Ten Fallacies of the Thrive MSP 2040 Plan

Faulty Assumptions are Leading to an Unsustainable Long-Term Plan for the Twin Cities Region



By Randal O'Toole



Center of the American Experiment is a nonpartisan, tax-exempt, public policy and educational institution that brings conservative and free market ideas to bear on the hardest problems facing Minnesota and the nation. APRIL



Ten Fallacies of the Thrive Plan

by Randal O'Toole, Cato Institute

Introduction

The Twin Cities Metropolitan Council has published a "draft for public review and comment" of the "Thrive MSP 2040" plan, which will serve as the "regional plan for sustainable development" for the seven-county metro area. While the draft uses vague terms and generalities, it is clear that upcoming housing, transportation, and other subplans will seek to dramatically alter Minnesota lifestyles. This includes forcing more people to live in multifamily housing and reducing personal mobility, all in the name of "sustainability."

This plan was partly funded by a \$5 million "sustainable communities" grant from the Department of Housing and Urban Development. Plans funded by similar grants written by other metropolitan planning organizations provide a preview of what the details of the Thrive plan and its sub-plans will look like. The draft Thrive plan also has many hints about planners' intentions buried within it.

Based on this information, the Thrive plan and its subplans will call for:

- Increasing the cost of single-family homes by limiting the amount of land available for development inside the municipal urban service area and through restrictive zoning within that area;
- Promoting and subsidizing multifamily housing by rezoning neighborhoods to higher densities

and using tax-increment financing and other subsidies to persuade developers to build housing that would otherwise be difficult to market;

- Discouraging driving by increasing traffic congestion in the region;
- Subsidizing expensive alternatives to driving such as rail transit; and
- Diverting gas taxes and other highway funds to projects that actually reduce roadway capacities such as converting general-purpose lanes to dedicated bike lanes.

The draft plan does not spell out all of these features. Instead, it relies on euphemisms that are used throughout the planning profession to mean these things.

The Metropolitan Council argues that the Thrive plan will make the Twin Cities more prosperous and more sustainable. But a careful review of transportation and housing data reveal that the plan will be far from sustainable by any definition of the term. Moreover, the huge subsidies required to implement the plan will reduce the region's prosperity and its competitiveness with other regions.

The Thrive plan contains numerous implicit or explicit assumptions that are little better than myths and fallacies. This paper will address the most important of these fallacies.

Fallacy #1: Government action is needed to provide affordable housing.

The Thrive plan's stress on affordable housing is based on an assumption that government programs can make housing more affordable. In fact, the most affordable housing in the nation is in the states and regions that have the least government involvement in land and housing markets.

The nation's least affordable housing is in states like California and Hawaii, which have the nation's most heavily regulated land and housing markets. Housing isn't expensive in these areas due to land shortages: only 6 percent of the state of Hawaii, 36 percent of the island of Oahu, and 17 percent of the nine-county San Francisco Bay Area have been urbanized. But strict urban-growth boundaries have prevented private property owners from using their lands for their highest and best uses.

⁶⁶ In fact, the most affordable housing in the nation is in the states and regions that have the least government involvement in land and housing markets. **)**

At the other extreme, the nation's most affordable housing is in states such as Texas, where counties aren't even allowed to zone, and Indiana, where counties have the option to zone but not all counties exercise that option. Despite lack of regulation, urban "sprawl" is not threatening farms, forests, or open spaces in these states: only 6 percent of Indiana and just 3 percent of Texas have been urbanized.¹

Midway between California/Hawaii and Texas are Oregon and Washington, which require all or (in Washington's case) most cities to draw urban-growth boundaries. Unlike California and Hawaii, planners in these states are attempting to accommodate population growth by emphasizing multifamily housing. For example, Portland has set a target of reducing the share of households living in single-family homes from 68 percent in 1995 to 41 percent in 2040.²

This range of policies is reflected in the affordability of housing in each state or region. A standard measure of housing affordability is median home value divided by median family income, or *valueto-income ratio*.³ In 1969, when only Hawaii was engaged in restrictive land-use regulation, the value-to-income ratio was about 2 everywhere in the United States except Hawaii, where it was more than 3. It was 2.2 in the San Francisco Bay Area, 1.8 in Seattle and the Twin Cities, 1.6 in Portland, and 1.4 in Indianapolis.⁴

By 2006, when about fifteen states were practicing some form of statewide land-use regulation, valueto-income ratios in those states ranged from 3 to 9, while they were still around 2 in most states that had no statewide regulation. For example, median home values were more than 8 times median family incomes in the San Francisco Bay Area and Hawaii. The emphasis on multifamily housing had only partially mitigated the effect on housing affordability in Portland and Seattle, where values were around 5 times incomes. Minnesota doesn't have statewide land-use regulation, but regulation by the Metropolitan Council had driven Twin Cities value-to-income ratios to well above 3. In unregulated areas such as Texas and Indiana, valueto-income ratios never rose above 2.2.⁵

Twin Cities value-to-income ratios have fallen to about 2.5 today, but still remain well above those in less-regulated regions.⁶ According to Coldwell-Banker, a four-bedroom, two-and-one-half-bath, 2,200-square-foot home in Minneapolis was worth about \$595,000 in 2013. In St. Paul, that same home would have sold for about \$476,000, while in Bloomington it was \$427,000. Meanwhile, that same home in Houston cost only \$191,000, and in Indianapolis it was \$187,000.⁷

A company considering whether to locate new employment centers in the Twin Cities vs. Indianapolis or Houston would have to consider the extra money it would need to pay its workers so that they could afford the Twin Cities' higher housing costs. Minneapolis-St. Paul home prices and valueto-income ratios are almost certain to rise under the Thrive plan, even if the plan attempts to emphasize multifamily housing over single-family housing, which surveys show most Americans prefer.

Government regulation not only tends to make housing less affordable, it makes housing prices more volatile, thus increasing the risk that homeowners will lose money on their investments. This is because regulation makes it more difficult for builders to respond to changes in demand. In much of Texas, for example, someone can buy land, get all required permits, build a house, and move in within 120 days of purchasing the land. When demand increases, builders simply build more homes. Regulation can greatly lengthen the time required to get permits and build, so when demand increases, prices increase rather than supply. When demand falls, prices similarly fall rather than being expressed by slower rates of home construction.

Since transportation of labor and construction materials is relatively inexpensive, the only reasons

for housing to be expensive or housing prices to be volatile are shortages of land or land-use regulation that prevents builders from using that land. Minnesota has an abundance of land. The 2010 census found that only 2.1 percent of the state has been urbanized.⁸ Even counting all rural roads, railroads, and developments larger than a quarteracre in size, the U.S. Department of Agriculture's 2007 National Resources Inventory found that less than 4.5 percent of the state has been developed.⁹

Yet Figure 1 shows that Twin Cities housing prices have been excessively volatile over the past decade. This is due to the Metropolitan Council's municipal urban service area that limits the ability of homebuilders to respond to fluctuating demands for housing. When demand goes up, some homebuyers are forced to buy in distant towns and commute many miles to work. But this is expensive, so the increase in demand results in higher prices in the Twin Cities.

After making housing increasingly unaffordable and risky through land-use regulation, planners then propose to provide subsidized, affordable housing for a few low- and moderate-income families. This



Thanks to the Metropolitan Council's land-use regulation, home prices in the Twin Cities are nearly as volatile as they are in San Francisco and Seattle, and far more than in relatively unregulated regions such as Columbus, Houston, and Indianapolis. Source: "Home Price Indices," Federal Housing Finance Agency.

is what the Thrive plan proposes. But it would be far more equitable for the Metropolitan Council to reduce its land-use regulation and make housing more affordable for everyone than to provide affordable housing for a few at everyone else's expense.

Fallacy #2: Multifamily housing is more affordable.

In the Thrive plan, the Council says "the region needs to offer housing options that give people in all life stages and of all economic means viable choices for safe, stable and affordable homes" (p. 22). *Housing options* is a euphemism for multifamily housing and is based on an assumption that multifamily housing is less expensive than singlefamily homes.

In fact, multifamily homes cost more, per square foot, than single-family homes.)

This assumption is valid only if it is also assumed that multifamily dwellings are significantly smaller than single-family homes. In other words, what saves money is that the dwellings are smaller, not that they are multifamily.

In fact, multifamily homes cost more, per square foot, than single-family homes for several reasons. First, construction costs of multifamily housing are higher if the dwellings are more than two stories tall. A 1997 study in Portland, Oregon, found that two-story multifamily homes cost less, per square foot, than single-family homes, but threeand more-story multifamily homes cost more. On average, multifamily homes cost \$91 per square foot vs. \$74 for single-family.¹⁰ Housing in mixed-use developments costs even more per square foot. If the Metropolitan Council wants to see more mid-rise, mixed-use developments, it is actually advocating for less-affordable housing. A second issue is that multifamily homes are often built near regional and town centers where there is a lot of competition for land. The higher land costs translate into higher housing costs. If the Thrive plan calls for more multifamily housing in transit corridors and near rail transit stations, it is advocating for less-affordable housing.

Add to this the costs of artificial land shortages created by urban-growth or urban-service boundaries, and multifamily housing in areas with strict land-use regulation can be far less affordable than single-family housing in areas with little regulation. An 800-square-foot condominium in the San Francisco Bay Area can easily cost twice as much as a 2,200-square-foot single-family home in Houston or another Texas urban area.¹¹

In short, the way to create more affordable housing is to reduce land-use regulation, not construct more multifamily housing. With reduced regulation, people who want to live in multifamily homes can choose to do so, but most people who want lessexpensive homes will choose to buy smaller singlefamily homes.

The Thrive document goes on to say that the Council will "invest in affordable housing construction and preservation in higher-income areas of the region" (p. 22). This means that relatively wealthy neighborhoods of single-family homes will be deemed to have "unaffordable housing" and to remedy that the Council will mandate the construction of multifamily housing in those neighborhoods.

This pattern follows recent Housing and Urban Development (HUD) proposals and actions requiring other communities in the nation to force construction of multifamily housing in singlefamily neighborhoods. HUD's "affirmatively furthering fair housing" rules would measure every community's racial and ethnic mix, and if it wasn't mixed enough, would mandate the construction of "affordable" (meaning multifamily) housing in the community.¹² HUD has already successfully sued Garden City, New Jersey, a suburb of New York City, requiring the city to rezone for multifamily housing because single-family zoning supposedly kept racial minorities out of the community.¹³

The San Francisco Bay Area recently approved a plan that, like the Thrive plan, was funded by a federal sustainable communities grant. Using language that is almost identical to the Thrive plan, the Bay Area plan requires that 80 percent of all new housing in that region be multifamily housing.¹⁴ This will reduce the share of residents living in single-family homes from 56 percent today to less than 48 percent by 2040.

The Thrive plan goes on to require "a mix of housing affordability along the region's transit corridors" (page 23). This means the Council wants to subsidize the construction of high-density housing along those transit corridors. This was a major focus of the Bay Area plan, which targeted more than 200 neighborhoods along transit corridors for highdensity development. But, as noted, high-density, mid-rise housing in regional and town centers will actually be more expensive than single-family homes away from those centers.

What the Thrive plan appears to advocate, then, is that people live in smaller, lower-quality housing than they have in the past, with less privacy and more noise than is found in typical single-family neighborhoods. If the strategy is to make housing more affordable by building smaller housing units, there is no reason why it can't be achieved with smaller single-family homes. In fact, planners' real goal is to increase urban densities, and they merely use the affordability issue as a cover for that goal.

Fallacy #3: Multi-family housing is more sustainable.

Another implicit assumption behind the push for multifamily housing is that it uses less energy (and therefore is responsible for less pollution) than single-family housing. Once again, this is only true because multi-family dwellings are much smaller than single-family homes. The Department of Energy says that, on a per-square-foot basis, singlefamily homes use 29 percent less energy than multifamily homes.¹⁵ This counts only the energy costs of operation, but the energy costs of constructing mid-rise and high-rise housing are also far greater, per square foot, than for single-family homes.

If the goal is to save energy, then it is far more costeffective to house more people in single-family

The Department of Energy says that, on a per-square-foot basis, single-family homes use 29 percent less energy than multi-family homes.

homes and to make those homes more energy efficient than they already are than to house people in energy-inefficient multi-family homes and save energy by making people live in smaller dwellings.

Fallacy #4: Racial and ethnic minorities prefer multifamily over single-family housing.

Though the Thrive plan doesn't explicitly say so, the assumption that building more multifamily housing will somehow lead to housing equity for racial minorities contains the implicit (and racist) assumption that minorities prefer multifamily housing. This assumption was explicitly stated in the Bay Area plan, which said that Asians and Latinos "have demonstrated an historic preference for multi-family housing," and that the fact that these ethnic groups are growing faster than non-Hispanic whites "is expected to drive higher demand for multifamily housing."¹⁶

The reality, of course, is that the "historic preference for multifamily housing" is income-related, and as incomes rise the majority of all ethnic, racial, and age groups aspire to live in single-family homes.

Fallacy #5: Transit is an effective alternative to driving.

Transit carries less than 1.5 percent of the motorized passenger miles in the Twin Cities region.¹⁷ Yet the Thrive plan places an undue emphasis on transit as a solution to any urban problem. While automobiles offer door-to-door convenience, transit is slow and inconvenient. Given that research has found a strong positive correlation between commuting speeds and worker productivity, asking people to take transit rather than drive is the same as asking them to accept lower pay.¹⁸

Transit advocates often point to European cities, which typically spend far more money subsidizing transit than American cities. Europeans drive less than Americans, but they don't make up for it by riding transit. Instead, they simply travel less, which makes them less productive and means that a wide variety of social opportunities are less available and consumer goods are more expensive.

According to the European Union, the average American travels about 15,000 miles per year by car compared with less than 6,000 miles per year for the average European. American travel by urban transit and intercity rail totals less than 700 miles per person per year, compared with 1,300 miles per year for the average European.¹⁹ This extra 600 miles of travel doesn't come close to making up for more than 9,000 miles of lost auto travel.

Europeans don't drive less than Americans because European nations are smaller: with open borders, Europe, at 3.9 million square miles, is actually slightly larger than the United States, at 3.7 million square miles. Besides, the nation with the secondhighest amount of per capita driving in the world is Iceland, which is less than 40,000 square miles. Differences in auto travel between Europe and the United States are due more to high fuel taxes than to land area, population densities, urban design, or transit systems.

Noting that some low-income households do not own automobiles, the Thrive plan calls for

prioritizing transportation investments "that connect lower-income areas to job opportunities" (page 22). This is a euphemism for spending an even greater share of the region's resources on public transit. Yet "transit is not a reasonable substitute for the private vehicle for most people, poor or not poor," says University of Southern California planning professor Genevieve Giuliano. "In most circumstances, private vehicle access is the key to improved mobility for the poor."²⁰

Fallacy #6: Transit is more sustainable than driving.

An implicit assumption behind the emphasis on transit is that transit uses less energy than driving. That may have been true in 1970, but since then cars have become far more energy efficient, while transit has actually gotten less energy efficient.²¹ At average occupancies, the average car on the road uses about 3,364 British Thermal Units (BTUs) per passenger mile.²² Meanwhile, the Twin Cities Metro transit system uses an average of 3,479 BTUs per passenger mile.²³



In 1970, cars were gas guzzlers and transit was energy efficient. Since then, cars have become far more energy efficient while transit has gotten less so. Source: Department of Energy, Transportation Energy Data Book.

Moreover, as shown in Figure 2, the energy efficiency of cars is growing far faster than that of transit. By 2025, the average car on the road will use only about 2,400 BTUs per passenger mile.²⁴ Meanwhile, transit technologies, particularly for rail transit, improve only very slowly.²⁵

Environmental impact statements (EISs) for both the Central Corridor and Southwest LRT projects reveal neither project should be relied on to reduce energy use in the Twin Cities. In fact, the Central Corridor's Final EIS estimates "[t]he additional energy used by [Central Corridor] LRT is greater than the energy saved by replacing passenger vehicles."²⁶ Reductions in energy used by passenger vehicles only offset about 25 percent of the additional energy required by LRT.

The proposed Southwest LRT project does better and is estimated to "slightly lower energy consumption."²⁷ But it is maybe too slight to measure. The Draft EIS admits the "the differences between the alternatives may not be statistically significant."²⁸ Considering this trivial and possibly statistically insignificant improvement, Southwest LRT does not offer a dependable strategy to increase energy efficiency.

Fallacy #7: Transit is more affordable than driving.

Partly because transit is inherently inefficient and partly because government operations make it even more inefficient, transit is far more expensive than driving. Americans spend about a trillion dollars a year on purchasing, maintaining, operating, and insuring automobiles, including paying gas taxes, tolls, and other highway user fees.²⁹ They drive 2.6 trillion vehicle miles per year in cars and light trucks.³⁰ At average occupancies of 1.67 people per car, they spend about 24 cents per passenger mile on auto travel.³¹ In 2011, subsidies to highways, roads, and streets paid out of sales taxes, property taxes, or other general funds, mostly for city and county roads and streets, amounted to about \$38 billion, or less than a penny per passenger mile.³²



Transit fares are competitive with auto driving, but only because taxpayer subsidies to transit are huge. On average, subsidies to Twin Cities transit are 88 times more than subsidies to driving. Source: See text.

Transit fares are competitive with the cost of driving. But subsidies to transit are far greater per passenger mile. In 2011, the average fare paid by Twin Cities transit riders was 25 cents per passenger mile. But transit operations cost 79 cents per passenger mile. Maintenance and capital costs added another 33 cents a passenger mile, for total subsidies of 88 cents per passenger mile, or more than 88 times the subsidies to highways, roads, and streets.³³ Twin Cities residents travel nearly 40 billion passenger miles per year by automobile; shifting that travel to transit would require subsidies of \$35 billion per year.³⁴

Fallacy #8: Improving transit is the best way to provide low-income people with access to jobs.

The Thrive plan notes that many low-income households lack automobiles and strongly implies that improving transit is a good way of helping those households. It specifically states that "households who do not own private automobiles [are] also known as 'transit dependen[t]'" (p. 22). Census data reveal that less than 2.8 percent of Twin Cities workers live in households that lack automobiles. Moreover, 26 percent of those workers nevertheless drive alone to work, and 11 percent carpool. Since only 36 percent take transit to work, that means they actually rely more on automobiles than transit.³⁵

If the goal is to help poor people out of poverty, giving them access to a car is far more likely to succeed than improving public transit. "Car ownership is a significant factor in improving the employment status of welfare recipients," say UCLA planners Paul Ong and Ellen Blumenberg.³⁶ One Portland study found that people without a high-school diploma were 80 percent more likely to have a job and earned \$1,100 more per month if they had a car. In fact, the study found that owning a car was more helpful to getting a job than getting a high-school-equivalent degree.³⁷ Another study by University of California researchers found that closing the black-white auto ownership gap would close nearly half the black-white employment gap.³⁸

Auto ownership is so important to helping people out of poverty that welfare agencies in more than 50 urban areas in 25 states started "ways-to-work" programs that help low-income people buy their first cars.³⁹ These programs offer people low-interest loans of up to \$4,000 to buy a used car or smaller loans to help people repair a non-working car they already own.

Fallacy #9: Subsidizing transit and multifamily housing will make the region more competitive.

A major selling point for the Thrive plan is that it will help the Twin Cities region be more competitive with other urban areas. In fact, the reverse appears to be true: those urban areas that spend the least effort meddling with land uses and subsidizing public transit are the ones that are growing the fastest.⁴⁰

On a percentage basis, the fastest-growing urban area in the Midwest, for example, is Indianapolis,

which is growing twice as fast as the Twin Cities. The second-fastest growing area is Columbus (Figure 4). Neither Indianapolis nor Columbus have municipal urban service areas or spend heavily on expensive transit programs. Numerically, the fastest-growing urban area in the country is Houston, which not coincidentally also has the least land-use regulation of any urban area in the United States.

Overall, transit spending and land-use regulation are both strongly correlated with slower growth. Transit capital spending during the 1990s has a strong negative correlation with population growth in the 2000s. Transit operational spending in the 1990s and 2000s has strong negative correlations with population growth in the same or succeeding decades. These strong correlations hold whether measured by the nation's 50 largest urbanized areas or the nation's 160 largest urbanized areas.⁴¹



The Indianapolis urbanized area has been growing more than twice as fast, and Columbus nearly twice as fast, as the Twin Cities urbanized area. Source: Census Bureau, 1990, 2000, and 2010 censuses.

Similarly, growth is also strongly correlated with land-use regulation. The most heavily regulated states and regions, such as California and Hawaii, are growing slowest; the least heavily regulated, such as Texas and North Carolina, are growing fastest; and areas of moderate regulation, such as Minnesota, have moderate growth rates.

Fallacy #10: Dense development reduces driving.

The most important fallacy underlying the Thrive plan is the assumption that denser development, especially along transit corridors, can significantly reduce driving and thus (if you believe Fallacy #6) make the region more sustainable. Planners often point to studies showing that households in high-density areas drive less than households in low-density areas. However, these studies almost invariably fail to account for self-selection, that is, that people who want to drive less tend to choose to live in denser neighborhoods where they can be close to transit, shops, and other services. After correcting for self-selection, University of California (Irvine) economist David Brownstone concluded that the effects of density and urban form on driving are "too small to be useful" in saving energy or reducing pollution.⁴²

Census data reveal this small but measureable relationship between density and driving. In 2010, the density of the 413 urbanized areas greater than 50,000 people ranged from 811 to 6,999 people

per square mile. The share of commuters driving to work in the densest area was only 9 percent less than the least-dense area (Figure 5). While some urbanized areas do have significantly lower rates of auto commuting, the graph reveals that this is independent of density. In fact, the two most important factors are having a large number of jobs concentrated in one place, such as Manhattan, or having a lot of young people in the work force. Most of the urbanized areas with low rates of auto commuting are college towns, such as Ithaca, Davis, Boulder, and State College, Pennsylvania, or urban areas with large, older downtowns, such as New York, Boston, San Francisco, and Washington, D.C.

Like the Thrive plan, the Bay Area plan counted on increased densities as a way to reduce driving. Yet the plan itself projected that densification, transit improvements, and transit-oriented developments in transit corridors would reduce per capita driving by less than 6 percent.⁴³ Even that is almost certainly optimistic. Since 1980, the population density of the San Francisco–Oakland and San Jose urbanized areas have each grown by more than 55 percent, and the region has built more than 200 miles of



The density of an urban area has a measureable but small effect on the share of people who commute to work by car. Source: 2010 census.

new rail transit lines and scores of transit-oriented developments. Yet per capita transit ridership declined by 36 percent and per capita driving grew by nearly 5 percent.⁴⁴

Urban planners and planning advocates have a decades-long obsession with increasing urban densities. The reasons claimed for needing such densities change: Early reasons involved preserving farmland (when the United States has 1.5 acres of agricultural land that lie more-or-less fallow for every acre actually used to grow crops⁴⁵); preserving open space (when the Census Bureau says that just 3.0 percent of the United States, and only 2.1 percent of Minnesota, have been urbanized⁴⁶); and because low-density suburbs "lack a sense of community" (actual studies have found that suburbanites are more likely to be involved in their communities than city residents⁴⁷).

More recently, density advocates have argued that suburbs cause obesity (in fact, to the slight extent that suburbanites weigh more than city residents, it is due to self-selection: suburbs don't cause obesity, but obese people are more likely to choose to live in suburbs⁴⁸) or that it is expensive (in fact, the costs of sprawl are far lower than the costs of trying to prevent sprawl⁴⁹). The truth is that as soon as one claim for the advantage of density is debunked, density advocates come up with another.

Whatever the real reasons—and it is likely that many planners themselves aren't sure why they support urban densification—they are almost certainly based on fallacies such as the ones described here. Instead of writing a plan based on such fallacies, the Metropolitan Council should scrap the Thrive plan and instead investigate what policies actually contribute to urban growth and a healthy environment. Such policies are likely to involve less planning, less land-use regulation, and less subsidy to transit, and more efforts to improve urban mobility and reduce the barriers to residential and commercial development.

References

1 Economic Research Service, United States Department of Agriculture, *Major Land Uses*, "Summary Table 1—Major uses of land, by region and State, United States, 2007," available at http://www.ers.usda.gov/data-products/majorland-uses.aspx.

2 "Region 2040 Recommended Alternative Technical Appendix," Metro, Portland, Oregon, September 15, 1994, Table 11.

3 For the purposes of this paper, my calculations of value-toincome ratios rely on median family incomes, based on the hypothesis that families are more likely to buy homes than non-family households. Some other researchers use median household incomes, which tend to be a bit lower than median family incomes, resulting in higher value-to-income ratios. This isn't necessarily wrong but it explains why my numbers might differ from others'.

4 1970 Census of Housing, Volume 1, Housing Characteristics for States, Cities, and Counties, Part 1, United States Summary, table 17, "Financial Characteristics for Areas and Places"; 1970 Census of the Population, Volume 1, Characteristics of the Population, Part 1, United States Summary, Section 2, table 366, "Median Income in 1969 of Families by Type of Family and Race of Head for Standard Metropolitan Statistical Areas of 250,000 or More."

5 U.S. Census Bureau, American Community Survey 2006, Tables B19113 (median family income) and B25077 (median home value) for states and urbanized areas.

6 U.S. Census Bureau, *American Community Survey 2012*, Tables B19113 (median family income) and B25077 (median home value) for urbanized areas.

7 "2013 Coldwell-Banker Home Listing Report," Coldwell-Banker, 2013, available at hlr.coldwellbanker.com.

8 "Urban and Rural in 2010 by State and County," Bureau of the Census, 2012, www2.census.gov/geo/ua/ PctUrbanRural_County.xls.

9 Natural Resources Conservation Service, U.S. Department of Agriculture, *Summary Report: 2007 National Resources Inventory* (2009), p. 24.

10 William L. White, Robert Bole, and Brett Sheehan, "Affordable Housing Cost Study: An Analysis of Housing Development Costs in Portland, Oregon," Housing Development Center, Portland, 1997, p. 1, http://www.hcd. ca.gov/2012_affordable_housing/portland_ah_study.pdf.

11 Compare Mark Hogan, ""Why can't developers build housing in San Francisco for the people who need it most instead of for the rich?" *Markosaurus* blog, October 22, 2013, at http://markasaurus.com/2013/10/22/whycan%E2%80%99t-developers-build-housing-in-sanfrancisco-for-the-people-who-need-it-most-instead-of-forthe-rich/ (calculating that an 800-square-foot apartment in the Bay Area costs \$470,000 to build) with Coldwell Banker, "Home Listing Report," 2013, at http://hlr.coldwellbanker. com/FullData.html (finding that a typical 2,200-square foot single-family home in Dallas, Houston, or San Antonio costs less than \$200,000).

12 "Affirmatively Furthering Fair Housing: Department of Housing and Urban Development Proposed Rule," *Federal Register*, July 19, 2013, pp. 43710–43743.

13 Will James and Josh Barnabel, "Garden City Loses Housing-Law Case," *Wall Street Journal*, December 6, 2013, http://online.wsj.com/news/articles/SB100014240527023040 96104579242710500776696.

14 Metropolitan Transportation Commission, *Draft Plan Bay Area* (2013), p. 26. Draft Plan Bay Area focuses 80 percent of new housing in "Priority Development Areas" (PDAs). According to analysis by John Burns Real Estate Consulting: "Since the PDAs are governed by the PDA types in terms of allowable densities, this effectively means that about 80% of future residential units in the region will be at a minimum of 20 units per acre and at an average of something like 60 to 80 units to the acre." John Burns Real Estate Consulting, "A Review of the San Francisco Bay Area's Draft Plan Bay Area/Sustainable Communities Strategy: Market Dynamics and Housing Preferences," at pg. 5, available at http://quietandsafesanrafael.org/wp-content/ uploads/2013/05/PBA-Review-by-John-Burns.pdf.

15 U.S. Department of Energy, 2011 Buildings Energy Data Book (2012), p. 2–5, http://buildingsdatabook.eren.doe.gov/ docs/DataBooks/2011_BEDB.pdf.

16 Metropolitan Transportation Commission, Draft Plan Bay Area, p. 8.

17 Calculated by comparing vehicle miles in the Minneapolis-St. Paul metropolitan area from U.S. Department of Transportation, *Highway Statistics 2011* (2013), Table HM–71 with passenger miles from U.S. Department of Transportation, *National Transit Database* 2011 (2012), "Table 19: Transit Operating Statistics: Service Supplied and Consumed" spreadsheet. To convert vehicle miles to passenger miles, they are multiplied by 1.67, which is the average automobile occupancy rate reported by N. Santos, et al., *Summary of Travel Trends: 2009 National Household Travel Survey* (U.S. Department of Transportation 2011), p. 39.

18 Rémy Prud'homme and Chang-Woon Lee, "Size, Sprawl, Speed and the Efficiency of Cities," *Urban Studies*, October 1999, 36(11): 1849–1858.

19 Eurostat, Panorama of Transport: 2009 Edition (2009), p. 100.

20 Genevieve Giuliano, Hsi-Hwa Hu, and Kyoung Lee, "The Role of Public Transit in the Mobility of Low Income Households," Metrans Transportation Center, University of Southern California, 2001, p. ii.

21 Stacy C. Davis, Susan W. Diegel, and Robert G. Boundy,

Transportation Energy Data Book, Edition 32 (Department of Energy 2013), Tables 2–13 and 2–14, available at http://cta. ornl.gov/data/chapter2.shtml.

22 Ibid, Table 2–13.

23 Calculated from the U.S. Department of Transportation, 2012 National Transit Database (2013), "Table 17: Energy Consumption" and "Table 19: Transit Operating Statistics: Service Supplied and Consumed" spreadsheets, at http:// www.ntdprogram.gov/ntdprogram/pubs/dt/2012/excel/ DataTables.htm.

24 Calculated based on federal corporate average fuel economy standards and an assumption that America's auto fleet will continue to turn over at its historic rate of about 5.6 percent per year. Randall O'Toole, "Obama Undercuts Case for HSR and Rail Transit," August 4, 2011, at http:// ti.org/antiplanner/?p=5487.

25 Steven Polzin, "Energy Crisis Solved!" Urban Transportation Monitor, July 11, 2008, pp. 8–9.

26 United States Department of Transportation and Metropolitan Council, *Central Corridor Light Rail Transit Project Final Environmental Impact Statement* (June 2009): pp. 4.10-1 to 4.10-2, available at http://www.metrocouncil.org/ Transportation/Projects/Current-Projects/Central-Corridor/ Publications-And-Resources/Environmental/CC-FEIS/ Published-FEIS/CC-FEIS-Ch4-pdf.aspx.

27 United States Department of Transportation and Metropolitan Council, *Southwest Transitway Draft Environmental Impact Statement* (October 2012): pp. 4-139 to 4-145, available at http://www.metrocouncil.org/ Transportation/Projects/Current-Projects/Southwest-LRT/ Publications-And-Resources/Environmental-Documents/ DEIS/Published-DEIS/SW-DEIS-ch4-Environmental_ Effects.aspx.

28 Ibid. Note the DEIS likely overestimates the energy use of passenger vehicles. Based on the energy use and passenger miles listed in Tables 4.11-3 and 4.11-4, the report appears to assume passenger vehicles will use about 3,700 BTUs per passenger mile in 2030 compared to 2,600 BTUs for light rail.

29 Bureau of Economic Analysis, National Income and Product Account Tables: Table 2.5.5. Personal Consumption Expenditures by Function (2012), at http://www.bea.gov/ iTable/iTable.cfm?reqid=9&step=1&acrdn=2#reqid=9&step =3&isuri=1&903=74

30 U.S. Department of Transportation, *Highway Statistics* 2011 (2012), Table VM-1.

31 N. Santos, et al., Summary of Travel Trends: 2009 National Household Travel Survey (U.S. Department of Transportation 2011), p. 39.

32 Calculated by subtracting "amounts for non-highway purposes" and "amounts for mass transportation purposes" from "subtotal other taxes and fees" in U.S. Department of Transportation, *Highway Statistics 2011*, Table HF-10.

33 Calculated from the U.S. Department of Transportation, 2012 National Transit Database, "capital use," "fare revenue," "operating expenses," and "service" spreadsheets. Numbers may not exactly add due to rounding. Capital costs of the Hiawatha and Northstar rail lines amortized over 30 years at 4 percent; capital costs for buses averaged over the past 19 years.

34 U.S. Department of Transportation, 2011 Highway Statistics, Table HM-71.

35 U.S. Census Bureau, 2012 American Community Survey, Table B08141, Minneapolis--St. Paul, MN--WI Urbanized Area.

36 Paul Ong and Evelyn Blumenberg, "Job Access, Commute, and Travel Burden among Welfare Recipients," *Urban Studies* 31(1):77–93.

37 Kerri Sullivan, *Transportation and Work: Exploring Car Usage and Employment Outcomes* (June 2003), available at http://web.pdx.edu/~jdill/LSAL_Sullivan.pdf.

38 Steven Raphael and Michael Stoll, "Can Boosting Minority Car-Ownership Rates Narrow Inter-Racial Employment Gaps?" (Berkeley Program on Housing and Urban Policy June 2000), p. 2, available at http://www.uctc. net/papers/685.pdf.

39 Alliance for Children and Families, "Ways to Work," at http://www.alliance1.org/alliance/waystowork.

40 The Census Bureau reports data for *places*, which includes incorporated cities, and *metropolitan areas*, which includes all counties that are partly urbanized. Since much urban development is outside of incorporated cities while large parts of partly urbanized counties remain rural, neither is appropriate for measuring urban economies. For this, the Census Bureau uses *urbanized areas*, which are agglomerations of 50,000 people or more including one or more central cities (such as Minneapolis and St. Paul), incorporated suburbs (such as Bloomington), and contiguous development in unincorporated areas including residential developments denser than about 1,000 people per square mile (about one or more homes every two acres). Most references to *urban areas* in this report are based on census data for urbanized areas.

41 Calculated from U.S. Department of Transportation, *National Transit Database* (2013), historical data files; and 1990, 2000, and 2010 census populations by urbanized areas. Correlation coefficients for the top 50 urbanized areas are -.23 for transit capital spending in the 1990s vs. population growth in the 2000s; -.31 for transit operating costs in the 1990s vs. population growth in the 2000s; -.22 for transit operating costs in the 1990s vs. population growth in the 1990s; and -.26 for transit operating costs in the 2000s.

42 David Brownstone, "Key Relationships between the Built Environment and VMT," (Transportation Research Board 2008), p. 7, available at http://onlinepubs.trb.org/ Onlinepubs/sr/sr298brownstone.pdf. 43 Metropolitan Transportation Commission, Plan Bay Area Draft Environmental Impact Report (2013), Table 3.1–12.

44 U.S. Department of Transportation, *Highway Statistics* 1989 (1990), Table HM-72; *Highway Statistics* 2010 (2011), Table HM-72; U.S. Department of Transportation, 1982 *National Transit Database* (1983), Table 417282; U.S. Department of Transportation, 2010 National Transit Database, "Table 19: Transit Operating Statistics: Service Supplied and Consumed" spreadsheet.

45 Natural Resources Conservation Service, U.S. Department of Agriculture, *Summary Report: 2007 National Resources Inventory* (2009), p. 44.

46 U.S. Census Bureau, "Urban and Rural in 2010 by State and County," (2012), available at www2.census.gov/geo/ua/ PctUrbanRural_County.xls.

47 Jan Brueckner and Ann Largey, *Social Interaction and Urban Sprawl* (Center for Economic Studies 2006), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_ id=946914.

48 Jean Eid, Henry G. Overman, Diego Puga, and Matthew A. Turner, *Fat City: Questioning the Relationship Between Urban Sprawl and Obesity* (University of Toronto, 2006), p. 1; Andrew J. Plantinga and Stephanie Bernell, "The Association Between Urban Sprawl and Obesity: Is It a Two-Way Street?," *Journal of Regional Science*, Vol. 47, No.5 (2007) available at http://www.researchgate.net/ publication/4773712_THE_ASSOCIATION_BETWEEN_ URBAN_SPRAWL_AND_OBESITY_IS_IT_A_TWO-WAY_STREET/file/e0b495209a33174541.pdf.

49 Robert Burchell, et al., *The Costs of Sprawl* 2000 (2002), p. 13 (finding that homes in low-density areas cost \$11,000 more to service than homes in high-density areas, which is an insignificant sum compared to the hundreds of thousands of dollars added to home prices by urban containment plans).

About the Author

Randal O'Toole is a Cato Institute Senior Fellow working on urban growth, public land, and transportation issues. O'Toole's research on national forest management, culminating in his 1988 book, *Reforming the Forest Service*, has had a major influence on Forest Service policy and on-the-ground management. His analysis of urban land-use and transportation issues, brought together in his 2001 book, *The Vanishing Automobile and Other Urban Myths*, has influenced decisions in cities across the country. In his book *The Best-Laid Plans*, O'Toole calls for repealing federal, state, and local planning laws and proposes reforms that can help solve social and environmental problems without heavyhanded government regulation. O'Toole's latest book is *American Nightmare: How Government Undermines The Dream of Homeownership*. An Oregon native, O'Toole was educated in forestry at Oregon State University and in economics at the University of Oregon.



NON-PROFIT ORG U.S. POSTAGE **PAID** TWIN CITIES, MN PERMIT NO. 4546

1024 Plymouth Building ★ 12 South 6th Street Minneapolis, MN 55402

www.AmericanExperiment.org

To obtain copies of any of our publications

please contact American Experiment at (612) 338-3605 or Info@AmericanExperiment.org. Publications also can be accessed on our website at www.AmericanExperiment.org.



Center of the American Experiment is a nonpartisan, tax-exempt, public policy and educational institution that brings conservative and free market ideas to bear on the most difficult issues facing Minnesota and the nation. 612-338-3605 612-338-3621 (fax) AmericanExperiment.org Info@AmericanExperiment.org