

Backgrounder

No. 1782
July 28, 2004



Published by The Heritage Foundation

The EPA Withdraws Inaccurate Smart Growth–Traffic Congestion Report

Wendell Cox and Ronald D. Utt, Ph.D.

In February 2004, the Environmental Protection Agency (EPA) released *Characteristics and Performance of Regional Transportation Systems*,¹ a report that purported to prove that communities built along 19th century urban designs experienced less traffic congestion than those built to design standards typical of the modern suburb. The report, however, proved no such thing. Indeed, the report was so contrived and lacking in analytical rigor and integrity that a formal complaint by another federal agency led the EPA to withdraw the report within two months of its release. To close observers of the EPA's traditional bias against cars and its recent cultivation of a fashionable dislike of suburbs, it was only a matter of time before the EPA would combine these two biases into a single document, and *Characteristics* was the unhappy result.

Ever since its creation in 1970 by President Richard M. Nixon, the EPA and its supporters in the environmental movement have conducted a vigorous campaign against the automobile, using the agency's clout to discourage road building and driving and to impose increasingly onerous and costly regulations on automobile owners and the residents of metropolitan areas that the EPA finds are not in attainment of current clean air standards. Reflecting its anti-automobile bias, the EPA's purported remedies often seem to be aimed more at reducing automobile use than at seriously improving air quality.

More importantly, the bias and third-rate analysis of *Characteristics* raises another concern: Because

Talking Points

- The EPA's *Characteristics and Performance of Regional Transportation Systems* report was so deeply flawed that the EPA was forced to withdraw it within two months of its release.
- Outside reviewers had urged the EPA to improve the methodology and expand the scope of analysis, but the EPA declined, citing cost limitations.
- Among the report's problems in attempting to prove that smart growth land-use strategies lead to lower traffic congestion is that smart growth land-use lacks any clear definition.
- In Philadelphia, Pittsburgh, and New Orleans—the EPA's examples of smart growth "successes"—economic stagnation is a far better explanation of lower traffic congestion than "smart growth."
- Both Congress and the President should launch formal investigations into EPA analytical quality and integrity.

This paper, in its entirety, can be found at:
www.heritage.org/research/smartgrowth/bg1782.cfm

Produced by the Thomas A. Roe Institute
for Economic Policy Studies

Published by The Heritage Foundation
214 Massachusetts Avenue, NE
Washington, DC 20002-4999
(202) 546-4400 • heritage.org

Nothing written here is to be construed as necessarily reflecting the views of The Heritage Foundation or as an attempt to aid or hinder the passage of any bill before Congress.

EPA's analysis of the air and water quality of individual communities can often lead to harsh penalties and costly remedies, substandard analysis by EPA staff—as used in *Characteristics*—could lead to needless expenditures to remedy non-existent problems. To ensure such analytical failings have not occurred in previous EPA reports and will not happen again, Congress and President George W. Bush should open an investigation into EPA analytical quality and integrity to determine how widespread such lapses may have become.

EPA's War Against Cars and Suburbs

Typical of the EPA's war against the automobile and its counterproductive remedies was its threat in the waning years of the Clinton Administration to withhold federal highway money from the Atlanta metropolitan area unless the region adopted a plan to alter land-use practices toward “smart growth” principles and to encourage commuters to shift from cars to transit. The Georgia legislature responded accordingly and created the Georgia Regional Transportation Authority, while the Atlanta Regional Council (ARC) crafted a plan to achieve the EPA's approval.² Among the plan's provisions was the Atlanta region's commitment to devote 55 percent of all regional transportation spending to transit over the next 25 years. Although the ARC estimated that shifting these billions of dollars would increase transit ridership from 2.6 percent to only 3.4 percent of the traveling public and that it would have only a trivial effect on air quality, the EPA was satisfied.

The Atlanta case is revealing for another reason: It represents the formal unveiling of the EPA's intention to add an anti-suburban initiative to its already robust anti-auto traditions. Beginning in the 1990s, when smart growth and “new urbanism” became

trendy belief sets among America's artistic elites, the EPA has been an outspoken advocate of smart growth strategies. The EPA has provided grants to anti-suburb advocacy groups around the country, currently supports New Partners for Smart Growth conferences, is a partner in the Smart Growth Network, and has created a National Award for Smart Growth Achievement to highlight “exemplary” local smart growth initiatives. More troubling, on at least one occasion EPA staff have gone so far as to contact a journalist and criticize her for writing favorably about a skeptical assessment of smart growth strategies³ that was published in 2001.⁴

Although there is no precise definition of smart growth land-use/housing development strategy, for the most part the movement's adherents advocate higher density housing arrangements such as town houses and high-rise apartments (to discourage excessive use of raw land), smaller lot sizes for detached houses, a closer mix of commercial and residential uses (to encourage walking), and a greater reliance on transit (to discourage automobile use). Companion movements to smart growth include new urbanism, which buys into much of the smart growth coda, but goes on to adopt a more nostalgic approach to community development. It urges greater reliance on traditional architectural design (the early 20th century Arts and Crafts style is now much in vogue) and traditional 19th century square-block grid pattern in which streets cross at right angles, block after block.⁵

EPA Oversteps Its Bounds

Notwithstanding all the money and effort that the EPA and other supporting institutions have spent to promote smart growth strategies, most Americans still choose to live in the typical suburban subdivisions of detached houses on quarter-

1. U.S. Environmental Protection Agency, Development, Community, and Environment Division, *Characteristics and Performance of Regional Transportation Systems*, February 2004, withdrawn April 2004. Electronic version posted as a courtesy of Demographia, at www.demographia.com/db-epa-withdraw.pdf.
2. Angela M. Antonelli, “Lessons from the Atlanta Experiment,” in Jane S. Shaw and Ronald D. Utt, eds., *A Guide to Smart Growth* (Washington, D.C.: The Heritage Foundation, 2000), pp. 135–152.
3. Wendell Cox and Ronald D. Utt, Ph.D., “Smart Growth, Housing Costs, and Homeownership,” Heritage Foundation *Background* No. 1426, April 6, 2001, at www.heritage.org/Research/SmartGrowth/BG1426.cfm.
4. Letter to journalist from an EPA staff member, May 15, 2001. Copy available from authors upon request.

acre lots.⁶ Some even choose to live on the much-maligned cul-de-sacs that pepper the American landscape. Indeed, communities have frequently opposed residential/commercial developments designed along smart growth/new urbanist principles because the higher densities are thought likely to contribute to worsening traffic congestion as more and more people try to fit into the limited available space.

Perhaps the EPA intended to use *Characteristics* to overcome this opposition by showing that new urbanist communities built along traditional street grid designs experience less traffic congestion than communities following less traditional design patterns.

Within a few months however, the report was vigorously attacked for its bias and weaknesses—even by other federal agencies—and the EPA was forced to withdraw the report. This backtracking by the EPA was extremely unusual. Few, if any, federal agencies have enjoyed the degree of insulation from criticism enjoyed by the EPA. Washington's politicians have treated the agency with "kid gloves," perhaps fearing that criticizing any EPA initiative could portray them as favoring pollution and risking the nation's health. Similarly, other Washington bureaucracies have permitted the EPA to tread upon their areas and responsibilities largely unchallenged, even when the data indicated weakness in EPA positions.

For years, the EPA has bought into the trendy European anti-car ideology that does not even work much in Europe, ignoring that cars have become cleaner and cleaner. Under both the Clinton and Bush Administrations, the EPA has strongly supported smart growth land-use poli-

cies that would increase population densities, claiming that these policies reduce traffic congestion and air pollution. The EPA holds this belief despite all of the evidence showing that as population density increases, so does traffic congestion. This may explain why many communities reject zoning variances that would allow new urbanist communities to be built. Evidence from around the world also shows that the slower and less consistent automobile speeds associated with high-density areas substantially increase local air pollution emissions.⁷

However, while the EPA ignored these inconvenient facts, officials at the U.S. Department of Transportation (DOT) responded by commissioning a comprehensive internal analysis of *Characteristics*. After the analysis exposed numerous significant flaws, DOT officials shared their findings with EPA officials who—to their credit—took the unusual step of withdrawing the report in April 2004, approximately two months after its initial release. Although the DOT has not formally released its critique to the public, copies were leaked to the editor of a transportation newsletter, who has published them on his Web site.⁸

Among the many specific criticisms of the report, four observations are particularly notable:

- "The report defines desirable transportation performance in narrow, incomplete and modally biased terms, without regard to the views of US DOT, the federal agency with purview for national transportation policy."
- "EPA's criteria for desirable transportation performance, which are at the core of the analysis, appear to have been selected to serve a limited set of national policy goals to the exclusion of

5. For a more detailed description of new urbanism, see Emily Talen, "The Social Goals of New Urbanism," Fannie Mae Foundation *Housing Policy Debate*, Vol. 13, Issue 1 (2002), pp. 165–188.

6. Kenneth Orski, "The Backlash Against Smart Growth," *Innovation Briefs*, Vol. 14, No. 6 (November/December 2003), at www.innobriefs.com/abstracts/2003/nov03.html#3.

7. Wendell Cox, "Smart Growth and Housing Affordability," report commissioned by the Congressional Millennial Housing Commission, 2002, at www.mhc.gov/papers/coxsg.doc.

8. For a reproduction of the U.S. Department of Transportation's full critique of the EPA report, see TOLLROADSnews, "EPA Lauds Immobility in CAPORTS (Plus FHWA Comment in Full)," May 15, 2004, at www.tollroadsnews.com/cgi-bin/a.cgi/DFgWgqaHEdiRW6r2jFwDw (June 15, 2004).

broad, balanced national transportation and environmental policy.”

- “The report uses data which are wrong/inappropriately applied or inappropriate statistical techniques.”
- “Outside reviewers urged EPA to improve the methodology and expand the scope of analysis, but EPA did not do so, citing cost limitations.”⁹

Where the EPA Went Wrong

In the discredited report, the EPA attempted to prove that smart growth land-use strategies lead to lower traffic congestion. Among the problems in proving such a claim is that smart growth land-use lacks any clear definition, because the term has been applied loosely—and contradictorily—throughout the nation. EPA writers solved this problem by borrowing an idea from smart growth’s companion movement, new urbanism—which is obsessed with the traditional grid of rectangular city blocks and streets that cross at right angles block after block—and renaming this traditional grid “interconnected street systems.”

The EPA claims that interconnected road systems make walking easier and facilitate better traffic movement. In measuring an area’s degree of “smart growth,” the EPA also considered the extent to which people used transit. Having defined the traditional street grid pattern as a smart growth strategy, the EPA then set out to prove that interconnected street systems and transit use reduce traffic congestion. This, in turn, would prove the superior congestion-fighting properties of smart growth.

Faulty Analysis and Comparisons

The EPA’s research and analysis into this hypothesis was limited to five “smart growth” urban areas, ranked by size. This critique focuses on only the three largest areas reviewed by the EPA—Philadelphia, Pittsburgh, and New Orleans. (The other two metropolitan areas are small enough that traffic

congestion is not as serious a problem as in the largest three areas.)

The EPA selected these three urban areas because they have less traffic congestion and more transit trips than their “non-smart growth” peers of similar population size. The EPA attributed the alleged superiority of traffic conditions in these three urban areas to their interconnected street systems, which reflect the cities’ 18th and 19th century origins. For each of these urban areas, the EPA also selected two “non-smart growth” urban areas of similar size: Philadelphia’s control group was Houston and Atlanta; Pittsburgh’s was Tampa–St. Petersburg and Saint Louis; and New Orleans was compared to Charlotte and Nashville. As this paper demonstrates, the EPA appears to have carefully selected these particular cities and the control groups in order to “support” the hypothesis. Not surprisingly, the EPA discovered that the smart growth areas had less congestion than their control groups.

Despite the fatal flaws in the procedures used to test the relationship—the sample cities used in the analysis are not randomly selected and the sample size is too small to yield meaningful results—the EPA nonetheless claimed to have uncovered an important relationship between traffic congestion and traditional street design. However, they uncovered no such thing. Indeed, selecting another set of cities that meet the same EPA criteria would yield completely different conclusions.

First, all three of the EPA’s premier smart growth urban areas share another significant characteristic: Since the 1950s, all of their central cities have suffered disproportionately from significant population, employment, and business declines, and none of them participated in the revival that many other cities—large and small—experienced during the 1990s. Although New York, Boston, San Francisco, Chicago, and many others experienced a population increase during the 1990s, the population of New Orleans fell by 2.5 percent, Pittsburgh by 9.5 percent, and Philadelphia by 4.3 percent.¹⁰

9. *Ibid.*

10. Wendell Cox Consultancy, “2000 Census: U.S. Municipalities Over 50,000: Alphabetical,” 2001, at www.demographia.com/db-2000city50k.htm (June 15, 2004).

According to U.S. Census estimates, those declines have continued into the 21st century. Indeed, to appreciate just how far and fast the fortunes of these cities declined, Philadelphia had a larger population in 1910, while Pittsburgh's population in 1890 was higher than it is today.¹¹

Such growth/no-growth trends are important factors to consider when comparing traffic and street designs. Because traffic congestion is largely caused by too many people using too few roads, regardless of design, substantial reductions in population mean *ipso facto* substantial reductions in traffic as fewer people take to the roads.¹²

EPA Group One: Urban Areas with a Population Over 3 Million. In the group with the largest populations, Philadelphia is declared the “smart growth” representative by virtue of its more interconnected streets and higher transit ridership. Indeed, of the three cities, traffic congestion is the lowest in Philadelphia. However, if the EPA had selected another smart growth city, the outcome would have been the exact opposite of what the EPA claims. For example, in San Francisco (surely a smart growth city, with its interconnected street grids), annual traffic delay hours per peak period traveler are more than double the rate in Philadelphia and 20 percent or more higher than the rates in Houston and Atlanta—allegedly non-smart growth cities.

Likewise, selecting Washington, D.C.—arguably as smart growth as Philadelphia—would yield contradictory results. Washington built 100 miles of new subway over the past 30 years and traffic congestion more than doubled. Now, Washington's annual delay hours per peak period traveler are nearly double Philadelphia's and greater than both Houston's and Atlanta's. The story is similar for New York. Boston's average annual peak period delay is 50 percent higher than Philadelphia's and nearly as high as Houston's and Atlanta's. Only by

choosing the least representative large urban area—and the slowest growing—was the EPA able to support its smart growth theories. Indeed, if the study had examined a more representative sample of cities, it would have concluded that smart growth street patterns *create* congestion.

None of this is to suggest that mobility is as it should be in Houston and Atlanta, but some improvement has been made. By building more roadways, Houston has managed to improve from having the nation's worst congestion in the mid 1980s to ranking number nine in the most recent survey. As late as 1986, Houston's traffic congestion was worse than that in Los Angeles.

Atlanta, however, is a real problem case. As the fastest growing large metropolitan area in the industrialized world, Atlanta has a feeble roadway system, which has virtually no non-radial freeways (freeways that do not lead toward downtown) outside the I-285 Perimeter. Outside the Perimeter is the greatest expanse of urbanization unserved by non-radial freeways *in the world*. Moreover, few places in the world have invested more in transit than Atlanta has over the past two decades. Since 1980, only seven urban areas in the world have built more miles of subway (also called elevateds or metros). One of the seven is the even more congested Washington, D.C., area. Within its transit service area, Atlanta has higher ridership per capita of any place in the United States outside New York City.

EPA Group Two: Urban Areas with Populations Between 1.5 and 3 Million. The EPA's second category of city comparisons has the most significant analytical lapses. In this category, the EPA compared “smart growth” Pittsburgh to Tampa–St. Petersburg and St. Louis, but ignored Portland—the similar sized “mother of all smart growth urban areas.” Surely the message of Portland's smart growth strategies—well known throughout the world—did not escape the EPA's

11. Wendell Cox Consultancy, “U.S. Population from 1790: Cities Achieving Population 300,000 or More,” 2001, at www.demographia.com/db-uscity1790.htm (June 15, 2004).

12. The EPA denies that there is a link between population growth and traffic congestion. When the DOT pointed out this failing, the EPA responded, “We do not believe the rate of growth is a major factor influencing transportation system performance—we do not feel it necessary to control for growth rate.” TOLLROADSnews, “EPA Lauds Immobility in CAPORTS.”

attention. Of course, including Portland would have utterly undermined the EPA's smart growth thesis. Smart growth Portland has more traffic delay than Tampa–St. Petersburg and St. Louis, and the worst traffic congestion of any metropolitan area its size, despite its extravagant spending on transit. While implementing smart growth strategies, pretending that light rail will reduce traffic congestion, and neglecting roadway expansion, Portland has managed to experience the greatest increase in traffic congestion of any major urban area in the nation.¹³

EPA Group Three: Urban Areas with Populations Between 750,000 and 1.5 Million. In the third group, “smart growth” New Orleans is compared to Charlotte and Nashville. New Orleans' economic stagnation seems to have been the secret of its “success.” Charlotte and Nashville both have approximately 20 percent more employment per 1,000 people than New Orleans. If the same proportion of people was working in New Orleans, the additional travel demand would almost certainly make traffic conditions as bad, or worse, than in Charlotte or Nashville.

The EPA Demonstrates the Benefits of Stagnation. While attributing better traffic conditions to transit, the EPA failed to check the usage trends. Over the past two decades, Philadelphia, Pittsburgh, and New Orleans have experienced some of the largest declines in transit ridership in the nation—not just in market share, but in actual declines in ridership.¹⁴ That some of the largest transit ridership losses occurred in urban areas that now have better traffic conditions belies any positive material connection between transit and traffic congestion in the modern urban area.

The EPA also overlooked the impact of population growth on observed traffic patterns in currently congested areas. In 1982, when federal data on urban traffic congestion were first reported, there was little difference in the annual delay

hours among the smart growth and non-smart growth areas reviewed by the EPA. The difference between then and now, however, is not alternative strategies of land use or transit use, but rather that for the much of the past 20 years, serious political constraints have been placed on roadway expansion, often by planners seeking to socially engineer people out of their cars.

Roadway systems were comparatively sufficient in most areas in 1982. Where there was little growth in population, existing roadways continue to handle the demand. However, where populations have grown with little roadway expansion, traffic congestion has predictably worsened. The EPA's ideological predispositions seem to have blinded it to this reality. Smart growth cannot take the credit for reducing congestion, as Portland so clearly demonstrates. Instead, the credit belongs to economic stagnation.

Was This an Isolated Lapse? The larger issue is whether this is the only fatally flawed EPA study. The nation has entrusted the EPA with important tasks that will determine the quality of life of future generations, and Congress has authorized the EPA to employ powerful levers to achieve its objectives. One can only wonder about the degree to which the low quality and bias evident in this report have infected other EPA analyses that could serve as the basis for draconian policy interventions that destroy jobs and interfere with people's lives. The citizens of the nation have a right to expect policies based upon reality, not ideology.

It is time for Congress and the President to ask: How deep is the rot?

—Wendell Cox, Principal of the Wendell Cox Consultancy in metropolitan St. Louis, is a Visiting Fellow at The Heritage Foundation and a visiting professor at the Conservatoire National des Arts et Metiers in Paris. Ronald D. Utt, Ph.D., is Herbert and Joyce Morgan Senior Research Fellow in the Thomas A. Roe Institute for Economic Policy Studies at The Heritage Foundation.

13. The Public Purpose, “Traffic Congestion Trends: 1986–2001,” *Highway & Motor Fact Book*, at www.publicpurpose.com/hwy-tti20011986.pdf.

14. See Table 8 in Ronald D. Utt, Ph.D., “Reauthorization of TEA–21: A Primer on Reforming the Federal Highway and Transit Programs,” Heritage Foundation *Background* No. 1643, April 7, 2003, p. 8, at www.heritage.org/Research/SmartGrowth/bg1643.cfm.