



Using Federal Data for Bicycle Friendly States

Since the landmark Intermodal Surface Transportation Efficiency Act (ISTEA) created the Transportation Enhancements program in 1991 bicycle and pedestrian projects have been eligible for programmatic federal transportation funding. In the more than 20 years since the creation of programmatic funding for people who bike and walk more than 22,000 projects have been built and \$7.2 billion has been invested in communities.

Each year the federal government produces data that is extremely helpful for understanding bicycling in each state. We are always looking for the best possible data that allows us to compare and rank states. Federal data is often the only data we have that readily compares between states. Each data source has its issues, but this mini-report will allow you to better understand federal data on bicycling and how we use it to judge Bicycle Friendly States.

There are three major federal data sources that we evaluate in our Bicycle Friendly States ranking:

- Federal Funding Data
- Federal Fatality Data
- Federal Commuting Data

Federal Funding Data

Each year states are given a federal transportation funding allocation according to the federal transportation bill. The current transportation bill – Moving Ahead for Progress in the 21st Century (MAP-21) – reduced programmatic funding for bicycling and walking by roughly 30%. The way that we measure federal funding on biking and walking projects is by looking at the funding obligated to projects over a five year period. An obligation occurs when the federal government and the state agree that the federal government will reimburse the state for a project and not when the money is actually spent. While these projects most often move forward, they can still be stopped and that funding can be de-obligated. We use five years of data to capture a more complete picture of how each state uses federal funding.

Federal obligation data is reported in the Federal Highway Administration (FHWA)'s Fiscal Management Information System (FMIS). Three codes can be given to projects that signify that the majority of project spending is on facilities for people who bike and walk. Under the current FMIS system there is no way to differentiate between facilities for people who bike and facilities for people who walk. Last year we explored an alternative source of information – the Statewide Transportation Improvement Program – in order to see if that type of mode-specific information might be available and determined that it is not available in a way that lends itself to repeat annual analysis at this time.

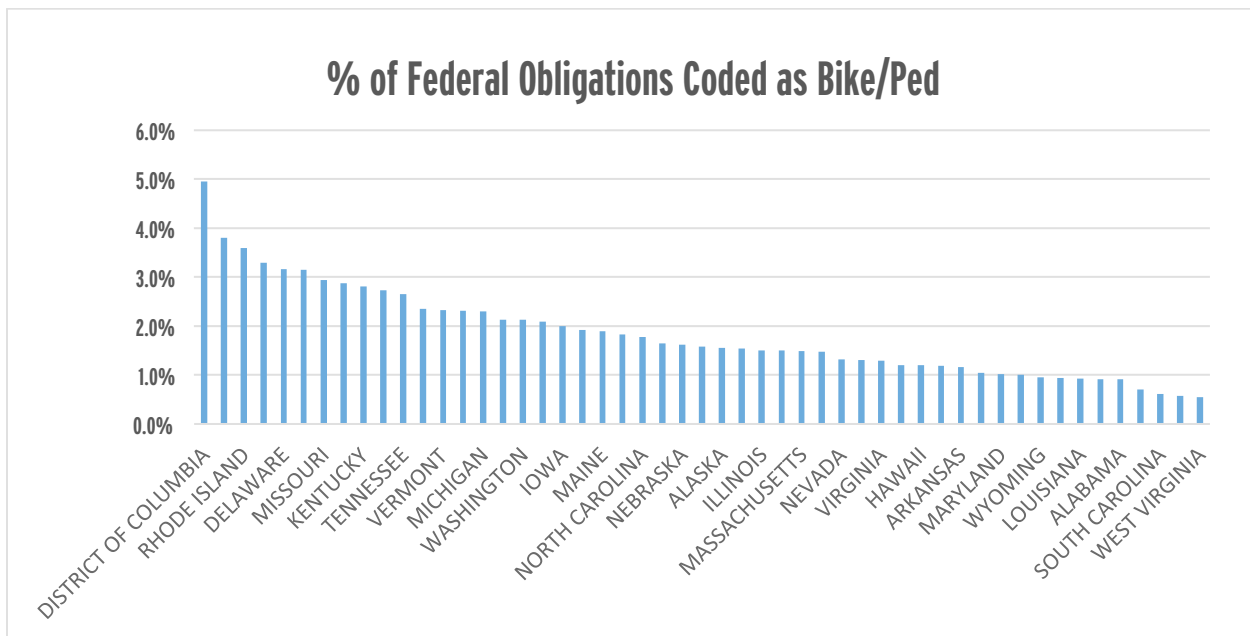
The two major problems with FMIS data are:

1. FMIS data conflates biking and walking facilities, and
2. FMIS data does not provide a reliable accounting of biking and walking facilities built as part of road projects.

The second problem is particularly difficult because of the proliferation of Complete Streets policies at the state and local level and their effect on road projects. It is likely that federal funding for biking and walking projects is under-reported due to this limitation.

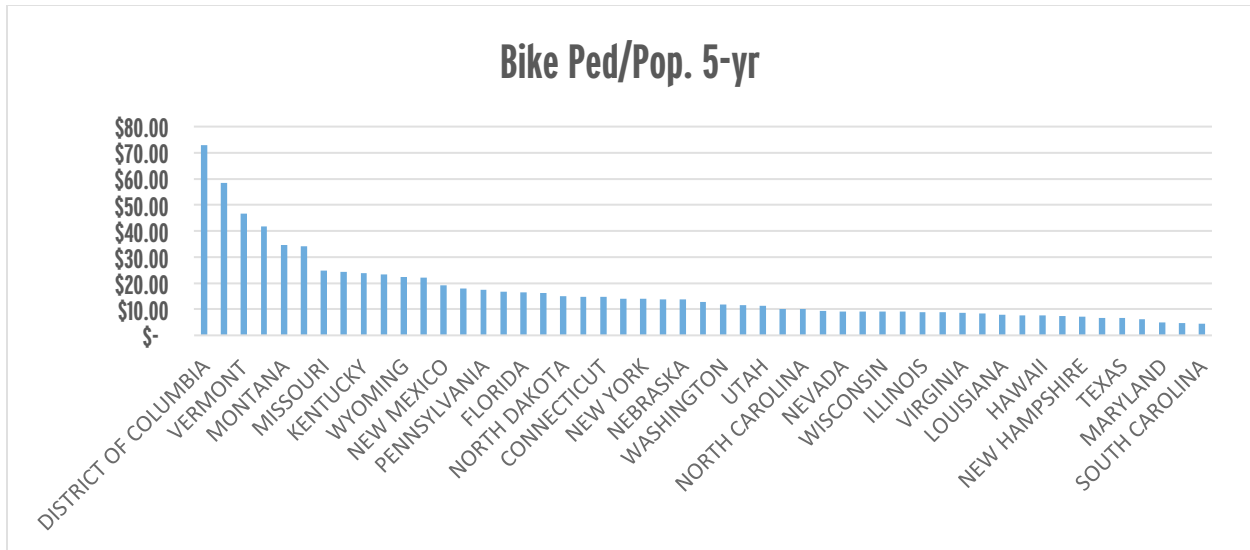
Now that you have an understanding about where federal funding data comes from and its limitations, let's look at how we use it.

The #1 thing we are looking for is that a state uses a high percentage of the federal funds it can obligate on projects for biking and walking. We use the percentage because it accounts for differences in available funding based on the policies set out in transportation bills and we believe that it captures the priority given to funding facilities for people who bike and walk with federal funds within the state.



This year we added an adjustment to our scoring formula to account for obligations per capita. We chose a per capita measure because FMIS data is based on bicycling and walking. Everybody walks and so we felt the correct way to measure obligations per capita was a population measure rather than one that looked at participation in particular activities by mode – like going to work.

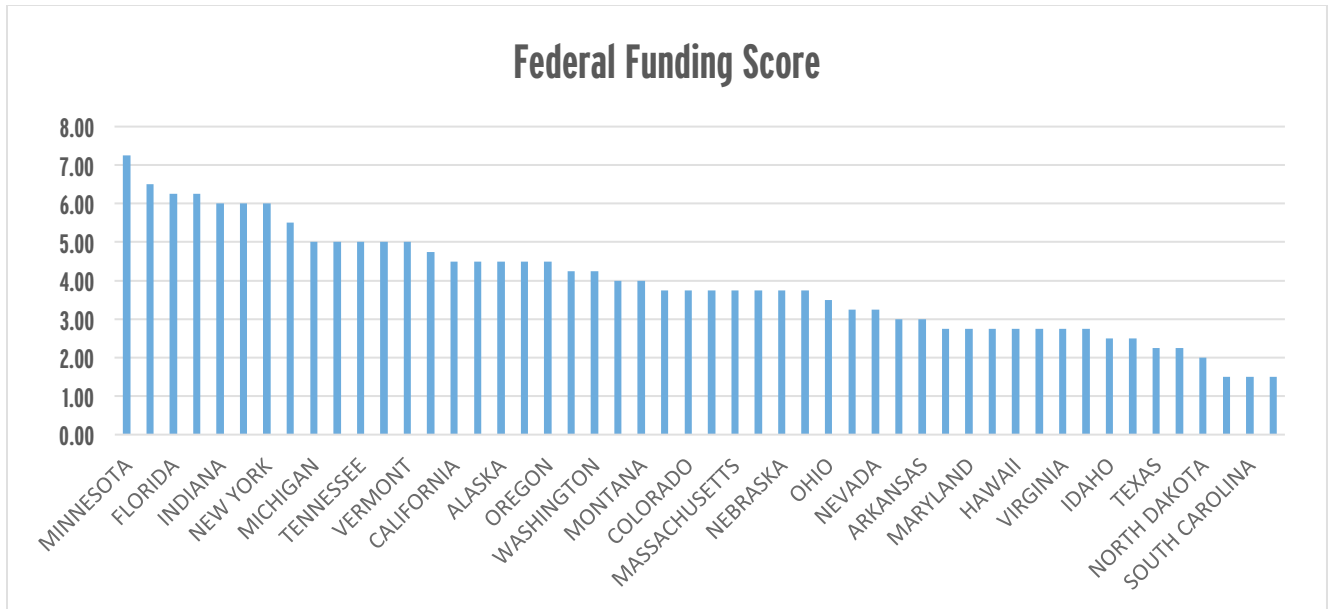
The chart below shows the amount of federal funding obligated to projects for people how bike and walk over a five year period per person in each state. So, over the past 5 years of available data (2009-2013), South Carolina has obligated slightly less than \$4.50 per person (less than \$1/year) to biking and walking projects.



Finally, we added to adjustments based on the programs used to fund projects for people who bike and walk. For more than 20 years federal transportation bills have not only provided programmatic funding for biking and walking, but have made those same projects eligible under other federal funding programs.

- We want states to use all funding programs at their disposal to improve conditions for bicyclists and so we awarded points based on the number of funding programs with bicycling and walking obligations – which ranged from a low of 2 (Hawaii and North Dakota) to a high of 6 (11 states). On average, states took advantage of 4.6 programs to fund biking and walking projects.
- We want states to use programmatic biking and walking funding so that it continues to be funded at the federal level. While we believe that the Transportation Alternatives Program (TAP) created by MAP-21 can be improved – and tell your Senator to support S. 705 the TAP Improvement Act in order to improve it – we awarded points to states already taking advantage of TAP funding. 34 states are already using TAP money for biking and walking projects. For an in-depth understanding of how states spend TAP funding check out <http://trade.railstotrails.org/stateprofile>.

By weighting the four measures described in this section we hope to provide a reasonable judgment of whether or not a state is using federal funding opportunities for projects that benefit people who bike and walk. There are still many questions about the populations served by federally funded projects and the quality of those projects, but our aggregated funding metric provides a reasonable basis for comparison and ranking.



Federal Fatality Data

Every year, since 1975, the National Highway Traffic Safety Administration (NHTSA) has published a census of police-reported traffic crashes with at least one fatality through its Fatality Analysis Reporting System (FARS). This is incredibly valuable information and since 1975 there has been a substantial reduction in bicyclist fatalities, especially among children.

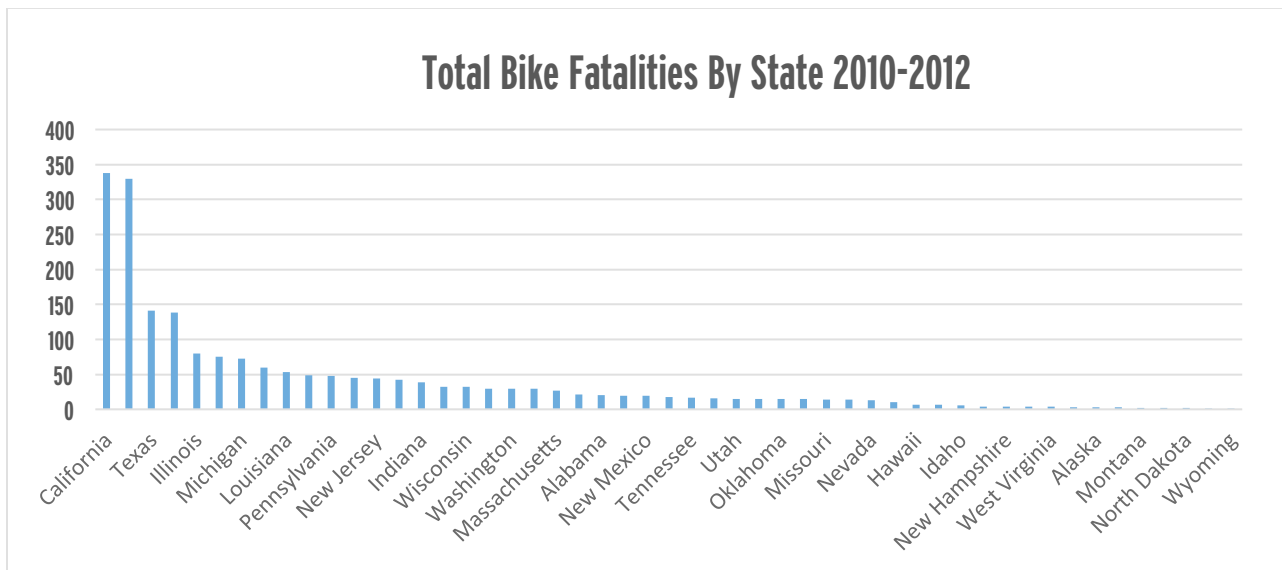
While FARS data is extremely valuable and useful, it has several problems that we are not able to account for in our scoring.

1. FARS data has limited value in understanding the causes of crashes and interventions that might most effectively address dangerous conditions in states. FARS is based upon police reports and is only as good as the information reported on police reports. Recent [research](#) by Anne Lusk at Harvard suggests some ways in which police reports might be improved to capture information relevant to bicyclist fatalities and injuries, but currently much information is missing. As an example, most police reports and therefore FARS cannot indicate that a bicyclist died due to a dooring crash.
2. FARS data only captures fatal crashes. NHTSA reports data on other traffic crashes using a [sample](#) of about 50,000 crashes to represent the 6.2 million police-reported motor vehicle crashes each year. That crash data is reported in the National Automotive Sampling System General Estimates System (NASS GES). While the NASS GES is [currently undergoing a redesign](#) to better provide information on bicyclist and pedestrian crashes at this point it is of limited value to understanding bicyclist safety.
3. FARS data only captures fatalities associated with police-reported crashes. Many bicyclist injuries occur without crashes and without police reports. While a smaller portion of fatalities are not crash-related, the lack of data related to non-crash and non-police-reported injuries and fatalities is a significant limitation for understanding the safety of bicyclists in each state. Alternative data is

available from the Centers for Disease Control and Prevention (CDC) through the Web-based Injury Statistics Query and Reporting System (WISQARS), but WISQARS does not provide non-fatal injury data at the state level through its online query system. WISQARS is based upon hospital data as collected by the CDC. There have been numerous [attempts](#) to reconcile police-reported and hospital-reported data, but we have chosen to use FARS data, which is widely [used](#) for reporting on traffic safety.

There is a final major problem with traffic safety data related to bicycling that needs to be addressed, but is not a problem with FARS. The problem is that we don't know how many people are using bicycles and how often they are exposed to danger due to traffic. This crucial piece of data – the exposure rate – means it is very hard to say whether bicyclist safety is improving or deteriorating at the state level. There are great [reports](#) showing the power of infrastructure at local or corridor levels, but when we look at the state level it becomes harder. Several states are taking steps to have a better understanding of the bicycling analog for how we measure car exposure – miles traveled. Oregon, Washington, Minnesota and Colorado all have done research projects related to developing a miles traveled estimate that would give a better exposure rate approximation in the past several years. We hope that our recent advocacy – and the advocacy of the over 10,000 people who submitted comments to USDOT – to get states to set non-motorized performance measures will lead to improvements in how traffic safety for bicyclists and pedestrians is measured, including by exposure to traffic.

Since we do not have exposure rate data we looked at fatality data in a variety of ways in the hopes of reasonably judging which states are safest for bicyclists.



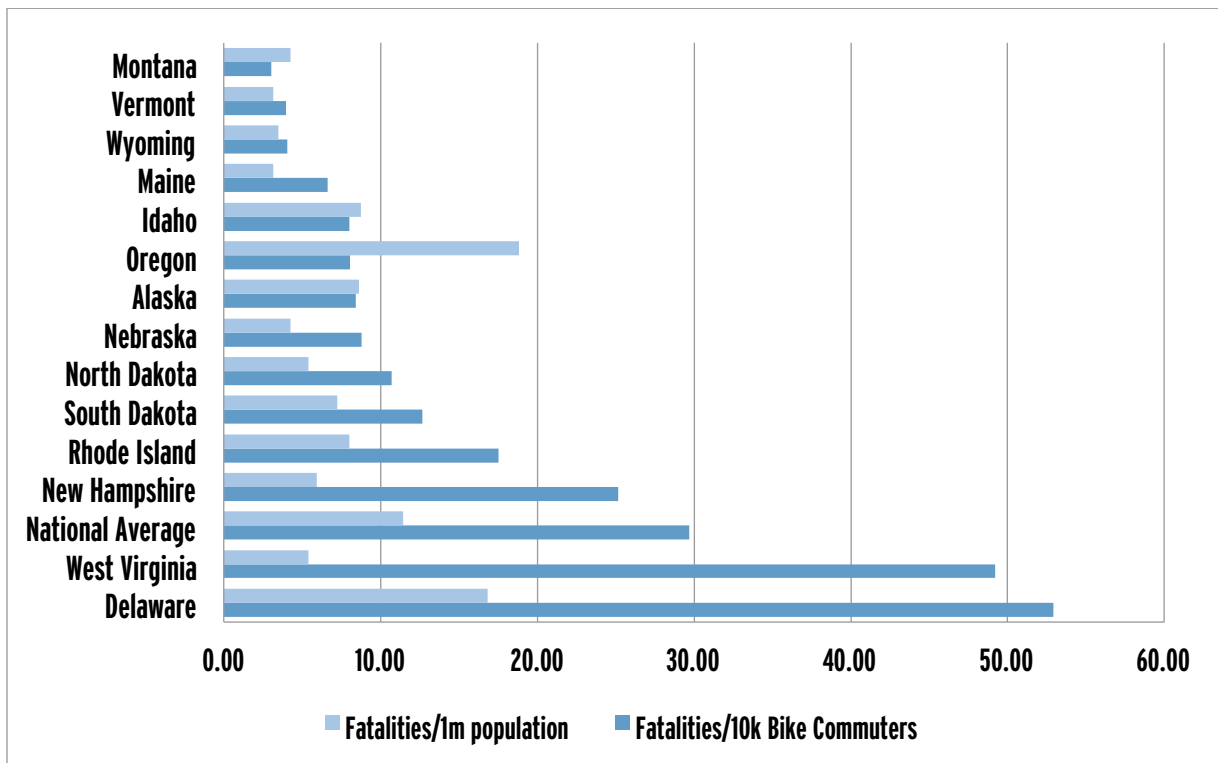
The most basic way to look at bicyclist fatalities is the number per state. We looked at three years of data because fatalities can be highly variable year-to-year, especially in smaller states and states with few regular bicyclists. We also chose a three year average because it best fit with other statistics that we wanted to aggregate into our composite score.

What is very apparent is that bicyclist fatalities tend to be concentrated in a handful of large states with large populations, many of whom who bike. This concentration has led to groups like the [Governors](#)

[Highway Safety Association](#) saying bicyclist fatalities are “not necessarily a national issue.” That limited view of safety – looking at raw numbers of fatalities alone – is why we feel it is important to adjust fatality scores for other factors.

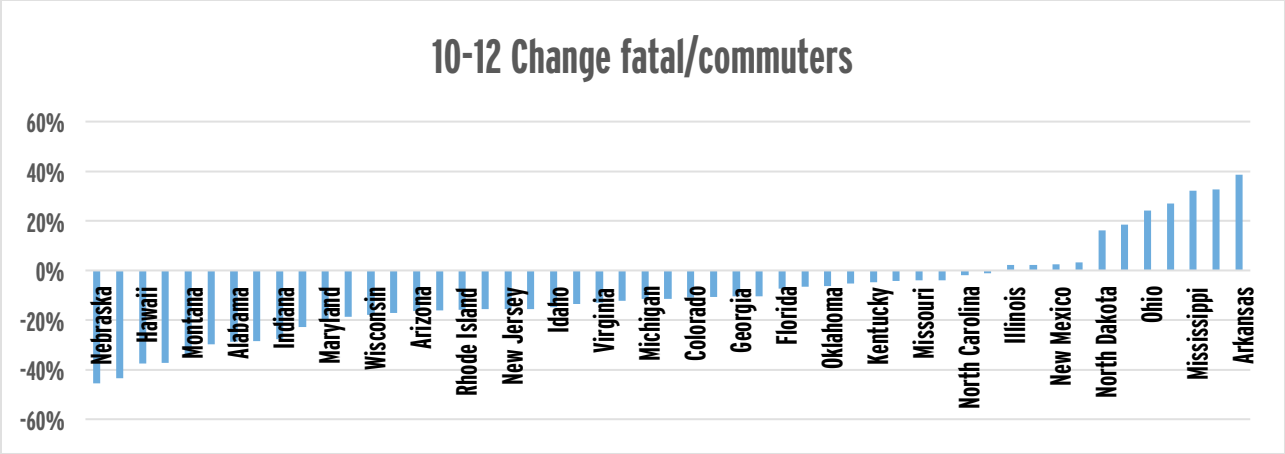
Since we do not have exposure rate data, we approximate exposure using federally available data on regular bicycle commuters and state populations. The two measures that we used were fatalities per 10,000 regular bicycle commuters and fatalities per 1 million state residents.

The chart below shows those statistics for the states that had fewer than 10 fatalities between 2010 and 2012. It also includes an average of all states and the fatality rates for Oregon, which is the state with the highest percentage of people who regularly bike to work.

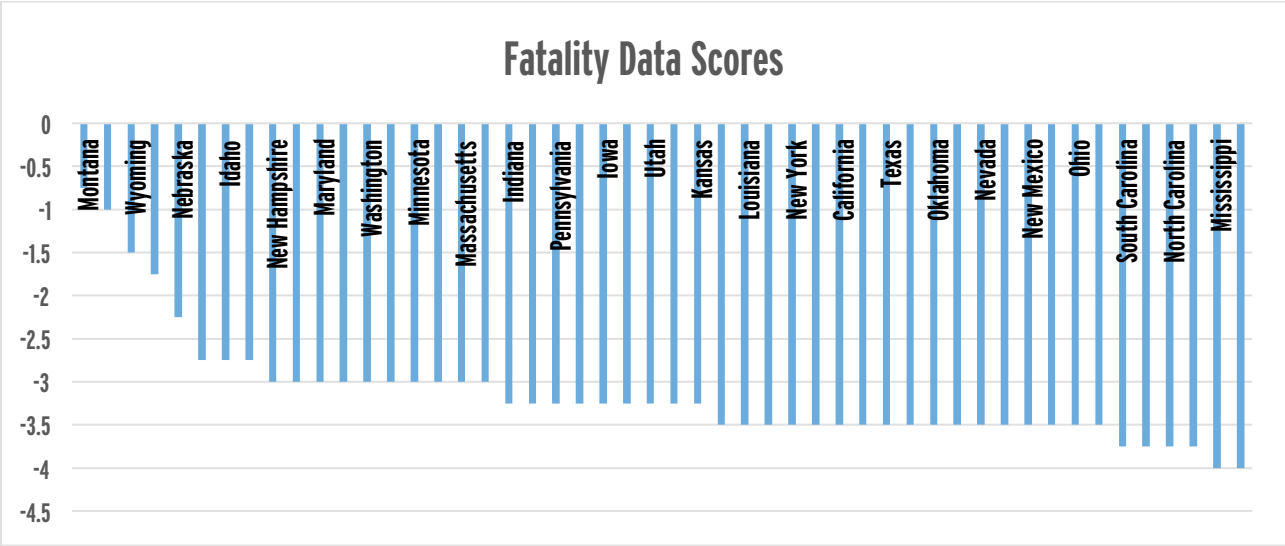


This chart shows that some states without many fatalities may still be very dangerous for bicyclists. To say that bicyclist fatalities are not a problem in some of these states ignores the perils that bicyclists face on their roads and suggests that reducing the number of bicyclists is an acceptable way to deal with the safety problem that bicyclists face.

Finally, we added a component to give points for improvement by looking at the change in the fatality rate per 10,000 commuters based on the average of two five year periods ending in 2010 and 2012. Based on those time periods, 39 states have seen a reduction in bicyclist fatalities per bike commuter.



We believe that every state should have a goal of zero roadway fatalities. Fatality scores are assigned negative points to reflect that zero is the only acceptable number of roadway deaths.



The top 10 is dominated by states with very few bicyclist fatalities over the last three years. These states are often rural and may have smaller exposure rates than other states. However, there are also many states, like Oregon, that perform well despite having higher raw numbers of fatalities because they have many regular bicycle commuters and likely have better fatality rates based upon exposure.

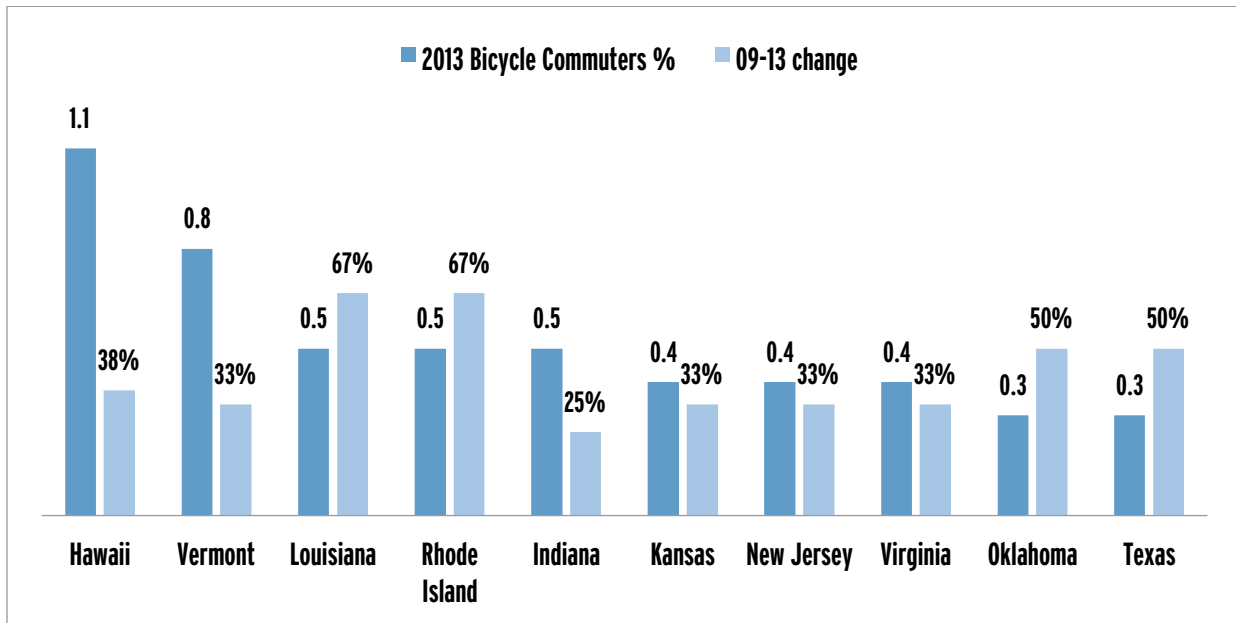
Federal Commuting Data

Every year the Census Bureau publishes data from the American Community Survey (ACS). Thanks to one question on that survey we have yearly estimates of the number of regular bicycle commuters in each state and the percentage of all commuters that they represent. There are a number of issues with this data – it only captures one mode (bike+bus = bus, in most cases) and it only captures the mode you used for the majority of your commutes last week – but it is the best data we have on regular bicycle use. Since the ACS

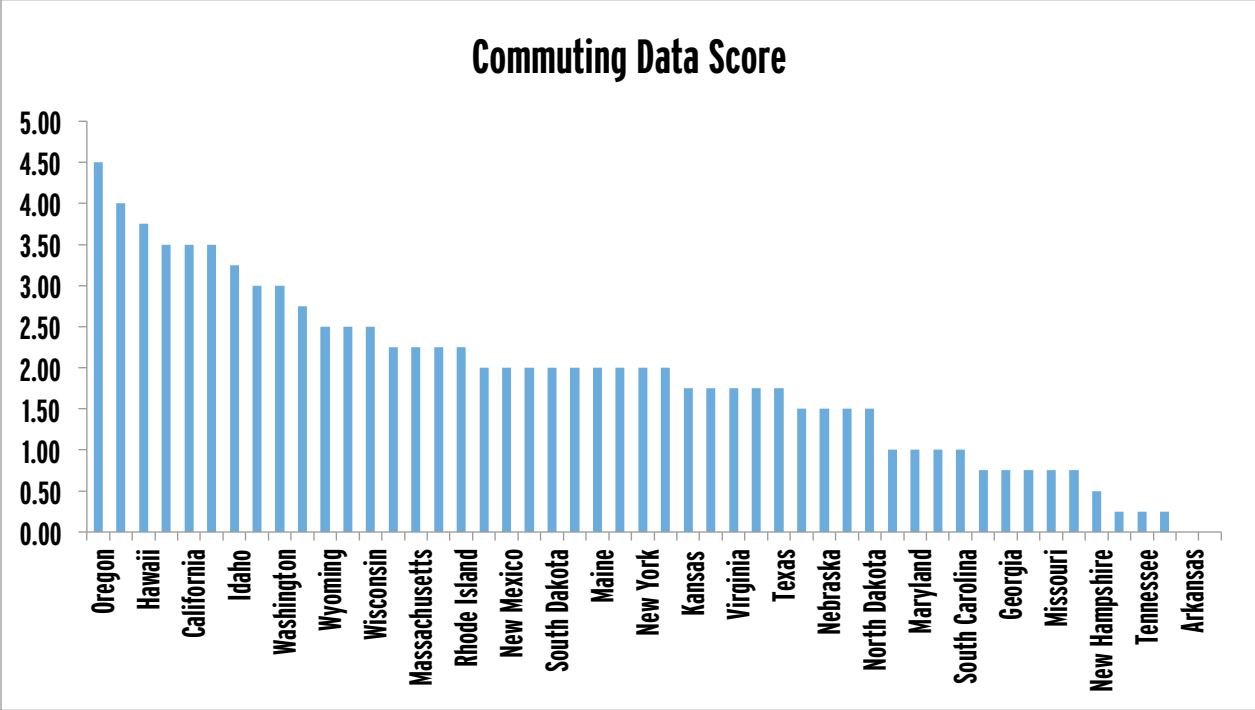
was created in 2005 we have published this [data](#) yearly searching for where bicycling is growing and where people are finding it a great option for their commute.

Compared to the other ways in which we use federal data (some of which use ACS data). How we score commuting data is pretty simple. We look at two things: 1) a state's current 5-year ACS estimated percent of commuters using bicycles to get to work, and 2) the change in the state's 5-year estimate from five years ago. A 5-year estimate is simple an average of five years of ACS data. We use it to account for the year-to-year variability of ACS data.

By using growth as part of our metric we are able to reward states that do not yet have a high percentage of their population regularly commuting by bike, but are still making significant strides. The following graph show the percent of people who use a bicycle as their primary mode of travel to work and the growth in the percent of people choosing to use a bicycle as their primary mode of travel to work for the 10 states that grew the most between 2009 and 2013.



By weighting both the percent of people biking to work and the growth in bicycle commuters we created a composite score for each state.



Conclusion

Analysis of federal data makes up close to 10% of available points in our Bicycle Friendly State survey. While federal data is immensely helpful for knowing how states are doing, there is so much more that states are doing that is not covered by this data. Our survey looks at many other factors to determine how states rank. Each of these indicators has a significant lag associated with it and policies put in place today are not necessarily reflected in federal data from two years ago.

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