

Appendix F

Trip Distribution

“The most common format for trip distribution in four-step models is the gravity model, an aggregate model structure that estimates a production-attraction trip table from zone-level estimates of trip productions and attractions and measures of separation between zones. Separate models are developed for each trip purpose” (Federal Highway Administration, 2010, p. 6-1).¹

To begin the trip distribution review, existing year (2015) zonal estimates were compared to the observed trip length frequency distribution (TLFD) curves. Data from the 2006-2010 U.S. Census Transportation Planning Package (CTPP) was used to develop home-based work (HBW) trip distribution patterns and TLFD curves. The CTPP 5-year data was used to calculate the average trip times between Saint Cloud zones and the TLFD was compared to the trip length frequency from the current model. The frequency distribution was then used as a friction factor input to the TDM to develop the origin-destination tables (calibrated using CTPP frequency distribution). “Friction factors define the measure of separation based on travel impedances between TAZs. Checks of travel impedance skims for travel time, travel distance, and travel cost. Those basic travel impedance skims are used for both trip distribution and mode choice modeling” (Federal Highway Administration, 2010, p. 6-2).¹

The 2015 trip distribution for all trip purposes is shown in Figure 5, and average trip length by purpose is shown in Table 5. Trip lengths apply only to the portion of trips within the APO model area.

Figure 5: 2015 Trip Distribution Average Trip Lengths

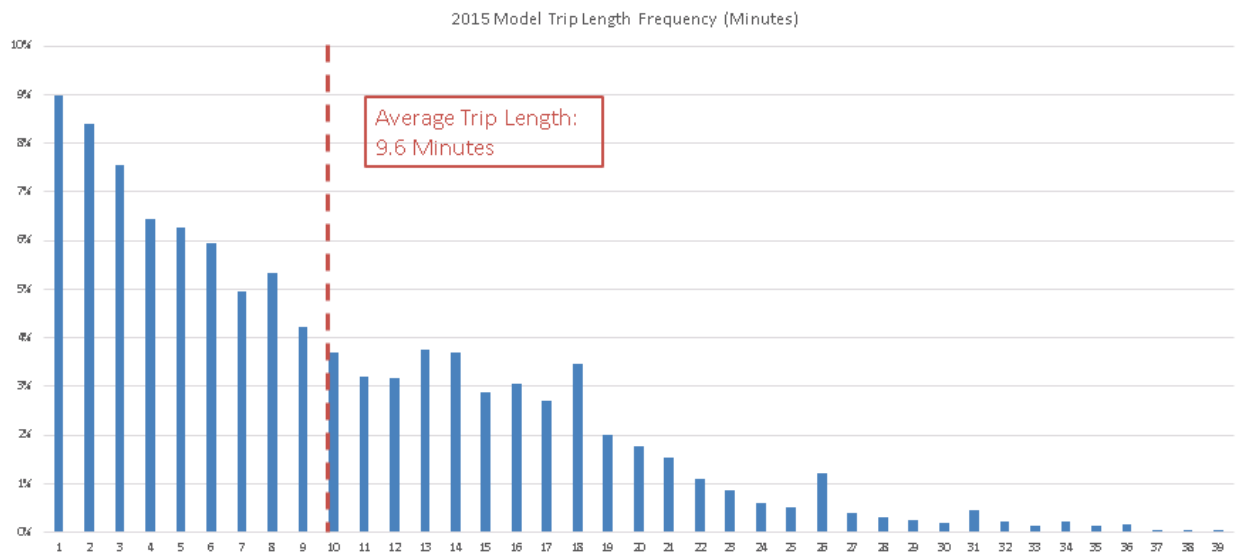


Table 5: Average Trip Length by Trip Purpose

Trip Purpose	Average Trip Length
Home-Based Work	24.6
Home-Based Other	17.3
Non Home-Based	10.9