



Portsmouth Bypass (State Route 823), Southern Ohio

By Kevin DeGood

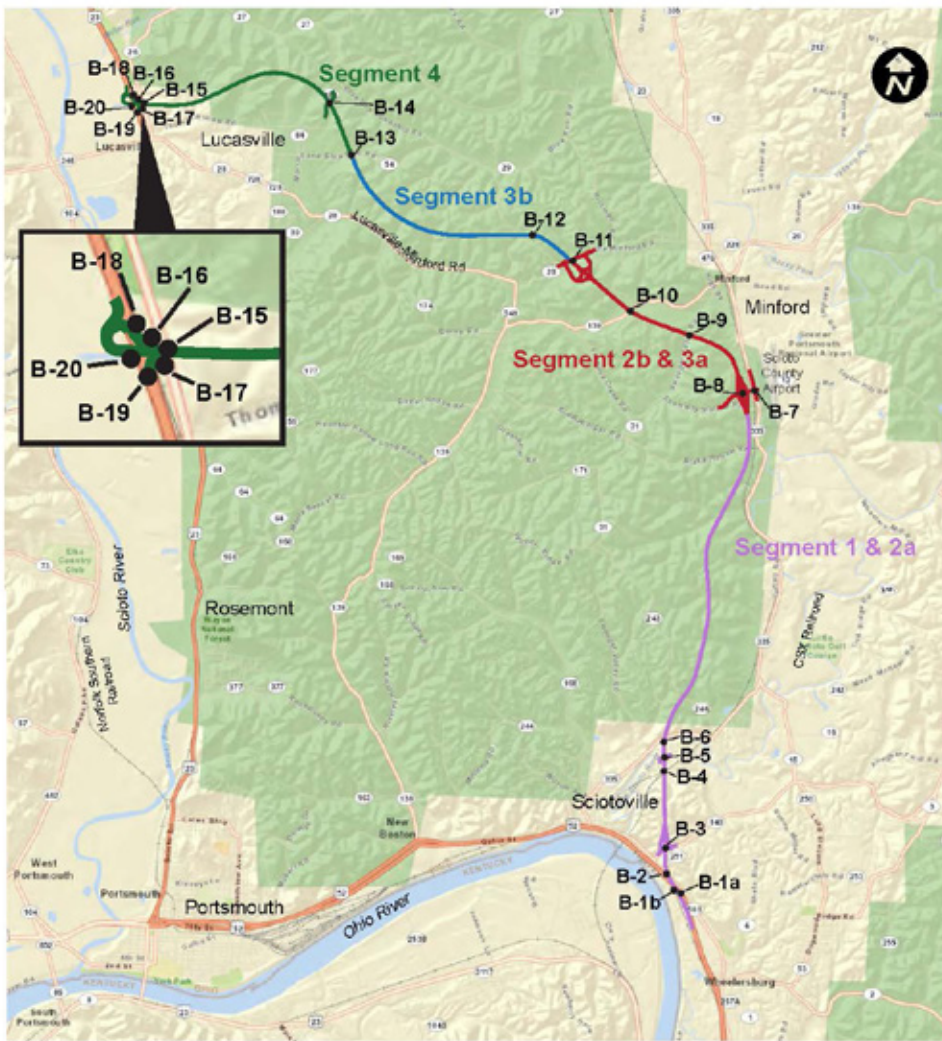
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Infrastructure is the foundation of America's society and economy. Yet not all investments are worthwhile. In fact, unnecessary projects create a long-term, unproductive cost burden—a form of infrastructure overhang. The “[White Elephant Watch](#)”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

Under current U.S. federal transportation policy, states are not held accountable for their investment decisions. Instead, the federal government provides states with dedicated highway money, which reflects the political power of certain elected officials and regions as opposed to local needs or potential returns on investment. Under this system, states are not required to demonstrate the social, environmental, or economic value of their projects. Beyond certain procedural and design requirements, states have total discretion, which often results in projects that fail to provide clear benefits or to advance national transportation policy objectives.

The steady flow of federal funds and access to low-cost federal financing mean that even highly questionable projects can advance. For example, in 2018, the Ohio Department of Transportation (ODOT) completed the Portsmouth Bypass—state Route 823—which is a four-lane, divided highway with five new interchanges that runs 16 miles around Portsmouth, Ohio, from U.S. Highway 52 near Wheelersberg to U.S. Highway 23 in Lucasville.¹

The Ohio Department of Transportation developed the project through a design, build, finance, operate, and maintain public-private partnership concession with a total cost of more than \$1.2 billion.² The cost for planning, environmental review, and construction was \$646 million with another roughly \$600 million for operations and maintenance over the 35-year concession agreement.³ Under the terms of the concession agreement, ODOT is obligated to make payments—known as availability payments—to the private concessionaire over the life of the contract. According to the private activity bond offering documents, the payments made by ODOT to the concessionaire are “subject to appropriations being made by the Ohio General Assembly.”⁴



BRIDGES BY SEGMENT

SEGMENT 1 & 2A

B-1A	Ramp B over US 52
B-1B	Ramp B over Ohio River Rd
B-2	Ramp A over Ohio River Rd
B-3	Ramp A/B over SR 140
B-4	SR 823 over CSX
B-5	SR 823 over Slocum Ave
B-6	SR 823 over Little Scioto River
B-6A	SR 823 over Shumway Hollow

SEGMENT 2b & 3a

B-7	Shumway Hollow over CSX
B-8	Shumway Hollow over SR 823
B-9	SR 823 over Susque Valley-Minford Rd
B-10	SR 823 over SR 109
B-11	SR 823 over Lucasville Minford Rd

SEGMENT 3b

B-12	SR 823 over Blue Run Road
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SEGMENT 4

B-13	SR 823 over Morris Lane
B-14	Falwood Fallen Timbers over SR 823
B-15	Ramp A/D over Fairground Rd
B-16	Ramp C over Fairground Rd
B-17	Ramp B over Fairground Rd
B-18	Ramp C over NSRR
B-19	Ramp B over NSRR
B-20	Ramp A/D over NSRR and US 23

Map of the Portsmouth Bypass. Credit: Portsmouth Gateway Group

The Portsmouth Bypass has two major flaws. First, the construction of the highway did not respond to an actual transportation need and instead relied on a broken theory of economic development for its justification. Second, the high cost of the new highway used up the limited funds set aside for this portion of southern Ohio, effectively displacing other projects that would have spurred more cost-effective and robust economic development.

Southern Ohio economic hardship

Southern Ohio faces sustained economic hardship. For many years, the regional economy was sustained by large anchor employers focused on chemicals, steel, coke, ironworks, and uranium enrichment.⁵ Years of deindustrialization throughout the Midwest resulted in the shuttering of the largest firms, including chemicals,⁶ coke,⁷ and the uranium enrichment plant, among others.⁸

According to the Ohio Department of Jobs and Family Services, as of March 2020 and prior to the huge spike in unemployment caused by the coronavirus, Scioto County's unemployment rate was 8.2 percent, or nearly 2.5 times the national average.⁹ The county ranked 13th out of 88 Ohio counties for the highest unemployment rate.

In 2018, the most recent year for which data are available, the median household income in Scioto County was \$39,700, compared with more than \$60,000 nationally.¹⁰ Furthermore, 22.6 percent of county residents fell below the poverty line, compared with 11.8 percent nationally.¹¹ In short, even during a period of record economic expansion following the Great Recession, many residents in Scioto County continued to struggle. In an attempt to boost the economic fortunes of Scioto County, the state of Ohio decided to build the Portsmouth Bypass.

A broken theory of economic development

Highways provide two forms of benefit: land access and travel time savings. To advance the argument that constructing a highway will spur economic activity, a project sponsor should, at a minimum, demonstrate that the new facility will unlock large amounts of usable land and alleviate severe regional travel delays. Unfortunately, the Portsmouth Bypass fails both tests.

The Portsmouth Bypass is designated as part of the Appalachian Development Highway System (ADHS).¹² According to the Appalachian Regional Commission, Congress created the ADHS “expressly to provide growth opportunities for the residents of Appalachia . . . ”¹³ This approach can be thought of as the “Field of Dreams” theory of economic development: If you build it, businesses will come.

The Field of Dreams theory of highway-based development begins with the simple premise that land only has economic value when it may be accessed. Yet Portsmouth and the other communities within Scioto County already have highway access with U.S. 23 and U.S. 52. In response to this point, ODOT claims that the bypass remains necessary due to “deficiencies” in the U.S. route network. ODOT argues that “inadequate transportation infrastructure impedes the area's ability to attract industrial investment.”¹⁴ Specifically, the existing U.S. highways have three steep grades, seven tight curves, and 30 signalized intersections.¹⁵



The problem with this rationale is that it fails to account for the rise of industrial production and subsequent deindustrialization in the region—all of which occurred in the absence of the Portsmouth Bypass. If a few steep grades, tight curves, and signalized intersections were truly an impediment to growth, then Scioto County should never have experienced an industrial heyday.

Left: Topography of Scioto County, Ohio, including the Portsmouth Bypass/state Route 823. Credit: Google Maps. **Right:** Portsmouth Bypass construction showing mountainous topography. Credit: HDR Inc

Jason Kester, the development director for the Southern Ohio Port Authority at the time the project was under construction, similarly tried to advance a land access argument. He stated, “the No. 1 issue we have right now is the lack of available, usable sites for buildings for economic development purposes.”¹⁶ It’s hard to square this statement with the Portsmouth Bypass alignment, which traverses very hilly topography, making most of the surrounding land a poor candidate for future commercial development.

The firm responsible for building the highway stated that completion required “massive excavation,” meaning the removal of huge volumes of earth and rock to clear the right of way.¹⁷ In fact, the alignment is so hilly that construction required the removal of 20 million tons of sandstone and other rocks.¹⁸ There is a simple reason why Portsmouth and the other population centers in Scioto County, as well as U.S. 23 and U.S. 52, are located along the Scioto and Ohio rivers: The land is flat. Building the Portsmouth Bypass doesn’t change this reality.

Many of the industries that powered the regional economy in the 20th century, such as steel and coke works, have shuttered, leaving behind idle parcels known as brownfields that are often polluted. The pollution—or possibility of pollution—can make it challenging to return brownfield sites to productive use. Former director Kester noted during construction, “We have either hellacious brownfield or floodplains, side of a hill sites or cornfields with no gas, water or fiber-optic access.”¹⁹

There are two problems with this statement. First, it implies that the bypass opens up a large amount of developable land when in fact the highway alignment is through very hilly terrain. Scioto County leaders still face the same challenge of limited flat land capable of supporting commercial activity. Second, Kester's statement advances a troubling approach to development that effectively throws away previously used land for development of pristine greenfield space. This is deeply unsustainable.

Nonetheless, local leaders have attempted to leverage the bypass by pushing forward with the creation of a new business park known as the Southern Ohio Aeronautical Regional Business Park (SOAR).²⁰ The unfinished commercial zone includes 145 acres within the boundary of the Greater Portsmouth Regional Airport and another 126 acres of adjacent land that was previously used for farming. Yet the project remains more a vision of growth than a reality in large measure because Scioto County lacks the fiscal resources to outfit the site with necessary utilities and services, including gas, water, fire suppression, and roadway access, among others. In short, the business park suffers from the very shortcomings that former director Kester lamented about during construction of the bypass.

Moreover, it's important to understand that the construction of the bypass did not create new developable land that would have otherwise remained locked away. Both the airport, which opened to the public in 1957, and adjacent land that make up SOAR were already accessible via state Route 335.²¹ The difference between the bypass and state Route 335 is design. The bypass is an access-controlled divided four-lane highway, while state Route 335 is a traditional rural two-lane highway.

Yet these design differences translate into negligible travel time savings. According to Google Maps, driving from downtown Portsmouth to the Greater Portsmouth Regional Airport via the new bypass takes 19 minutes. Making the same trip via state Route 335 takes 23 minutes—a difference of just four minutes.²² Heading north from the airport to the intersection with U.S. 23, Google Maps estimates a trip time of 10 minutes. The same trip north via state Route 335 and state Route 728 is estimated to take 15 minutes—a difference of just five minutes.²³

For businesses considering where to locate their production, the modest travel time savings offered by the bypass must be placed into context. The bypass connects with U.S. 23 to the north and U.S. 52 to the south. These U.S. routes are mostly at-grade signalized arterials as opposed to access-controlled highways. The 16 miles of bypass is a short distance in the world of logistics. This means that its construction doesn't fundamentally alter the overall mobility value proposition of Scioto County. Stated differently, it's hard to envision that the marginal financial value provided by shaving off a few minutes of commuting or freight shipping time would be the controlling factor for a company to locate its business in Scioto County.²⁴

TABLE 1

Daily Scioto County, Ohio, vehicle miles traveled, 2000 vs. 2018

Functional class	2000	2018	Percentage change
Principal arterial roads	726,220	729,090	0.4%
Countywide total	1,702,160	1,635,300	-3.9%

Source: Ohio Department of Transportation, "Daily Vehicle Miles Traveled (DVMT)," available at <http://www.dot.state.oh.us/Divisions/Planning/TechServ/traffic/Pages/DVMT.aspx> (last accessed May 2020).

In its application for federal financing, ODOT estimated that the bypass would provide 16 minutes of travel time savings. This optimistic estimate is based on a theoretical vehicle traveling through the region—not someone making a trip from within Portsmouth or other parts of greater Scioto County. According to Google Maps, a vehicle leaving from downtown Portsmouth would need to travel east for 13 minutes and more than 7 miles just to access the bypass. In short, the bypass has little practical value for most area residents on a day-to-day basis.

Since the bypass provides only marginal time savings and opens up little new land for development, the remaining justification advanced by proponents of building new highway capacity is congestion alleviation. Putting aside decades of research that shows adding highway capacity does not reduce roadway congestion due to a phenomenon known as induced demand,²⁵ vehicle travel has actually fallen slightly in Scioto County over the past 20 years. According to data from ODOT, total vehicle miles traveled within the county decreased by 4 percent.²⁶

Importantly, this issue brief does not argue that the Portsmouth Bypass provides no utility to residents and businesses, but rather that the highway is an extremely cost-inefficient way to improve the economic prospects and quality of life for residents. The \$1.2 billion that ODOT will spend over the life of the bypass concession could have been spent in much more productive and cost-effective ways.

Another vision of economic development

The enormous cost of the Portsmouth Bypass has effectively displaced other public investments that could produce more cost-effective economic development. After all, Scioto County is just one of 88 counties in Ohio. There is only so much political will to expend limited budgetary resources on this one portion of the state.

To understand the scale of the bypass's price tag, it helps to compare it to ODOT's planned roadway expenditures for Scioto County in the coming years. Federal law requires state departments of transportation to develop statewide construction plans that cover a four-year period.²⁷ ODOT's current draft construction plan anticipates spending a total of \$41.5 million in Scioto County over the next four years, or a little

more than \$10 million per year.²⁸ The planning and construction cost for the bypass was \$646 million.²⁹ Thus, ODOT spent 15 times more constructing the bypass, which took approximately four years, than it intends to spend in Scioto County over an equivalent period of time.³⁰

The \$646 million could have been spent on more economically and socially productive investments, including in water facilities, brownfield remediation, public health, and education.

Water works

Land access is only one component of creating usable parcels for industrial or other types of commercial activity. Additional essential services include drinking or industrial process water, wastewater treatment, gas, electricity, telecommunications, flood control, and fire suppression, among others. Depending on the industrial activity, having access to a large volume of affordable water services may be far more important than saving a few minutes of travel time.

Some of the most promising regional economic development is taking place along the existing U.S. 52 from Wheelersburg in Scioto County to South Point in Lawrence County. This stretch of land is often referred to as the Scioto-Lawrence Heavy Industry Corridor. For example, a company called PureCycle Technologies has developed a novel process for recycling plastic waste. The patented process “separates color, odor and contaminants from plastic waste feedstock to transform it into ultra-pure recycled polypropylene.”³¹ PureCycle is currently planning to build a new recycling plant within Lawrence County that will handle much larger volumes of waste than their current facility. The company estimates that when fully operational, the new plant will use approximately 120 million gallons of water each year.³²

However, the substantial water needs of the PureCycle plant are more than existing Lawrence County facilities can support. For this reason, PureCycle is in negotiations with Scioto County officials for the construction of a new wastewater collection pipe that would link the new plant to Portsmouth’s wastewater system. The pipe would allow PureCycle to discharge its wastewater into the Portsmouth system for treatment to meet Clean Water Act standards. The estimated cost of constructing the collection pipe is \$3.7 million.³³ PureCycle has offered to cover a portion of this cost and Scioto County would use a combination of municipal bond proceeds and grant funds to cover the rest.³⁴

More broadly, Scioto County is studying the prospect of constructing a new \$40 million facility that would deliver water—both potable and less stringently cleaned water for industrial production—to attract businesses to the Scioto-Lawrence Heavy Industry Corridor. Expanded water facilities could help attract industries that require large volumes of affordable water, including chemicals, petroleum refining, paper, food, and primary metals such as aluminum.³⁵

For the city of Portsmouth and Scioto County, \$40 million is a huge financial lift. Building a completely new water plant would require substantial grant assistance from the state and federal government. Yet Ohio has committed to spend a total of \$1.2 billion on the Portsmouth Bypass over a 35-year period. The state has pledged to make the availability payments to the public-private partnership concessionaire with general appropriations. These are flexible dollars that could be used for any purpose, including rehabilitating and expanding water and wastewater facilities.

Brownfields

Industrial activity in the 19th and 20th centuries brought growth and some prosperity to Scioto County. Unfortunately, heavy industrial production left behind a harmful environmental and public health legacy that continues to negatively affect area residents. For example, according to the Ohio Department of Public Health, Scioto County has the fifth-highest overall cancer rate in the state.³⁶ Additionally, the county has an infant mortality rate that is 28 percent higher than both the statewide and U.S. rates.³⁷

Environmental pollution is associated with both cancer and infant mortality.³⁸ A report by the Ohio Environmental Protection Agency (OEPA) that studied the exposure risk from toxic chemicals in the air found that acrylonitrile and benzene, which are volatile organic compounds, “drive the majority of the cancer risk for potential exposure” in Scioto County and elsewhere in the state.³⁹ Specifically, the OEPA found that Scioto County had the second-highest recorded levels of benzene within the state.⁴⁰ The study notes that, “Long-term exposure to high levels of benzene in the air can cause leukemia, particularly acute myelogenous leukemia ...”⁴¹

Research by the U.S. Environmental Protection Agency (EPA) found that residents of Scioto County faced a much higher risk of cancer than Americans overall due to exposure to pollutants, mostly from steel production. According to an article in the *Columbus Dispatch* summarizing the EPA study, “The risk of some Scioto County residents contracting cancer is nearly 20 times higher than the national average ...”⁴² The EPA study attributed “95 percent of the potentially cancer-causing pollutants in the worst area of Scioto County to coke ovens used to form and melt steel and iron.”⁴³

Empire Detroit Steel Company facility along the Ohio River. Credit: Portsmouth Public Library Local History Digital Collection

While these results are a few years old, much of the land that housed the steel and coke works remains unremediated to this day. In fact, a 2019 report by the Scioto County Department of Economic Development found that the Empire Detroit Steel Corporation site had “Arsenic, Lead, Mercury, Aluminum, and noticeably higher than normal levels of Benzene.”⁴⁴ The remediation challenges of the site are substantial since “All the toxins are at various levels in depth throughout the site. Deep borings go as deep as 112/ft.”⁴⁵



The Empire site is prime commercial real estate, sitting just 275 feet from the Ohio River and including access to Norfolk Southern's main line. However, the region does not have the financial resources to undertake the remediation. At the same time that Scioto County is trying to secure funding to provide the SOAR business park with necessary utilities and fire suppression protection, brownfield sites along the Ohio River will remain idle. Again, the funding spent on the bypass could have gone to cleaning up the Empire site and other industrial parcels along the river.

Public health and education

Economic development is often defined in narrow terms as improvements to public infrastructure and different forms of business subsidy, including preferential tax treatment. However, restricting public expenditures to this limited set of historical tools may miss other pressing community needs that would unlock more growth than a roadway upgrade or a tax abatement.

Beyond physical assets, businesses need a healthy, well-trained workforce. Shiny new infrastructure won't catalyze economic development if businesses can't find the right people. Unfortunately, beyond the environmental and public health threats from brownfield sites, Scioto County faces a devastating opioid addiction public health crisis.⁴⁶ According to recent epidemiological research, Scioto County ranks 136th out of more than 3,000 U.S. counties for infectious disease transmission risk tied to opioid addiction, often referred to as opioid use disorder.⁴⁷ The death rate for opioid use disorder in Scioto County is 48 per 100,000,⁴⁸ which is more than twice the national average of 21 per 100,000.⁴⁹

The health challenges facing Scioto County don't stop with opioids. According to the Ohio Department of Public Health, 39 percent of county residents are obese, compared with 29 percent nationally.⁵⁰ Research shows that obese workers have a higher rate of absenteeism than workers with a body mass index considered normal or overweight.⁵¹

Scioto County also faces educational challenges. According to data from the U.S. Census Bureau, only 15 percent of the adult population has a bachelor's degree, compared with 31 percent nationally. In addition, 14 percent of Scioto County adults do not have a high school diploma or equivalent credential.⁵² Scioto County has two great educational assets: Shawnee State University and the Scioto County Career Technical Center. These institutions represent an opportunity to provide local residents with the analytical skills and technical training that are essential for success in a modern economy. Moreover, providing residents with an affordable pathway to acquiring marketable skills is much more likely to yield increased earnings and household wealth compared with a highway facility that shaves off a few minutes of travel time. A few numbers help to demonstrate the opportunity cost of the highway expenditure. For a student living at home, the full cost of attending Shawnee State University for a year is \$14,814.⁵³ The money spent on the bypass could have covered the full cost of a four-year bachelor's degree for 10,902 students.⁵⁴

Conclusion

For too long, elected officials have held on to the belief that highway construction is a cost-beneficial investment strategy for generating economic development. However, there is little rationale for building new highway facilities in economically distressed regions that have an underutilized existing transportation system.

Public officials should direct the limited fiscal resources available to those projects and programs that provide the highest economic, social, and environmental return on investment. The Portsmouth Bypass does not meet this test. Yet, a doctrinaire approach to economic development and a ready pipeline of construction funds and low-cost, flexible federal financing allow ineffective projects to advance, even when a diversified approach that looks at a combination of investments in people and places would yield greater opportunity and prosperity.

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Endnotes

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