

Pupil Transportation Efficiency Targets
Pupil Transportation Office, Ohio Department of Education
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In a continuing effort to provide school districts with tools to assist in providing safe and efficient pupil transportation service, ODE has calculated efficiency targets to assist districts with management goals.

The concept of efficiency measures is a work product of the statewide pupil transportation advisory group created during the process of designing a new method for funding pupil transportation. The intent is to create a benchmark that districts can use to compare themselves with other district in the state on a common measure.

In this model, efficiency is measured by the number of regular education students that are transported per school bus in a school district. The model establishes a target student per bus value for each district in the state. Districts who exceed that target are defined as being efficient relative to other districts in the state.

The formula is dynamic, using actual reported data from T-1 reports submitted in October of each school year. The calculation will be updated annually to reflect the current year data.

The initial target value is determined by calculating a student per bus ratio for every school district in the state, excluding the 10 highest and 10 lowest values, and then calculating the median rider ratio.

With this value as a starting point, we then make adjustments to account for the significant differences in geographical and population sizes among our districts. These differences influence the ability of school districts to route school buses. Districts that are relatively small with a high number of riders can easily achieve a high number of riders per bus, while a district that is geographically large with a low number of riders will experience lower per bus loads. We measure the primary difference between these districts by evaluating their rider density – which calculated by dividing the district's actual bus riders by its size in square miles. This measurement of rider density is then used to adjust the target rider ratio for each district.

The above chart represents the net effect of the adjustment. Districts with a median density are assigned a target value of the median rider ratio. Districts with higher density ratings are assigned higher target rider ratios, and districts with lower density ratings are assigned lower target rider ratios.

The net affect of this process is that every district has a unique relative position in the density listing, which then corresponds to a matching target rider ratio.

The actual efficiency target data for each district is presented in an excel spreadsheet which lists all of the data used in the calculation. Only regular education students living more than 1 mile from school are counted, and only buses that transport regular education students are considered.

The three key columns in the spreadsheet are the three on the far right. The data shows the calculated target ridership for each district, the actual ridership for that district, and a ratio that compares these two values. Districts with a ratio over 1.0 are defined as efficient relative to other school districts. Higher ratios indicate higher relative efficiency.

There are many factors that can influence a district's ratio. Districts with single routed buses that operate with low ridership will experience the lowest ratios. Conversely, a district that schedules buses at capacity loads with multiple tiered routes will experience the highest ratios.

There may be policy issues in place in a district that result in lower rider ratios; such as transporting students less than 1 mile from school (who are not counted), bell times that are too close together (minimizing the amount of time available to pick up students), or routing plans that deliberately schedule few students per bus. While these are not necessarily bad policies, they do cause districts to operate transportation less efficiently, which in turn results in a higher cost per student to provide that transportation service.

The ultimate goal in pupil transportation logistics is to transport as many students as possible with as little cost as possible, in other words, with a high degree of efficiency. To that end, an appropriate goal is to consider plans and options that will allow a district to increase efficiency, thereby resulting in a lower cost per student.