ACTION TRANSMITTAL No. 2016-54

DATE:	October 26, 2016
TO:	Technical Advisory Committee
PREPARED BY:	Jonathan Ehrlich, Planning Analyst (651-602-1408)
SUBJECT:	Ongoing Funding Strategy for the Travel Behavior Inventory (TBI).
REQUESTED ACTION:	Recommend approval of a funding strategy for the TBI.
RECOMMENDED MOTION:	TAC recommends that TAB allocate $2.7 million of federal Regional Solicitation funds to the Travel Behavior Inventory for the first six years of the program.

BACKGROUND AND PURPOSE OF ACTION: The Metropolitan Council, like all large MPOs, maintains a regional transportation forecasting model. This model is regularly updated to reflect changes in regional demographics, transportation networks, and observed travel patterns and behaviors. Federal laws and regulations require the regular maintenance of the model for planning, environmental, and environmental justice purposes.

The regional model is used by the Council to demonstrate conformity of the regional TIP and TPP to the Clean Air Act, enabling federal transportation funds to be spent in the region. The regional travel model is used for project forecasting by MnDOT, Metro Transit, counties and cities. The information put out by the model is used for project justification, estimation of environmental impacts, and for design. The right-sizing of major infrastructure projects, such as the TH 169/I-494 interchange in Hennepin County is an important use of the model. The Council's role in project forecasting is to maintain the model and its input data, provide technical support to users of the model, and review model validation and results. The credibility of model forecasts is crucial to major highway and transit projects; models that lack credibility and currency expose major projects to litigation risk.

The region's model is only as good as the data that is used to develop it. The program used to collect our region's data is known as the Travel Behavior Inventory (TBI) and has been an on-going data collection program since 1949. Traditionally the TBI data have come from a decennial household travel survey and a transit on board survey every five years. From 2015-2016 the Council engaged a consultant to make recommendations for the future structure and frequency of the TBI program considering the needs of the model, contemporary policy concerns, the pace at which changes in travel patterns now occur and advances in technology The work of the consultant was overseen by regional stakeholders, including members of TAC.

RELATIONSHIP TO REGIONAL POLICY: The regional travel demand model is used by all major transportation stakeholders across the Twin Cities and is a requirement of the TPP and TIP to determine air quality conformity.

STAFF ANALYSIS: Previous conversations with the TAC and TAB indicate a high level of interest in maintaining a current and useful model for regional use. Staff was directed to identify a funding mechanism that keeps the TBI data current and relevant to produce the highest benefit for the model to

the region. Instead of conducting one household travel survey every ten years and a transit on board survey every five years, the proposal is for a continuous program sampling the region every two years plus transit, airport, and University of Minnesota emphasis areas on a regular basis and continuing updates to the regional model for an estimated cost of $2.5 million every two years. This action would also establish an agreed upon funding formula for the future.

The recommended motion involves splitting the cost equally between three partners: the Metropolitan Council, MnDOT, and TAB through the Regional Solicitation. This is a total of $850,000 per participant per two year cycle.

Taking this action at this time fits into the funding cycle for TAB's 2016 solicitation round. However this falls behind MnDOT's funding cycle and therefore the MnDOT share would be funded by a one-time funding available from the Council and a slightly higher share from TAB ($1.0 M versus $850,000) for the first two-year cycle of the TBI data collection.

Action is needed at this time to advance the TBI program to ensure continued reliable, trusted results for the region's transportation partners.

COMMITTEE COMMENTS AND ACTION: Following the last TAC meeting, TAB passed a motion directing staff to develop a memorandum of agreement for future funding based on the principle of equal funding shares between the Council, MnDOT, and TAB. The TAB also directed staff to show the TBI as off-the-top funding in Regional Solicitation funding scenarios that are being developed.

In addition, since the last TAC meeting, MnDOT's Transportation Programming and Investment Committee (TPIC) committed to funding one third of the TBI starting in 2019.

At its October 5 2016, meeting, TAC requested a work group of Planning and Funding & Programming Committee members be formed to further explore the issue of funding the TBI through the Regional Solicitation. That work group, consisting of representatives from five counties, MnDOT, TAB, and the Council made the following suggestions:

- That Council staff provide a graphic version of TBI activities.
- That consultant selection committees for TBI- related activities include local agency representation.
- That Council modeling staff establish a regional transportation modeling work group, inclusive of the counties and other interested agencies, to establish how to best assure that the Regional Model is of optimal use to the Council's regional partners.

ROUTING

TO	ACTION REQUESTED	COMPLETION DATE
Technical Advisory Committee	Review & Recommend	
Transportation Advisory Board	Review & Approve	

The Travel Behavior Inventory and regional model program is a ten-year program consisting of a biennial household travel survey, a once-in-five years transit on board survey and other direct and 3rd party travel behavior data collection to support the currency and validity of the regional travel demand forecast model. Below is a brief summary of each element of the program in the first six years of the program.

Funding / Contracting Year	Elements
2017	"Kick-Start" household survey 3rd party data Model update
2019	Household survey Special generator Transit on-board survey
2021	Household survey Special generator Model overhaul

Household Travel Survey

A consultant will be engaged to perform a regional household travel survey in biennial waves, with the initial survey wave being 2.5 times larger than successive waves to allow for immediate use of the data. Similar survey instruments and sample approaches will be used for each wave. The survey is intended to be a year-long cross-sectional survey, with some oversampling targeted populations in each wave. Data collected will include person and household demographics, school and work locations, employment/student status, activity types and duration, travel modes and times. Effort will be made to include new and emerging modes of travel (including transportation network services, car/bike sharing, autonomous vehicles). Smartphone prompted-recall GPS technology will be the main mode of data collection. The consultant will be expected to develop a sample plan that addresses people without smartphones (including children in a household), as well as known and common sources of bias in household surveys. The consultant will field the survey. The consultant will process, geocode, and assemble the survey results into a database. The consultant will provide initial analysis of survey data, including developing expansion weights, and fully document all aspects of the survey design, collection, and analysis. In subsequent waves, the consultant will develop methodology to combine data from previous years.

Cost (constant dollars): $2,000,000 for first wave, $800,000 for successive waves.
Cost assumptions: 7,500 households for first wave, 3,000 for successive waves. $260/HH based on peer comparison, judgement of TBI Program Evaluation consultant and Council staff.

Contract years: 2017, 2019, 2021

Third Party Data Collection

The Council will contract with a commercial transportation data provider to provide origin-destination data for travelers entering and departing the Twin Cities region. The data will be provided at a level of geographic and travel purpose granularity to allow use in regional travel model estimation and validation.

Cost: $200,000
Cost assumptions: Judgment of TBI Program Evaluation consultant and Council staff.
Contract Years: 2018

Transit On-Board Survey

A consultant will be engaged to perform a transit on board survey every five years per FTA recommendation. A survey will be administered to a sample of riders on all fixed-route buses and trains operated by all providers in the region. The survey will collect origin-destination and demographic data on riders. The preferred survey mode will be in-person interview with tablet computer. The consultant will be responsible for survey design, sample design (including addressing known sources of bias), fielding the survey, processing and expanding data, initial analysis of survey data, and complete documentation. The survey will be designed to meet needs for transit agency Title VI analysis as well as FTA requirements for before and after studies for New Starts projects.

Cost (constant dollars): $1,300,000 per survey
Cost assumptions: 2016 on board survey proposals, peer experience, 10% overall sample
Contract Years: 2020

Regional Model Update

A consultant will be hired to evaluate and update the regional model in light of data from the 2016 on-board survey, the 2018 household survey, and the 2018 external data purchase, as well as use experience since 2015. Model estimation data sets will be developed, and each component of the regional model will be re-estimated and re-validated as necessary. Council staff will work in advance of hiring a consultant to determine with stakeholder input desired enhancements to the model, which will also be incorporated.

Cost (constant dollars): $200,000
Cost assumptions: past experience, judgement of Council staff
Contract Years: 2018

University Special Generator Survey

A consultant will be hired to perform this survey, which will measure the travel behavior of university students. The consultant will work with Council staff and staff at local universities, colleges, and community colleges to determine the appropriate distribution and form of data collection. The data collection may consist of a specially designed survey, or may involve incorporating samples of students into an ongoing wave of the household travel survey. The consultant will be responsible for survey and sample design, execution of the survey, data assembly and weighing, and initial analysis and documentation.

Cost (constant dollars): $150,000
Cost assumptions: past experience, judgement of Council staff
Contract Years: 2019

Airport Special Generator Survey

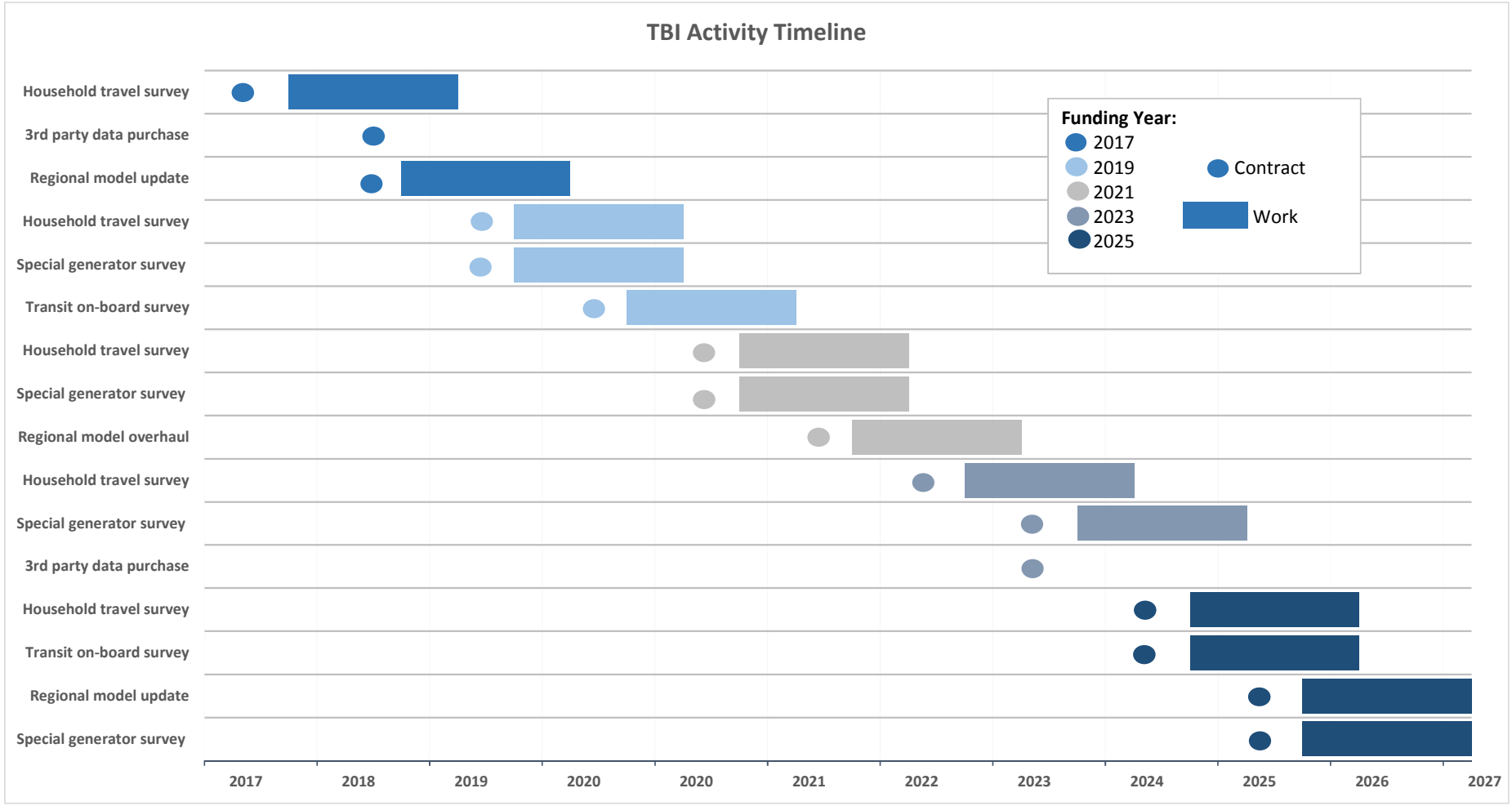
A consultant will be hired to perform this survey, which will measure the travel behavior of MSP airport visitors. The consultant will work with Council staff and staff at MAC to determine the appropriate distribution and form of data collection. The data collection may consist, as in 2010, of a departure gate in-person interview or it may involve third-party data purchases, or both. The
of a specially designed survey, or may involve incorporating samples of students into an ongoing wave of the household travel survey. The consultant will be responsible for survey and sample design, execution of the survey, data assembly and weighing, and initial analysis and documentation.

Cost (constant dollars): $100,000
Cost assumptions: past experience, judgement of Council staff
Contract Years: 2021

Regional Model Overhaul

A consultant will be hired to evaluate and update the regional model in light of data from data collection to-date. Potential major structural changes to the regional model will be assessed. The consultant will work with council staff and model stakeholders to determine the most effective and efficient form for the model based on current policy concerns and state-of-the-practice methods. Model estimation data sets will be developed, and each component of the regional model will be re-estimated and re-validated as necessary.

Cost (constant dollars): $200,000
Cost assumptions: past experience, judgement of Council staff
Contract Years: 2021


TBI Activity Timeline
Household travel survey
3rd party data purchase
Regional model update
Household travel survey
Special generator survey
Transit on-board survey
Household travel survey
Special generator survey
Regional model overhaul
Household travel survey
Special generator survey
3rd party data purchase
Household travel survey
Transit on-board survey
Regional model update
Special generator survey
2017
2018
2019
2020
2020
2021
2022
2023
2024
2025
2026
2027
Funding Year:
2017
2019
2021
2023
2025
Contract
Work