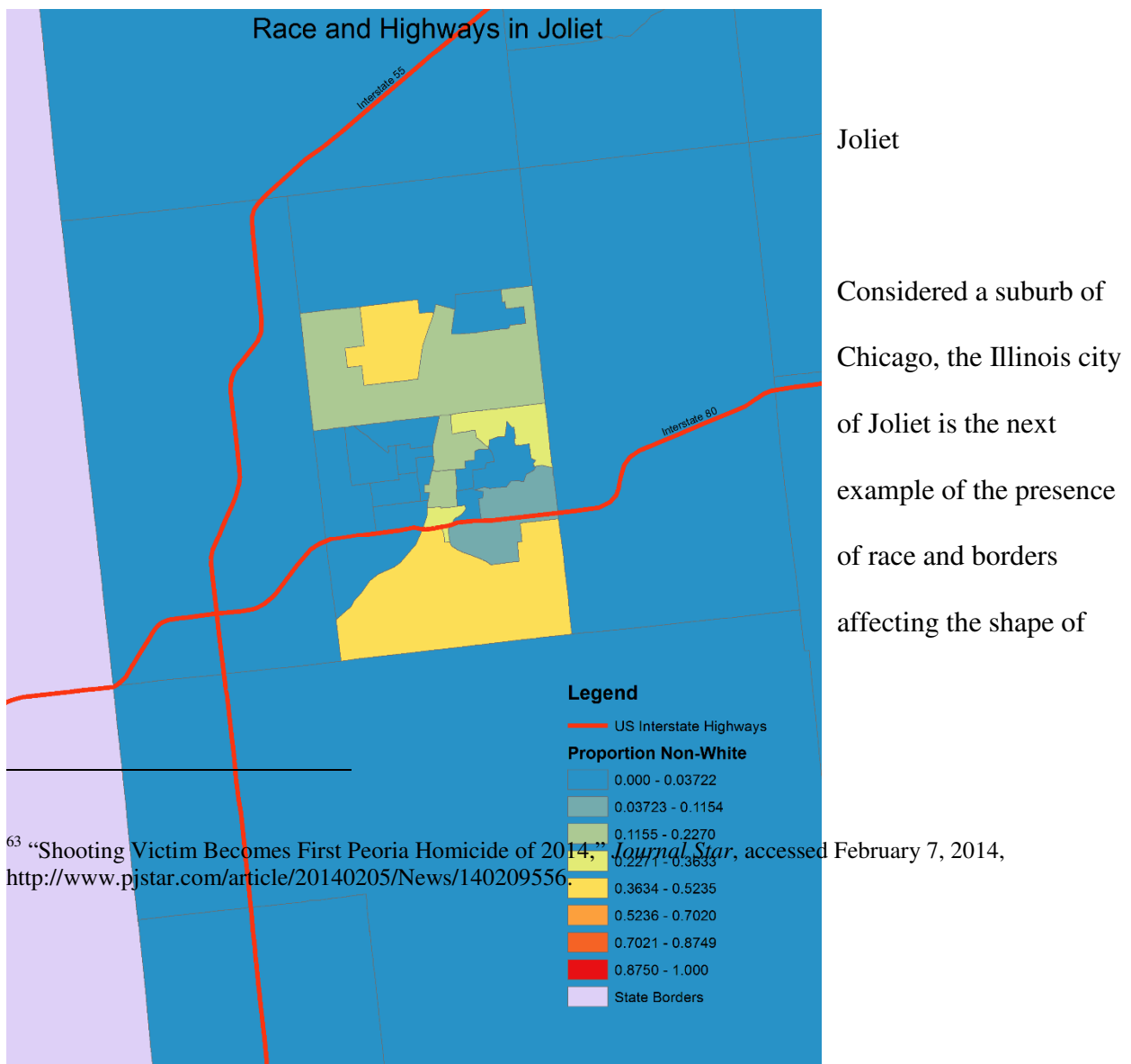
This divide, with the minorities located below the line was exacerbated by the construction of Interstate 74 along this southern routing in Peoria, creating a clear racial boundary running through the heart of the city that has persisted to this day, resulting in a culture of neighborhood decay and high crime rates.

⁶¹ Hal Foust, "STRATTON, IN RED FLANNELS, OPENS A BRIDGE: Tells Peorians of Big Spending Plans," *Chicago Daily Tribune*, December 13, 1958.

⁶² "Carson's Buying 35 Acres at Peoria for Development," *Chicago Daily Tribune*, October 14, 1961, <http://proxy.library.upenn.edu:2095/docview/183054225/1E056B97D3774EB4PQ/1?accountid=14707#>.

To this day, the neighborhood to the south of 74 and north of 474, South Peoria, is a predominantly African-American neighborhood and riddled with crime.⁶³ Even though South Peoria was not cut through by the interstate system, the effect of Interstate 74 running on the border of the neighborhood, and with 474 running on its southern edge, has led to a systematic decline in the quality of life for the neighborhood's residents, all done such that the suburban Peorians are able to shuttle in and out of the northern downtown area effectively and without having to encounter their geographically proximate fellow citizens to the south.

This sort of discrimination, where the neighborhood itself deteriorated largely as a result of being cut off by the interstate is difficult to note in a large-scale quantitative study, but it is an important effect that South Peoria is able to demonstrate with a remarkable degree of clarity.



⁶³ "Shooting Victim Becomes First Peoria Homicide of 2014," *Journal Star*, accessed February 7, 2014, <http://www.pjstar.com/article/20140205/News/140209556>.

both the interstate and the surrounding people.

Joliet first became embroiled in debate when the initial plan for Interstate 80 dividing the city were rejected for tolling, as it would violate the then-position of the Bureau of Public Roads that federal interstates should not be tolled.⁶⁴ However, this section was hotly contested for the removal of 316 houses in Joliet to allow for the highway to go along the southern edge of the city.⁶⁵ This skirting the city, however, then led the Interstate into the less white suburbs to the south where it appears to have had a greater impact on the community as a dividing line between the relatively affluent downtown area of Joliet and the southern communities just outside of it.

Joliet was a rather unique experience, where much of the urban core of the city was sliced in half by Interstate 80.⁶⁶ However, the opposition to the interstate centered on the routing of it through West Park, a cornerstone of the city's parks system.⁶⁷ This was largely done to ease the congestion on the city's "Loop," the commercial area of the city which lies to the north of the proposed route, but the five interchanges on the highway could take as much as four blocks each, which had a strongly detrimental effect on the south Joliet community.

Much of the issue in Joliet was tied to the lack of suitable housing stock for relocation in the city.⁶⁸ Many of the neighborhoods that were displaced on the south side of the city were working class, and they were unable to cope with the rent intensification that was occurring in

⁶⁴ "I-80 Route in Joliet Is Set; Toll Opposed," *Chicago Tribune*, July 19, 1963, sec. 1A.

⁶⁵ Hal Foust, "BIDS TO CLEAR RIGHT OF WAY FOR I-80 OPEN: Plan to Remove 316 Houses in Joliet," *Chicago Daily Tribune*, June 6, 1962, <http://proxy.library.upenn.edu:2095/docview/183183962/95A8A525AC794211PQ/6?accountid=14707#>; "LAST SECTION OF ROUTE I-80 OPENS IN STATE," *Chicago Tribune*, January 8, 1968, <http://proxy.library.upenn.edu:2095/docview/170494233/95A8A525AC794211PQ/8?accountid=14707#>.

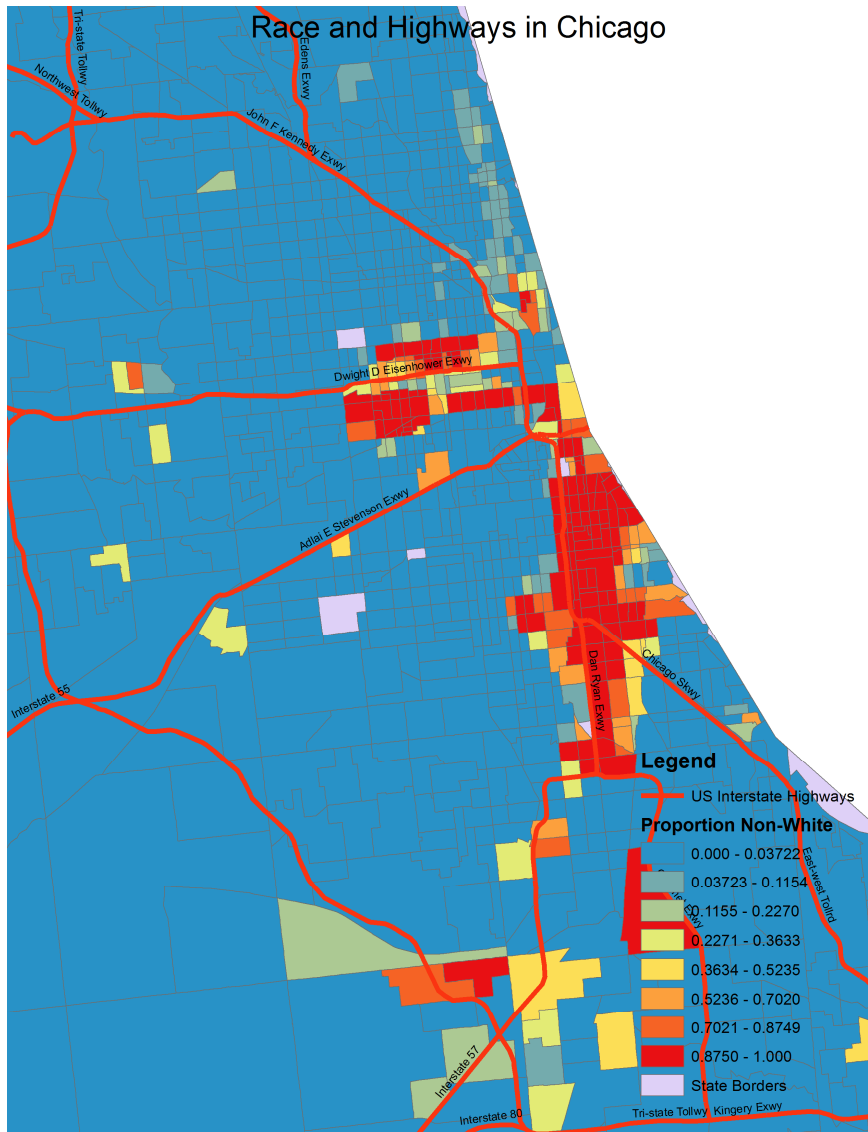
⁶⁶ "I-80 Route in Joliet Is Set; Toll Opposed."

⁶⁷ "Joliet Park District," accessed February 7, 2014, <http://www.jolietpark.org/about/joliet-park-district>.

⁶⁸ Donald Yabush, "Start Joliet Thruway in 1960: U. S. to Pay Most of Cost," *Chicago Daily Tribune*, October 16, 1958, sec. S.

the other portions of the city. This, forced many of the residents of Joliet further south and west, out of the city limits, as well as increasing the density beyond the designed capacity in the remaining areas in the southern portion of the city. Much like Peoria, Joliet's experience with Interstate 80 was one of a dividing line through the city, drawn to keep out undesirable people from the city's central business district further north on the Illinois.

Chicago



Few discussions of racial prejudice are complete without a discussion of the City of Chicago. During the beginning of the federal aid highway system, Chicago began to upgrade many of its avenues to being a full interstate standards, thus making them eligible for federal maintenance and construction funds.⁶⁹

Of these, Interstate 90 and the connecting

Calumet expressway into the south side of Chicago were the most egregious from a single relocation standpoint. These massive projects entailed a major relocation of people from the West Side of Chicago.⁷⁰ In the last phase of the project, the bridge over the Chicago River, maritime and residential interests sparred over the proper method of reconciling the interests of

⁶⁹ Hal Foust, "Officials Map Numbering System for Express Ways Near Chicago," *Chicago Daily Tribune*, December 14, 1958.

⁷⁰ Hal Foust, "PLAN HEARING ON THRUWAY USING W. SIDE: City Seeks Decision on Desirability," *Chicago Daily Tribune*, December 1, 1964, <http://proxy.library.upenn.edu:2095/docview/179741160/540B07A7E6B542F3PQ/9?accountid=14707>.

merchants and their bots that used the Chicago River as well as the interests of the residents in the area who opposed a higher bridge on the grounds that it would entail more seizure of property as well as being esthetically unattractive.⁷¹

However, the opposition to the interstates in Chicago was most epitomized by that for the Chicago Skyway, running to the Indiana border through the heart of South Chicago.⁷² Much of these concerns were well-founded, as in the ensuing decades, the surrounding areas of the Skyway became a “Toxic wasteland” and a superfund site, a relic of a bygone industry and impenitent dereliction for years.⁷³ However, this expressway had been planned as a major boon to prevent this dereliction.⁷⁴

Fundamentally, there is a combination of various factors that contribute to Chicago’s composition as a statistically significant entity in the macroeconomic scale, and the neighborhoods of the southeastern end of the city bear witness to the gravity of this effect. Due to the construction of these concrete and asphalt megaliths, many of which have severely constrained access due to the mandates of the highway construction standards and a need to prevent excessive eminent domain usage. The combination of these two factors contributes heavily to the overall sentiment that the south side of Chicago has suffered more from these structures than it was aided, even if the Aldermen from these wards initially did support these structure for the opposite of these reasons during the pre-war period.

⁷¹ Nick Polos, “EXPRESSWAY BRIDGE CENTER OF HOT BATTLE,” *Chicago Daily Tribune*, August 3, 1959, <http://proxy.library.upenn.edu:2095/docview/182331809/540B07A7E6B542F3PQ/14?accountid=14707>.

⁷² “Protest Skyway Structure,” *Chicago Daily Tribune*, October 17, 1957, <http://proxy.library.upenn.edu:2095/docview/180302916/78D36140279B4215PQ/2?accountid=14707>.

⁷³ Michael Abramowitz, “Chicago’s ‘Toxic Wasteland’ Breeds Blue-Collar Environmentalism,” *The Washington Post*, November 8, 1992.

⁷⁴ Hal Foust, “URGE ELEVATED HIGHWAY TO AID THE SOUTH SIDE: Aldermen Hear New Pleas for Quadrangle.,” *Chicago Daily Tribune*, January 12, 1940, <http://proxy.library.upenn.edu:2095/docview/176335213/2A56DECA5BD14623PQ/22?accountid=14707>.

Chicago's network of overhead expressways, however, also are symbolic of a greater desire to avoid the city and the factors that go with it. Unlike an at-grade expressway which is confronted consistently with the terrain that surrounds it, an elevated one only sees its constraining walls and the overall skyline. Part of this reflects the post-war consensus that the city itself is inferior by virtue of its urbanity than the suburb, and the census tracts of the south side of Chicago became a proxy in this war of different norms.

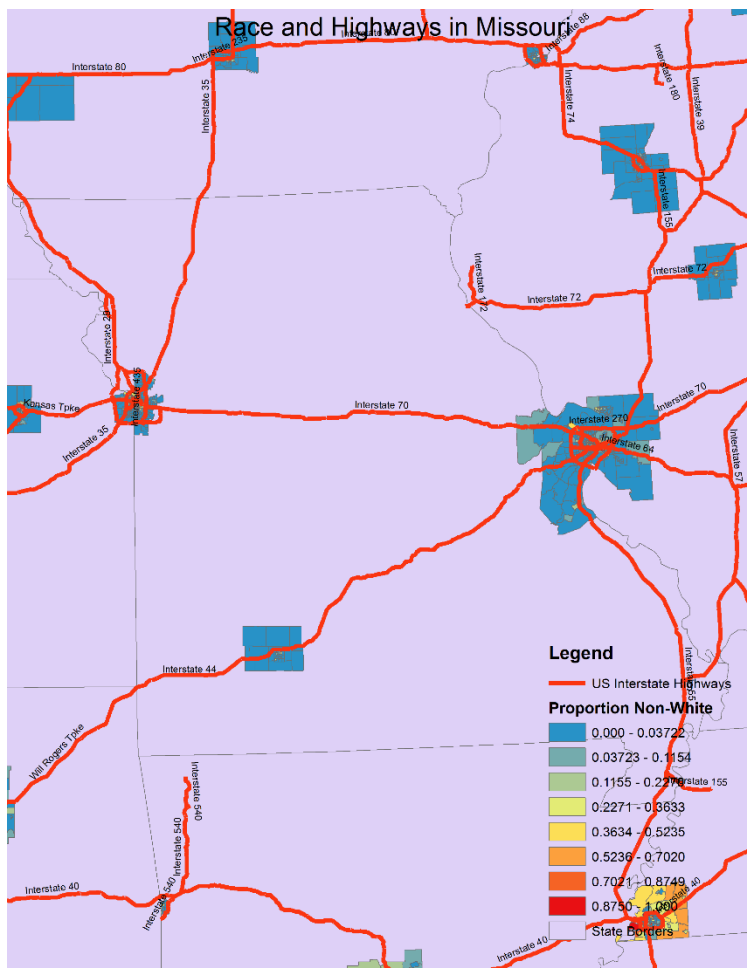
Missouri

Missouri Group Statistics

	Binary Highway Presence	N	Mean	Std. Deviation	Std. Error Mean
Proportion Non-White	No Highway Present	264	.1478913	.29126854	.01792634
	Highway Present	184	.0792114	.20978908	.01546586
Proportion Black	No Highway Present	264	.1461142	.29114162	.01791853
	Highway Present	184	.0776968	.21006200	.01548598

Missouri Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower		Upper
Proportion Non-White	Equal variances assumed	27.543	.000	2.741	446	.006	.06867990	.02505860	.01943231	.11792750
	Equal variances not assumed			2.901	445.505	.004	.06867990	.02367586	.02214966	.11521014
Proportion Black	Equal variances assumed	27.631	.000	2.730	446	.007	.06841738	.02505923	.01916854	.11766622
	Equal variances not assumed			2.889	445.452	.004	.06841738	.02368310	.02187290	.11496186



Nestled deeply in the Midwest, Missouri was the next state to experience a significant result on the quantitative tests. In this states, there are three major population centers. On either side of the state, bordering Kansas and Illinois are Kansas City and St. Louis, respectively. Both of these cities sit along the Interstate 70 corridor, which stitches together much of the middle of the country from Maryland into Utah. The third major urbanized area in this Missouri

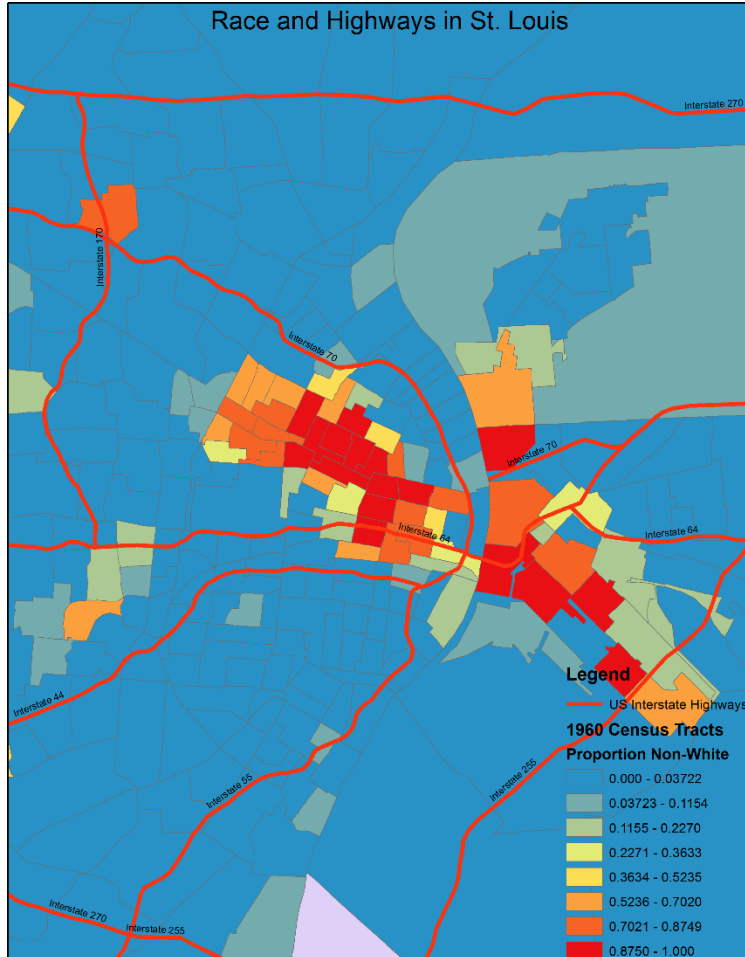
is the city of Springfield, which was built along a prominent plateau in the Ozarks, with most residents hailing from the Southeastern states, as opposed to Northeastern migrants who otherwise comprised the state.⁷⁵ This city has only Interstate 44 to the far northern edge of the city, which is then linked to Interstate 49 to the west of the city linking it to Kansas City.

The Missouri Department of Transportation is the agency tasked with the construction and planning of the interstate highway system within the state's borders.⁷⁶ From this central agency came all of the state's highway plans, many of which were the same ones implemented in the cities of Missouri.

⁷⁵ George S. Escott, "History and Directory of Springfield and North Springfield," accessed February 7, 2014, <http://thelibrary.org/lochist/history/directory/ch1.html>.

⁷⁶ William D. Ankner, "Revisiting Transportation Planning," *Public Works Management & Policy* 9, no. 4 (April 1, 2005): 270–277, doi:10.1177/1087724X05276417.

St. Louis



St. Louis is a city built straddling the Illinois-Missouri border, with the mighty Mississippi river running in the heart of the downtown, where the border between the two states sits.

As the map to the right shows, the Missouri downtown was divided by the construction of Interstates 64 and 44 with Interstate 70 lining the bank of the Mississippi River.

On the Illinois side, only Interstate 55 and 70 enter the urbanized areas, and these link up

with the more obtrusively planned areas on the Missouri side. This Interstate 70 on the west side of the Mississippi was named the Mark Twain Expressway, and it served as the Missouri model for limited access expressways.⁷⁷

However, on the Illinois side of the river, much of the initial Interstate 55 was not built to interstate standards.⁷⁸ This signified that the interstate highway, though signed as one was

⁷⁷ "St. Louis Joins U.S. Road System," *New York Times*, July 30, 1961.

⁷⁸ Hal Foust, "AUTO OWNERS Guide: WRITER TEST DRIVES ROUTE TO ST. LOUIS Motoring Time Aids Testimony," *Chicago Tribune*, October 8, 1965.

actually US Route 66 and maintained that initial standard, with at-grade rail and cross-traffic crossing that were implied by this.

On the other hand in Missouri, MoDOT was eager to finish the crossing of the Mississippi to Interstate standards, and they continued the pace of building the interstate system through the heart of St. Louis's downtown areas.⁷⁹ Much of Interstate 64 follows the routing of the railroad through the heart of St. Louis, and then it diverges from this path however to follow the southern edge of Forest Park, which is the largest park in downtown St. Louis.

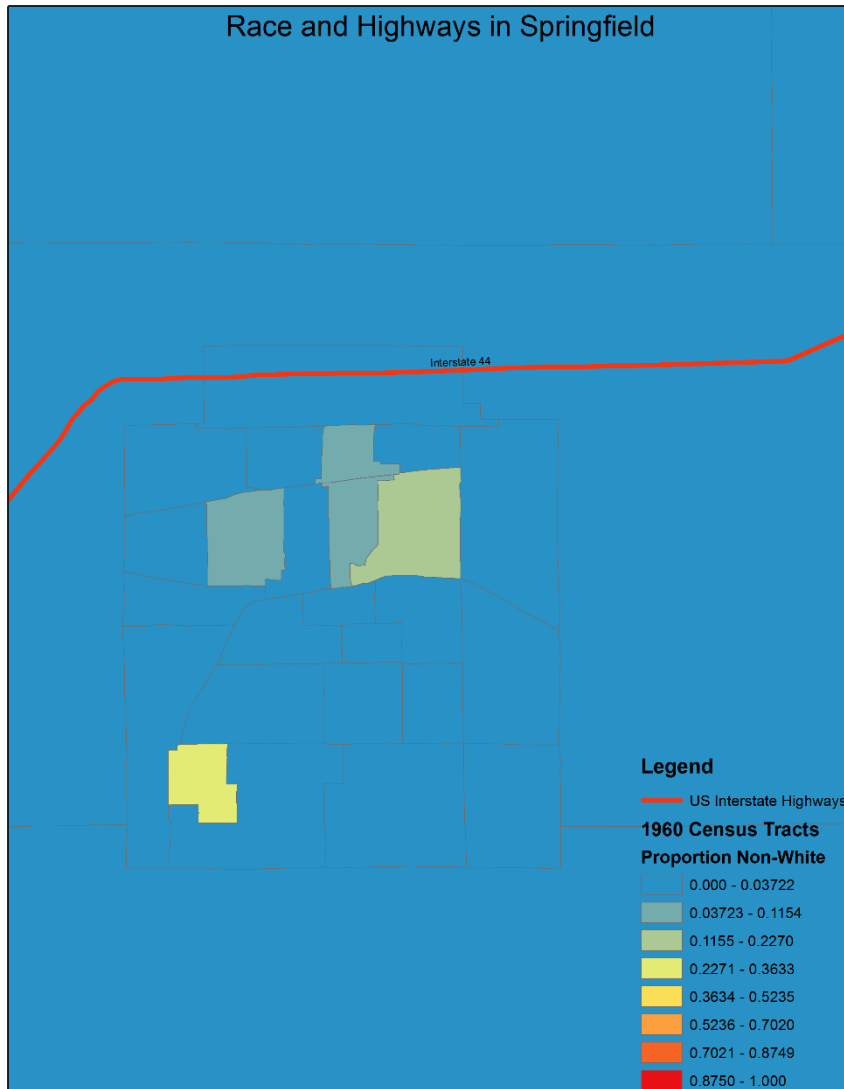
In St. Louis, this park is bordered to the north by the traditionally working class neighborhoods in the city. These areas are unique, as the finishing of Interstate 170, while initially envisioned has never come to fruition.⁸⁰ This, it can be inferred is partially due to the racial composition to the south of Interstate 170, which would entail going through some of the most white neighborhoods of the city, such as Lindenwood Park, which have existed largely as neighborhoods to escape the inner cities that have developed over the past decades since the development of the interstate system made these bedroom communities viable.⁸¹ Thus, St. Louis arranged its interstates in a method of racial segregation with dramatically different racial compositions on either side.

⁷⁹ "Two States to Build Huge Bridge Ramps," *Chicago Tribune*, March 22, 1964.

⁸⁰ Sheryl Hodges, David Nichols, and Raegan Ball, *South County Connector: Draft Environmental Impact Statement* (St. Louis County, Missouri: Federal Highway Administration, April 2013), <http://www.southcountyconnector.com/EIS/South%20County%20Connector%20Draft%20EIS%20Volume%20I%20-%20April%202013.pdf>.

⁸¹ "Neighborhood Profile: Lindenwood Park," *City of St. Louis*, accessed February 7, 2014, <https://stlouis-mo.gov/neighborhoods/profile.cfm?neighborhood=Lindenwood%20Park>.

Springfield



Springfield is a fascinating city to include in this discussion, not for its inclusion of the interstate in the city's limited minority presence, but rather its complete avoidance.

Interstate 44 went through this area as a replacement to the strained Norton Road in the northern edge of the city.

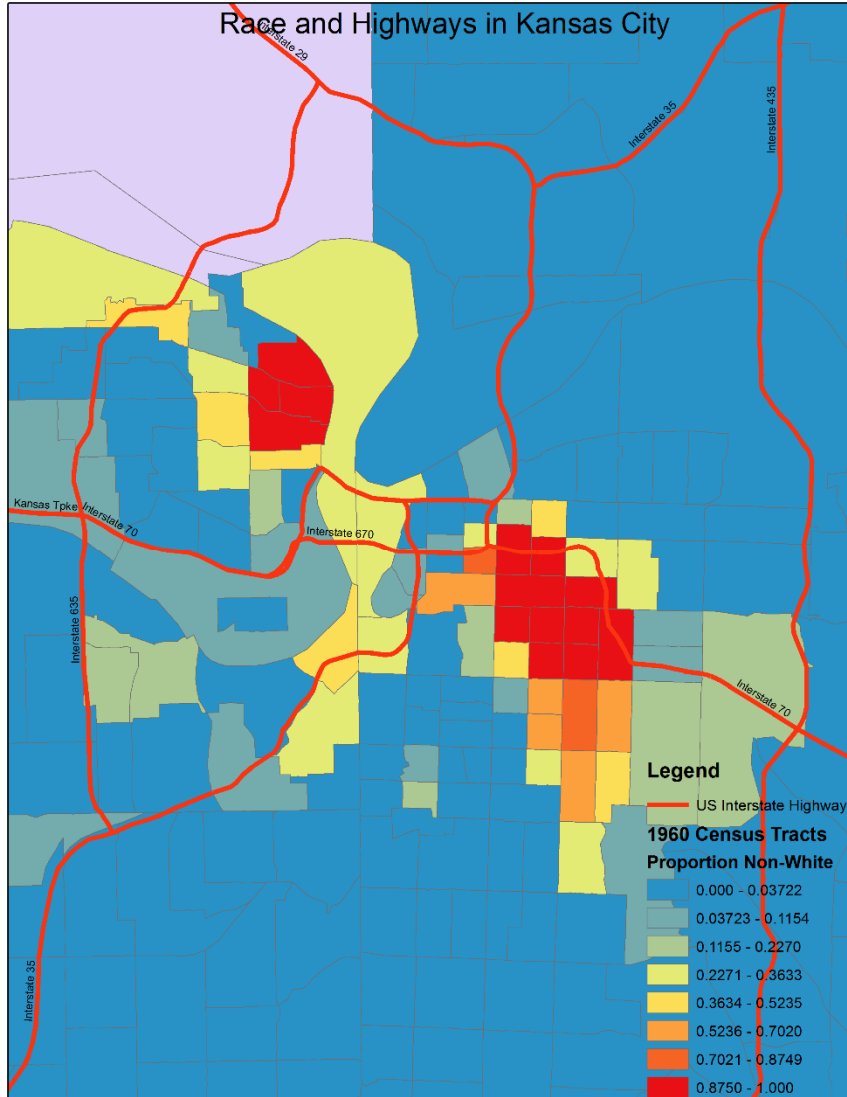
When the third largest city in a state is skipped, it is generally a larger discussion,

but it bears reminding that Springfield, as the map shows rather poignantly had a racial divide, albeit less severe than that seen in St. Louis and other cities heretofore that dictated that the residents to the north were more worthy of receiving this amenity to enable them to travel speedily to St. Louis.

This was seen as the gateway to the Ozarks on a national scale, but in Springfield the politics it entailed was strictly local.⁸² Springfield had a traditional, “side of the track” based racial distribution, as the map bears out, and by having the interstate run on a separate right of way even further to the north, it further constrained the ability of people from the south side of the railroad to access it by forcing them to use one of the few bridges over the sunken tracks in the heart of the city.

⁸² Robert Pearman, “NEW TRAIL IS BLAZED FOR TOURISTS IN MIDWEST,” *New York Times*, May 24, 1964.

Kansas City



Built at the confluence of the Kansas and Missouri rivers, Kansas City is split between the namesakes of its two rivers, Kansas and Missouri. Of these two states, Missouri is the primary concern, and Kansas did not test statistically significant in any metric.

However, the results in Missouri were more mixed with the Interstate 70 bisecting the city in its route from St. Louis. This route,

though it did accomplish the purpose of reaching westward, went in a circuitous manner through many of the non-white neighborhoods in the city. Unfortunately, the Kansas City Star's archives prior to 1991 are limited on this matter, and there are few resources that could be found to lend more explanation as to what transpired in this situation for this routing which appears to have been constructed to evade the neighborhood's parks, at the expense of the residents themselves.

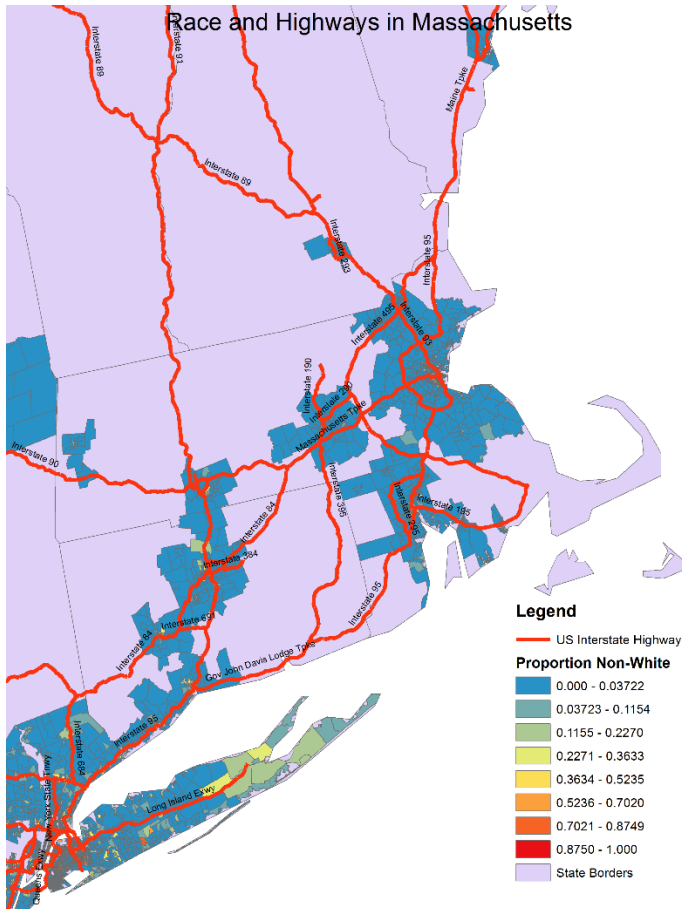
Massachusetts

Massachusetts Group Statistics

	Binary Highway Presence	N	Mean	Std. Deviation	Std. Error Mean
Proportion Non-White	No Highway Present	548	.0402562	.12605939	.00538499
	Highway Present	199	.0249337	.09085931	.00644085
Proportion Black	No Highway Present	548	.0370607	.12385061	.00529064
	Highway Present	199	.0152934	.06535543	.00463292

Massachusetts Independent Samples Test

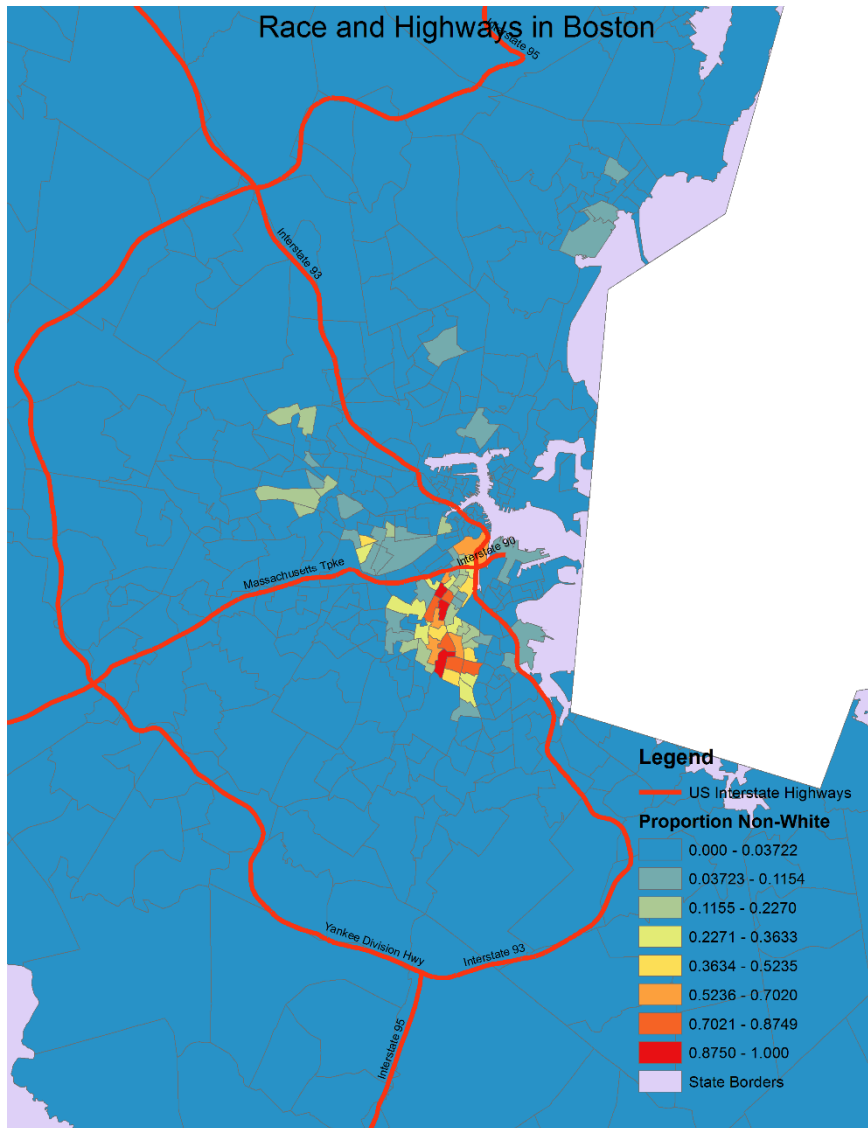
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Proportion Non-White	Equal variances assumed	5.695	.017	1.572	745	.116	.01532256	.00974431	-.00380701	.03445213
	Equal variances not assumed			1.825	485.658	.069	.01532256	.00839539	-.00117321	.03181834
Proportion Black	Equal variances assumed	15.196	.000	2.362	745	.018	.02176728	.00921532	.00367619	.03985838
	Equal variances not assumed			3.095	650.626	.002	.02176728	.00703241	.00795832	.03557624



As the group statistics demonstrate, the significance in the case of Massachusetts is more based on a small difference between the two groups, measured in a few percentage points.

However, this is most clearly demonstrated in discussion about Boston, the state's capital, and its metropolitan area.

Boston



Massachusetts was one of the many states that had developed an extensive expressway system prior to the Federal Aid Highway Act. The Massachusetts Turnpike, which runs east-west through the heart of Boston aroused controversy not for its limited displacement in Boston, where it largely follows the Charles River, but rather its routes out in the suburbs of the city where the interstate was seen to have a

deleterious impact upon property values, creating a “highway menace” that would adversely affect both the ability of children to go to school as well as their homes’ crime rate.⁸³

As the city had been planned, it was designated that I-95 would function as the Northeast and Southwest Expressways, linked by a central belt of I-695 which would also link

⁸³ “THRUWAY TIE STIRS FUSS IN BAY STATE: 10 Boston Suburbs Snarl Route by Clamoring to Shift Road From Their Property,” *New York Times*, May 10, 1953, <http://proxy.library.upenn.edu:2095/docview/112837248/43B47CB4C4404A9APQ/5?accountid=14707#>.

with I-93 and US 3.⁸⁴ This inner belt, however, was never constructed after there were extensive protests from the residents of the proposed route.⁸⁵

Route 128 (Also known as the Yankee Division Highway) was to serve as the western link between the two ends of I-95, which wholly bypasses the city of Boston proper. The length of Route 128 was created in 1933, during the early part of the highway mystique, and much of it was built to adequate freeway standards, allowing MassDOT to use it as a replacement for I-695, even though they were originally intended to work in tandem with Route 128 as the Outer Belt and I-695 as the Inner Belt.⁸⁶

Since that time, Route 128 has served as a divisive highway separating the communities of Woburn, Newton, and South Quincy from one side to the other.⁸⁷ However, all of these suburban massive growths were done to preserve the urban core. Originally, all of these converged into the highway known as the “central artery” which ran through the predominantly non-minority sections of Boston nearer the Charles.⁸⁸ This Central Artery was largely submerged by the now-infamous “Big Dig” project which undertook the process of reclaiming much of downtown Boston nearer the harbor from this elevated highway.⁸⁹

All of these designs mean that Boston has actually gone to great lengths to preserve the contiguity of minority neighborhoods, even if it comes at the expense of its suburban, and whiter

⁸⁴ Metropolitan Planning Organization (Mass.) et al., *Preliminary Report on a Master Highway Plan for the Boston Metropolitan Area to His Excellency, Robert F. Bradford, Governor of Massachusetts, by the Joint Board for the Metropolitan Master Highway Plan.* ([Boston, 1947).

⁸⁵ Ibid.

⁸⁶ Ibid.

⁸⁷ Gene Smith, “Slowdown on Route 128; Cutbacks Cost Jobs For Many Slowdown on Route 128,” *The New York Times*, October 11, 1970, <http://select.nytimes.com/gst/abstract.html?res=F40F14FC3F5B137A93C3A8178BD95F448785F9>.

⁸⁸ John H. Fenton, “OLD BOSTON BOWS TO SUPERHIGHWAY: \$40,000,000 Central Artery Levels Ancient Buildings, but Faneuil Hall Stands,” *The New York Times*, February 28, 1954.

⁸⁹ Mary B. Tabor, “Highway Project May Bring Boston to a Standstill,” *The New York Times*, June 1, 1991.

residents. However, though at first blush this may appear magnanimous, it is more pragmatic and harmful than it appears. Like in Springfield, by ignoring these sections of Boston, the people who live in them are unable to reap the benefits that come from the construction of these highways. As Boston failed to build its interior belt inside of Route 128 which would have alleviated this issue, the people in these areas are compelled to travel long distances on often constrained routes in order to reach effective infrastructure for their long-distance movements.

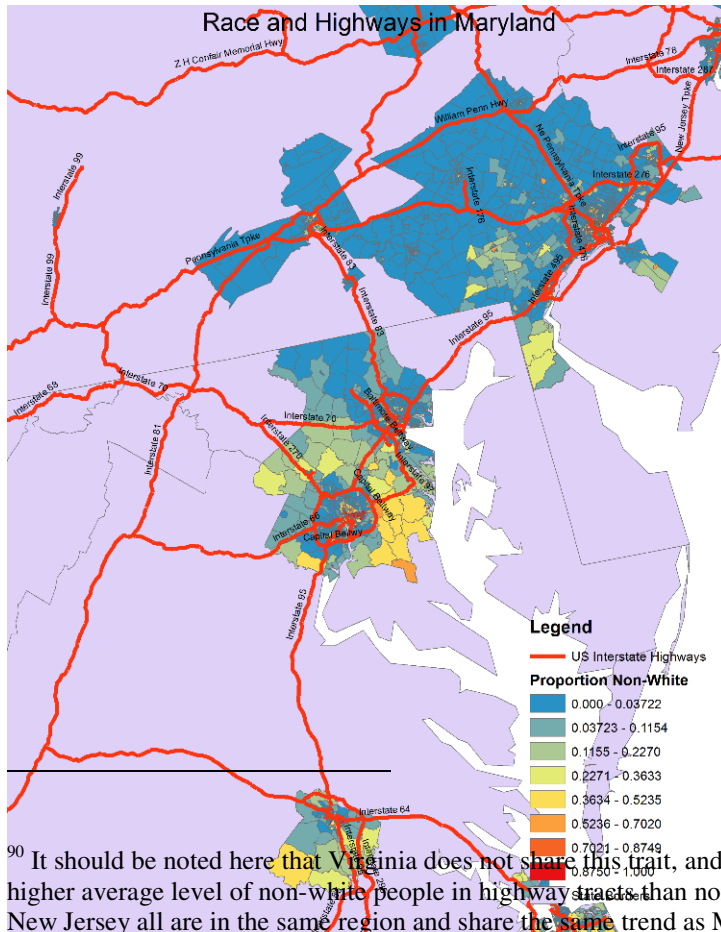
Maryland

Maryland Group Statistics

	Binary Highway Presence	N	Mean	Std. Deviation	Std. Error Mean
Proportion Non-White	No Highway Present	358	.1961272	.31748788	.01677976
	Highway Present	128	.1076079	.20785977	.01837238
Proportion Black	No Highway Present	358	.1946493	.32141874	.01698751
	Highway Present	128	.1052325	.20753622	.01834378

Maryland Independent Sample

		Levene's Test for Equality of Variances			
		F	Sig.	t	df
Proportion Non-White	Equal variances assumed	33.867	.000	2.936	484
	Equal variances not assumed			3.558	342.469
Proportion Black	Equal variances assumed	35.181	.000	2.935	484
	Equal variances not assumed			3.576	347.353

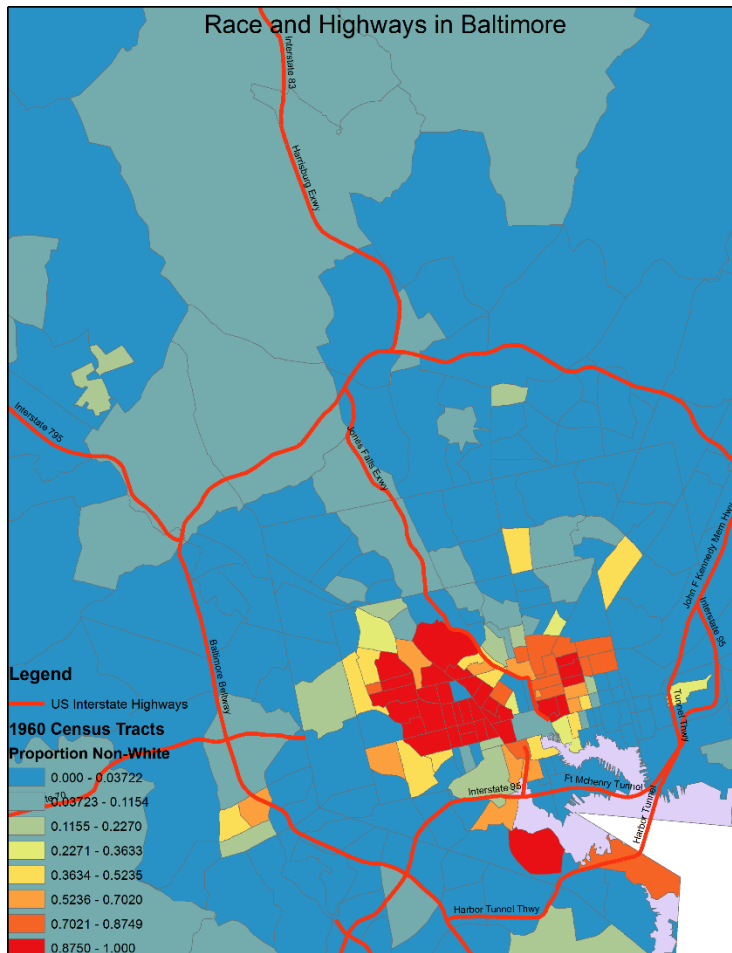


Maryland is similar to most of the states it borders in that the non-white average in the non-highway tracts is actually higher than that in the highway tracts.⁹⁰ This is again different from the conclusions that were reached in the literature; however, Maryland experienced effective resistance to inner city

⁹⁰ It should be noted here that Virginia does not share this trait, and it displays a statistically insignificant level of higher average level of non-white people in highway tracts than non-highway tracts. West Virginia, New York, and New Jersey all are in the same region and share the same trend as Maryland.

expressways in its only major conurbation, Baltimore.

Baltimore



An examination of the inner city of Baltimore reveals that many of the expressways are around the city in a broadly drawn loop, as opposed to cutting through the largely minority sections of the inner city.

Part of the opposition to drawing a tighter loop stemmed from Maryland's early construction of the Baltimore-Frederick Expressway through the inner city, which links with the Interstate 95 in Downtown Baltimore, which effectively serves as

a limited access expressway.⁹¹ This early highway project demonstrated to the, largely white, population on the inside of the loop, that highway projects had sizable caveats for nearby residents, leading to the routing of the freeways through many of the more non-white tracts in the city.

Beyond the route of Interstate 83, which was built along the railroad tracks running into the downtown, until it goes due south at its end, to become briefly an elevated expressway in a commercial area, until it becomes a standard boulevard at its end. This routing is laudable

⁹¹ "Maryland Lists Area Roads In 1951 Plans: Expressway Links and Other Construction Projects on Program Maryland Lists Highway Plans," *The Washington Post*, August 16, 1951.

relative to the conventional routing to follow the tracks, as that would have involved going deeper into the residential downtown neighborhoods further to the east, which would have caused increased disruption to the city. This routing was the result of extensive protest and political mobilization, which was required in order to run the Jones Fall Expressway into downtown Baltimore.⁹² In this situation, it was directly based on African-American advocacy in the planning process that the Jones Falls Expressway was constructed on the routing that was eventually selected and acted upon.

However, Baltimore's harbor residents were successful in rejecting a controversially designed bridge to go over the inner harbor in favor of a tunnel.⁹³ The Interstate 95 Link through the city was one of the final projects undertaken in the northeast interstate, and it was a hotly contested compromise that led to the effected routing.⁹⁴ This route actually managed to avoid most of the densely populated areas of Baltimore and the surrounding harbor, especially through the usage of a tunnel where it can later reunify with the outer harbor tunnel to form the John F. Kennedy Memorial Highway.

⁹² "Druid Hill-Orchard Area Unhappy about Expressway," *The Baltimore Afro-American*, February 3, 1968.

⁹³ Ada Louise Huxtable, "The Expressway Debate: Progress or Destruction: Projects in Baltimore and in New Orleans Stir Controversy," *The New York Times*, May 1, 1967.

⁹⁴ Bart Barnes, "Work Is Set On I-95 Link To Baltimore: Work Is Set On I-95 Link To Baltimore," *The Washington Post*, February 28, 1968,
<http://proxy.library.upenn.edu:2095/docview/143485280/4D797718788E48CEPQ/12?accountid=14707#>.

Conclusions

Much of the work in the preceding sections has been focused on the demonstration of the methods used to undertake the quantitative examination, as well as some basic case study results. Each of these sections is open to increased criticism and inquiry throughout the coming scholarly discourse on this issue.

The areas where this paper has both made the most progress and is most vulnerable are in its scope and its methods. These two critiques are intermingled on the same core tenet: the cliché of all politics being local, and they are the result of consciously made decisions during the experimental design process that has culminated in this paper.

Finally, the concluding remarks will revisit the distinctions and values that may be gleaned from this examination, as well as final takeaways granted by the piece's completion.

Scope

Part of the allure of this study is its national scale. Indeed, this study demonstrates, with a high degree of clarity, that these issues occur on a much smaller scale than was previously indicated. The primary conclusion that has been drawn time and again, that these projects take place in a much smaller scale than the national scale can discuss.

Each paradigm has its own rules and actors, and any examination from this macroscopic scale is, by design, unable to appreciate this variation for the benefit of increased breadth. This is the first regret of this paper, the inability of covering local politics to a level which was provides too much meaningful discussion of the interstate projects. Yes, there was, through the process of newspaper scouring, the ability to shed light on certain projects, however, almost without fail, this was done in isolation without a knowledge of the greater political climate of the area, and as such it marks the primary area for further inquiry.

With such a large scope, there is very little ability to craft the narratives that transformed each of these communities. This translates to a portion of the story being lost or muddled in the translation of the communities by directly juxtaposing them against one another as is done in this paper. Indeed, this sort of differentiation can be seen as a potential fly in the ointment for this sort of macroscopic scale examination of the racial prejudices involved in the construction of the interstate highway system, and this omission of the microscopic for the macroscopic, though regrettable, was intentional.

For example, Chicago is a prominent city with a slew of different actors, such as Mayor Richard J. Daley, who among many others could have been named in the furtherance of this

piece. However, in this scale, the individual names and faces, and even to a lesser extent the distinguishing characteristics of the places are almost irrelevant as compared to the overarching narrative of these communities and how the interstate highway system was planned.

In this sense, the ethnographic roots of this study have been eschewed in favor of increasing the scale and applicability of the overall paper's conclusions to seek out if there were any consistent racial biases in the planning process.

Methods

From the beginning, the methods of this paper have been statistically difficult to obtain, and they are open to considerable criticism. For example, the use of census tracts as the examination criteria, though required by the use of old data, does obfuscate the results substantially, as these tracts are often times quite large, and in dense areas, such as the cities discussed in this paper, they may not accurately represent racial and neighborhood boundaries.

This usage of tracts as the primary basis does allow for increased uniformity amongst the cities, and it keeps a sufficiently small sample size such that the t-test itself is not reduced to the point of being overwhelmed and has some value as a metric, as its value is inverse to the sample size beyond a certain point due to the nature of the test, thus the inability to use census blocks results in a simplification of the test and the ability to derive a meaningful result from running this test at a statewide level.

However, one should still cast a wary eye on even these carefully selected methods for the examination of the quantitative data assessed here. As we have seen before, one of the uses of the interstate highway, as an entrenchment of racial borders, seems to be almost impossible to not in this examination, as these generally do not coincide with tract borders. This function, which is clearly and intrinsically racial is almost entirely omitted from this type of study, as it does not examine the proximity of these tracts to one another.

Furthermore, this report may unnecessarily vilify several projects by these same methods, as they may have taken the only viable route to reach the destinations that needed the alleviation of congestion that the interstate system provides. For example, in Chicago many of the routes noted that go through predominantly non-white areas are in very high density areas, and these routes are some of the most heavily travelled in the city. However, there is a great deal of

evidence that there was insufficient care taken to mitigate the effects of the highway system in predominantly minority areas, such as in Phoenix.

Final Remarks

To a great extent, both of the preceding critiques rested upon the macroscopic scale of the undertaking, both in the statistically methods as well as in its qualitative studies. However, though each of these rings critiques can ring true in isolation, addressing them more completely would obscure the overall goal of this piece to study, on a national scale, the presence of racial bias in the interstate highway planning mechanism.

In light of that goal, this study does provide a considerable degree of insight into the usage of highway planning projects. Though there were very few instances where we could find a willful desire to break through and obstruct neighborhoods, as had been alleged, there were more cases, such as St. Louis or Baltimore, where the interstate highway was used as a method of keeping a racial divide in place between whites and blacks. This runs counter to the initial supposition that the highway was itself considered to be undesirable and deleterious to a neighborhood, as has been asserted elsewhere.

Overall, this work does provide an interesting rebuttal of the anecdotal account of rampant racism in these projects; however, part of these anecdotes may be inspired by the process of neighborhood transition. Thus, more research is needed to understand exactly why the anecdotally based literature has developed in the way that it has, as it may indicate that these projects were detrimental and provoked a degree of neighborhood transition after they were constructed.

Furthermore, these studies could be run with an examination of the income patterns of the tracts as opposed to the racial composition, which could shed light on whether these issues that were anecdotally noted are based on the perceived class of the residents. This sort of class based discrimination may have been the effective result of prejudice; however, it appears that there

were a scarce few examples where the interstate appears to have been prejudicially placed through minority neighborhoods.

Overall, this essay seems largely to rebut the placement being discriminatory *ipso facto*. However, the form that these roads take in minority neighborhoods is often unmitigated, which may cause deterioration in the surrounding neighborhoods. There do appear to have been distinct areas where a more equitable placement could have been made, but this does not have the same degree of evidence as the initial literature may have suggested. Thus, after this extensive research, the only clear response is that the answer to this line of enquiry is much more nuanced than was initially expected and implied.

Appendix: Case Study Tables (State t-tests)

Alabama

Alabama Group Statistics

Binary Highway Presence		N	Mean	Std. Deviation	Std. Error Mean
Proportion Non-White	No Highway Present	135	.3154282	.33256238	.02862241
	Highway Present	85	.3354154	.34396746	.03730851
Proportion Black	No Highway Present	135	.3139150	.33251952	.02861872
	Highway Present	85	.3347520	.34409339	.03732217

Alabama Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Proportion Non-White	Equal variances assumed	.143	.705	-.428	218	.669	-.01998716	.04666254	-.11195463	.07198030
	Equal variances not assumed			-.425	174.159	.671	-.01998716	.04702305	-.11279557	.07282124
Proportion Black	Equal variances assumed	.154	.695	-.447	218	.656	-.02083704	.04666580	-.11281092	.07113685
	Equal variances not assumed			-.443	174.093	.658	-.02083704	.04703164	-.11366264	.07198857

Arizona

Arizona Group Statistics

Binary Highway Presence		N	Mean	Std. Deviation	Std. Error Mean
Proportion Non-White	No Highway Present	126	.0598591	.15048594	.01340635
	Highway Present	53	.1264579	.22322252	.03066197
Proportion Black	No Highway Present	126	.0291728	.09767620	.00870169
	Highway Present	53	.0652186	.14785428	.02030935

Arizona Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Proportion Non-White	Equal variances assumed	8.193	.005	-2.324	177	.021	-.06659874	.02865427	-.12314672	-.01005076
	Equal variances not assumed			-1.990	72.677	.050	-.06659874	.03346471	-.13329880	.00010132
Proportion Black	Equal variances assumed	7.079	.009	-1.919	177	.057	-.03604576	.01878165	-.07311053	.00101902
	Equal variances not assumed			-1.631	71.837	.107	-.03604576	.02209500	-.08009304	.00800152

Arkansas

Arkansas Group Statistics

Binary Highway Presence		N	Mean	Std. Deviation	Std. Error Mean
Proportion Non-White	No Highway Present	30	.1492607	.20326591	.03711111
	Highway Present	30	.2413328	.29520007	.05389591
Proportion Black	No Highway Present	30	.1481641	.20405176	.03725458
	Highway Present	30	.2407842	.29480295	.05382341

Arkansas Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Proportion Non-White	Equal variances assumed	5.512	.022	-1.407	58	.165	-.09207216	.06543702	-.22305859	.03891427
	Equal variances not assumed			-1.407	51.452	.165	-.09207216	.06543702	-.22341443	.03927011
Proportion Black	Equal variances assumed	5.326	.025	-1.415	58	.162	-.09262012	.06545887	-.22365028	.03841004
	Equal variances not assumed			-1.415	51.600	.163	-.09262012	.06545887	-.22399719	.03875695

California

California Group Statistics

Binary Highway Presence		N	Mean	Std. Deviation	Std. Error Mean
Proportion Non-White	No Highway Present	2149	.0971677	.20605379	.00444490
	Highway Present	726	.0985988	.18931654	.00702620
Proportion Black	No Highway Present	2149	.0700873	.18874652	.00407156
	Highway Present	726	.0709225	.17558284	.00651649

California Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Proportion Non-White	Equal variances assumed	.476	.490	-.165	2873	.869	-.00143103	.00866962	-.01843033	.01556828
	Equal variances not assumed			-.172	1348.519	.863	-.00143103	.00831412	-.01774104	.01487899
Proportion Black	Equal variances assumed	.146	.702	-.105	2873	.916	-.00083524	.00796354	-.01645008	.01477959
	Equal variances not assumed			-.109	1332.983	.913	-.00083524	.00768389	-.01590909	.01423860

Colorado

Colorado Group Statistics

Binary Highway Presence		N	Mean	Std. Deviation	Std. Error Mean
Proportion Non-White	No Highway Present	206	.0399785	.13320010	.00928049
	Highway Present	64	.0324930	.04605547	.00575693
Proportion Black	No Highway Present	206	.0333302	.12736293	.00887380
	Highway Present	64	.0227329	.04082029	.00510254

Colorado Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Proportion Non-White	Equal variances assumed	2.638	.105	.441	268	.660	.00748549	.01697490	-.02593564	.04090661
	Equal variances not assumed			.685	265.297	.494	.00748549	.01092107	-.01401751	.02898849
Proportion Black	Equal variances assumed	2.833	.094	.655	268	.513	.01059728	.01619049	-.02127944	.04247400
	Equal variances not assumed			1.035	267.732	.301	.01059728	.01023622	-.00955644	.03075100

Connecticut

Connecticut Group Statistics

Binary Highway Presence		N	Mean	Std. Deviation	Std. Error Mean
Proportion Non-White	No Highway Present	268	.0569557	.13233598	.00808371
	Highway Present	129	.0580040	.10604824	.00933703
Proportion Black	No Highway Present	268	.0556894	.13192050	.00805833
	Highway Present	129	.0568947	.10561978	.00929930

Connecticut Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Proportion Non-White	Equal variances assumed	.075	.785	-.079	395	.937	-.00104827	.01333363	-.02726202	.02516548
	Equal variances not assumed			-.085	308.664	.932	-.00104827	.01235016	-.02534942	.02325288
Proportion Black	Equal variances assumed	.091	.763	-.091	395	.928	-.00120528	.01328894	-.02733117	.02492061
	Equal variances not assumed			-.098	308.906	.922	-.00120528	.01230503	-.02541755	.02300699

Delaware

Delaware Group Statistics

Binary Highway Presence		N	Mean	Std. Deviation	Std. Error Mean
Proportion Non-White	No Highway Present	67	.1235559	.22568877	.02757227
	Highway Present	29	.1094760	.21116664	.03921266
Proportion Black	No Highway Present	67	.1220869	.22465438	.02744590
	Highway Present	29	.1136299	.21314337	.03957973

Delaware Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Proportion Non-White	Equal variances assumed	.197	.658	.286	94	.775	.01407996	.04922658	-.08366057	.11182049
	Equal variances not assumed			.294	56.656	.770	.01407996	.04793603	-.08192291	.11008282
Proportion Black	Equal variances assumed	.056	.814	.172	94	.864	.00845698	.04918781	-.08920656	.10612053
	Equal variances not assumed			.176	55.917	.861	.00845698	.04816464	-.08803156	.10494552

District of Columbia

District of Columbia Group Statistics

Binary Highway Presence		N	Mean	Std. Deviation	Std. Error Mean
Proportion Non-White	No Highway Present	108	.5186599	.37747923	.03632296
	Highway Present	17	.4478631	.32332810	.07841858
Proportion Black	No Highway Present	108	.5079855	.38296085	.03685043
	Highway Present	17	.4526009	.32990079	.08001269

District of Columbia Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Proportion Non-White	Equal variances assumed	2.257	.136	.732	123	.466	.07079680	.09677326	-.12075993	.26235352
	Equal variances not assumed			.819	23.441	.421	.07079680	.08642240	-.10779577	.24938936
Proportion Black	Equal variances assumed	2.326	.130	.564	123	.574	.05538460	.09823426	-.13906410	.24983329
	Equal variances not assumed			.629	23.350	.536	.05538460	.08809078	-.12669387	.23746306

Florida

Florida Group Statistics

Binary Highway Presence		N	Mean	Std. Deviation	Std. Error Mean
Proportion Non-White	No Highway Present	313	.1077828	.24137876	.01364353
	Highway Present	104	.2090274	.33954447	.03329507
Proportion Black	No Highway Present	313	.1026129	.23903510	.01351106
	Highway Present	104	.2122256	.33965631	.03330604

Florida Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Proportion Non-White	Equal variances assumed	31.846	.000	-3.324	415	.001	-.10124459	.03045793	-.16111565	-.04137353
	Equal variances not assumed			-2.814	139.199	.006	-.10124459	.03598205	-.17238661	-.03010258
Proportion Black	Equal variances assumed	35.709	.000	-3.620	415	.000	-.10961273	.03028339	-.16914069	-.05008477
	Equal variances not assumed			-3.050	138.452	.003	-.10961273	.03594219	-.18067930	-.03854615

Georgia

Georgia Group Statistics

Binary Highway Presence		N	Mean	Std. Deviation	Std. Error Mean
Proportion Non-White	No Highway Present	202	.2977589	.35904457	.02526229
	Highway Present	133	.2370269	.31162556	.02702136
Proportion Black	No Highway Present	202	.2962140	.35941831	.02528858
	Highway Present	133	.2355856	.31223362	.02707409

Georgia Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Proportion Non-White	Equal variances assumed	8.971	.003	1.595	333	.112	.06073204	.03808229	-.01418015	.13564423
	Equal variances not assumed			1.642	308.709	.102	.06073204	.03699104	-.01205443	.13351850
Proportion Black	Equal variances assumed	9.014	.003	1.590	333	.113	.06062835	.03813341	-.01438439	.13564110
	Equal variances not assumed			1.637	308.561	.103	.06062835	.03704752	-.01226938	.13352609

Illinois

Illinois Group Statistics

Binary Highway Presence		N	Mean	Std. Deviation	Std. Error Mean
Proportion Non-White	No Highway Present	1211	.1523095	.31514903	.00905616
	Highway Present	310	.1218329	.27287064	.01549801
Proportion Black	No Highway Present	1211	.1469587	.31428795	.00903141
	Highway Present	310	.1192423	.27252714	.01547850

Illinois Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Proportion Non-White	Equal variances assumed	9.486	.002	1.560	1519	.119	.03047661	.01954246	-.00785646	.06880968
	Equal variances not assumed			1.698	539.970	.090	.03047661	.01794999	-.00478377	.06573699
Proportion Black	Equal variances assumed	9.348	.002	1.422	1519	.155	.02771639	.01949370	-.01052102	.06595381
	Equal variances not assumed			1.547	539.252	.123	.02771639	.01792067	-.00748648	.06291927

Indiana

Indiana Group Statistics

Binary Highway Presence		N	Mean	Std. Deviation	Std. Error Mean
Proportion Non-White	No Highway Present	329	.0945280	.21577093	.01189584
	Highway Present	139	.1044639	.25005745	.02120960
Proportion Black	No Highway Present	329	.0930798	.21580762	.01189786
	Highway Present	139	.1038655	.25027867	.02122836

Indiana Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Proportion Non-White	Equal variances assumed	1.418	.234	-.434	466	.665	-.00993584	.02290977	-.05495509	.03508341
	Equal variances not assumed			-.409	228.947	.683	-.00993584	.02431785	-.05785124	.03797956
Proportion Black	Equal variances assumed	1.434	.232	-.471	466	.638	-.01078570	.02291958	-.05582423	.03425282
	Equal variances not assumed			-.443	228.817	.658	-.01078570	.02433521	-.05873545	.03716404

Iowa

Iowa Group Statistics

Binary Highway Presence		N	Mean	Std. Deviation	Std. Error Mean
Proportion Non-White	No Highway Present	111	.0331113	.10272595	.00975032
	Highway Present	40	.0584286	.13438965	.02124887
Proportion Black	No Highway Present	111	.0329089	.10626130	.01008588
	Highway Present	40	.0539077	.12967926	.02050409

Iowa Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Proportion Non-White	Equal variances assumed	5.595	.019	-1.227	149	.222	-.02531731	.02063293	-.06608824	.01545363
	Equal variances not assumed			-1.083	56.268	.283	-.02531731	.02337912	-.07214639	.02151177
Proportion Black	Equal variances assumed	3.319	.071	-1.009	149	.315	-.02099886	.02081335	-.06212631	.02012860
	Equal variances not assumed			-.919	58.933	.362	-.02099886	.02285044	-.06672357	.02472586

Kansas

Kansas Group Statistics

Binary Highway Presence		N	Mean	Std. Deviation	Std. Error Mean
Proportion Non-White	No Highway Present	117	.0766853	.19810789	.01831508
	Highway Present	90	.0890248	.19553213	.02061090
Proportion Black	No Highway Present	117	.0729250	.19868491	.01836843
	Highway Present	90	.0859082	.19617103	.02067824

Kansas Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Proportion Non-White	Equal variances assumed	.238	.626	-.447	205	.656	-.01233955	.02761999	-.06679522	.04211611
	Equal variances not assumed			-.448	192.810	.655	-.01233955	.02757265	-.06672231	.04204320
Proportion Black	Equal variances assumed	.277	.599	-.469	205	.640	-.01298324	.02770463	-.06760578	.04163930
	Equal variances not assumed			-.469	192.777	.639	-.01298324	.02765843	-.06753524	.04156875

Kentucky

Kentucky Group Statistics

Binary Highway Presence		N	Mean	Std. Deviation	Std. Error Mean
Proportion Non-White	No Highway Present	97	.1807507	.29206196	.02965440
	Highway Present	73	.1064572	.19533091	.02286175
Proportion Black	No Highway Present	97	.1799781	.29232163	.02968076
	Highway Present	73	.1059094	.19510990	.02283589

Kentucky Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Proportion Non-White	Equal variances assumed	11.039	.001	1.879	168	.062	.07429351	.03953212	-.00375023	.15233724
	Equal variances not assumed			1.984	165.892	.049	.07429351	.03744387	.00036556	.14822145
Proportion Black	Equal variances assumed	11.224	.001	1.873	168	.063	.07406868	.03954722	-.00400486	.15214222
	Equal variances not assumed			1.978	165.821	.050	.07406868	.03744897	.00013042	.14800693

Louisiana

Louisiana Group Statistics

Binary Highway Presence		N	Mean	Std. Deviation	Std. Error Mean
Proportion Non-White	No Highway Present	218	.2928465	.33788441	.02288442
	Highway Present	89	.3657397	.35487291	.03761645
Proportion Black	No Highway Present	218	.2912038	.33864734	.02293609
	Highway Present	89	.3644132	.35502070	.03763212

Louisiana Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Proportion Non-White	Equal variances assumed	2.212	.138	-1.690	305	.092	-.07289328	.04312990	-.15776311	.01197655
	Equal variances not assumed			-1.656	156.499	.100	-.07289328	.04403061	-.15986422	.01407766
Proportion Black	Equal variances assumed	2.159	.143	-1.695	305	.091	-.07320942	.04320276	-.15822261	.01180377
	Equal variances not assumed			-1.661	156.750	.099	-.07320942	.04407086	-.16025879	.01383994

Maine

Maine Group Statistics

Binary Highway Presence		N	Mean	Std. Deviation	Std. Error Mean
Proportion Non-White	No Highway Present	26	.0077015	.01417137	.00277924
	Highway Present	10	.0059488	.00701510	.00221837
Proportion Black	No Highway Present	26	.0036004	.00867093	.00170051
	Highway Present	10	.0045243	.00535489	.00169336

Maine Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Proportion Non-White	Equal variances assumed	.800	.377	.372	34	.713	.00175270	.00471699	-.00783337	.01133877
	Equal variances not assumed			.493	31.493	.626	.00175270	.00355602	-.00549525	.00900066
Proportion Black	Equal variances assumed	.189	.666	-.313	34	.756	-.00092392	.00295052	-.00692009	.00507226
	Equal variances not assumed			-.385	26.575	.703	-.00092392	.00239984	-.00585166	.00400382

Maryland

Maryland Group Statistics

Binary Highway Presence		N	Mean	Std. Deviation	Std. Error Mean
Proportion Non-White	No Highway Present	358	.1961272	.31748788	.01677976
	Highway Present	128	.1076079	.20785977	.01837238
Proportion Black	No Highway Present	358	.1946493	.32141874	.01698751
	Highway Present	128	.1052325	.20753622	.01834378

Maryland Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Proportion Non-White	Equal variances assumed	33.867	.000	2.936	484	.003	.08851922	.03014585	.02928632	.14775211
	Equal variances not assumed			3.558	342.469	.000	.08851922	.02488181	.03957880	.13745963
Proportion Black	Equal variances assumed	35.181	.000	2.935	484	.003	.08941672	.03046383	.02955902	.14927441
	Equal variances not assumed			3.576	347.353	.000	.08941672	.02500140	.04024354	.13858989

Massachusetts

Massachusetts Group Statistics

Binary Highway Presence		N	Mean	Std. Deviation	Std. Error Mean
Proportion Non-White	No Highway Present	548	.0402562	.12605939	.00538499
	Highway Present	199	.0249337	.09085931	.00644085
Proportion Black	No Highway Present	548	.0370607	.12385061	.00529064
	Highway Present	199	.0152934	.06535543	.00463292

Massachusetts Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Proportion Non-White	Equal variances assumed	5.695	.017	1.572	745	.116	.01532256	.00974431	-.00380701	.03445213
	Equal variances not assumed			1.825	485.658	.069	.01532256	.00839539	-.00117321	.03181834
Proportion Black	Equal variances assumed	15.196	.000	2.362	745	.018	.02176728	.00921532	.00367619	.03985838
	Equal variances not assumed			3.095	650.626	.002	.02176728	.00703241	.00795832	.03557624

Michigan

Michigan Group Statistics

Binary Highway Presence		N	Mean	Std. Deviation	Std. Error Mean
Proportion Non-White	No Highway Present	846	.1471857	.28336084	.00974215
	Highway Present	315	.1573564	.29745376	.01675962
Proportion Black	No Highway Present	846	.1447351	.28267580	.00971859
	Highway Present	315	.1547140	.29758997	.01676730

Michigan Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Proportion Non-White	Equal variances assumed	.335	.563	-.536	1159	.592	-.01017070	.01895970	-.04736988	.02702848
	Equal variances not assumed			-.525	539.173	.600	-.01017070	.01938541	-.04825090	.02790949
Proportion Black	Equal variances assumed	.368	.544	-.527	1159	.598	-.00997888	.01892972	-.04711923	.02716148
	Equal variances not assumed			-.515	537.861	.607	-.00997888	.01938023	-.04804909	.02809134

Minnesota

Minnesota Group Statistics

Binary Highway Presence		N	Mean	Std. Deviation	Std. Error Mean
Proportion Non-White	No Highway Present	254	.0158533	.05274507	.00330952
	Highway Present	135	.0353874	.09853456	.00848051
Proportion Black	No Highway Present	254	.0114181	.05094174	.00319637
	Highway Present	135	.0277425	.09589854	.00825363

Minnesota Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Proportion Non-White	Equal variances assumed	15.725	.000	-2.548	387	.011	-.01953407	.00766618	-.03460664	-.00446150
	Equal variances not assumed			-2.146	175.764	.033	-.01953407	.00910340	-.03750011	-.00156803
Proportion Black	Equal variances assumed	15.537	.000	-2.194	387	.029	-.01632440	.00744112	-.03095448	-.00169431
	Equal variances not assumed			-1.844	175.122	.067	-.01632440	.00885094	-.03379264	.00114385

Missouri

Missouri Group Statistics

Binary Highway Presence		N	Mean	Std. Deviation	Std. Error Mean
Proportion Non-White	No Highway Present	264	.1478913	.29126854	.01792634
	Highway Present	184	.0792114	.20978908	.01546586
Proportion Black	No Highway Present	264	.1461142	.29114162	.01791853
	Highway Present	184	.0776968	.21006200	.01548598

Missouri Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Proportion Non-White	Equal variances assumed	27.543	.000	2.741	446	.006	.06867990	.02505860	.01943231	.11792750
	Equal variances not assumed			2.901	445.505	.004	.06867990	.02367586	.02214966	.11521014
Proportion Black	Equal variances assumed	27.631	.000	2.730	446	.007	.06841738	.02505923	.01916854	.11766622
	Equal variances not assumed			2.889	445.452	.004	.06841738	.02368310	.02187290	.11496186

Nebraska

Nebraska Group Statistics

Binary Highway Presence		N	Mean	Std. Deviation	Std. Error Mean
Proportion Non-White	No Highway Present	95	.0867356	.20748537	.02128755
	Highway Present	29	.0129972	.01973025	.00366382
Proportion Black	No Highway Present	95	.0820933	.20702087	.02123989
	Highway Present	29	.0053774	.01132026	.00210212

Nebraska Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Proportion Non-White	Equal variances assumed	14.434	.000	1.906	122	.059	.07373835	.03869062	-.00285359	.15033029
	Equal variances not assumed			3.414	99.359	.001	.07373835	.02160054	.03088010	.11659659
Proportion Black	Equal variances assumed	16.235	.000	1.989	122	.049	.07671596	.03856928	.00036422	.15306770
	Equal variances not assumed			3.594	95.820	.001	.07671596	.02134366	.03434810	.11908381

Nevada

Nevada Group Statistics

Binary Highway Presence		N	Mean	Std. Deviation	Std. Error Mean
Proportion Non-White	No Highway Present	9	.0093806	.01119745	.00373248
	Highway Present	5	.1955465	.41092432	.18377094
Proportion Black	No Highway Present	9	.0012388	.00244762	.00081587
	Highway Present	5	.1879829	.41142269	.18399382

Nevada Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Proportion Non-White	Equal variances assumed	12.850	.004	-1.406	12	.185	-.18616590	.13242842	-.47470265	.10237085
	Equal variances not assumed			-1.013	4.003	.368	-.18616590	.18380884	-.69633517	.32400337
Proportion Black	Equal variances assumed	13.577	.003	-1.409	12	.184	-.18674412	.13249538	-.47542676	.10193852
	Equal variances not assumed			-1.015	4.000	.368	-.18674412	.18399563	-.69758997	.32410172

New Hampshire

New Hampshire Group Statistics

Binary Highway Presence		N	Mean	Std. Deviation	Std. Error Mean
Proportion Non-White	No Highway Present	12	.0032957	.00493911	.00142580
	Highway Present	9	.0044940	.00445216	.00148405
Proportion Black	No Highway Present	12	.0010578	.00206548	.00059625
	Highway Present	9	.0031317	.00434194	.00144731

New Hampshire Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Proportion Non-White	Equal variances assumed	.058	.812	-.573	19	.573	-.00119824	.00209022	-.00557313	.00317664
	Equal variances not assumed			-.582	18.266	.568	-.00119824	.00205799	-.00551741	.00312092
Proportion Black	Equal variances assumed	3.825	.065	-1.458	19	.161	-.00207395	.00142258	-.00505145	.00090355
	Equal variances not assumed			-1.325	10.721	.213	-.00207395	.00156532	-.00553016	.00138226

New Jersey

New Jersey Group Statistics

Binary Highway Presence		N	Mean	Std. Deviation	Std. Error Mean
Proportion Non-White	No Highway Present	783	.0781257	.19063847	.00681286
	Highway Present	206	.0626032	.15089662	.01051347
Proportion Black	No Highway Present	510	.1168710	.22512060	.00996851
	Highway Present	116	.1133000	.18846312	.01749836

New Jersey Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Proportion Non-White	Equal variances assumed	4.524	.034	1.083	987	.279	.01552248	.01433708	-.01261218	.04365714
	Equal variances not assumed			1.239	395.054	.216	.01552248	.01252789	-.00910719	.04015215
Proportion Black	Equal variances assumed	1.691	.194	.159	624	.874	.00357100	.02250991	-.04063335	.04777535
	Equal variances not assumed			.177	197.067	.859	.00357100	.02013861	-.03614386	.04328586

New Mexico

New Mexico Group Statistics

Binary Highway Presence		N	Mean	Std. Deviation	Std. Error Mean
Proportion Non-White	No Highway Present	31	.0252208	.02596534	.00466351
	Highway Present	23	.1135790	.23803492	.04963371
Proportion Black	No Highway Present	31	.0135096	.02247659	.00403691
	Highway Present	23	.0309861	.05841493	.01218035

New Mexico Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Proportion Non-White	Equal variances assumed	13.082	.001	-2.057	52	.045	-.08835827	.04295340	-.17455058	-.00216597
	Equal variances not assumed			-1.772	22.389	.090	-.08835827	.04985232	-.19164163	.01492509
Proportion Black	Equal variances assumed	10.487	.002	-1.525	52	.133	-.01747649	.01146351	-.04047971	.00552674
	Equal variances not assumed			-1.362	26.861	.185	-.01747649	.01283190	-.04381175	.00885878

New York

New York Group Statistics

Binary Highway Presence		N	Mean	Std. Deviation	Std. Error Mean
Proportion Non-White	No Highway Present	2899	.0958299	.21695977	.00402954
	Highway Present	485	.0614582	.15164147	.00688568
Proportion Black	No Highway Present	2895	.0913307	.21485084	.00399312
	Highway Present	485	.0545127	.14052158	.00638076

New York Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Proportion Non-White	Equal variances assumed	39.259	.000	3.354	3382	.001	.03437175	.01024690	.01428100	.05446250
	Equal variances not assumed			4.308	855.513	.000	.03437175	.00797808	.01871284	.05003066
Proportion Black	Equal variances assumed	46.708	.000	3.645	3378	.000	.03681800	.01010007	.01701514	.05662086
	Equal variances not assumed			4.891	913.895	.000	.03681800	.00752722	.02204535	.05159065

North Carolina

North Carolina Group Statistics

Binary Highway Presence		N	Mean	Std. Deviation	Std. Error Mean
Proportion Non-White	No Highway Present	160	.2244690	.32026651	.02531929
	Highway Present	79	.2367982	.29981501	.03373182
Proportion Black	No Highway Present	160	.2232285	.31994065	.02529353
	Highway Present	78	.2400287	.30030477	.03400282

North Carolina Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Proportion Non-White	Equal variances assumed	1.357	.245	-.286	237	.775	-.01232919	.04313365	-.09730351	.07264514
	Equal variances not assumed			-.292	164.963	.770	-.01232919	.04217704	-.09560559	.07094722
Proportion Black	Equal variances assumed	1.229	.269	-.388	236	.698	-.01680018	.04331646	-.10213651	.06853615
	Equal variances not assumed			-.396	161.799	.692	-.01680018	.04237870	-.10048685	.06688649

Ohio

Ohio Group Statistics

Binary Highway Presence		N	Mean	Std. Deviation	Std. Error Mean
Proportion Non-White	No Highway Present	921	.1240601	.25591957	.00843284
	Highway Present	393	.1088441	.24618899	.01241859
Proportion Black	No Highway Present	921	.1225583	.25568837	.00842522
	Highway Present	393	.1068074	.24510090	.01236370

Ohio Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Proportion Non-White	Equal variances assumed	1.788	.181	.998	1312	.318	.01521598	.01524686	-.01469491	.04512687
	Equal variances not assumed			1.014	767.339	.311	.01521598	.01501113	-.01425178	.04468374
Proportion Black	Equal variances assumed	2.019	.156	1.035	1312	.301	.01575084	.01521794	-.01410333	.04560500
	Equal variances not assumed			1.053	769.862	.293	.01575084	.01496147	-.01361927	.04512095

Oklahoma

Oklahoma Group Statistics

Binary Highway Presence		N	Mean	Std. Deviation	Std. Error Mean
Proportion Non-White	No Highway Present	105	.0831443	.21648243	.02112652
	Highway Present	83	.1201768	.25770117	.02828638
Proportion Black	No Highway Present	105	.0698336	.21830577	.02130446
	Highway Present	83	.1021408	.25891685	.02841982

Oklahoma Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Proportion Non-White	Equal variances assumed	2.718	.101	-1.070	186	.286	-.03703245	.03459544	-1.0528233	.03121743
	Equal variances not assumed			-1.049	159.795	.296	-.03703245	.03530509	-1.0675720	.03269230
Proportion Black	Equal variances assumed	2.320	.129	-0.928	186	.355	-.03230721	.03481924	-1.0099860	.03638418
	Equal variances not assumed			-.910	160.173	.364	-.03230721	.03551853	-1.0245223	.03783782

Oregon

Oregon Group Statistics

Binary Highway Presence		N	Mean	Std. Deviation	Std. Error Mean
Proportion Non-White	No Highway Present	149	.0296664	.09100481	.00745540
	Highway Present	64	.0569709	.14358919	.01794865
Proportion Black	No Highway Present	149	.0203610	.08859246	.00725778
	Highway Present	64	.0379943	.13836708	.01729588

Oregon Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Proportion Non-White	Equal variances assumed	5.543	.019	-1.670	211	.096	-.02730442	.01634803	-.05953081	.00492197
	Equal variances not assumed			-1.405	85.531	.164	-.02730442	.01943546	-.06594386	.01133501
Proportion Black	Equal variances assumed	3.439	.065	-1.114	211	.267	-.01763329	.01583194	-.04884234	.01357576
	Equal variances not assumed			-.940	86.005	.350	-.01763329	.01875694	-.05492083	.01965425

Pennsylvania

Pennsylvania Group Statistics

Binary Highway Presence		N	Mean	Std. Deviation	Std. Error Mean
Proportion Non-White	No Highway Present	1637	.0883093	.20404146	.00504306
	Highway Present	347	.0515187	.13171111	.00707062
Proportion Black	No Highway Present	1637	.0872811	.20356897	.00503138
	Highway Present	347	.0485319	.12990032	.00697341

Pennsylvania Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Proportion Non-White	Equal variances assumed	31.292	.000	3.219	1982	.001	.03679054	.01142824	.01437791	.05920317
	Equal variances not assumed			4.236	746.702	.000	.03679054	.00868482	.01974096	.05384012
Proportion Black	Equal variances assumed	34.543	.000	3.402	1982	.001	.03874915	.01139125	.01640907	.06108924
	Equal variances not assumed			4.506	756.638	.000	.03874915	.00859903	.02186836	.05562995

Rhode Island

Rhode Island Group Statistics

Binary Highway Presence		N	Mean	Std. Deviation	Std. Error Mean
Proportion Non-White	No Highway Present	111	.0166617	.06023093	.00571687
	Highway Present	45	.0380639	.07795570	.01162095
Proportion Black	No Highway Present	110	.0446003	.31399648	.02993839
	Highway Present	45	.0351449	.07478339	.01114805

Rhode Island Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Proportion Non-White	Equal variances assumed	5.574	.019	-1.841	154	.068	-.02140219	.01162564	-.04436850	.00156412
	Equal variances not assumed			-1.653	66.320	.103	-.02140219	.01295103	-.04725742	.00445304
Proportion Black	Equal variances assumed	.413	.522	.199	153	.842	.00945543	.04743202	-.08425081	.10316166
	Equal variances not assumed			.296	134.898	.768	.00945543	.03194661	-.05372558	.07263643

South Carolina

South Carolina Group Statistics

Binary Highway Presence		N	Mean	Std. Deviation	Std. Error Mean
Proportion Non-White	No Highway Present	97	.2931246	.32252577	.03274753
	Highway Present	55	.2593727	.23132564	.03119194
Proportion Black	No Highway Present	97	.2909456	.32325837	.03282191
	Highway Present	55	.2579231	.23165144	.03123587

South Carolina Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Proportion Non-White	Equal variances assumed	15.611	.000	.682	150	.496	.03375190	.04945343	-.06396339	.13146719
	Equal variances not assumed			.746	141.765	.457	.03375190	.04522541	-.05565147	.12315527
Proportion Black	Equal variances assumed	15.964	.000	.666	150	.506	.03302251	.04955618	-.06489582	.13094084
	Equal variances not assumed			.729	141.823	.467	.03302251	.04530958	-.05654692	.12259194

Tennessee

Tennessee Group Statistics

Binary Highway Presence		N	Mean	Std. Deviation	Std. Error Mean
Proportion Non-White	No Highway Present	172	.2442497	.33601343	.02562078
	Highway Present	124	.2981404	.35480016	.03186199
Proportion Black	No Highway Present	172	.2472110	.35280925	.02690145
	Highway Present	124	.2978979	.35472860	.03185557

Tennessee Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Proportion Non-White	Equal variances assumed	1.412	.236	-1.330	294	.185	-.05389066	.04052535	-.13364721	.02586589
	Equal variances not assumed			-1.318	256.386	.189	-.05389066	.04088534	-.13440452	.02662320
Proportion Black	Equal variances assumed	.663	.416	-1.217	294	.225	-.05068682	.04165812	-.13267273	.03129909
	Equal variances not assumed			-1.216	264.303	.225	-.05068682	.04169491	-.13278327	.03140962

Texas

Texas Group Statistics

Binary Highway Presence		N	Mean	Std. Deviation	Std. Error Mean
Proportion Non-White	No Highway Present	718	.1060326	.23551595	.00878938
	Highway Present	394	.1403742	.25612319	.01290330
Proportion Black	No Highway Present	718	.1042905	.23558236	.00879186
	Highway Present	393	.1378386	.25555996	.01289129

Texas Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Proportion Non-White	Equal variances assumed	6.802	.009	-2.254	1110	.024	-.03434164	.01523595	-.06423615	-.00444712
	Equal variances not assumed			-2.200	753.405	.028	-.03434164	.01561244	-.06499069	-.00369258
Proportion Black	Equal variances assumed	6.278	.012	-2.202	1109	.028	-.03354811	.01523716	-.06344502	-.00365120
	Equal variances not assumed			-2.150	752.462	.032	-.03354811	.01560392	-.06418050	-.00291573

Utah

Utah Group Statistics

Binary Highway Presence		N	Mean	Std. Deviation	Std. Error Mean
Proportion Non-White	No Highway Present	80	.0182141	.03726866	.00416676
	Highway Present	39	.0231864	.03654228	.00585145
Proportion Black	No Highway Present	80	.0068812	.02792789	.00312243
	Highway Present	39	.0106175	.02275615	.00364390

Utah Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Proportion Non-White	Equal variances assumed	.253	.616	-.687	117	.493	-.00497232	.00723270	-.01929630	.00935166
	Equal variances not assumed			-.692	76.809	.491	-.00497232	.00718341	-.01927689	.00933224
Proportion Black	Equal variances assumed	.788	.376	-.726	117	.469	-.00373627	.00514797	-.01393156	.00645902
	Equal variances not assumed			-.779	90.756	.438	-.00373627	.00479871	-.01326866	.00579612

Virginia

Virginia Group Statistics

Binary Highway Presence		N	Mean	Std. Deviation	Std. Error Mean
Proportion Non-White	No Highway Present	209	.2014959	.32107570	.02220927
	Highway Present	140	.2426703	.34230050	.02892967
Proportion Black	No Highway Present	209	.2026544	.33732291	.02333311
	Highway Present	140	.2396125	.34281611	.02897325

Virginia Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Proportion Non-White	Equal variances assumed	1.962	.162	-1.143	347	.254	-.04117443	.03601220	-.11200409	.02965524
	Equal variances not assumed			-1.129	284.975	.260	-.04117443	.03647160	-.11296233	.03061348
Proportion Black	Equal variances assumed	1.089	.297	-0.997	347	.320	-.03695811	.03708163	-.10989116	.03597494
	Equal variances not assumed			-0.993	294.879	.321	-.03695811	.03720058	-.11017040	.03625418

Washington

Washington Group Statistics

Binary Highway Presence		N	Mean	Std. Deviation	Std. Error Mean
Proportion Non-White	No Highway Present	296	.0387192	.11941953	.00694112
	Highway Present	125	.0354044	.07292572	.00652267
Proportion Black	No Highway Present	273	.0246863	.09549276	.00577948
	Highway Present	122	.0123102	.03326885	.00301202

Washington Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Proportion Non-White	Equal variances assumed	1.246	.265	.288	419	.773	.00331481	.01149581	-.01928183	.02591145
	Equal variances not assumed			.348	366.370	.728	.00331481	.00952494	-.01541560	.02204522
Proportion Black	Equal variances assumed	7.370	.007	1.393	393	.164	.01237602	.00888209	-.00508633	.02983838
	Equal variances not assumed			1.899	377.258	.058	.01237602	.00651726	-.00043869	.02519073

West Virginia

West Virginia Group Statistics

Binary Highway Presence		N	Mean	Std. Deviation	Std. Error Mean
Proportion Non-White	No Highway Present	31	.0433046	.11256659	.02021756
	Highway Present	14	.0302551	.05717697	.01528119
Proportion Black	No Highway Present	31	.0408781	.11057687	.01986019
	Highway Present	14	.0296686	.05726931	.01530587

West Virginia Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Proportion Non-White	Equal variances assumed	.630	.432	.409	43	.685	.01304950	.03192352	-.05133042	.07742942
	Equal variances not assumed			.515	42.248	.609	.01304950	.02534293	-.03808570	.06418470
Proportion Black	Equal variances assumed	.584	.449	.357	43	.723	.01120945	.03142172	-.05215849	.07457738
	Equal variances not assumed			.447	42.016	.657	.01120945	.02507383	-.03939103	.06180993

Wisconsin

Wisconsin Group Statistics

Binary Highway Presence		N	Mean	Std. Deviation	Std. Error Mean
Proportion Non-White	No Highway Present	283	.0510329	.16515547	.00981747
	Highway Present	74	.0752176	.21724317	.02525401
Proportion Black	No Highway Present	283	.0474850	.16446444	.00977640
	Highway Present	74	.0697260	.21667995	.02518853

Wisconsin Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Proportion Non-White	Equal variances assumed	3.395	.066	-1.046	355	.296	-.02418463	.02312584	-.06966550	.02129624
	Equal variances not assumed			-.893	96.163	.374	-.02418463	.02709516	-.07796693	.02959767
Proportion Black	Equal variances assumed	3.292	.070	-.965	355	.335	-.02224098	.02304047	-.06755396	.02307199
	Equal variances not assumed			-.823	96.086	.412	-.02224098	.02701925	-.07587317	.03139120

