SERPM 8 Project Update

presented to

RTTAC-MS

presented by

Cambridge Systematics, Inc.

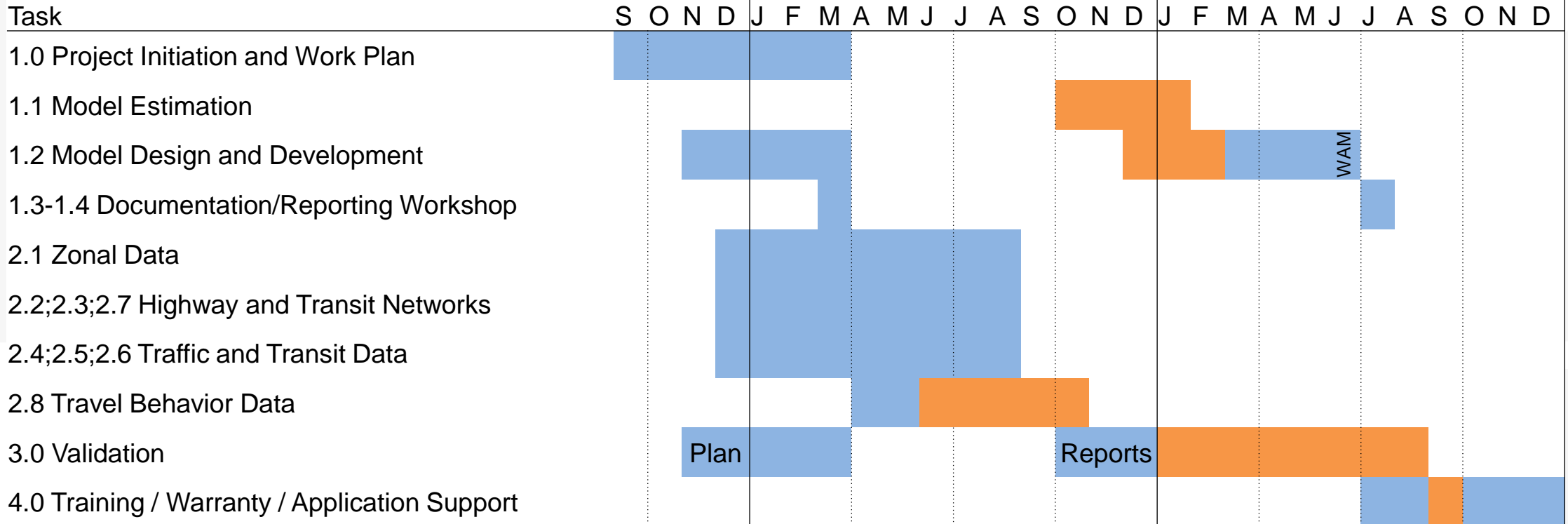Jay Evans, Marty Milkovits, Tom Rossi

September 27, 2017

Outline

> Schedule

> Data status

> 2015 employment data*

> Synthetic population calibration*

> Activity-based component update status and plan

*RTTAC-MS Action Item

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Project schedule

SERPM 8.0 Project Plan

Task	2016	2017	2018

Task timeline (S O N D | J F M A M J J A S O N D | J F M A M J J A S O N D):

- 1.0 Project Initiation and Work Plan
- 1.1 Model Estimation
- 1.2 Model Design and Development — WAM
- 1.3-1.4 Documentation/Reporting Workshop
- 2.1 Zonal Data
- 2.2;2.3;2.7 Highway and Transit Networks
- 2.4;2.5;2.6 Traffic and Transit Data
- 2.8 Travel Behavior Data
- 3.0 Validation — Plan, Reports
- 4.0 Training / Warranty / Application Support

Critical Path

WAM: Windowed Area Model

Version: 9/27/2017

Plan: validation plan development

Reports: validation reporting development

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Next steps

➤ Incorporate remaining feedback to 2015 input data
- » Zonal data
- » Highway network
- » Transit network

➤ Model update
- » Assess and prepare travel behavior data
- » Update ABM models
- » Update aggregate models
- » Synthetic population calibration

➤ Begin SERPM 8 implementation

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Data Status

Data status

- Zonal input data

- Network updates

- System-level validation data

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Zonal data summary

		CS Actions	Action required from T/MPOS		
Type	**Description**	**Status**	**PBC**	**BC**	**MDC**
Person SED	Persons by categories of age, occupation, gender, race/ethnicity	Assembled, trend check notes sent to T/MPOs			Review trends
HH SED	HHs by categories of income, size, # workers, children, housing unit	Assembled, trend check notes sent to T/MPOs			Review trends
Employment	Employment by 16 categories	Zero/Non-Zero trends sent to T/MPOs To review inclusion of self-employment			Review trends
School Enrollment	Enrollment by 7 categories, including higher education	Investigating public/private model segmentation			Categorize Charter / Magnet as 'Private'
School District	District shapefile for K-8 and 9-12				

Zonal data summary (continued)

Type	Description	CS Actions	Action required from T/MPOS		
		Status	PBC	BC	MDC
Parking	Space and cost by time period	Issues identified and transmitted back to M/TPOS			Address issues
Hotels	Total hotel rooms	Assembled, trend check notes sent to T/MPOs			Review trends
Shopping Malls	Binary indicator of shopping malls	Review in system validation			
Beaches	Total acres	No change from 2010			
Daily Enplanements	Total daily enplanements	To convert FAA/3rd party data to SERPM format			
CBD indicator	Binary indicator of location in CBD	Review in system validation			
Port Activity	Special generator inputs for cruise terminals	Updated with new port data			
Freight Activity	Updated freight distribution seed table	To develop using FDOT CO Freight Activity Center database and Streetlight data			

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Network updates

- Highway network
  - » Addressed initial comments from D4
  - » Maintain list of items to review going forward

- Transit network
  - » Finalize inclusion criteria

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System data - highway

➤ Counts

» Incorporated Miami-Dade 2015 Time-of-Day Counts

» Incorporated Turnpike 2016 counts

» Addressed other count data comments given for final network

» Updated Traffic Count AADT, TOD, and Class data to network for over 4200 sites

➤ Speeds

» Associated Traffic Message Channel (TMC) by direction with 1,880 links in the model network

» Initial comparisons with free-flow and congested speed by facility type

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System data - transit

➤ **Transit onboard surveys processed and expanded to 2015**

» Tri-Rail: 2013 on-board survey

» Palm Tran buses: 2015 on-board survey

» Broward County Transit (BCT) buses: 2010 on-board survey

» I-95 Express: 2011 on-board survey

» Miami Dade Transit (MDT) Metrobus: Three (3) on-board surveys conducted between 2012 and 2015

» MDT Metromover: 2014 on-board survey

» MDT Metrorail: 2009 on-board survey

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Next steps (beyond TWO 3)

➤ Prepare initial system-level summaries

- » Highway
  - ▪ Volumes
  - ▪ Speeds
- » Transit boardings
- » Identify systematic differences / areas of concern
- » Increase familiarity with data ahead of validation schedule

➤ Assemble issues list to track minor items

- » Network modifications
- » TAZ / MAZ-level corrections

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Employment Data

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Recommendation

- Wage / Salary: Use 2015 Central Office Employment Data
  - » Consistent with BEA 2015 county control totals
  - » MAZ-Level Adjustments based on T/MPO feedback

- Self-Employment: Apply factors derived from PUMS data
  - » Consistent with SERPM7 self-employment derivation process

We are requesting a motion today to approve these employment data and self-employment factors

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Synthetic Population Calibration

Recommendation

- Maintain TAZ total household and total person control totals as specified by the T/MPOs
  - » T/MPO spatial distribution is more reliable than ACS.

- Adjust TAZ control totals to match ACS distribution pattern by market segment at super district level
  - » ACS market segment distribution is more reliable.

We are requesting a motion today to approve this modification to the T/MPO provided inputs

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Next Steps

- Derive balanced scale factors for household and person compositions

- Apply scale factors and compare PopSynIII outputs to control totals and ACS

- Identify segments where revised control totals are not well matched due to correlations in sample population
  - » Revise control totals to compensate as necessary

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ABM Update Status and Plan

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