

TRAVEL DEMAND MODEL AND DEFICENCY ANALYSIS

A travel demand model is a forecasting tool used to assess travel supply and demand. The existing road networks represent the supply side of the metric. The demand side is the product of urban data to determine where trips are generated from, how they are distributed, and what the mode choice will be. Using existing verifiable information like population numbers tied to geographic zones and employers with validated employee populations, the model can be calibrated for accuracy. From that base, projections can be made that relate to changes anticipated within the planning horizon through 2040. With the new data inputs, the model will generate findings that identify trouble spots within the network where the existing design capacities of the road or transit network will be exceeded.

Travel demand modeling can aid in policy suggestions for long range planning and short range studies (corridor studies and sub-area studies) because the results highlight the imperfections and inadequacies that will need to be addressed.

The travel demand modeling process was a collaborative effort between the SWMPC, MPO committee members, and the MDOT Statewide and Urban Travel Analysis Section. MDOT has taken the lead role in the travel demand modeling for “small MPO” areas throughout the state. Both entities collectively reach consensus on critical decisions in the development of the model with data largely generated and validated by the SWMPC.

MODELING AREA

The 2010-2040 travel demand model combined the Twin Cities Area Transportation Study (TwinCATS) MPO and NATS TMA areas into one regional model, while also encompassing the remainder of Berrien County outside the MPO areas. The modeling area consists of: all cities, villages and townships in Berrien County; and the Village of Edwardsburg; and Howard, Milton, Ontwa, Jefferson, and Mason Townships in Cass County. These additional areas have been included for three primary reasons.

1. Though not all of the communities modeled are within a defined MPO area, however, they currently have an important impact on the transportation characteristics of both of the urbanized areas.
2. It is a possibility that some of the jurisdictions may be included after the 2020 U.S. Census urban geographic definition.
3. The Villages of Grand Beach and Michiana, while part of the TwinCATS MPO, were previously not included in the model, and it was decided that they should be included in the urban travel demand model. They are not geographically contiguous to the rest of the TwinCATS study area.