



WHITE ELEPHANT WATCH: VOL. 4

Northern Beltline, Birmingham, Alabama

By Kevin DeGood

December 2015

Infrastructure is the foundation of America's society and economy. Yet not all investments are worthwhile. In fact, unnecessary projects create a long-term, unproductive cost burden—a form of infrastructure overhang. The “White Elephant Watch” series profiles projects that demonstrate the failures of the current U.S. policy approach to transportation infrastructure.

Federal surface transportation policy lacks accountability. Each year, states receive federal highway funding based on formulas set in law, which reflect political negotiations as opposed to objective measures of need or return on investment. This means that states are not required to demonstrate the social, environmental, or economic value of their projects. Federal funds operate as a largely unrestricted block grant—provided states meet certain procedural and design requirements. As a result, states often prioritize projects that fail to provide clear benefits or to advance national transportation policy objectives.

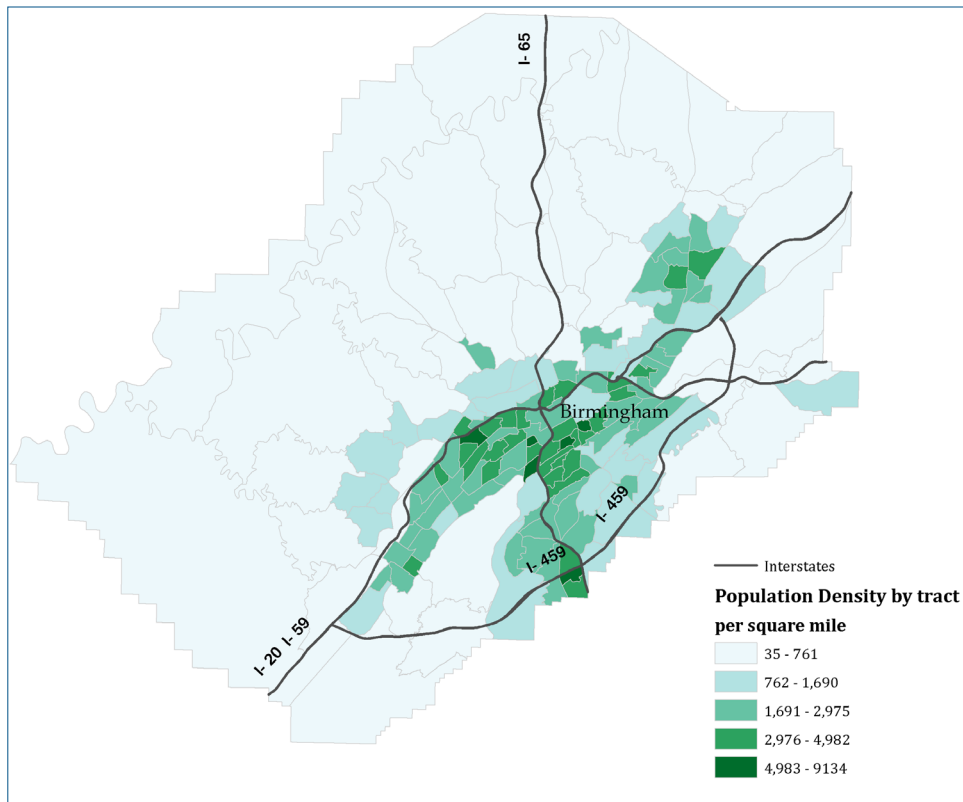
The steady flow of dedicated highway funds means that even dubious projects can advance. Take, for example, the Northern Beltline project in Birmingham, Alabama, which has an estimated cost of \$5.4 billion and a projected 40-year completion timeline.¹ The project involves the construction of 52 miles of new interstate highway from the Interstate 59/20 interchange west of Birmingham through northern Jefferson County, eventually terminating at I-59 northeast of Trussville.²

The origins of the Birmingham Northern Beltline, or BNB, trace back to the earliest days of the interstate highway era. As far back as the early 1960s, the Alabama Department of Transportation, or ALDOT—working closely with local leaders—began planning a comprehensive regional highway network with two features: direct access to the central business district and a beltway that would allow for suburban land development and provide through traffic a way to flow quickly around the area.³ Initial state and federal funding focused on providing direct access to downtown Birmingham with the long-term goal of completing a full beltway. By 1984, ALDOT had completed the southern portion of the loop, known as I-459.⁴ Soon after, the state began more intense work on development of the Northern Beltline.

At more than \$100 million per mile, the Northern Beltline is a very expensive project.⁵ Yet for the cost, it will deliver very few benefits, while drawing limited transportation funding away from other, more worthwhile projects. In short, the Northern Beltline must not be judged in isolation but rather in comparison with what could be done with the funding. ALDOT states within the environmental documents for the BNB that one of its goals is to ensure that its choices “provide the best possible return on the capital investment.”⁶ On this measure, the BNB is a clear failure.

To understand why the BNB is such a poor investment, it helps to place the project in a larger context. The BNB will run through northern Jefferson County, which is less populous and developed than southern portions of the county. In fact, large portions of the BNB corridor have an average population density of approximately 400 people per square mile.⁷ By comparison, the city of Birmingham and southern portions of the county average between 4,000 and 7,000 people per square mile.⁸

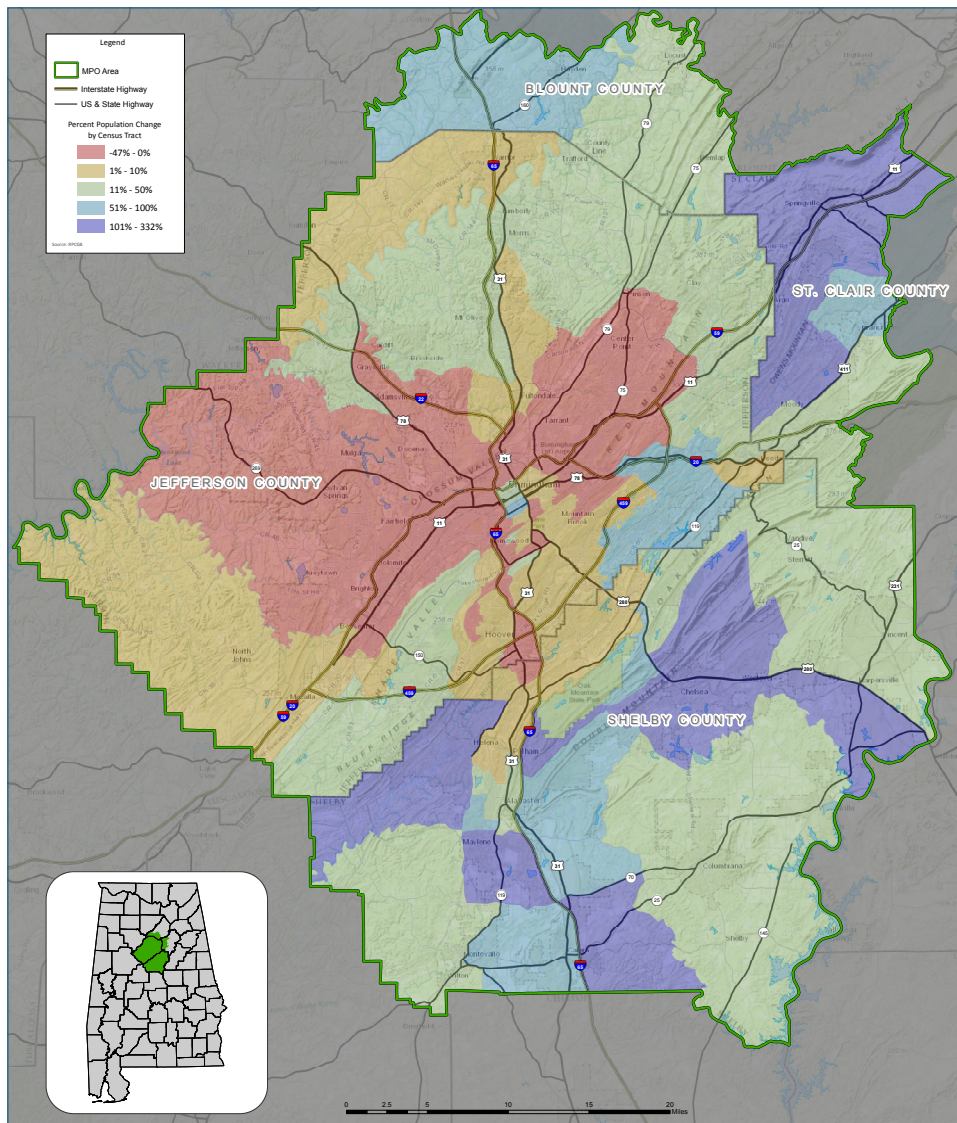
Jefferson County population density



Source: Map generated from Bureau of the Census, 2009–2013 American Community Survey 5-Year Estimates; Table B01003 (U.S. Department of Commerce).

Moreover, according to population estimates developed by the Regional Planning Commission of Greater Birmingham, or RPCGB, a majority of the project corridor passes through areas that will actually experience a significant population decline over the next three decades. The remaining sections will see very modest growth of only 0.3 percent per year on average—at most.⁹ During these same years, portions of northern Shelby County and western St. Clair County will experience sustained population growth.¹⁰ In other words, ALDOT is planning on spending a staggering \$5.4 billion where the population—and by extension, locally generated travel demand—may actually fall.

Regional population change forecast

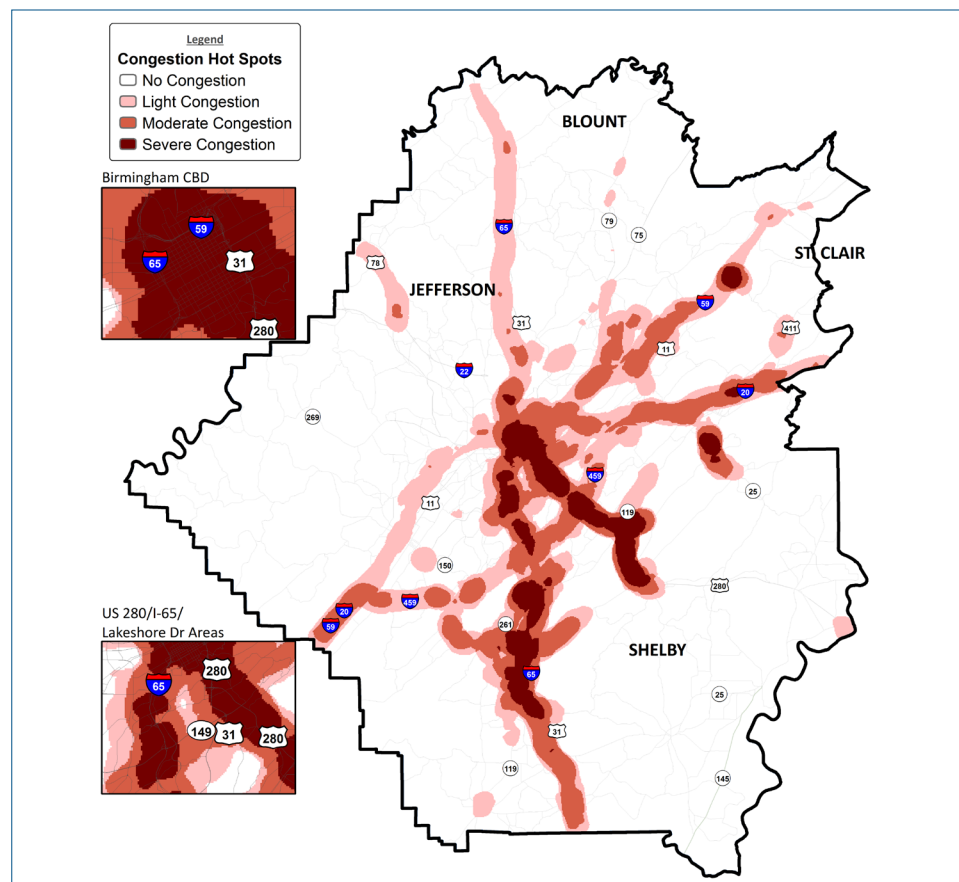


Source: Regional Planning Commission of Greater Birmingham, "Projected Population Change, 2010-2040: Birmingham Metropolitan Planning Area," available upon request to author.

The story does not end there. Under federal law, ALDOT was required to survey the proposed project corridor to determine the number of homes and businesses that would need to be relocated in order to allow for right-of-way acquisition. In the original 1997 environmental impact statement, ALDOT estimated that the project would require 293 total relocations, including 279 residences and 14 businesses.¹¹ This number alone reveals the underdeveloped nature of the corridor, since it works out to fewer than six relocations per mile. When the department updated the environmental documentation in 2012, the estimate rose to 520 total relocations.¹² Was the increase due to population growth along the corridor that might signal why such a massive highway is needed? According to ALDOT, this was not the case. The primary reason for the increase was "more detailed design (ramp locations and configurations, cross street tie-ins)."¹³ Thus, over the course of 15 years, the number of relocations required to build the road increased primarily because ALDOT had more accurate design specifications to determine the roadway's actual footprint.

The long-range transportation plan developed by RPCGB for the Birmingham metropolitan region further reinforces the point that growth and travel demand will remain concentrated within the central business district and the area south of the city for decades to come. As part of the planning process, RPCGB developed a map to illustrate projected congestion hotspots along major arterial highways in 2040, assuming that no additional transportation improvements were made to the region. The map clearly shows that congestion will continue to plague the downtown area, as well as the radial highways I-65, U.S. 280, and portions of I-459 and I-59. Notably, the areas north of central Birmingham through which the BNB will pass are projected to have zero or only light congestion.

Regional congestion in 2040 assuming no build



Source: Regional Planning Commission of Greater Birmingham, "2040 Regional Transportation Plan" (2015), available at http://www.rpcgb.org/download/mpo/2040_RTP_BhamMPO_Jan14-2015.pdf.

Perhaps the most damning statistic comes from RPCGB's analysis of the effects of the BNB. States almost always advance major highway projects by arguing that they are needed in order to relieve significant congestion. The BNB, however, fails this essential test. In fact, the Beltline will reduce congestion within downtown Birmingham by only 1 percent to 3 percent.¹⁴ According to data from ALDOT, I-59, which runs through downtown Birmingham, carries more than 155,000 vehicles each day.¹⁵ Thus, if the Beltline were already completed, it would reduce total traffic on I-59 by a maximum of just 4,600 vehicles.¹⁶ With a total estimated cost of \$5.4 billion, this works out to spending approximately \$1.1 million for every vehicle removed from I-59.¹⁷

Alternative improvements lost to the Beltline

By pushing forward with the Northern Beltline, ALDOT is foregoing many other projects that would have a greater effect on the performance of the regional highway network by providing additional capacity along corridors with the heaviest travel demand. Economists refer to this trade-off as an opportunity cost. In other words, because the state has limited transportation funding, building the BNB would prevent ALDOT from completing other projects. The opportunity costs of the Beltline are enormous.

Every four years, RPCGB releases a long-range transportation plan for the Birmingham metropolitan region. The plan is an attempt to respond comprehensively to overall population, economic, and travel trends within the region. Under federal law, this plan must be fiscally constrained—meaning that RPCGB can only formally select projects for which it may reasonably expect to have the financial resources in the coming years to complete. Like many regions, RPCGB also chooses to list other major projects for which there are no identified resources—a sort of big vision wish list. The BNB falls into both categories, as a few sections have funding while the majority of the project does not.

Within the fiscally constrained portion of the plan, RPCGB anticipates spending more than \$820 million on the Beltline.¹⁸ This sum displaces many other worthwhile projects, and it still represents only a fraction of the total cost of the highway facility. In fact, these funds alone are enough to complete 50 of the 63 projects on the wish list—including major widening projects on I-59, I-65, U.S. 31, U.S. 280, and U.S. 78, among others.¹⁹ The wish list also includes another \$2.8 billion for the BNB. To put that additional funding in perspective, this amount is almost twice as much as the cost of completing every project on the fiscally constrained capacity expansion project list.²⁰

The opportunity costs do not end with construction. The completed Beltline will add a substantial long-term maintenance burden to the state transportation budget. According to data from the Federal Highway Administration, the current cost of repaving a major highway is \$1.2 million per lane per mile.²¹ Thus, simply repaving the entire six-lane, 52-mile Northern Beltline would cost more than \$375 million.²² For this reason, a full accounting of the trade-offs of completing the BNB must also look at the serious potential for deferred maintenance on other aspects of the state and local highway network in favor of the Beltline in the future.

A question of priority

The enormous cost of the BNB raises an important question about Alabama's decision to build an expensive new highway at the same time that existing roadways in Jefferson County face a substantial repair backlog. According to data from Jefferson County, expenditures on roadway maintenance have fallen by almost 50 percent since 2001.²³ Over this same time period, the construction price index has risen by 60 percent.²⁴

Taken together, this means that Jefferson County has less money to repair increasingly expensive roads. At its peak, Jefferson County employed more than 500 road and transportation workers. Today, the number stands at approximately 150.²⁵ This year alone, the county needs at least \$15 million more than is currently available just to prevent the road network from further deterioration.²⁶

The overarching reason for the maintenance backlog and reduced workforce is bankruptcy. In 2011, Jefferson County, facing a total debt burden of more than \$4 billion and unable to secure relief with its creditors, filed for Chapter 9 bankruptcy.²⁷ At the time, it was the largest public bankruptcy filing in U.S. history.²⁸ After lengthy legal proceedings, the county entered into a long-term agreement with creditors to restructure its debt, leaving little money for core public services.

So what does this have to do with the Northern Beltline? Alabama, like many states, engages in transportation revenue sharing with local governments. The reason for this revenue sharing is that the majority of transportation taxes are collected at the state level, yet many miles of roadways are owned and repaired by local governments. The transfer helps cities and counties repair roadways that are not part of the state highway network. In Alabama, county governments own and maintain 61 percent of all public roadway miles.²⁹ Jefferson County alone is responsible for approximately 1,900 miles of roadway and 310 bridges.³⁰ Jefferson County also has the largest population of any county in Alabama and is in many ways the economic engine of the state.³¹ Yet for fiscal year 2014, the state of Alabama provided Jefferson County a mere \$16 million in revenue sharing funds.³² To put that in perspective, it would take 337 years of state revenue sharing payments to the county to equal the \$5.4 billion estimated total cost of the BNB.³³

Properly maintaining the county road network is hardly a trivial matter. While state highways tend to garner the attention of politicians and engineers because they carry the most vehicles, the truth is that without county roads to provide last-mile connections and land access, state highways would be empty. County roads are the links that funnel vehicles from local streets onto the state highway network at the start of a trip and back to local streets and their destination at the end. The economic vitality of the state depends on workers and businesses being able to rely on a well-maintained system—not just certain high-profile pieces of that system. Pushing forward with the BNB demonstrates a lack of regard for the immediate needs of Jefferson County.

Economic development

Unsurprisingly, supporters of the BNB, such as the Coalition for Regional Transportation, tout its ability to generate substantial economic development.³⁴ After all, what could be better for a struggling county than a new highway facility? Unfortunately, a careful economic analysis conducted in 2012 by the Ochs Center for Metropolitan Studies revealed that the Beltline would generate only a modest number of jobs at a very high cost.

Construction of the BNB is itself a form of economic activity and will produce jobs in the short term. Because building the highway will take many years, the most accurate way to analyze the cost of creating these jobs is to apply a discount rate. This process recognizes that a job today is worth more than a job 20 years from now. Similarly, a dollar spent on construction today is more expensive than a dollar spent 20 years from now. Thus, discounting allows all costs and benefits over the life of the project to be analyzed in terms of their present value. According to the Ochs Center analysis—which assumed a 30-year construction period and an overall cost of \$4.7 billion³⁵—the BNB will produce a total of 5,377 jobs at a cost of \$456,016 per job.³⁶

When it comes to the long-term effects of the project, ALDOT’s own analysis shows that the BNB will produce minimal change. Specifically, ALDOT planners looked at those areas around the planned corridor to determine the change in total population and employment under two scenarios: build and no build. Notably, building the BNB will yield a population increase in Jefferson County along the corridor of just 2,208 people per mile compared to the no build alternative—a gain of just 1.5 percent, or 43 people per mile.³⁷ As for jobs, the project will increase total employment along the corridor by just 2,842 positions.³⁸ Relative to the magnitude of the expenditure, these are very small changes in both population and employment.

If ALDOT’s goal is economic development that benefits Jefferson County, the BNB is an exceedingly expensive and cost-ineffective means of achieving it.

Conclusion

The Northern Beltline is a powerful reminder that just because planners and elected officials put a line on a map many decades ago does not mean the justification for that line still holds—if it ever did. Unfortunately, under current federal policy, projects such as the Northern Beltline may advance with little to no scrutiny. In the future, states should be required to demonstrate not only how their projects will deliver economic, social, and environmental benefits but also why their choices are the most cost effective. At more than \$100 million per mile, the Northern Beltline will devour limited transportation funding for decades to come at the expense of numerous other worthwhile projects—many of which would provide greater system performance and social benefits at a lower cost. Finally, a larger share of federal funding should be distributed on a competitive basis rather than by formulas set in law. The time has come to reform transportation policy so that it holds states accountable for how they spend federal funds.

Kevin DeGood is the Director of Infrastructure Policy at the Center for American Progress.

Endnotes

- 1 Mike D. Smith, "Northern Beltline: Federal judge denies request for a preliminary injunction to block construction," Alabama.com, January 17, 2014, available at http://blog.al.com/spotnews/2014/01/northern_beltline_federal_judg.html.
- 2 Birmingham Northern Beltline, "Frequently Asked Questions," available at <http://betterbeltline.org/faqs.php> (last accessed September 2015).
- 3 Federal Highway Administration and Alabama Department of Transportation, "Final Environmental Impact Statement: Project AFS-350(1) Birmingham Northern Beltline" (1997), available at http://rp.dot.state.al.us/BNB/docs/Bham_Northern_Beltline_FEIS.pdf.
- 4 Interstate-Guide.com, "Interstate 459 Alabama," available at http://www.interstate-guide.com/i-459_al.html (last accessed September 2015).
- 5 Result based on author's calculation from Smith, "Northern Beltline."
- 6 Federal Highway Administration and Alabama Department of Transportation, "Final Environmental Impact Statement."
- 7 Result based on author's calculation from Bureau of the Census, *2009-2013 American Community Survey 5-Year Estimates: Table B01003* (U.S. Department of Commerce).
- 8 Result based on author's calculation from *ibid.*
- 9 Regional Planning Commission of Greater Birmingham, "Projected Population Change, 2010-2040: Birmingham Metropolitan Planning Area," available upon request to author.
- 10 *Ibid.*
- 11 Federal Highway Administration and Alabama Department of Transportation, "Final Environmental Impact Statement (FEIS) Reevaluation: Birmingham Northern Beltline" (2012), available at <http://rp.dot.state.al.us/BNB/docs/BNB%20FEIS%20Reeval%20-%20signed.pdf>.
- 12 *Ibid.*
- 13 *Ibid.*
- 14 Regional Planning Commission of Greater Birmingham, "Public Involvement Meeting Documentation" (2010), available at <http://www.rpcgb.org/download/mpo/RPCGB-MPO-Public-Involvement-Meeting-Documentation.pdf>.
- 15 Alabama Department of Transportation, "Alabama Traffic Data," available at <http://algis.dot.state.al.us/atd/default.aspx> (last accessed September 2015).
- 16 Author's calculation using data from *ibid.*; Regional Planning Commission of Greater Birmingham, "Public Involvement Meeting Documentation."
- 17 Author's calculation using data from Alabama Department of Transportation, "Alabama Traffic Data"; Smith, "Northern Beltline."
- 18 Regional Planning Commission of Greater Birmingham, "2040 Regional Transportation Plan" (2015), available at http://www.rpcgb.org/download/mpo/2040_RTP_BhamMPO_Jan14-2015.pdf.
- 19 Author's calculation using data from *ibid.*
- 20 *Ibid.*
- 21 Federal Highway Administration, *2013 Status of the Nation's Highways, Bridges, and Transit: Conditions and Performance* (U.S. Department of Transportation, 2013), Appendix A, available at <http://www.fhwa.dot.gov/policy/2013cpr/appendixa.cfm>.
- 22 Author's calculation using data from *ibid.*; Office of Management and Budget, *Table 10.1—Gross Domestic Product and Deflators Used in the Historical Tables: 1940–2020* (Executive Office of the President, available at <https://www.whitehouse.gov/sites/default/files/omb/budget/fy2016/assets/hist10z1.xls> (last accessed October 2015).
- 23 Jefferson County Commission Committee, "Roads and Transportation Requirements Discussion" (2015), available at http://jeffconline.jccal.org/Sites/Jefferson_County/Documents/Main/Roads%20Discussion%2001-20-2015.pdf.
- 24 *Ibid.*
- 25 Alan Collins, "JeffCo looking for ways to cover \$15 million in road work needs," WBRC Fox 6 News, January 21, 2015, available at <http://www.myfoxal.com/story/27906896/jeffco-looking-for-ways-to-cover-15-million-in-road-work-needs>.
- 26 *Ibid.*
- 27 Barnett Wright, "Jefferson County files largest government bankruptcy in U.S. History," Alabama.com, November 10, 2011, available at http://blog.al.com/spotnews/2011/11/jefferson-county-files_for_lar.html.
- 28 *Ibid.*
- 29 Federal Highway Administration, "Public Road Length – 2012: Miles by Ownership," available at <http://www.fhwa.dot.gov/policyinformation/statistics/2012/hm10.cfm> (last accessed September 2015).
- 30 Jefferson County Commission Committee, "Roads and Transportation Requirements Discussion."
- 31 Bureau of the Census, "2014 American Community Survey 1-Year Estimates: Table B01003."
- 32 Alabama State Treasurer's Office, "2014 Fiscal Year End Tax Distribution Report: Jefferson County," available at <http://www.treasury.alabama.gov/gastax/> (last accessed September 2015).
- 33 Author's calculation using data from *ibid.*; Smith, "Northern Beltline."
- 34 Center for Business and Economic Research, "Socioeconomic Indirect and Cumulative Impact Components for the Northern Beltline" (2010), available at <https://d3n8a8pro7vnmx.cloudfront.net/northernbeltline/pag-63/attachments/original/1441120791/northern-beltline-economic-impact.pdf?1441120791>.
- 35 The Ochs Center report was completed in 2012 when the estimated cost was lower than the current estimate of \$5.4 billion.
- 36 Ochs Center for Metropolitan Studies, "If You Build It, Will They Come?: Reassessing the Economic Impacts of the Northern Beltline Project" (2012), available at https://www.southernenvironment.org/uploads/publications/nb_report_final.pdf.
- 37 *Ibid.*
- 38 *Ibid.*