

# Portland's Green Dividend

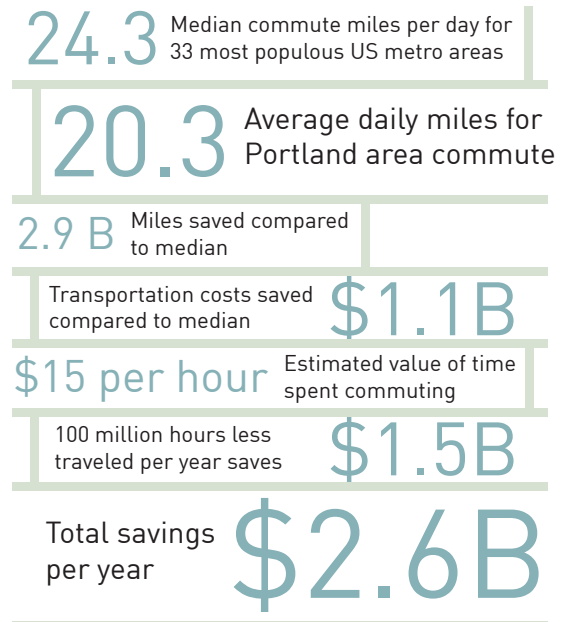
A White Paper from CEOs for Cities by Joe Cortright  
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Portland, Oregon has acquired a reputation as the nation's greenest city. For many, this green streak is viewed as a sort of environmental hair-shirt. Portlanders deprive themselves of prosperity in the name of saving the environment. Skeptics view biking, transit, density and urban growth boundaries as a kind of virtuous self-denial, well meaning, but silly and uneconomic. Critics see the seeds of economic ruin. They claim planning, policies and regulations that restrict use or access to resources impede growth and lower household income.

Both the skeptics and the critics are wrong. Being green means Portlanders save a bundle on cars and gas, and local residents have more money to spend on other things they value, which in turn stimulates the local economy.

For example, consider transportation, just one of the areas where important policy choices have contributed to creating a distinctive Portland region. Compared to other large metropolitan areas in the U.S., Portland area residents travel about 20 percent fewer miles every day. According to the U.S. Department of Transportation the average resident of the metropolitan area traveled 20.3 miles per day in 2005. The median for the 33 most populous metro areas in the country is 24.3 miles per day.

And while vehicle miles per person have been increasing over the past decade, they have been essentially flat to declining in Portland. The metropolitan area's vehicle miles traveled per person per day peaked in 1996.<sup>1</sup> [Vehicle miles traveled is a very aggregated measure of travel, expressed as total miles divided by population. Consequently, it reflects the combined effects of shorter trips and the use of alternative modes of transportation.]



## Four miles per day may not seem like much, but do the math

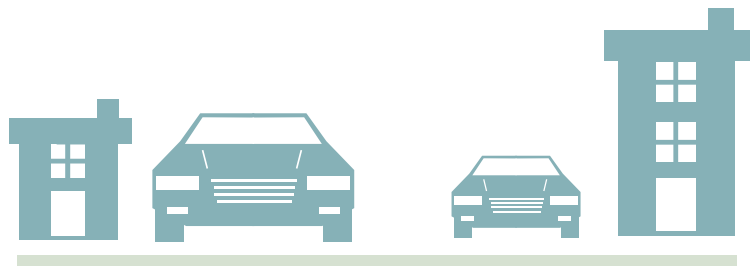
Four miles per day may not seem like much, but do the math. The Portland metro area has roughly 2 million residents. If Portlanders traveled as much as the typical U.S. metro resident, that would produce 8 million more vehicle miles per day or about 2.9 billion more miles per year. A conservative estimate of the cost of

1 David Horowitz, VMT UPDATE: 2005 Daily Vehicle Miles of Travel (DVMT) Data, Planning Dept., Metro Regional Government, December 6, 2006

driving is about 40 cents per mile. (At \$3.00 a gallon, 15 cents of this is just the cost of fuel, figured at a fleet average of 20 miles per gallon, which is a generous number for city driving.) All told, the out-of-pocket savings work out to \$1.1 billion dollars per year. This works out to about 1.5 percent of all personal income earned in the region in 2005.

This is a good minimum estimate of the aggregate economic benefits—the green dividend—that Portland area residents enjoy as a result of land use planning and related environmental policies. But the benefits don't stop there. Since Portlanders don't spend that money on transportation, they have more money to spend on other things. Because so much of what is spent on transportation immediately leaves the state—Oregon makes neither cars nor gasoline—money not spent on transportation gets spent on sectors of the economy that have a much larger local multiplier effect. (Think locally-brewed beer.) According to IRS data, about 73 percent of the retail price of gas (back when it was under \$2 a gallon, by the way) and 86 percent of the retail price of cars is the “cost of goods sold,” which immediately leaves the local economy. The \$1.1 billion Portlanders don't spend on car travel translates into \$800 million that is not leaving the local region. Because this money gets re-spent in other sectors of the economy, it stimulates local businesses rather than rewarding Exxon or Toyota.

## Households that spend more on transportation spend less on housing, and vice versa



So where does the money saved on traveling fewer miles get spent? We don't know exactly, but we have some clues. National data show that there is an inverse relationship between household spending on transportation and housing: households that spend more on transportation spend less on housing, and vice versa. Shorter distances traveled means Portland residents have more money to spend on their homes. We also know that Portlanders spend more on some things — outdoor recreation and alcoholic beverages, for example. And, not incidentally, Portland has more restaurants per capita than any other large metropolitan area, save Seattle and San Francisco.

Not traveling has another important economic benefit — saving time. And time, as the saying goes, is money. The Oregon Department of Transportation estimates that consumers value time spent traveling at about \$15 per hour.<sup>2</sup> So every hour saved is the equivalent of \$15 in additional income. Based on an average travel speed of 27 miles per hour, Portland residents traveling 2.88 billion fewer miles per year spend 100 million hours less traveling. The economic value of the time saved is \$1.5 billion per year.

A counter argument might be made that somehow Portland's residents greener behavior is the product of policies that impinge on their choices, and, that less money spent commuting and less travel time reflects their being worse off, or that shorter travel is a product of frustration with congestion. But there is no evidence for that. In fact, more than 60 percent of metro Portland's residents rated their transportation system good or excellent, compared to only 35 percent of Americans.<sup>3</sup> There's strong evidence that time spent commuting — particularly commuting alone — has a large negative effect on self-reported levels of happiness.

2 Oregon Department of Transportation, The Value of Travel-Time: Estimates of the Hourly Value of Time for Vehicles in Oregon 2003, [http://www.oregon.gov/ODOT/CS/EA/reports/Value\\_of\\_Travl-Time\\_2003.pdf](http://www.oregon.gov/ODOT/CS/EA/reports/Value_of_Travl-Time_2003.pdf)

3 Bob Moore, Kelly Middendorff, and Jill Dehlin, Transportation System Ratings, (Moore Information, Portland, OR), June 12, 2007, page 1.

One study found a 23-minute commute had the same effect on happiness as a 19 percent reduction in income (Stutzer and Frey 2004). A second concluded that public policies like congestion taxes or carpool subsidies that reduce time spent commuting alone could actually make people happier (Kahneman and Krueger 2006). So shorter commutes make people happier, as well as better off financially.

There are also, of course, huge environmental benefits. To gauge their magnitude, we use the assumption that vehicle emissions are proportional to total miles traveled. This is a reasonable assumption for greenhouse gases like carbon dioxide and a bit fuzzier for hydrocarbons, where emissions are also accentuated by starting and stopping an engine. (Avoiding a single short trip will reduce much more pollution than shaving that same distance off a longer one.)

Again, with a metropolitan population of roughly 2 million driving four miles per day less than the average American, it means the people of Portland travel 8 million miles less per day. At a fleet average of 20 miles per gallon, that means Portlanders burn 400,000 gallons less per day. At 19.4 pounds of carbon emitted per gallon burned, their lower level of emissions saves about 1.4 million tons of greenhouse gases per year.<sup>4</sup> The long term price of carbon is estimated at about \$20 to \$50 per ton,<sup>5</sup> making the value of annual carbon savings from Portland's greater efficiency worth between \$28 and \$70 million annually.

Portland residents are twice as likely to use transit... seven times more likely to commute by bicycle



A variety of other data points make it clear that Portland is greener than other places. Portland residents are twice as likely to use transit to commute to work and seven times more likely to commute by bicycle than the average metropolitan resident of the U.S., according to the latest census bureau estimates (Mayer 2007). We know that Oregonians buy fewer new cars than other Americans (even though the total number of cars in operation, per capita, is roughly the same as the national average). Oregonians buy about 46 new vehicles per 1,000 persons each year, compared to about 55 new vehicles per 1,000 persons nationally.<sup>6</sup> Oregon also consumes about 10 percent less motor fuel per capita than does the rest of the United States.<sup>7</sup> The Department of Labor's Consumer Expenditure Survey shows that Portland has the second lowest rate of spending on transportation costs of the 28 largest metro areas. Residents spend about 4 percentage points less of their total household budgets on transportation than other Americans, about 15.1 percent compared to 19.1 percent nationally (Center for Neighborhood Technology and Surface Transportation Policy Project 2005).

4 19.4 pounds of carbon per gallon of gas is the EPA estimate; see <http://www.epa.gov/otaq/climate/420f05004.htm>

5 International Panel on Climate Change, quoted in, "A Special Report on Business and Climate Change, The Economist, June 2, 2007, page 30.

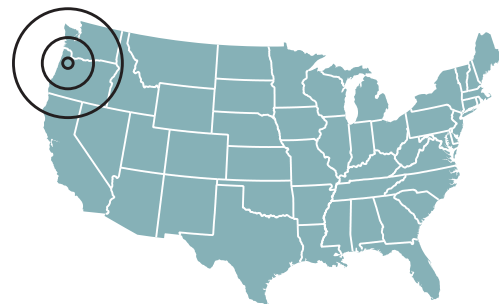
6 Computed from total new-vehicle registrations by state, reported in AutoExec magazine, May 2007, (autoexec-mag.com) divided by population data from the Bureau of Economic Analysis (bea.gov).

7 Energy Information Agency, Motor Gasoline Prices and Expenditures Ranked by State, 2004. [http://www.eia.doe.gov/emeu/states/sep\\_sum/plain\\_html/](http://www.eia.doe.gov/emeu/states/sep_sum/plain_html/). Oregon's average consumption was 53.5 million btu per capita for motor fuel, compared to a national average of 59.6 million btu per capita. Consumption calculated from data on prices and expenditures.

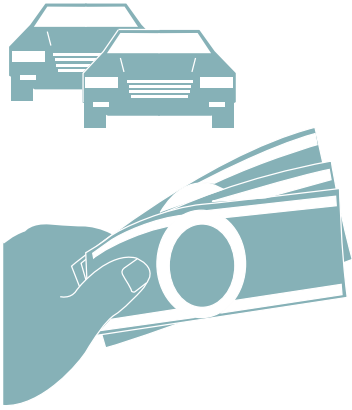
We also know that people in Portland buy greener cars than in other places. The Portland market ranks No. 1 in the nation for per capita sales of hybrid vehicles. Portlanders purchased 11.2 hybrids per 1,000 households in 2006, double the rate of purchase in Los Angeles (No. 5) and triple the rate of purchase in Denver (No. 15).<sup>8</sup>

Land use patterns and transit obviously contribute to lower vehicle miles of travel per capita. With its urban growth boundary, Portland has a particularly compact development pattern, which facilitates shorter trips to work, for shopping and other purposes. Comparative national research shows that in metro Portland 30 percent of all jobs are within three miles of the central business district. Fewer than 20 percent are more than 10 miles from the CBD. Of the nation's 50 largest metropolitan areas, only two, New York and San Francisco, have a higher proportion of regional employment within three miles of the CBD (Glaeser, Kahn et al. 2001). While in most places there is a strong negative relationship between income and transit use, Portland ranks eighth among the nation's 50 largest metropolitan areas in the percentage of the non-poor population that reports regular transit use. About 19 percent of non-poor Portlanders used transit, compared to 45 percent in New York, 10.5 percent in Atlanta, 8.7 percent in Houston and 6.7 percent in Dallas (Cortright 2006). Denser neighborhoods and greater accessibility to jobs and shopping activity are strongly correlated with less driving by individual households. A careful study of the travel patterns of people living in Portland showed people living in the most urbanized neighborhoods tend to travel only a third as many miles as those in the least urbanized neighborhoods (Lawton 1999).

Commitment to green policies and the prevalence of green lifestyles has attracted people and business to the region



And far from driving people and businesses away from the region, the commitment to green policies and the prevalence of green lifestyles has attracted people and business to the region. Over the decade of the 1990s, the number of college-educated 25 to 34 year-olds increased 50 percent in the Portland metropolitan area—five times faster than in the nation as a whole, with the fastest increase in this age group being recorded in the city's close-in neighborhoods (Cortright and Coletta 2004). There's strong evidence that this group chooses Portland, in part, because it is green. Not only do they disproportionately choose close-in neighborhoods, but unlike 25 to 34 year-olds in most metropolitan areas, those with college degrees in Portland are actually somewhat more likely to use the transit system than their less well-educated counterparts.



## The time and money saved by less driving produces more demand for other local goods and services

Portland's greenscape is the combined result of individual and collective decisions about how Portlanders want to live. Collectively, the community has planned for density, arranged land uses more compactly and provided transit alternatives to a wide range of neighborhoods. Individually, citizens have responded, and compared to other urban Americans, drive less, take shorter trips, use transit more often, and purchase more green vehicles. And far from being individual or social self-denial, these choices have produced a tangible green dividend for the region - more than a billion dollars in savings on out-of-pocket spending for transportation, as well as another \$1.5 billion savings in time. The time and money saved by less driving produces more demand for other local goods and services, and so, in fact, stimulates the local economy.

It's time to replace the cliché of green policy as sacrifice and instead recognize that for progressive regions and their residents, being green pays handsome economic dividends.

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