Planning: TDM Support of TP&P

**Objective/Purpose/ Why:**

Corridor forecasting involves assessing traffic on an existing or future roadway. This involves analyzing the traffic growth along the study corridor and determining how traffic flows would change as a result of new improvements or modifications to the transportation system. Travel Demand Models (TDM) provide insight on the demographic and traffic growth of a given area and can be used to evaluate the change to traffic flows in the study area resulting from the transportation improvements or modifications.

**The TxDOT-TPP SOP for corridor analysis can be referenced for the standard process to be followed when forecasting traffic for TPP projects:**

[**https://teams.microsoft.com/l/file/5CE7522B-218E-4D0A-B9EA-F212DA214B35?tenantId=31b2883e-6cb9-4fb8-9190-c37247992f9e&fileType=pdf&objectUrl=https%3A%2F%2Femailatg2.sharepoint.com%2Fsites%2FCorridorForecasting%2FShared%20Documents%2FGeneral%2FTXDOT%20TPP%20SOP%2FTPP\_TAB\_SOP\_Oct2019.pdf&baseUrl=https%3A%2F%2Femailatg2.sharepoint.com%2Fsites%2FCorridorForecasting&serviceName=teams&threadId=19:505d242cb6284059961fa7f370fb9f92@thread.skype&groupId=c61f5289-2b1b-4cfe-af5d-8bc906954107**](https://teams.microsoft.com/l/file/5CE7522B-218E-4D0A-B9EA-F212DA214B35?tenantId=31b2883e-6cb9-4fb8-9190-c37247992f9e&fileType=pdf&objectUrl=https%3A%2F%2Femailatg2.sharepoint.com%2Fsites%2FCorridorForecasting%2FShared%20Documents%2FGeneral%2FTXDOT%20TPP%20SOP%2FTPP_TAB_SOP_Oct2019.pdf&baseUrl=https%3A%2F%2Femailatg2.sharepoint.com%2Fsites%2FCorridorForecasting&serviceName=teams&threadId=19:505d242cb6284059961fa7f370fb9f92@thread.skype&groupId=c61f5289-2b1b-4cfe-af5d-8bc906954107)

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**Process for Obtaining TDMs**

* Execute a license agreement and request delivery of the regional/statewide TDM from appropriate parties:
  + Texas regional models:
    - Greg Goldman – Planner, TxDOT-TPP
    - greg.goldman@txdot.gov
  + Texas Statewide Analysis Model V4 (SAMV4)
    - Geena Maskey – Planner, TxDOT-TPP
    - [geena.maskey@txdot.gov](mailto:geena.maskey@txdot.gov)
* Requests should include the following information:
  + MPO contact
  + Company name/business mailing address of Prime consultant (ONLY PRIMES CAN EXECUTE AGREEMENTS)
  + Name, title, and email of signature authority for person signing agreement
  + Purpose of what the model will be used for (must support MPO, TxDOT projects, or university research)
  + Signatory should be ATG leadership with signature authority

**Process for using TDMs in Support of TPP**

* Test the model provided by TxDOT-TPP and verify correct TransCAD version is being used and that documented results can be replicated.
* Identify logical study area around the project corridor (selection of TAZs)
* Review TDM base year:
  + Review validation of the base year for the region relevant to the project
    - Review demographics for reasonableness
    - Review traffic validation (volumes compared to counts)
    - Evaluate if modifications need to be made
      * Split TAZs
      * Add roadways
      * Move centroid connectors
      * Modify roadway characteristics (lanes, facility type, functional class, speed, capacity, area type, etc.)
* Review TDM forecast year:
  + Review demographic estimates for the region to determine if reasonable
  + Identify projects that are included in the model and evaluate whether any need to be added or removed to accurately depict the “background” or “nobuild” conditions for the project/study
  + Review if all projects are coded correctly
    - All work must be QC’ed
* Run scenarios for revised (if modifications were made) base and forecast year scenarios (typically “nobuild” scenario)
  + Create model scenario check list that denotes all assumption and inputs to scenarios to be run. (Regional projects to be in place, version of TransCAD, full run vs. assignment only, QC checks to be done, etc)
  + QC model results of these scenarios compared to the default set to evaluate if the results are reasonable
* Use of TDM for Typical Forecasting Report/Memo
  + Calculate population and employment average annual growth rates from base to horizon year
  + Calculate average annual traffic growth rate from base to horizon year at select locations on and around the study corridor
    - All work must be QC’ed
* Use TDM for forecast travel in response to various build alternatives. TDM can estimate potential impacts to the transportation system for a given region based on the additions, removals, or modifications of a build alternative(s)
  + Verify the details of the build alternatives prior to preparing the scenarios with scenario check list
  + Create a separate scenario from the nobuild scenario to be used for each build alternative scenario
  + Modify the appropriate files (typically the roadway network) to reflect the expected conditions of each build alternative
    - All work must be QC’ed
  + Run scenarios for the build alternatives for the appropriate years
  + Review model outputs (typically traffic volumes) to verify changes are logical and explainable in response to the modifications made as part of the build alternatives
  + The model outputs from the build alternative scenario(s) can be compared to that of the no build scenario to evaluate the impacts to the transportation system based on the improvements/modifications
  + The observed trip patterns can be used to assist in determining how travel patterns and/or traffic volumes could be expected to shift as a result of the build alternatives
  + Archive scenario on model server under project folder

**Outcome:** *TDM is used to assist in developing the TPP Forecasting Report/Memo for a given study. A review of demographics, traffic volumes, and growth patterns are expected to be included. This information is documented and used to determine an appropriate growth rate for forecasting traffic (growth rate typically gets applied to collected/existing conditions traffic counts that are independent of the TDMs).*

*TDM is also used to help guide how traffic will change in response to improvements or modifications to the transportation system. The TDM volumes should not necessarily be used directly, but they can be used as a guide to assess what logical shifts/adjustments in traffic would be for the build alternatives.*

**Resources: The TxDOT-TPP SOP for corridor analysis can be referenced for the standard process to be followed when forecasting traffic for TPP projects.**

**https://www.txdot.gov/content/txdot/en/inside-txdot/division/transportation-planning.html/**

**Definitions: Travel Demand Model (TDM), forecasting, corridor study, traffic analysis**