SERPM 8.0 Model Update Status

presented to

RTTAC-MS

presented by

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Agenda

- Data Needs

- Project Plan Reviews
  - » Model Design Plan
  - » Model Validation Plan

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Data Needs

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Employment / Population data

- 2015 Employment data will be developed as part of central office contract
  - » Task Order expected by end of January
  - » Approach available by late February / early March for review
- 2015 Population
  - » TAZ level controls are still in process
  - » Income segments to be used will be reviewed after HH survey data is available

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Zonal Data

- School enrollment and location
  - » District boundaries
  - » Private schools(?)
- University data
- Parking supply and cost

- Hotel and motel rooms
- Special generators
  - » Airport / Seaport / Cruise ship activity
  - » shopping mall / beach acres
- Freight data
  - » Major freight distribution centers

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Roadway Data

- Completed highway projects since 2010 network
  - » Project networks/shapefiles as available

- Operational data
  - » School zones
  - » Toll information
  - » Ramp metering

- Meso-model support roadway data
  - » Ped/bike facilities
  - » Intersection / median attributes
  - » Traffic signal data

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Project Plan Reviews

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SERPM 8.0 Project Plans

- **Model Design Plan**
  - » Draft - January; Final - February

- **Model Validation Plan**
  - » Draft - January; Final - February

- **Model Usability Plan**
  - » Draft - February; Final - March

- **Model Training and Documentation Plan**
  - » Draft - March; Final - April

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Model Design

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SERPM 8.0 Key Changes

> Transit

» Path building segments determined by onboard survey data

» Mode choice alternatives and parameters consistent with paths

» Drive-egress included to support ridesourcing

> Highway

» HOV vs. GP distinction removed (maintain toll vs. non-toll)

» Ridesourcing alternative and trip table

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Future Mobility Support

- **Willingness to ridesource**
  - » Binary choice model with income, density, hh lifecycle terms

- **Auto technology**
  - » Set level of technology in household vehicles
  - » Option to segment trip tables for assignment

- **Ridesourcing**
  - » New mode alternative and separate trip table

- **Zero-occupancy vehicles**
  - » Post-processing generation of deadheading trips

SERPM 8.0 Other Demand Changes

➤ Long term
  » Distance formulation
  » Usual workplace approach

➤ Mobility
  » Remove toll transponder ownership

➤ Daily
  » Update tour alternatives
  » Intermediate stop purpose

➤ Tour
  » Mode choice structure (key change described earlier)

➤ Trip
  » Consistent with Tour mode choice structure

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SERPM Assignment Changes

➤ Managed lane toll calculation and operation

➤ HOV2 vs. HOV3p trip/skim segments

　» Combine auto modes for assignment / segment in mode choice

➤ Aggregate model updates

　» Streetlight data

　　▪ Airport data
　　▪ External models
　　▪ Truck models

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Model Validation

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Validation Process

- Data compilation

- Single-pass calibration

- Full feed-back validation

- Backcast

- Sensitivity testing

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Validation Data

- SE Data
- Travel Survey
  - » Household
  - » Transit
  - » Streetlight
- Model parameters

- Backcast
  - » NHTS
  - » Transit
  - » Highway count
  - » Transit ridership

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Validation Tests

Level 1
- » Top priority
- » Aggregate level tests

Level 2
- » Targeted to market segments
- » Diagnostics to Level 1 results

Level 3
- » Other diagnosis measures if Level 1 & 2 results suggest issue with component specification

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Input Data Validation

- **SE data**
  - » Comparisons using Area Type & District iterations
  - » Trends and outlier inspection

- **Network data**
  - » Highway comparison with reported travel times
  - » Toll and HOV facility performance
  - » Transit
    - ▪ Path building
    - ▪ Run times
    - ▪ Timetables and headways

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Component Level Validation

➤ Review model coefficients against other areas

➤ Level 1-3 tests are defined for each disaggregate demand component

» PopSyn through Parking Location

» HH Survey will provide primary validation source

▪ ACS data as appropriate

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System Level Validation

- Highway
  - » VMT by segment (geographic area, functional class) and per resident
  - » Link volumes
    - Screenlines
  - » Congested speeds
    - 'choice' times– 95th percentile of observed travel times

- Transit
  - » Boardings by region, mode, line/station-rail
  - » PnR utilization

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Temporal Validation and Sensitivity

➤ 2010 Backcast
  » 7% population / 14% employment growth (2010-2015)
  » Great recession influence on travel
  » Substantial transportation projects
    ▪ Port of Miami tunnel, I-595
  » Input data readily available

➤ Sensitivity tests – specific tests to be defined:
  » SE changes
  » Auto parameters (e.g. auto operating cost)
  » New highway projects
  » New transit projects

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