

Review of Previous Model Enhancements

CTPP Person-Trip Comparison

Task 2.16 - "Year 2000 CTPP Person Trip Matrix Comparisons", April 24, 2006

The comparisons above between the 2000 CTPP and 2000 Model run data reveal that the model is doing a relatively good job at producing and attracting the correct proportion of person trips regionwide. Moreover, the model's distribution of trips by mode is also good. The figures above showing the trips by each mode produced to and attracted from each transportation analysis area between CTPP and Model are very good. The maps of CTPP and Model showing key areas' home locations' transit trips to work locations are also very comparable.

Implementation of Alternative Volume-Delay Functions

Task 2.6 - "Test Alternative Volume-Delay Functions", January 12, 2006

The conical and curve table volume delay functions have shown that speeds degrade gradually compared to the Akcelik curve function. The conical and curve table functions also match observed congested speeds during the peak periods more closely compared to the Akcelik functions. Because equations (Conical functions) are easier to work with compared to the look up tables (Curve table vdfs), we recommend replacing the Akcelik functions with the conical functions over the curve table volume delay functions in the OMPO travel demand model

Analysis of 1992 On-Board Survey Assignment

Task 2.2 - "1992 On-Board Survey Assignment Analysis", April 12, 2006

Despite some of these over-estimated, and under-estimated routes, a 95% R^2 in Figure 1 shows that the goodness of fit is excellent and that the transfer penalty, and other path parameters seem appropriate to reflect observed behavior.

Computation of Revised Target Values

Task 2.18 - "Revised Calibration Target Values"

Revised shares were prepared as a result of eliminating the geographical constants. The revisions also eliminate the over-specification of constants at the primary mode level.

Treatment of Parking Cost in the Model

Task 2.17 - "Parking Cost Representation and Forecasting", February 15, 2006.

The observed data generally supports the 1995 modeled parking costs. Existing and future parking costs may be forecast by assuming no change in the real cost of parking, which has been observed in several other cities, due to the market-based nature of parking costs. For Honolulu, an effort was made to evaluate the change in retail parking costs over the past ten years to determine if the real cost of parking has changed, and what this might indicate for future year parking costs in the model. However, no data for this analysis was available.

Since the parking cost is an independent, exogenous input, changes in areatype do not affect the parking cost. Since it appears that the parking cost was closely tied to areatype in its development, it may be advisable to update the parking cost as densities and therefore areatypes change in the future.

Note that outside of these three areatypes, parking is free in the model. In some areas, such as Waikiki, parking may not be available at any price for some markets such as low-income workers. Therefore, a question has arisen regarding whether a parking shadow price mechanism or other type of drive-to-work penalty should be implemented in the model to accommodate this influence.

Highway Travel Time Comparisons

"Proposed Changes to Travel Demand Model Free-Flow Speeds", April 28, 2006

Based on the results of the speed surveys on the South King Street/South Beretania Street and the Kapiolani Boulevard arterial roadway corridors, it is recommended to modify the model free flow speed table to code lower speeds for selected roadway facility types for area types 1, 2, and 3. Figure 3-5 shows the free flow speeds coded into the Oahu Metropolitan Planning Organization (OMPO) model roadway links by area type and facility type. It is recommended to modify all of the free flow speeds in the shaded area to 25 mph. Doing so will bring the speeds on these facilities more in line with the observed average travel speeds on these roadways

Mode Choice Model Structural Changes

"Mode Choice Model Updates", April 26, 2006.

Coefficient Value Modifications

- ❖ In-Vehicle time
- ❖ Walk & Wait Time ratios
- ❖ Stratified 1st Wait time
- ❖ Nesting Coefficients

Structural Improvements

- ❖ Park-and-Ride at Zero cost destinations
- ❖ Drive Time Ratio Threshold removal
- ❖ Informal Park-and-Ride
- ❖ Removal of geographic stratification of constants

Toll Implementation

"OMPO Toll Component to Mode Choice Model", January 6, 2006

"Development of the Nimitz Flyover and a Managed Lane Commuter Corridor", August 24, 2006.