

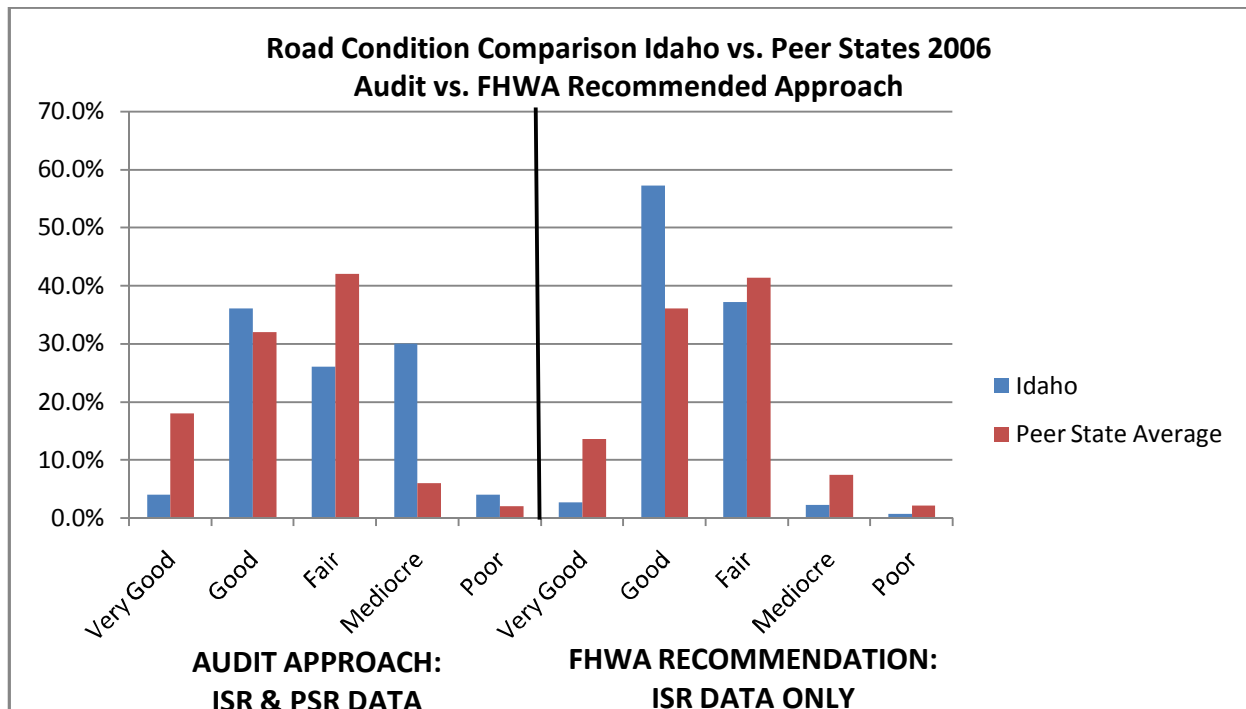
Details on the Differences Among Analyses of How Idaho's Roads Compare to Other States

In the first analysis, the OPE performance audit concludes on page 20 that “Idaho’s roads are deteriorating and generally are in worse condition than those in peer states.” This analysis contributes to their conclusion that the \$137 million in increased funding would be insufficient. Their analysis, captured in a graph on page 21 of the audit, indicates that Idaho roads are in far worse condition than any of nine peer states (mostly western states) that the audit identifies.

The Common Interest conducted a second analysis of Idaho’s road conditions. We conducted this alternative analysis because the audit’s analysis included a category of data that the FHWA warned was problematic for use in comparing states. When only the category of data is used that the FHWA suggests is most valid for comparing states, The Common Interest found that Idaho roads are in better condition than all of the nine peer states the audit identified and far better than the national average.

A third analysis, the “Annual Report on the Performance of State Highway Systems,” was conducted by David Hartgen, the widely recognized transportation expert that The Common Interest engaged. Like The Common Interest but unlike the audit, Hartgen used only the category of data that the FWHA recommends for comparing states. Unlike The Common Interest or the audit, he used those data to compare only the interstate and major state highways. Using this approach, Hartgen finds that Idaho’s rural interstates and other major rural highways are in better condition than five of the nine peer states and better than the national average. Our urban interstates, the Hartgen report finds, are worse than all of the peer states except Washington and far worse than the national average. Hartgen notes, however, that Idaho’s percentage of poor urban interstate miles will likely go down substantially when the GARVEE projects on those roads are completed.

The different results from the audit and The Common Interest’s approaches are captured in the table below.



Why the different results? There are two different ways of measuring road condition that states use in reporting to the Federal Highway Administration (FHWA). The first, called the Present Serviceability Rating (PSR), is a subjective rating of pavement. The second, called the International Roughness Index (IRI), is an objective, physical measurement of pavement roughness. States report their PSR data to the FHWA for those miles for which they don't have IRI data.

The audit authors included miles for which there is only PSR data because this is more complete in the sense that many more of a state's miles are included in the analysis. ITD, for example, reported on the condition of 5,602 miles of our roads using IRI. Another 3,702 miles were rated using only PSR.

Many researchers don't include the PSR data particularly when conducting comparisons between different states as the audit authors did because the PSR's subjectivity makes it prone to being implemented differently by different states. Accordingly, the FHWA warns that "because of the subjectivity of the rating process" with PSR, state-to-state comparisons "based on these indices may not be valid." In contrast, the FHWA suggests, "because IRI is a more objective, mechanically measured index, IRI should be more consistent between and among states."

For most of the peer states, the picture of road condition doesn't change much regardless of whether one includes the roads measured only by PSR or not. To a degree far greater in Idaho, however, a higher percentage of the miles measured only by PSR are judged to be in mediocre condition compared to the miles measured by IRI. There are two possible explanations for this. First, those Idaho roads measured by PSR only may genuinely be in worse condition than is the

case in the nine peer states. Second, Idaho's roads measured only by PSR may not actually be worse than those roads in the peer states, but may appear that way because Idaho's approach to applying the more subjective PSR may more easily put a road in the "mediocre" category, for example, than the approach taken by other states.

Why do Idaho's roads come out in the middle of the pack in the Hartgen approach? Like The Common Interest and unlike the audit, Hartgen uses only the IRI data and does not include the PSR data since he is drawing comparisons among states. Unlike either the audit or The Common Interest, instead of using the IRI data for all nine categories of roads included in the FHWA's statistics, he draws only on three categories of major highways: 1) urban interstates, 2) rural interstates, and 3) other principal arterials. He leaves out the other six categories of roads that the audit and The Common Interest included in their analyses. Four of these six other categories are urban roads: 1) other freeways and expressways, 2) other principal arterials, 3) minor arterials, and 4) collectors. Two of these six other categories are rural roads: 1) other principal arterials and 2) minor arterials. The Hartgen report also compares only the percentage of roads in "poor" condition, while the audit and The Common Interest compares the percentages of roads in all conditions.

Given the data available, it is difficult to know with confidence which analysis generates the most accurate picture for policy making purposes. Unfortunately, we're left with very different sets of results with very different strengths and weaknesses. The audit's approach suggests that Idaho's roads are in worse condition than any of the peer states. The approach generating that result has the strength that it is a much more complete comparison than the other two because it includes all categories of roads and many miles of roads in those categories that aren't measured by IRI. It has the weakness that FHWA warns against including such data because observed differences may be attributable not to an actual difference in road condition but to problems with the validity and reliability of the data.

The approach followed by The Common Interest produces results indicating that Idaho's roads are in better condition than any of the peer states. This approach has the strength that it compares all categories of roads only for those miles of roads for which we have data that allow us to conclude with confidence that any observed differences are real. The weakness is that it leaves out many miles of a state's roads.

The approach followed by Hartgen produces results indicating that Idaho's roads are mostly typical compared to the peer states and better than the national average. This approach has the strength that it compares roads only for those miles of roads for which we have data that allow us to conclude with confidence that any observed differences are real and on only those categories of roads for which this kind of data is most often collected. The weakness is that it leaves out many categories of roads included in the other two analyses.

Given the unfortunate circumstance that these approaches lead to very different pictures of how Idaho's roads compares, and given that each approach has strengths and weaknesses, The Common Interest concludes that the appropriate methodological approach is to report the results from both approaches with an explanation of why they turn out differently.