

# Briefing on the strategic plan to improve COG/TPB's travel forecasting procedures

Presentation to the TPB Technical Committee  
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Metropolitan Washington Council of Governments (COG)



# Overview

- COG/TPB travel demand modeling consultant-assistance project
- Strategic plan for improving the COG/TPB travel demand modeling procedures
  - ▣ Solicitation of input from
    - Users of the COG/TPB model (“stakeholders”)
    - Peer MPOs, regarding modeling practices, especially w.r.t. activity-based travel models (ABMs) and dynamic traffic assignment (DTA)



# Section 1

## COG/TPB travel demand modeling consultant- assistance project



# Consultant-assistance project

- Scope
  - ▣ Assist COG/TPB staff in development and application of COG/TPB travel demand model
  - ▣ Perform scans of current modeling practice across U.S.
- Goal: Ensure that COG/TPB travel model is consistent with or exceeds the state of the modeling practice in the U.S.
- Started in 2005 (FY 2006); Now in 10<sup>th</sup> year



# Consultant-assistance project

- Implementation
  - ▣ Series of 1-year, task-order contracts & contract extensions
  - ▣ Each contract can be extended for up to 2 additional years
  - ▣ Thus, a consultant may hold contract for up to 3 years before re-bidding
- After award of contract, task orders are negotiated between COG and consultant



# Consultant-assistance project

- Contract awards
  - ▣ FY 2006-2008: Vanasse Hangen Brustlin, Inc. (VHB)
  - ▣ FY 2009-2011: Cambridge Systematics, Inc.
  - ▣ FY 2012-2014: AECOM
  - ▣ FY 2015: Cambridge Systematics, Inc.
- Budget
  - ▣ \$150k/year for first 9 years
  - ▣ \$200k this year



# Consultant-assistance project: FY 15 task orders

	Description	Date Authorized	Amount
15.1	Attend relevant meetings and respond to ad-hoc requests	7/17/14	\$35,000
<b>15.2</b>	<b>Develop a strategic plan for models development</b>	<b>1/9/15</b>	<b>\$88,000</b>
15.3	Review of transit modeling w.r.t. FTA guidance	10/22/14	\$28,000
15.4	Modeling with Public Transport	2/26/15	\$49,000
	Total funds authorized (out of \$200k)		\$200,000



## Section 2

Strategic plan for improving the COG/TPB travel demand modeling procedures





# Strategic plan: Introduction

- Develop a multi-year strategic plan for the development of the COG/TPB regional travel demand forecasting process
- Goals:
  - To ensure that the COG/TPB travel demand modeling process is, at least, state of the practice, and, possibly, state of the art, when compared with peer MPOs
  - To provide a modeling process that can address the goals of the TPB and policy questions of our region



# Strategic plan: Background

- Last strategic plan for models development at COG
  - ▣ 22 years ago (PBQ&D et al., 1993)
  - ▣ Was a 7-year plan (FY 1993-1999)
- Intervening years
  - ▣ “Review of Transportation Modeling and Data Collection Activities at MWCOCG” (Harvey et al., 1995)
  - ▣ Review by a special TRB committee (letter reports: 2003, 2004)
  - ▣ Series of consultant-assistance contracts
    - 2005 to present: 10 years, 10 consultant reports
    - 2012 report: TPB staff review of first 6 years of consultant recommendations



# Strategic plan: 3 reports

1. Assessment of potential shortcomings of the current travel demand model (Version 2.3.57) and opportunities for improvement
2. Status report on the use of activity-based models (ABMs) and dynamic traffic assignment (DTA) at peer MPOs
3. **Strategic plan for the improvement of the COG/TPB regional travel demand modeling procedures**



# Report 1: Improvements to current model

- Identify actual & perceived issues with model
- Solicit input from users of the COG/TPB travel model (“stakeholders”)
  - ▣ TPB staff, including senior management
  - ▣ State DOTs
  - ▣ Local governments
  - ▣ Other users, e.g., consultants, transit operators
- Two mechanisms
  - ▣ Web-based survey, Feb. 13 – Mar. 3
  - ▣ Stakeholder meeting, Feb. 27



# Stakeholder survey

- Distributed to
  - ▣ COG/TPB Travel Forecasting Subcommittee
  - ▣ People who have requested the COG/TPB model or its inputs/outputs in the last year
  - ▣ Selected COG/TPB staff who are familiar with the COG/TPB model or its data
  - ▣ Additional individuals who requested it
- Sent to about 160 people
- No. of responses: 53
- This presentation presents some of the findings

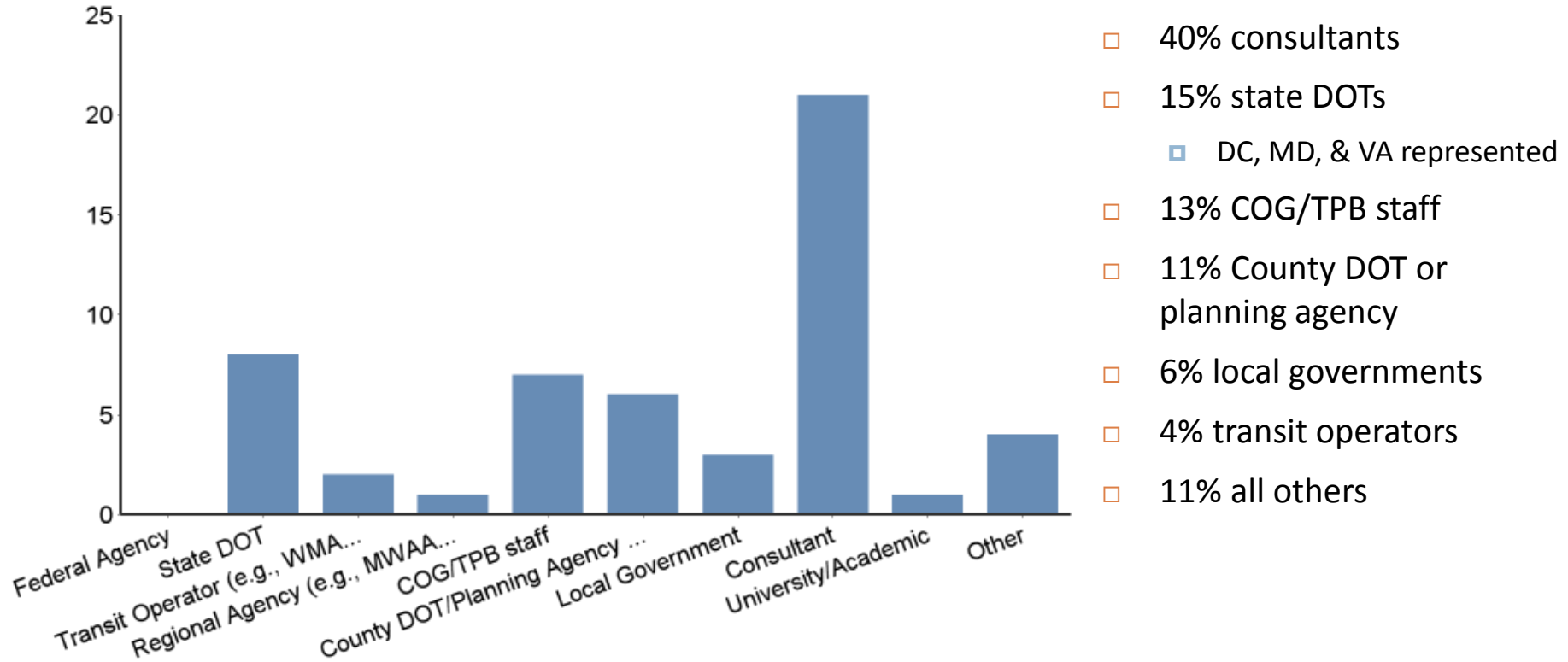


# Stakeholder survey

- Question categories
  - ▣ Respondent Information (name, title, agency, etc.)
  - ▣ Experience running the model/using inputs & outputs
  - ▣ Model application – project types, geography, mode
  - ▣ Level of interest regarding types of policies
  - ▣ Level of satisfaction with current model and how well it addresses specific issues
  - ▣ Importance of specific emerging transportation trends

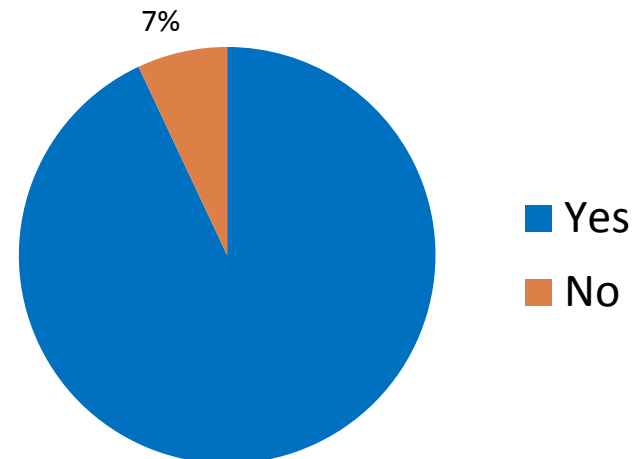
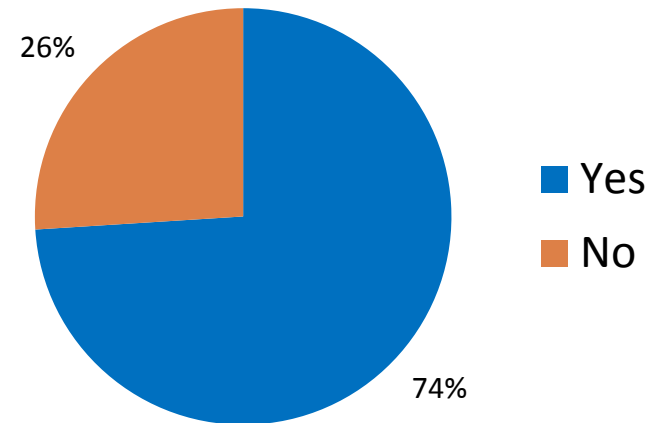


# Stakeholder survey: Distribution of Organizations (Q. 2)



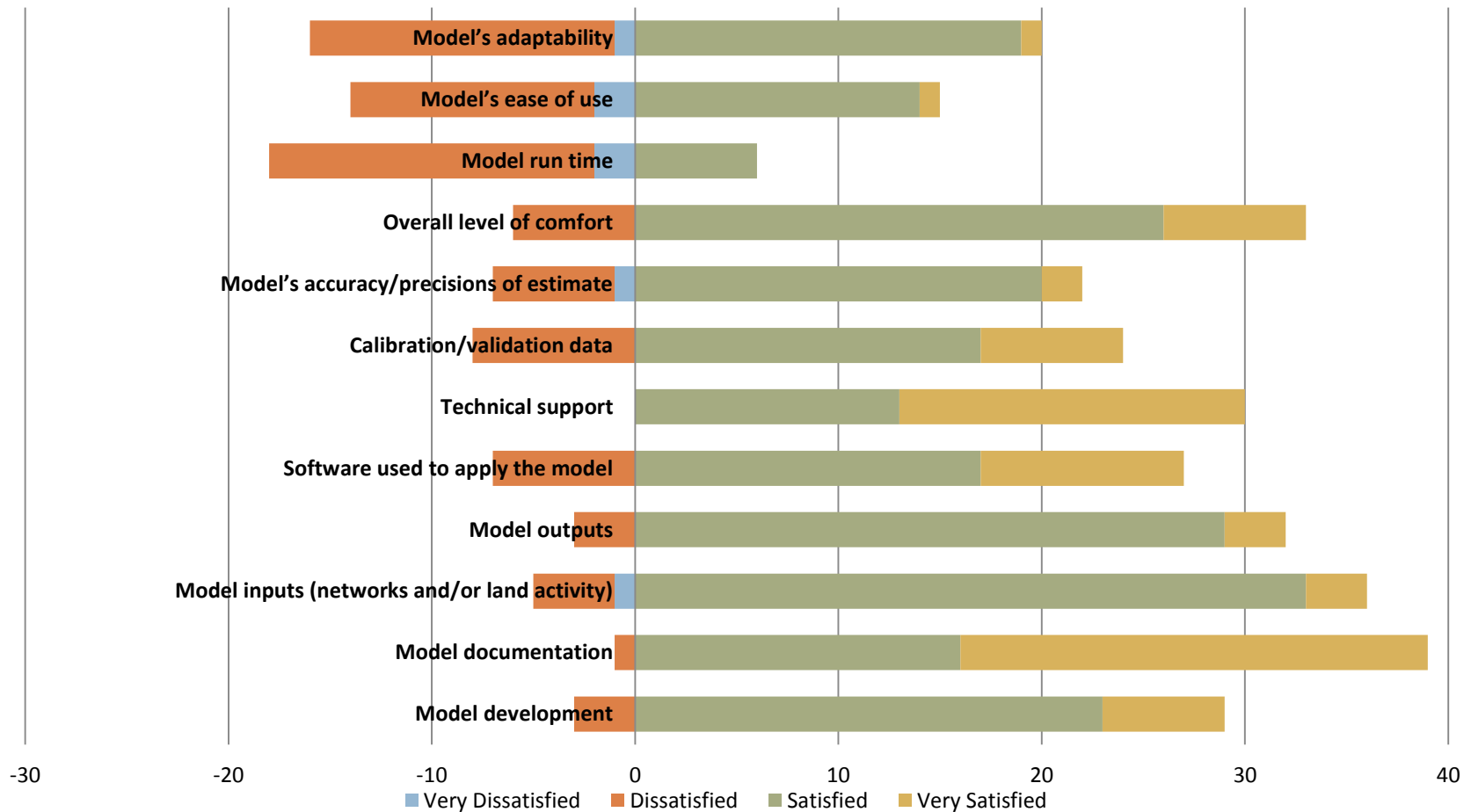
# Stakeholder survey: COG/TPB model use (Q. 4 & 5)

- Have you executed the adopted COG/TPB travel model during the past three years?
- Have you used COG/TPB travel model inputs or outputs during the past three years?





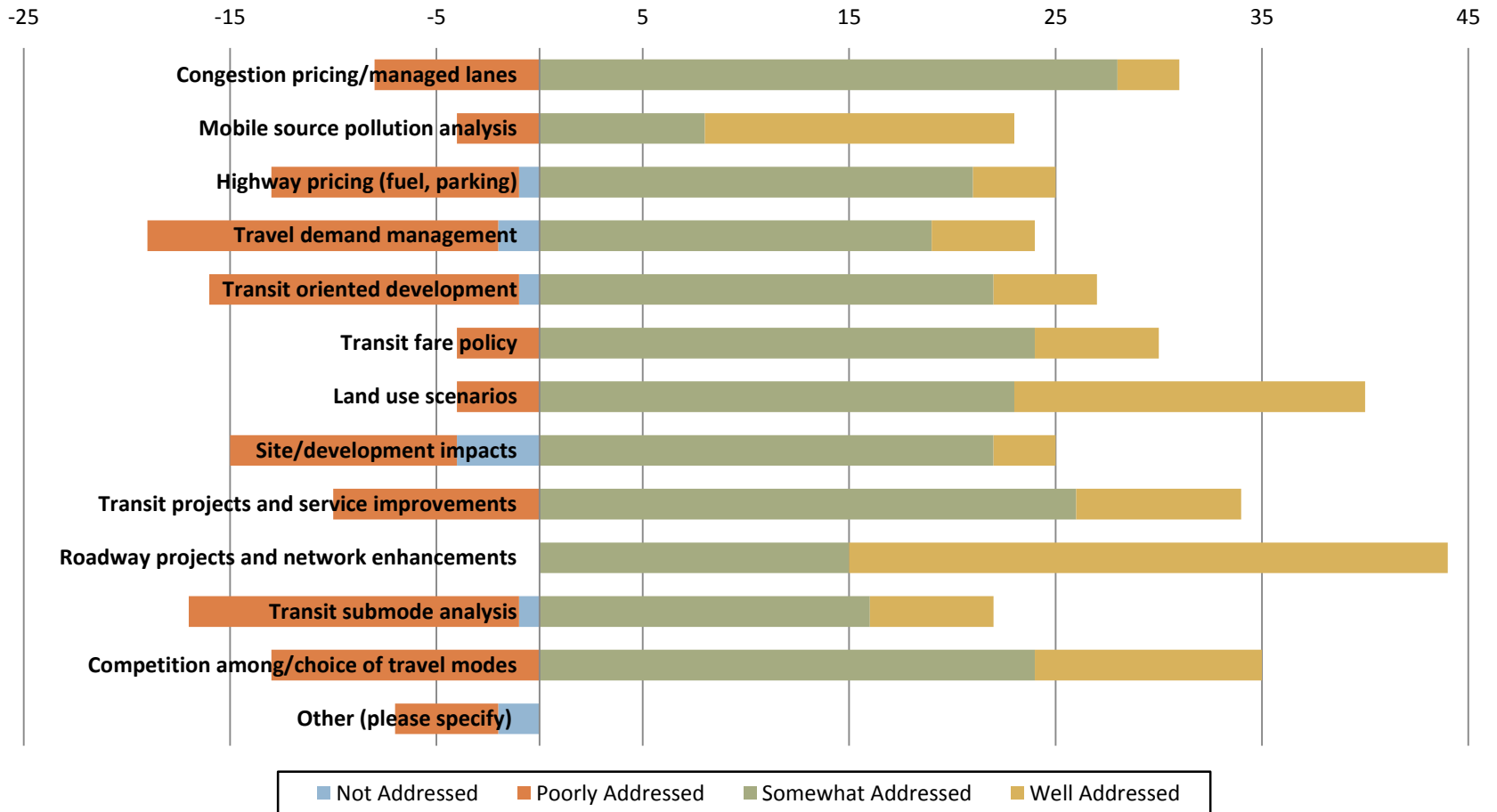
# Stakeholder survey: Satisfaction levels with current COG/TPB model (Q. 10)



Note: Total number of respondents – 53. The “Neutral” and “No Opinion” selections are not presented.



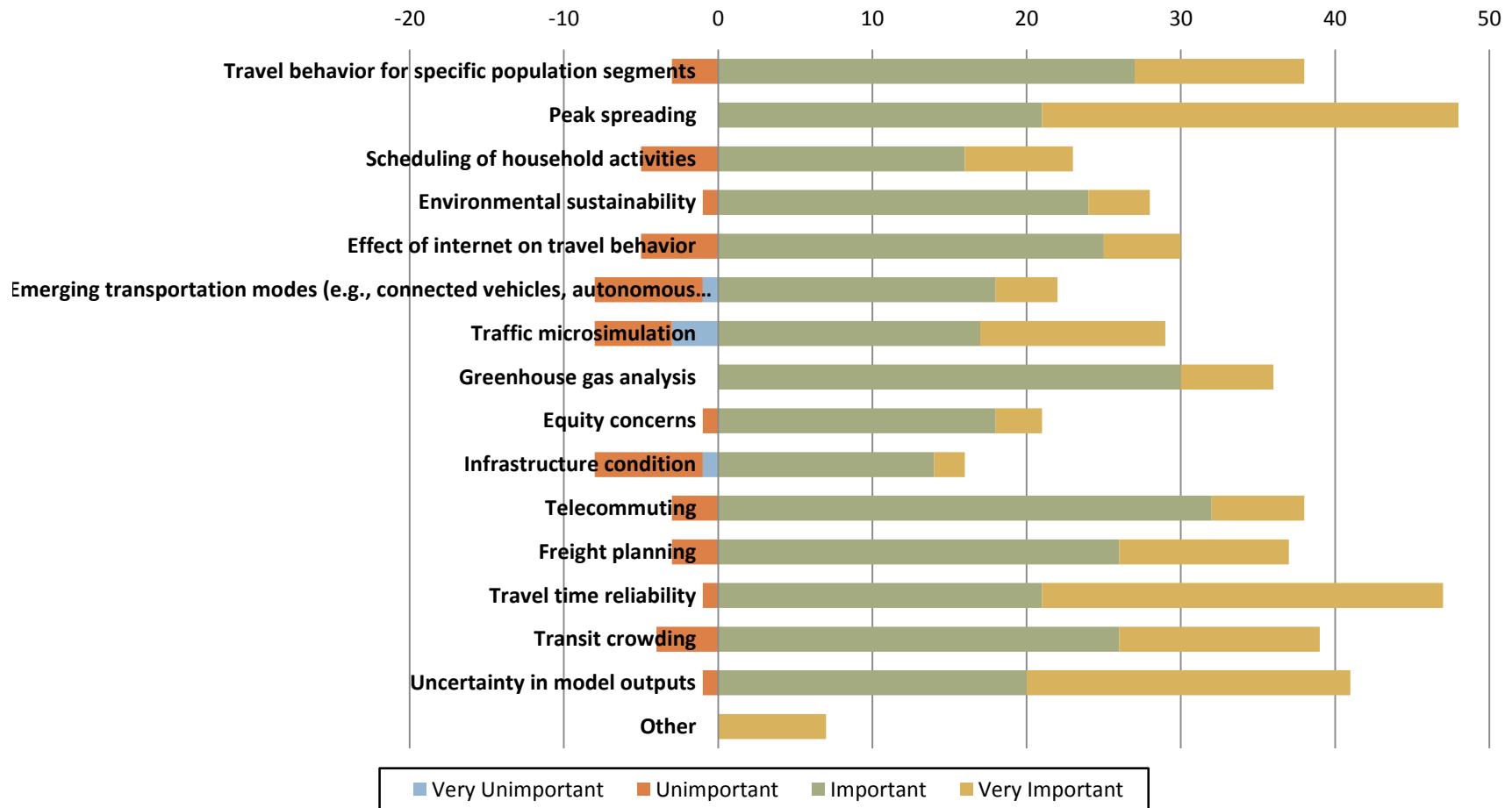
# Stakeholder survey: Satisfaction levels w/ issues addressed by current model (Q. 11)



Note: Total number of respondents – 53. The “Neutral” and “No Opinion” selections are not presented.



# Stakeholder survey: Importance of emerging transportation issues (Q. 12)



Note: Total number of respondents – 53. The “Neutral” and “No Opinion” selections are not presented.



# Stakeholder survey: Free-form responses

- Responses received on a variety of topics
- Some recurring themes
  - ▣ Desire for
    - Improved handling of HOV/managed lanes
    - Enhanced transit modeling (assignment, sub mode-choice)
    - More network detail in the model
    - Improved model run times
  - ▣ Comments for and against ABM and DTA



# Report 2: Use of DTA and ABM at peer MPOs

- 23 large MPOs considered peers of the TPB
  - ▣ 20 largest MPOs by population (TPB is #9)
  - ▣ 3 smaller MPOs known for innovation
    - SACOG, Sacramento (#22)
    - Portland Metro (#36)
    - MORPC, Columbus, OH (#37)
  
- See next slide for list



# Peer MPOs for COG/TPB\*

1. Southern California Association of Governments (SCAG)
2. New York Metropolitan Transportation Council (NYMTC)
3. The Chicago Metropolitan Agency for Planning (CMAP)
4. Metropolitan Transportation Commission (MTC)
5. North Jersey Transportation Planning Authority (NJTPA)
6. North Central Texas COG (NCTCOG)
7. Houston-Galveston Area Council (H-GAC)
8. Delaware Valley Regional Planning Commission (DVRPC)
9. **National Capital Region Transportation Planning Board (TPB)**
10. Atlanta Regional Commission (ARC)
11. Southeast Michigan COG (SEMCOG)
12. Maricopa Association of Governments (MAG)
13. Puget Sound Regional Council (PSRC)
14. Boston Region MPO
15. San Diego Association of Governments (SANDAG)
16. Metropolitan Council
17. Denver Regional COG (DRCOG)
18. Baltimore Regional Transportation Board (BRTB)
19. Southwestern Pennsylvania Commission (SPC)
20. East-West Gateway Council of Government (EWGCOG)
21. Sacramento Area COG (SACOG)
22. Portland Area Comprehensive Transportation System (METRO)
23. Mid-Ohio Regional Planning Commission (MORPC)

\*20 largest MPOs (based on 2010 population in the MPO planning area) plus 3 smaller MPOs known for innovation in travel demand modeling



# Survey of peer MPOs

- As of the survey closing date (Mar. 25), all 23 MPOs have responded to the survey
- Preliminary findings may be presented at the May 22 TFS meeting



# Next steps

- Report 1 (opportunities for improving current model) due mid April
- Report 2 (status of ABM & DTA use at other MPOs) due end of April
- Strategic plan
  - ▣ Coordination mtg. w/ senior COG/TPB staff (Apr. 16)
  - ▣ Report due by June 30





# Acknowledgements

- Cambridge Systematics, Inc.: John (Jay) Evans, Feng Liu, and Nikhil Puri,
  - ▣ For their work on developing the strategic plan and
  - ▣ For several slides in this presentation dealing with the stakeholder survey (derived from 3/20/15 presentation to the Travel Forecasting Subcom.)



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