



## Shifting Into Reverse

Northwest gasoline consumption makes a modest decline

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### Executive Summary

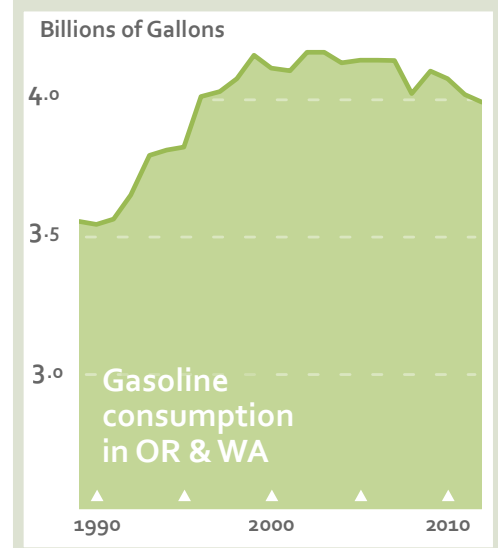
High prices are taking a bite out of northwesterners' appetite for gasoline.

Tallying up all vehicle travel on state, county, and local roads, residents of Washington and Oregon are on track to burn less gasoline in their cars and trucks this year than at any time since 1996—less even than in 2008, when gas prices spiked and the economy cratered.<sup>1</sup> (See Figure 1.) At least for the moment, the plateau in gas consumption that began in the late 1990s has turned into a gentle downward slide.

Measured per person, though, northwesterners have aggressively reduced their use of motor fuel. Last year, per capita combustion of gasoline in Oregon fell to its lowest level since 1962—back when a gallon of gasoline cost 31 cents.<sup>2</sup> Similarly, per person gas consumption in Washington fell to its lowest level since 1965. Early trends suggest that per capita consumption in the two states may be headed for a drop of as much as 2 percent in 2012.

Two concurrent trends have spurred the reductions in gasoline consumption: **people are driving less**, and **vehicles have become more efficient**. Of the two, declines in driving—particularly among northwesterners under the age of 35—have made the greater impact. Looking to the future, however, gains in vehicle efficiency, combined with high and volatile gas prices, demographic shifts, and a range of social and technological trends, all point towards continued declines in gasoline use in the Pacific Northwest.

**Figure 1. Annual gasoline consumption in Washington and Oregon has fallen from its 2002 peak.**



A fall in gasoline consumption is good news for the region in many ways. International oil markets have strapped Northwest consumers into a gut-tightening roller coaster ride of volatile price swings. The region's petroleum habit has contributed both to local pollution problems and to global climate change, while draining some **\$127 billion** out of the two states' economies over the last decade—including a record **\$14.6 billion in Washington** and **\$6.9 billion in Oregon** in 2011.<sup>3</sup> Simultaneous declines in per-capita driving and in gas tax revenue may mean that the region doesn't need, and can't afford, the expensive highway construction ambitions of the region's transportation agencies.

## Detailed Findings

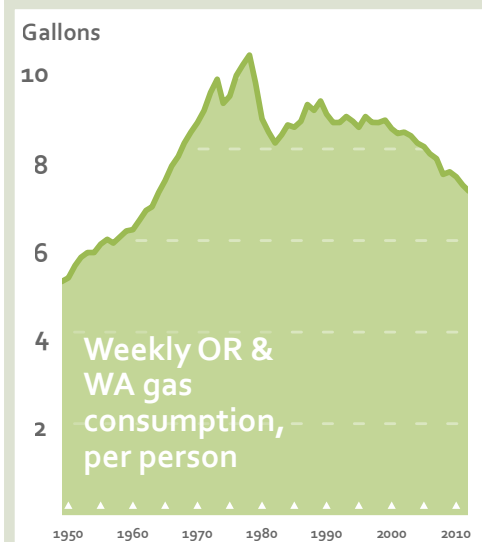
During the average week in 2011, Washington residents consumed 7.3 gallons of gasoline per person. In Oregon, weekly gas consumption totaled 7.1 gallons per person. In both states, gas consumption per person fell to its lowest level in nearly 50 years. Early data suggests that gasoline consumption, measured per person, will drop even farther in 2012. (See Figure 2.) In fact, gas consumption in Oregon may dip below one gallon per person per day in 2012—compared with a habit of more than a gallon and a half per person in 1978, the peak year for personal gas consumption.

The rapid decline in per capita consumption has begun to reduce the region's *total* consumption of gasoline. Motor fuel use in the Pacific Northwest crested in 2002, and stayed on a bumpy plateau through 2007. But after gas prices spiked in 2008, highway fuel use began a modest but perceptible downward trend. In total—and despite population increases—residents of Washington and Oregon consumed about 4 percent less total gasoline in 2011 than they did in 2002. It's a modest dip, yet still a significant reversal of what, for many years, seemed like an endless expanding appetite for motor fuel.

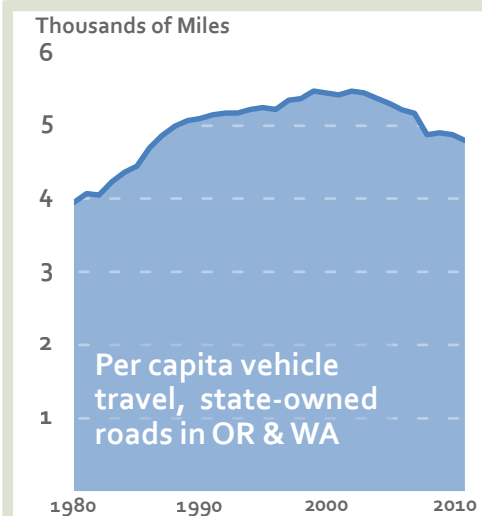
The fall in fuel consumption can be traced to two causes: reductions in per capita driving, and improvements in vehicle efficiency.

Most of the drop in motor fuel consumption resulted from reduced driving. On state-owned roads in Oregon and Washington, annual vehicle mileage per capita has fallen by 13 percent over the last decade. (See Figure 3.) The decline has been gradual enough that it has gone largely unnoticed, yet it has added up to a major change in driving habits: it's as if every driver left their car in the garage for a month and a half each year. These per-capita declines have offset

**Figure 2. Northwest gas consumption per person is at its lowest level in nearly 50 years.**



**Figure 3. Northwesterners have reduced per capita driving by 13 percent since 2002.**



population growth, leading to a virtual flat-lining of total driving on state roads for most of the last decade. (See Figure 4.)

Young Americans have decreased their driving the most. In 2009, drivers between the age of 16 and 34 drove 23 percent less than their same-aged counterparts in 2001.<sup>4</sup> Some of this trend can be traced to high unemployment rates. But even among younger Americans with jobs, per-person driving fell by 16 percent.<sup>5</sup>

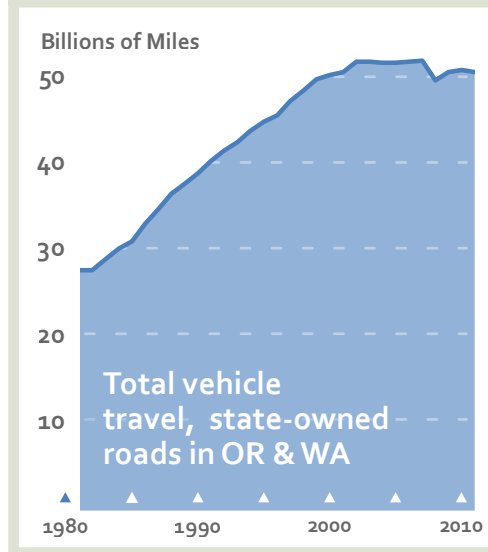
A host of social and technological trends have contributed to the drop in driving among younger Americans. For many high school students, driver's education classes have become less convenient and more expensive over the last decade, while stringent licensing laws—including restrictions on when and with whom young drivers may travel—have crimped driving's allure. At the same time, advances in Internet and mobile technologies increasingly make “virtual mobility” a low-cost substitute for the car. These same advances have boosted the convenience and utility of transit trips: even among households earning \$70,000 per year or more, young people doubled their use of transit between 2001 and 2009.<sup>6</sup>

Gains in vehicle efficiency play a surprisingly small role in recent fuel trends. Despite stricter federal fuel economy standards and renewed consumer interest in higher-efficiency vehicles, the real-world efficiency of the nation's vehicle fleet improved by only a few percentage points over the last decade, and has remained virtually unchanged since 2008. (See Figure 5.)<sup>7</sup> This suggests that gains in average vehicle efficiency have accounted for less than 13 percent of the reduction in per capita gasoline consumption since 2002.

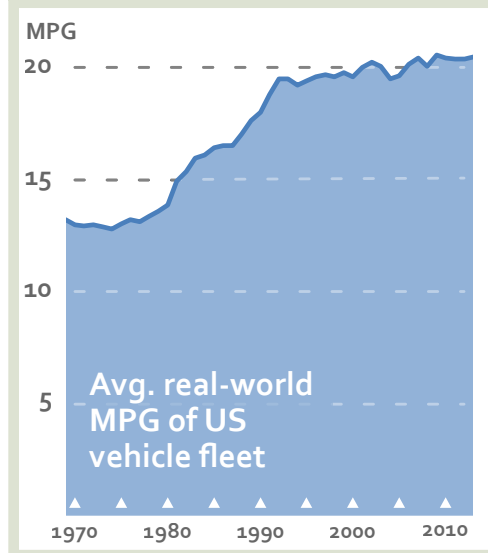
Efficiency gains have been hampered by two automotive trends: increased vehicle longevity, and a slowdown of sales of new vehicles. On average, today's cars and light trucks are nearly 11 years old, and vehicle age continues to increase: decades of improved craftsmanship have increased the lifespan of cars and trucks, even as vehicle sales slowed after the “great recession.”<sup>8</sup> It will take several more years for sales of new, more efficient vehicles to penetrate deeply enough into the vehicle fleet to have a sizable impact on gasoline consumption.

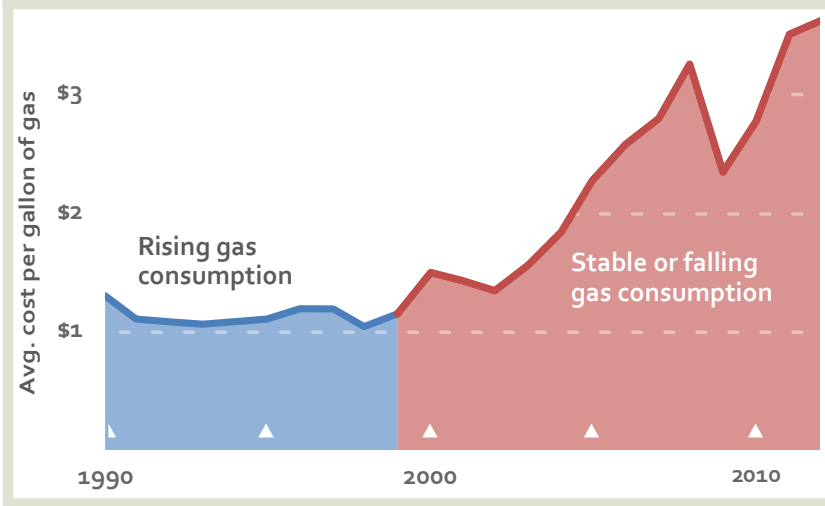
Much of the impetus for reduced driving can be traced to simple economics. Following more than a decade of price stability, the cost of a gallon of gasoline hit an all-time, inflation-adjusted low in 1999. But since then, gas prices have risen steeply and unpredictably—and the region's drivers have trimmed back on driving in response. (See Figure 6.)

**Figure 4. On the Northwest's state-owned roads, vehicle travel plateaued a decade ago.**



**Figure 5. Gains in real-world vehicle efficiency have slowed.**



**Figure 6. As gas prices climbed, northwesterners used less fuel.**

## The Future: Further Declines?

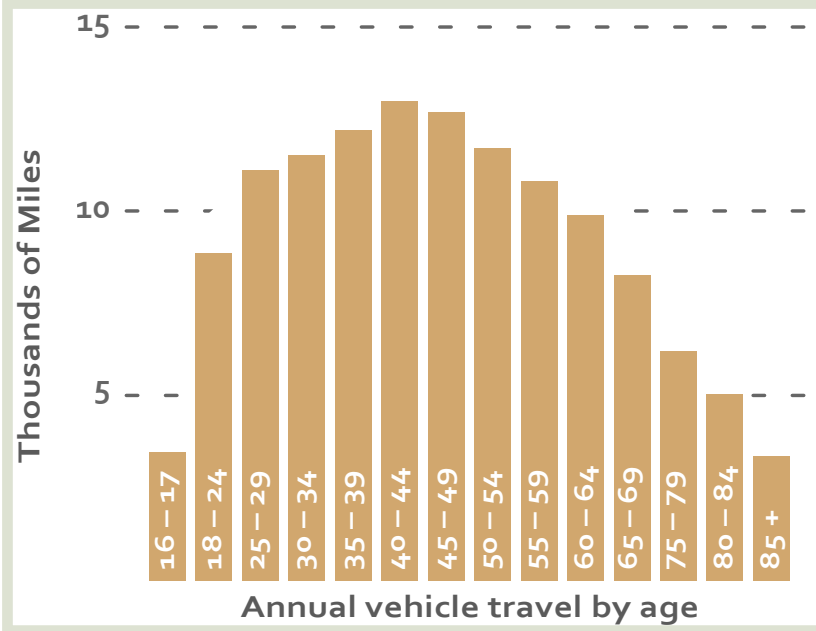
Demographic, economic, and political trends point towards continued declines in gasoline consumption in coming years.

The recent tightening of federal vehicle fuel economy will eventually yield major efficiency gains in the vehicle fleet. The most recent projection by the Washington Transportation Revenue Forecast Council, for example, predicts that the average real-world fuel economy of the passenger vehicle fleet will rise to 26.7 miles per gallon by 2027, up from 20.5 mpg today—leading to a 23 percent decline in fuel consumption per mile driven.<sup>9</sup>

Demographic trends provide good reason to believe that miles driven per capita will continue to fall. Once drivers hit the age of 45, they drive less.<sup>10</sup> (See Figure 7.) The youngest baby boomers turn 47 this year, foretelling a steady decline in driving among the particularly large boomer generation. And on the boomers' heels—and currently making their way through peak driving ages—sits the much smaller “baby bust” generation, born during a trough in birth rates in the late 1960s through early 1980s. The combination of a large, aging “boomer” population that is leaving their peak driving years and a smaller population of “busters” reaching peak driving ages portends a 6 percent decline in per capita driving through 2030, even if age-specific driving rates remain unchanged.

Declines in the share of people employed or seeking work will likely trim driving as well. The decades-long rise in vehicle miles traveled (VMT) per capita coincided with an increase in the share of the US population in the labor force, particularly as growing numbers of women obtained paid work. But as women have moved closer to parity with men in employment rates, there's less potential for growth in the labor force. In fact, the Bureau of Labor Statistics projects that as the population ages, the share of people working or seeking work will fall by 6.5 percent through 2030—a decline that can be expected to reduce per capita driving as well.<sup>11</sup>

**Figure 7. Driving peaks in middle age, then falls through the rest of life.**



Finally, the gas price spikes over the last few years may have lingering effects on fuel consumption. Transportation economists find that, when faced with short-term increases in the cost of gasoline, drivers make modest changes to reduce consumption: chaining together trips, choosing efficient vehicles when more than one is available, and even forgoing some trips. But sustained price increases lead some consumers to make more fundamental, long-term changes—such as purchasing more efficient vehicles, changing jobs, or moving closer to work or shopping destinations. On net, these long-run changes have two to three times as much impact as the short-term ones.<sup>12</sup> So unless fuel prices quickly fall from their current levels, recent fuel price increases will continue to reduce gas consumption for several years, as drivers make long-term lifestyle adjustments to reduce their exposure to high gas prices.

Given all of the trends that have the potential to reduce future motor fuel use, it is little wonder that state departments of transportation now forecast a long-term decline in total gasoline consumption in the region.<sup>13</sup> Declining gas tax revenues will exacerbate a full-blown crisis in highway finance. Oregon announced last fall that falling gas tax revenue, coupled with increased debt payments and other economic trends, will force the state's transportation department to slash its road construction budget in half by 2015.<sup>14</sup> Washington's finances are in worse shape: the agency currently projects that payments on projects that have already been completed will sap 70 percent of all state gas tax revenue by 2016—leaving precious little money left for new roads, let alone maintenance.<sup>15</sup>

The region's policy makers are now considering paying for new highway projects by increasing fuel taxes, by expanding the use of tolling, or both. But by raising the cost of driving, these steps would likely eat further into both vehicle travel and fuel

sales. Researchers from Harvard University and Resources for the Future recently found that increases in gas taxes are more likely to reduce gas consumption than comparable increases in oil prices—largely because gas taxes send a consistent price signal, while the volatility of oil prices sends mixed signals.<sup>16</sup> Similarly, Washington’s recent experiences with tolling suggest that drivers—even many from high-income households—are reluctant to pay tolls when there are nearby toll-free alternatives, and may respond to road tolling by selecting different routes or destinations, or by forgoing some trips.<sup>17</sup>

In short, declining gas consumption and flat-lining traffic volumes create a major crisis for transportation agencies in Oregon and Washington. Flat or declining traffic volumes in many parts of the region call into question the need for major road expansions; flat or declining gas tax revenue calls into question the states’ ability to pay for those expansions; and steps to raise additional revenue from drivers are likely to further erode the demand for vehicle travel. These trends all call for a comprehensive and public re-evaluation of the costs, benefits, and long-term financing plans for major highway expansions in the region.

## About the Author

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**Sightline Institute** is a not-for-profit research and communication center—a think tank—based in Seattle. Sightline’s mission is to make the Northwest a global model of sustainability—strong communities, a green economy, and a healthy environment.

## Endnotes

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