CITY OF PORTLAND BUREAU OF TRANSPORTATION

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How Portland Benefits from Bicycle Transportation

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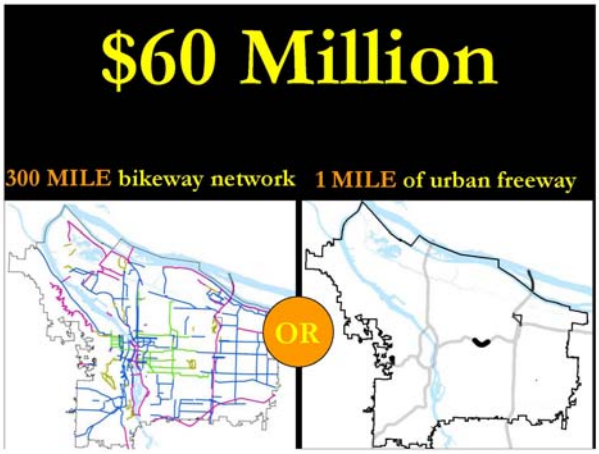
Portland, Oregon's bicycle transportation system is recognized as being among the best large city system in North America. According to 2010 census data, 6% of Portlanders use their bicycle as their primary commute vehicle. This document highlights some of the benefits the city has realized and costs associated with creating those benefits.

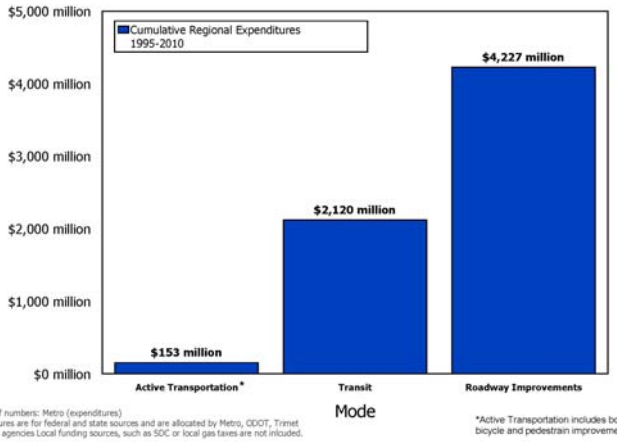
Investments in bicycle transportation provide the best return on investments in personal mobility.

1. In 2008, the Portland Bureau of Transportation (PBOT) estimated the replacement cost of its then 300-mile bikeway network at approximately $60 million. This included every off-street path, every bicycle lane, every bicycle signal and associated civil improvement made to create Portland's network of bikeways. That is roughly equivalent to the construction costs of one mile of urban freeway. This network now provides for the commuting needs of 6% of Portlanders (source: 2010 US Census).



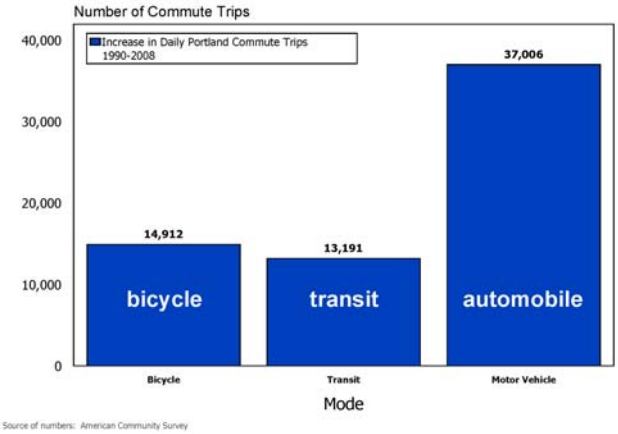
2. In the 15-year period between 1995-2010 the Portland Metropolitan Region invested into bicycle transportation 1.8% of what it invested into roadway improvements and 3.6% of what it invested into transit. The return on investment has been highest for bicycle transportation. In the period 1990-2008 the increase in daily commute use for bicycle transportation in the City of Portland exceeded that for transit and represented 40% of the increase seen in drive alone trips. In that 18-year period, of the three modes only bicycle transportation increased appreciably relative to population (1.2% in 1990 / 6.4% in 2008). Transit use showed a slight increase (11.4% / 13.4%) and drive alone trips dropped slightly (67.3% / 64.6%).

Cumulative regional expenditures 1995-2010
Active transportation, transit and roadway



Source of numbers: Metro (expenditures)
Expenditures are for federal and state sources and are allocated by Metro, ODOT, Trimet and local agencies Local funding sources, such as SDC or local gas taxes are not inlcuded.
*Active Transportation includes both bicycle and pedestrain improvements.

Increase in daily commute trips City of Portland 1990-2008
Bicycle, transit and automobiles



Note: Source of numbers: American Community Survey

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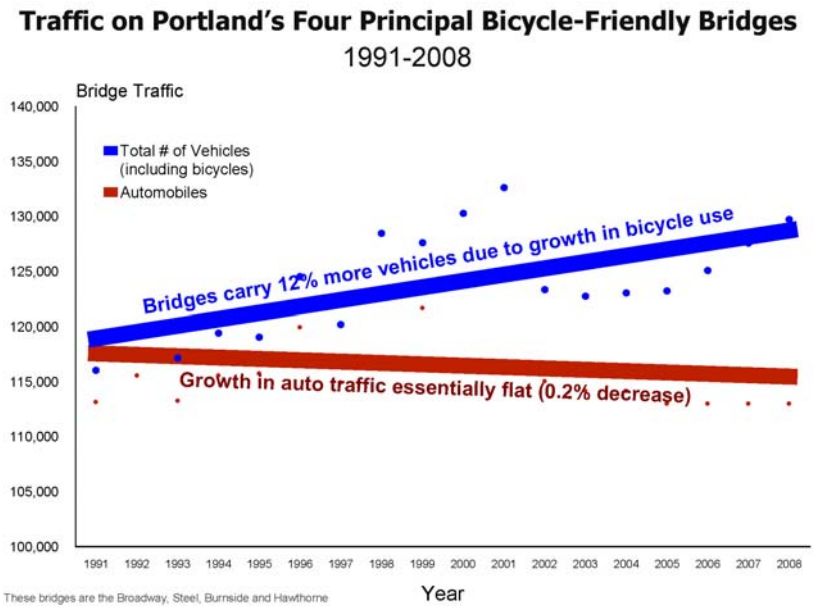
Increased bicycle transportation preserves mobility by making the most efficient use of the public right-of-way.



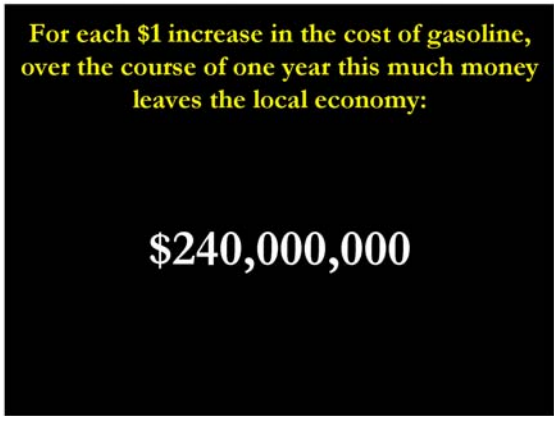
In the 18-year period from 1991 to 2008 both population and economic activity in Portland increased. This resulted in increased demand for personal mobility. Together, four of Portland's central city bridges—considered to be key transportation portals into the downtown—showed a 12% increase in the number of all vehicles. Despite this increase, the negative effects of congestion have been kept at bay because the increased demand for mobility was borne almost wholly by the bicycle. Indeed, there was essentially no growth in automotive traffic on those four central city bridges during this period. Had this increased demand for mobility been borne by automobiles, then the intersections at either ends of the bridge would likely have failed in their ability to effectively and efficiently move traffic. Common engineering solutions to this type of congestion would have been to widen the intersections, add more travel lanes to the bridge and/or add more green time to the movements onto the bridge. In reality, because there are scant funds for such improvements likely nothing would have been done and the costs would have been those of increased congestion. Because this 12% increase was handled by bicycle transportation, these four bridges work the same for automobiles today as they did in the early 1990s. It is for this reason, in part, that Portland's award winning city traffic engineer, Rob Burchfield, states that: "Bicycling infrastructure is relatively easy to implement and low cost compared to other modes. It is by far the most cost-effective way to provide for personal mobility in an urban transportation system."

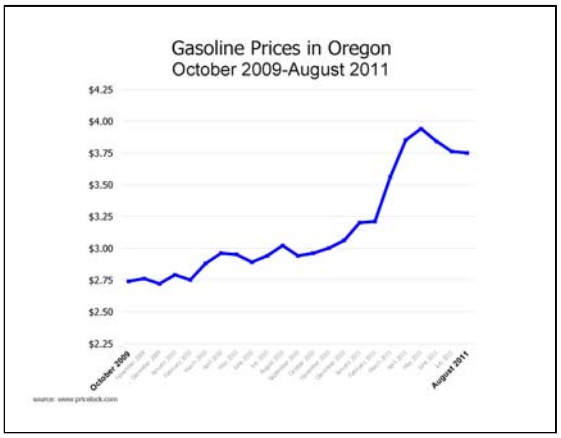
Bicycle transportation helps local economies

1. Because citizens of the Portland region spend less than the national average on our automobiles (operating, purchasing and maintaining them) we realize what economist Joe Cortright—a nonresident Senior Fellow with the Brookings Institute—refers to as a "Green Dividend." Citizens of the Portland metropolitan region annually spend $1.2 billion less than if they drove at the national average. Of that $1.2 billion, $800 million that would have otherwise left the region instead remains to circulate through the regional economy. This benefit accrues because money spent in the Portland region on automotive transportation generally leaves the region as Portland neither produces nor refines oil, nor manufacture automobiles.

Reference: "Portland's Green Dividend," authored by Joe Cortright, published by CEO's for Cities

2. Each $1 annual increase in the cost of gasoline results in approximately $240 million leaving the local economy. Motorists in Multnomah County purchase approximately 20 million gallons of gasoline each month. Increases in the cost of gas flow directly out of state to those companies that produce and refine oil. As the below chart shows, the cost of gasoline in Oregon increased from $2.74 per gallon in October 2009 to $3.75 per gallon in September 2011. Reducing fuel consumption keeps more money in the local economy.





All things being equal, a person riding a bicycle has more money in their pocket than a person driving an automobile. Portland businesses recognize and visibly support this—"voting with their feet" by requesting that the city remove on-street car parking and replace it with on-street bicycle parking. Portland's existing 67 bicycle corrals (as of 10/11) represent the removal of more than 100 car parking spaces for more than 1,000 bicycle parking spaces. Another 75 businesses have requested corrals, and requests continue to come into the city at the rate of approximately 3 per month.

Bicycling is healthy for individuals and communities

1. The health benefits of being active are well-known and well-promoted by all levels of health care and public health professionals. Numerous studies can be found to this effect. More obscure is that more than a decade ago the Federal Centers for Disease Control and Prevention (CDC) stated that "Automobile trips that can be safely replaced by walking or bicycling offer the first target for increased physical activity in communities" (Dr. Jeffrey Koplan and Dr. Willilam Dietz, former head of CDC and Director, Division of Nutrition, Physical Activity and Obesity at CDC, respectively). They further state that "Changes in the community environment to promote physical activity may offer the most practical approach to prevent obesity or reduce its co-morbidities."
2. These health benefits translate into practical and economic benefits. The City of Copenhagen, where bicycle use is among the highest in the world, reports that adults that cycle on a daily basis have a 30% lower mortality rate than comparable groups that do not. A study of 30,604 people in Copenhagen showed that people who commuted by bicycle had a 40% lower risk of dying over the course of the study period than those who did not bike to work.. The study also found that bike commuters average fewer work absences due to illness than non-bike commuters. Copenhagen estimates that if they can increase bicycling rates another 10% they will save $12 million annually in health care costs. It is for these reasons that Kaiser Permanente produces public messages as shown here.

3. According to The Health Effects Institute, between 30-45% of US citizens live in areas where there is a demonstrated causative relationship between where they live and increased childhood asthma. In these same locales there is also a strong correlation between where they live and increased risk of a host of ailments, including impaired lung function, accelerated hardening of the arteries, heart problems resulting

in death and other respiratory illnesses. Where do these people live that they experience such ill effects? Within 300-500 meters of a major roadway. In the City of Portland the areas shown to the right are within 500 meters of the city's busiest roadways. Replacing automobile trips with bicycle trips results in less of the exhaust gases and particulate matter that contributes to these conditions.

The Health Effects Institute is jointly financed by the US EPA and the automobile industry to help assure its independence. It was founded in 1980 to research and report on health effects associated with automobiles.