Demand Forecasting for Rural Transit

This summary describes the key findings of a WSDOT project that is documented more fully in the technical report titled "Demand Forecasting for Rural Transit." The objective of this project was to test the applicability of the new Workbook model to Washington for predicting demand for rural public transportation.

Three Washington-based models were developed based on the characteristics of usage for four regional transportation systems currently in place in nonmetropolitan areas in Washington State (Clallam Transit System, Jefferson Transit Authority, and Pacific Transit System in Clallam, Jefferson, and Pacific counties, and LINK in Chelan and Douglas counties).

The first model, Total Transit Demand-All, uses average values for ridership by population subgroup from four regional transportation systems in Washington to predict ridership for other areas. Data needs for the model are readily available from US Census data.

The second model uses the same approach as the first, but excludes the fare-free regional transportation system which has markedly different characteristics from the systems with fares. Ridership data from the three systems that have fares are used to produce coefficients for the second model, Total Transit Demand-FARE.

The third model, Disaggregated Transit Demand uses values from a random sample survey conducted in Chelan, Douglas and Clallam counties. Empirical ridership data by subgroup is combined with census data to estimate the percentage of that subgroup using transit services. Ridership estimates from this model were 20% below actual figures for the fare-free Chelan-Douglas system and 5% lower than actual figures for Clallam County. Predictions for Pacific County were just 4% higher than actual ridership, while ridership estimates for Jefferson County were 14% higher than actual ridership.

Planners can easily tailor these models to individual regions by using different values for various coefficients based on data or their informed estimates. Finally, simple on-board surveys, surveys of affected individuals, or additional surveys of the general population may be conducted to refine the data used for this model. All of the models developed in this study are easy to understand and alter to fit the circumstances of a particular region.

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