

PID No. 125093 State Job No. \*\*\*\*\*  
Scope of Services Meeting Time: 2:30pm Date: 11/10/26  
Location: Teams  
Approved Final Scope of Services Minutes Date: \*\*/\*\*/\*\*

## **In-House Support for Travel Demand Forecasting Models in Ohio Scope of Services**

The Department and Ohio's seventeen Metropolitan Planning Organizations (MPOs) maintain travel demand forecasting models for use in project planning, long-range plan development and other analyses including air quality conformity. The Department seeks a qualified firm to provide In-House Consultant Staff Support for thirty-six (36) months to augment ODOT staff and perform tasks related to the maintenance and enhancement of the statewide travel demand forecasting model (SW Model), Ohio Medium/Small Modeling System (OMS) models used in the small and medium sized MPOs, the 3C model used in the large sized MPOs, the TransModeler C10 model in Columbus, Cincinnati and Lima, the Tredis Economic Impact Model (EIM), Simulation Demand Estimator (SDE) tool, and various utilities used for pre- or post-processing.

The Department is making a concerted effort to update the various input datasets to these models, including highway and transit networks in TransCAD and Cube, and base year land use inventories, including land coverage, land use/development, water/sewer service areas, and base and future year employment and population for all models. It is anticipated that this position will be primarily working to update these GIS inventories. Work could include the annual QCEW data processing as well as other statistical analysis.

Travel Demand Models for Ohio are currently transitioning from their previous implementations in Citilabs/Bentley Cube and other bespoke software to use Bentley Agent and OpenPaths and Caliper TransCAD. TransDNA and TransModeler software. Knowledge of these software programs is expected.

The SW Model is an integrated econometric/land use/transport model employing tour-based microsimulation for the transport model components. The size and scope of the model require that it be run on one of ODOT's eight dedicated computers. Because this model represents a dramatic paradigm shift from traditional travel demand forecasting models, a number of its various components were custom built for ODOT. As such, ODOT requires consultant support to keep the model software operable for use in transportation project analysis. Additionally, enhancements to this model may be requested based upon ODOT needs. A 35k zone network and trip tables are being developed.

The 3C Model is a state-of-the-art Activity Based Model based on the Coordinated Travel-Regional Activity-Based Modeling Platform 2 (CT-RAMP 2). Travel demand is microsimulated at the Micro Analysis Zone (MAZ) level using various behavioral model formulations far beyond the simple aggregate statistical models of the four-step model era. Traffic microsimulation was added through the SHRP2 C10 program and has transitioned to TransModeler. The 3C model is implemented for Columbus/Newark, and Cincinnati and Dayton. There is also a Lima version that is maintained for testing purposes and is available for research. The TransModeler C10

model is in development for Columbus/Newark, Cincinnati and Lima.

In addition to these advanced models, traditional four-step models are maintained for the small and medium metropolitan areas in Ohio and the consultant's In-House staff may be tasked with providing enhancements or other on-call services related to their upcoming 2020 update. Additional work may include ODOT utilities including network calculators, CMAQ calculators, and utilities to convert networks and demand between Cube and TransModeler, among others.

The consultant selected for this contract must at a minimum be able to demonstrate detailed knowledge of the SW Model, OMS, 3C models and GIS using TransCAD. The In-House staff person will work at ODOT offices at 1980 West Broad Street using a provided ODOT Desktop. The In-House staff will be required to adhere to any ODOT telecommuting work-rules. Currently, telecommuting is not permitted, but any changes to ODOT telecommuting schedules applied to Department staff will also apply to the In-House staff.

It is unexpected, but possible, that additional tasks could be funded under this IDIQ agreement including:

- Enhance a network management tool for use with Ohio standard network formats (including statewide and MPO networks) that allows projects to be coded to a base network in order to create various alternative networks and export networks out for MPO use.
- Revise the Simulation Demand Estimator utility using Bentley/Caliper software.
- Support for the 3C SHRP2 C10 implementations
- 3C/OMS/C10 model validation work.
- Project level modeling in support of Certified Design Traffic.
- 3C modal enhancements for transit and non-motorized.
- MPO On-Call Modeling Support.
- Additional reporting capabilities for 3C/OMS/C10, including standardized reports in Power BI, Cube or R.

All models and tools will be maintained on github.