

ISSUE BRIEF

A NEW PLAN FOR CLEAN TRANSPORTATION

Today in America, 260 million cars, trucks, and buses travel on a vast network of nearly 4 million miles of roads—enough to encircle the earth 160 times.¹ At the same time, some 166 million people, more than half of the nation’s population, live in counties with unhealthy amounts of ground-level ozone pollution (a major component of smog) and fine particle pollution (including soot).² Our vehicles are a major source of this harmful air pollution. Tailpipes also emit carbon pollution that fuels dangerous climate change.³ When state and municipal authorities plan for transportation infrastructure, unfortunately, they rarely account for vehicle-generated pollution.

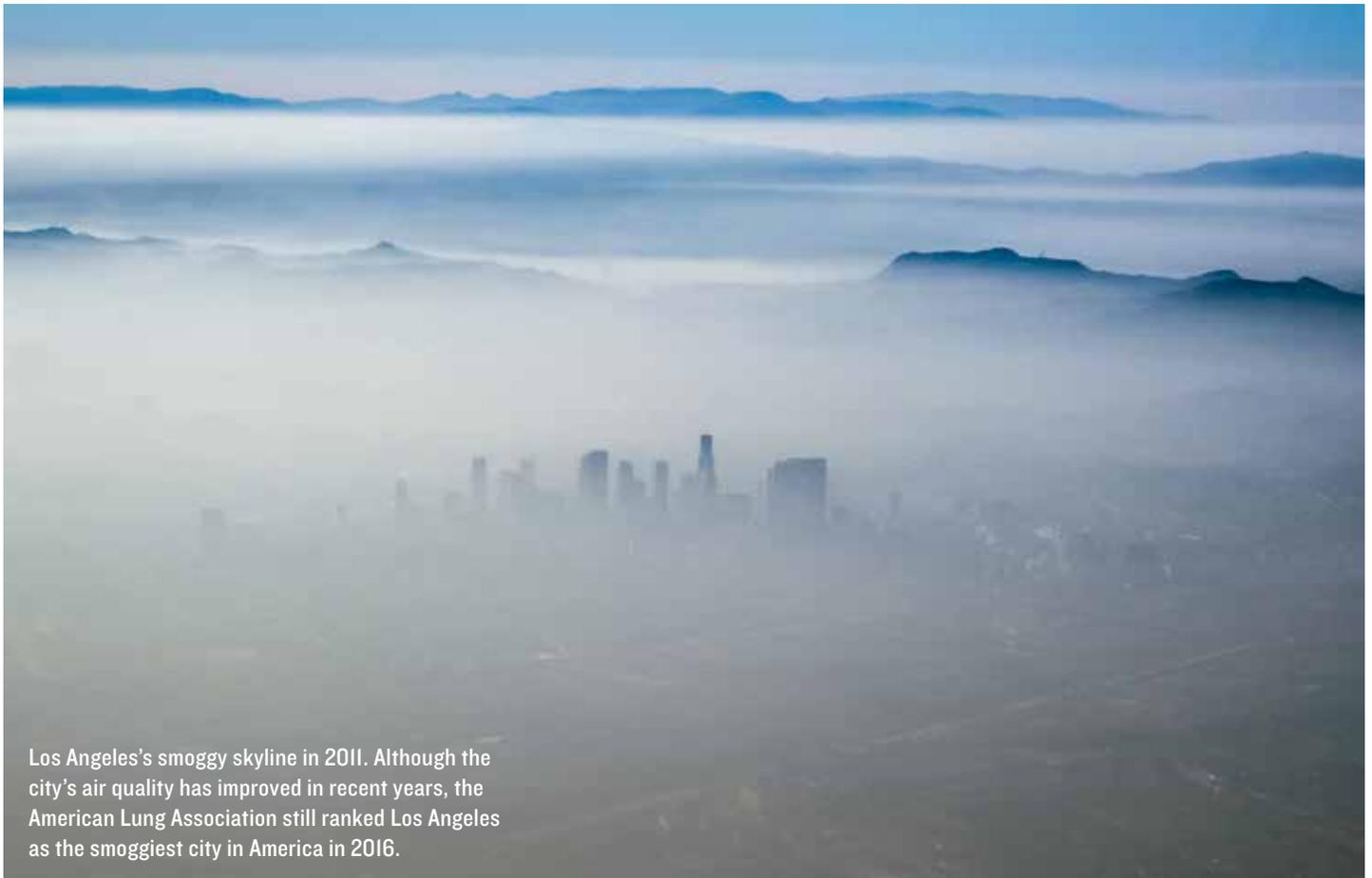


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Los Angeles’s smoggy skyline in 2011. Although the city’s air quality has improved in recent years, the American Lung Association still ranked Los Angeles as the smoggiest city in America in 2016.

WHAT IS TRANSPORTATION PLANNING?

National law requires state transportation agencies and metropolitan planning organizations (regional committees of officials from cities and surrounding counties) to develop long-range plans for how they will use federal grant money. These plans—which span 20 years or more—describe investment portfolios for transportation projects, including maintenance, repair, and construction of roads, commuter rail lines, bus service lines, bike lanes, and sidewalks. Thoughtful transportation plans can help state and local planners make the most of limited funds, meet national and regional policy goals (e.g., improved safety), and provide ample and meaningful opportunities for all people to shape the futures of their communities.

Efforts are underway to make our transportation system cleaner and safer while expanding transit options and improving community life. The country now has a critical opportunity to make fundamental and long-lasting improvements through smarter transportation planning.

DIRTY TRANSPORTATION MEANS DIRTY AIR—AND THAT'S EXPENSIVE

Car and truck tailpipes are among the largest U.S. contributors to smog, a powerful asthma trigger.⁴ Nearly 18 million adults and more than 6 million children suffered from asthma in 2014, and 3,630 people died from it in 2013.⁵ One study of 83 U.S. cities estimated that increases in particle pollution from traffic jams alone led to 3,000 premature deaths in 2005.⁶ Tailpipe pollution also can lead to pregnancy complications, cancer, and heart problems.^{7,8,9} Young children, pregnant women, the elderly, and people with existing lung and heart conditions are particularly vulnerable to health threats from poor air quality.¹⁰

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Cars and trucks are also the second-largest U.S. source of the carbon pollution that causes climate change.¹¹ This pollution raises temperatures and accelerates the formation of smog. It also can make stagnant air days more frequent, leading to a build up of pollution and more asthma attacks and premature deaths.¹² If we don't limit carbon pollution, temperature-related increases in smog and other air pollution could cause thousands more premature deaths and illnesses each year.¹³ Climate change poses many other direct and indirect health threats, including heat-related illnesses and deaths as well as diseases carried by ticks, mosquitoes, and contaminated food and water.¹⁴

Beyond the health costs, traffic congestion and carbon pollution place a significant burden on our economy. According to an annual report from the Bureau of Transportation Statistics, congestion on highways has increased over the past 30 years in every urban area in the country, costing \$160 billion in 2014 due to travel delays and wasted fuel.¹⁵ To make matters worse, more extreme heat waves, heavier rainfall, rising sea levels, and other stressors from climate change are expected to damage roads and bridges, slow highway construction, raise freight transportation costs, and increase weather-related traffic delays and accidents.¹⁶

THE FASTEST ROUTE TO SMARTER TRANSPORTATION

Thankfully, with smarter transportation planning, we can improve our air quality, move passengers and goods more efficiently, and create more travel options. States and metropolitan areas are required by federal law to develop long-range plans for transportation investments.¹⁷ But historically, they have not been required to consider carbon pollution as part of their plans.

Thanks to the Moving Ahead for Progress in the 21st Century Act (MAP-21)—a transportation law passed by Congress in 2012—that's all changing. Under MAP-21, the U.S. Department of Transportation (DOT) is developing a set of standards and resources to help state and local officials create better transportation plans.¹⁸ The most recent proposed standard addresses three core issues:¹⁹

1. Whether and how states and metropolitan areas track carbon pollution and set reduction targets,
2. How states and metropolitan areas measure local air pollution, and
3. How states and metropolitan areas should measure and address traffic congestion.



The Blue Line in Minneapolis, one of several transit projects slated for expansion under the Metropolitan Council's long-term transportation plan.

CLEARING THE AIR: PRACTICAL TOOLS TO TRACK AND REDUCE POLLUTION

Reducing smog, carbon pollution, and other air pollution from transportation is not rocket science. Now is the time for Secretary of Transportation Anthony Foxx to move forward with strong standards for tracking and cutting carbon pollution from transportation plans. The Federal Highway Administration and others have many off-the-shelf tools to help states and metropolitan areas analyze and develop tools to limit traffic pollution.²⁰

These options include:

- Encouraging the use of electric cars by supporting public charging stations,
- Creating or supporting carpooling and teleworking programs,
- Implementing programs and infrastructure that encourage biking, walking, and use of public transit,
- Applying better land-use planning and urban design to reduce travel distances, and
- Using intelligent transportation tools such as better signal timing to smooth traffic flow.

Several jurisdictions around the country already recognize the need to address air quality and climate change in their long-term transportation plans. For instance:

- **California** and **Oregon** have set carbon pollution targets with each of their metropolitan planning organizations.^{21,22}
- **Massachusetts's** 13 metropolitan planning organizations are required to consider carbon pollution when selecting transportation projects and must report on annual progress toward pollution reduction goals.²³
- The Chicago Metropolitan Agency for Planning in **Illinois**, Genesee Transportation Council in **New York**, Capital Area Metropolitan Planning Organization in **Texas**, North Jersey Transportation Planning Authority in **New Jersey**, Metropolitan Council in **Minnesota**, and Pikes Peak Area Council of Governments in **Colorado** all use, or plan to use, carbon pollution as a measure of progress toward environmental goals.^{24,25,26,27,28,29}

MEASURING AND CUTTING CONGESTION THE MODERN WAY

As they account for carbon pollution and other dangerous air pollution in long-term plans, transportation planners also need to modernize how they measure traffic congestion. The traditional approach focuses on how much time individual drivers spend delayed in traffic, which ignores the millions of Americans who travel by bicycle, public transit, or other means.³⁰ The DOT should create a more modern, holistic approach for planners to measure and address congestion that counts all travelers, not just solo drivers. This approach should be more accurate and fair to those who opt out of driving alone.

A 12-year study of 15 municipalities in Canada found a significantly lower rate of obesity and fewer new cases of diabetes in walkable neighborhoods.

CLEANER TRANSPORTATION = BETTER HEALTH, MORE JOBS, AND BRIGHTER FUTURES

Modernizing and diversifying how we plan and build our transportation system will provide real and lasting benefits for our neighborhoods and our nation, and rewards are already being felt in some areas:

- **Cleaner air.** Air pollution costs Southern Californians at least \$14.6 billion a year.³¹ The Southern California Association of Governments (SCAG) estimates that its clean transportation plan could dramatically improve air quality in the region by 2040. Without the plan, SCAG projects 270,328 air pollution-related illnesses and \$4.5 billion in related health care costs in 2040. Full implementation of the plan could reduce the incidence of these health problems by 13 percent in 2040, saving the region approximately \$596 million. The plan could also reduce emissions of climate-changing pollution by 21 percent in 2040.³² And a recent national study found that a pathway to slashing 75 percent of the carbon pollution from surface transportation by 2050 could prevent roughly 14,000 premature deaths by 2030.³³

- **More jobs and lower household costs.** In Maryland, public transportation initiatives could cut nearly two million tons of carbon pollution and support up to 1,824 jobs in 2020.³⁴ An analysis of 11 Northeast and mid-Atlantic states (plus Washington, D.C.) suggests that comprehensive implementation of clean transportation policies could save the region's businesses and consumers \$32.3 to \$72.5 billion over 15 years while adding \$11.7 billion and at least 91,000 new jobs to the regional economy in 2030.³⁵
- **Improved quality of life.** The Los Angeles County Metropolitan Transportation Authority (Metro) is tracking how Measure R, a voter-approved financing plan, is affecting the quality of life in Los Angeles County.³⁶ Metro's first report found that public transportation investments increased on-time bus and rail departures by 13 percent from 2008 to 2014. The report also found that travel times are more consistent and often faster on public transit than on the county's freeways.
- **Better physical fitness.** Transportation planners can help reduce obesity levels and associated health problems through safer and more convenient options for walking and biking.³⁷ A 12-year study of 15 municipalities in Canada found a significantly lower rate of obesity and fewer new cases of diabetes in walkable neighborhoods.³⁸

WE HAVE TRACTION; NOW IT'S TIME FOR ACTION

We need to improve our transportation system to create a cleaner, healthier, more prosperous future. Metropolitan and state transportation planners can and should incorporate methods to track and reduce carbon pollution and other dangerous air pollution in their long-term plans. They should also take a fresh approach to traffic congestion that better supports community needs while protecting public health.

The DOT is requesting public comment on its proposed planning standard by August 20, 2016. You can urge the agency to move forward with a strong standard [here](#).

ENDNOTES

- 1 Registered highway vehicles in 2014. U.S. Department of Transportation (hereinafter DOT), Bureau of Transportation Statistics, “Table 1-11: Number of U.S. Aircraft, Vehicles, Vessels, and Other Conveyances,” www.rita.dot.gov/bts/sites/rita.dot.gov.bts/files/publications/national_transportation_statistics/html/table_01_11.html (accessed May 25, 2016); DOT, Bureau of Transportation Statistics, “Table 1-4: Public Road and Street Mileage in the United States by Type of Surface,” www.rita.dot.gov/bts/sites/rita.dot.gov.bts/files/publications/national_transportation_statistics/html/table_01_04.html (accessed May 26, 2016).
- 2 American Lung Association, *State of the Air 2016*, April 2016, www.lung.org/assets/documents/healthy-air/state-of-the-air/sota-2016-full.pdf.
- 3 Xing, J., et al., “Historical Gaseous and Primary Aerosol Emissions in the United States from 1990-2010,” *Atmospheric Chemistry and Physics* 13 (August 2013): 7531-7549, www.atmos-chem-phys.net/13/7531/2013/; U.S. Environmental Protection Agency (hereinafter EPA), Office of Transportation and Air Quality, “Fast Facts: U.S. Transportation Sector Greenhouse Gas Emissions, 1990-2013”; EPA-420-F-15-032, October 2015, www.epa.gov/greenvehicles/fast-facts-us-transportation-sector-greenhouse-gas-emissions-1990-2013; Melillo, J.M., T.C. Richmond, and G.W. Yohe, eds., *Climate Change Impacts in the United States: The Third National Climate Assessment*, U.S. Global Change Research Program, 2014, nca2014.globalchange.gov/.
- 4 Xing, J., et al., “Historical Gaseous and Primary Aerosol Emissions”; EPA, “Health Effects of Ozone in Patients with Asthma and Other Chronic Respiratory Disease,” updated February 22, 2016, www3.epa.gov/apti/ozonehealth/effects.html (accessed June 7, 2016).
- 5 Centers for Disease Control and Prevention, National Center for Health Statistics, “Asthma,” updated February 10, 2016, www.cdc.gov/nchs/fastats/asthma.htm.
- 6 Levy, J.I., J.J. Buonocore, and von Stackelberg, “Evaluation of the Public Health Impacts of Traffic Congestion: A Health Risk Assessment,” *Environmental Health* 9, no. 65 (October 2010): DOI: 10.1186/1476-069X-9-65, ehjournal.biomedcentral.com/articles/10.1186/1476-069X-9-65.
- 7 Rutgers University Environmental Analysis and Communications Group, “Health Benefits of Transportation Emissions Reductions,” TCI Scoping Paper Series, August 2013, www.transportationandclimate.org/sites/default/files/tci-scoping-papers-series-health-benefits.pdf.
- 8 Boothe, V.L., et al., “Residential Traffic Exposure and Childhood Leukemia,” *American Journal of Preventive Medicine* 46, no. 4 (April 2014): 413-422, [www.ajpmonline.org/article/S0749-3797\(13\)00619-3/abstract](http://www.ajpmonline.org/article/S0749-3797(13)00619-3/abstract).
- 9 Thurston, G.D., et al., “Ischemic Heart Disease Mortality and Long-Term Exposure to Source-Related Components of U.S. Fine Particle Air Pollution,” *Environmental Health Perspectives* 124, no. 6 (June 2016): DOI:10.1289/ehp.1509777, ehp.niehs.nih.gov/15-09777/.
- 10 Fann, N., et al., “Air Quality Impacts,” chapter 3 in *The Impacts of Climate Change on Human Health in the United States: A Scientific Assessment*, U.S. Global Change Research Program, 2016, health2016.globalchange.gov/air-quality-impacts.
- 11 Total greenhouse gas emissions in 2013. EPA, Office of Transportation and Air Quality, “Fast Facts.”
- 12 Fann, N., et al., “Air Quality Impacts.”
- 13 Ibid.
- 14 Balbus, J., et al., “Introduction,” chapter 1 in *The Impacts of Climate Change on Human Health in the United States: A Scientific Assessment*, U.S. Global Change Research Program, 2016, health2016.globalchange.gov/climate-change-and-human-health.
- 15 DOT, Bureau of Transportation Statistics, “Moving People,” chapter 2 in *Transportation Statistics Annual Report 2015*, April 2016, www.rita.dot.gov/bts/sites/rita.dot.gov.bts/files/publications/transportation_statistics_annual_report/2015/chapter2.html.
- 16 Meyer, M., et al., *Strategic Issues Facing Transportation, Volume 2: Climate Change, Extreme Weather Events, and the Highway System: Practitioner’s Guide and Research Report* (Washington, D.C.: National Academies Press, 2014), www.trb.org/Main/Blurbs/169781.aspx.
- 17 Transportation Planning Capacity Building Program, *The Transportation Planning Process Briefing Book: Key Issues for Transportation Decisionmakers, Officials, and Staff*, Federal Highway Administration and Federal Transit Administration, FHWA-HEP-15-048 (Washington, D.C.: National Academies Press, 2015), www.trb.org/Main/Blurbs/173092.aspx.
- 18 For example, see Federal Highway Administration, *Model Long-Range Transportation Plans: A Guide for Incorporating Performance-Based Planning*, FHWA-HEP-14-046, August 2014, www.fhwa.dot.gov/planning/performance_based_planning/mlrtp_guidebook/.
- 19 Federal Highway Administration, “National Performance Management Measures: Assessing Performance of the National Highway System, Freight Movement on the Interstate System, and Congestion Mitigation and Air Quality Improvement Program,” Notice of Proposed Rulemaking, FHWA-2013-0054, April 22, 2016, www.federalregister.gov/articles/2016/04/22/2016-08014-national-performance-management-measures-assessing-performance-of-the-national-highway-system.
- 20 Federal Highway Administration and Federal Transit Administration, “The Energy and Emissions Reduction Policy Analysis Tool,” www.planning.dot.gov/fhwa_tool/ (accessed May 26, 2016); Cambridge Systematics, Inc., *Moving Cooler: An Analysis of Transportation Strategies for Reducing Greenhouse Gas Emissions* (Washington, D.C.: Urban Land Institute, 2009).
- 21 California Air Resources Board, “Sustainable Communities,” www.arb.ca.gov/cc/sb375/sb375.htm (accessed May 26, 2016).
- 22 Oregon Sustainable Transportation Initiative, “Target and Scenario Planning Rulemaking,” www.oregon.gov/ODOT/TD/OSTI/Pages/rules.aspx (accessed May 26, 2016).
- 23 Massachusetts Department of Transportation, “Greenhouse Gas Reduction,” www.massdot.state.ma.us/GreenDOT/GreenhouseGasReduction.aspx (accessed May 26, 2016).
- 24 Chicago Metropolitan Agency for Planning, “GO TO 2040 Update Appendix: Indicator Methodology,” October 2014, <http://www.cmap.illinois.gov/documents/10180/332742/Update+Indicator+Methodology+FINAL.pdf/720e4b90-0058-4d27-bdff-e898cdcf3fb2b>.
- 25 Genesee Transportation Council, *Long Range Transportation Plan for the Genesee-Finger Lakes Region 2035*, June 2011, www.gtcmppo.org/docs/LRTP.htm.
- 26 Capital Area Metropolitan Planning Organization, “Appendix G: Performance Measures,” *CAMPO 2040 Regional Transportation Plan*, amended September 21, 2015, www.campotexas.org/wp-content/uploads/2015/10/CAMPO2040PlanFinal_Chpt6_LowRes.pdf.
- 27 Cambridge Systematics, Inc., and Fitzgerald and Halliday Dewberry, “Performance Results: Assessing the Impacts of Implemented Transportation Projects,” Final Report for the North Jersey Transportation Planning Authority, December 2011, www.njtpa.org/planning/regional-studies/completed-studies/performance-results-assessing-the-impacts-of-imple/performance-results/njtpa_performance-results_finalreport_complete_000.
- 28 Metropolitan Council, *2040 Transportation Policy Plan*, Adopted January 14, 2015, www.metrocouncil.org/Transportation/Planning/Transportation-Policy-Plan/2040-Transportation-Policy-Plan.aspx.
- 29 Pikes Peak Area Council of Governments, *Moving Forward 2040 Regional Transportation Plan*, Approved November 2015.
- 30 Transportation for America, “Ten Things to Know About USDOT’s New Proposal for Measuring Traffic Congestion,” April 20, 2016, t4america.org/2016/04/20/nine-things-to-know-about-usdots-new-proposal-for-measuring-traffic-congestion/.
- 31 Southern California Association of Governments, “Where We Are Today,” chapter 2 in *The 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy*, adopted April 2016, scagtrpccs.net/Documents/2016/final/f2016RTPSCS_02_WhereWeAreToday.pdf.
- 32 Southern California Association of Governments, *The 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy, Appendix: Public Health*, adopted April 2016, scagtrpccs.net/Documents/2016/final/f2016RTPSCS_PublicHealth.pdf.
- 33 Shindell, D.T., Y. Lee, and G. Faluvegi, “Climate and Health Impacts of U.S. Emissions Reductions Consistent with 2°C,” *Nature Climate Change* 6 (May 2016): 503-509, www.nature.com/nclimate/journal/v6/n5/full/nclimate2935.html.
- 34 Maryland Department of the Environment, *2015 Greenhouse Gas Emissions Reduction Act Plan Update*, October 2015, news.maryland.gov/mde/wp-content/uploads/sites/6/2015/10/GGRA_Report_FINAL_10-29-15.pdf.
- 35 Pacyniak, G., et al., *Reducing Greenhouse Gas Emissions from Transportation: Opportunities in the Northeast and Mid-Atlantic*, Georgetown Climate Center, November 2015, www.georgetownclimate.org/reducing-greenhouse-gas-emissions-from-transportation-opportunities-in-the-northeast-and-mid-atlanti.
- 36 LA County Metropolitan Transportation Authority, *How Is Metro Measuring Up? 2008-2015 Quality of Life Report*, May 2016, www.scribd.com/doc/314266158/Metro-Quality-of-Life-report.
- 37 Litman, T., “Transportation and Public Health,” *Annual Review of Public Health* 34 (2013): 217-233, www.annualreviews.org/doi/abs/10.1146/annurev-publhealth-031912-114502.
- 38 Creatore, M.I., et al., “Association of Neighborhood Walkability with Change in Overweight, Obesity, and Diabetes,” *Journal of the American Medical Association* 315, no. 20 (May 2016): 2211-2220, jama.jamanetwork.com/article.aspx?articleid=2524191.