Date: January 31, 2019

To: Middle Rogue Metropolitan Planning Organization
Technical Advisory Committee (TAC)

From: ODOT Transportation Planning Analysis Unit (TPAU)
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RE: **Southern Oregon Activity-Based Model (SOABM) Calibration/Validation Results and Reviews of the 2010/2017 Land Use Data and 2045 Land Use Forecasting Methodologies**

Corresponding to the three purposes (as shown in the subject above), ODOT TPAU staff would like to present the following at the Feb. 7th TAC (Technical Advisory Committee) Meeting:

1. The base year 2010 SOABM validation results
2. The 2010 to 2017 district-level land use trends
3. TAC stakeholder engagement in future year forecasts

Base Year 2010 SOABM Validation Results

Last August, MRMPO TAC members were introduced about the SOABM, which will be implemented in the next RTP (Regional Transportation Plan) update. Now is the time to present the base year 2010 SOABM validation results and to demonstrate the model goodness of fit to the 2010 conditions. Following are some explanations about technical terms used in the SOABM for your better understanding:

Long-Term Models: which usually don't change as dynamically as traffic changes, such as:
- Flows & Tour Length: Travel flows are determined by travelers' activities among different places; therefore, their tour lengths are determined by the distances among these places.
- Employment vs Workers: Employment means at work places and workers mean where they are from residential locations; and they should be balanced in terms of home-work locations.
- Enrollment vs Students: Enrollment means the number of student headcounts at school/college/ university while students mean where they are located from their residential places.

Tour Summaries: individual daily activities are linked by their tours, which are composed of time and space constrained trips.
- School Escorting: joint tours are partly made by parents and kids together, or parents only.
- Joint Tours: there are several joint tour types: mandatory work or school, maintenance for shopping, and discretionary eating-out or recreational activity-based joint tours.
- Destination: Daily activities are all associated with places or destinations that people choose to go to.

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- Time of Day: SOABM models five time periods (3AM-7AM, 7AM-8:30AM, 8:30AM-4:30PM, 4:30PM-6:30PM, and 6:30PM-3AM), the summation of which represents the daily conditions.
- Tour Mode: tour mode determines travelers' daily trip mode patterns as soon as they start daily travel in their automobile or other modes, such as: carpool, walk, bike or by bus.

Trip Level: individual trips make for each tour which serves for different activities.
- Stop Frequency: number of individual trips determines individual stop frequencies for their tour.
- Location: travelers' location choices are determined by their need for the coordinated daily activities.
- All Day, AM, MD and PM Assignments: the primary travel time periods as each period trip assignment is characteristically different with or without traffic congestion, but All Day traffic assignments are combined five time periods of different trip assignments.
- Trip Mode: each individual travel mode is most likely predetermined by his tour mode.

2010-2017 SOABM Land Use Trends for Verification

Since last August, RVMPO and TPAU staff compiled the base year 2017 household and employment by MAZ (micro-analysis zone), respectively using both Jackson County and Josephine County tax lot database in reference with the 2012-2016 ACS (American Census Survey), and OED's (Oregon Employment Department) 2017 QCEW (quarterly census of employment and wage) data.

With RVMPO's coordination, your local jurisdictional technical staff had been involved in reviewing the 2017 household data by single-family, duplex, multi-family, and mobile home types by MAZ, which will be used to the base year SOABM forecasting conditions to compare with the future year RTP scenario travel forecasting.

At this TAC meeting, you will be presented with some aggregate district-level findings of your jurisdictional household and employment trends between 2010 and 2017. You will have opportunities to verify and comment on the development trends in your jurisdiction.

Why Stakeholder Engagement in 2045 Future Year Scenario Forecasts

Traditionally, the RTP update process needs for local stakeholders' engagement for consistent and coordinated model land use data in the future year scenarios. During the stakeholder engagement, not only the stakeholders are well informed of the SOABM results, but also their inputs with respect to their local jurisdictional conditions (land use and network assumptions) are incorporated into the future year RTP scenario modeling.

From local input data tracking and need perspectives, TPAU will update you on the timelines and milestones for on-going next steps, such as: 1) winter 2019 complete validation of 2010 SOABM; 2) spring 2019 completion of the 2017 SOABM development; and 3) mid-2019 creation of the 2045 future year RTP scenario SOABM to be ready for the mid-2019 to the end of 2020 RTP update.

The land use forecasting methodologies and assumptions will be presented for your information and comments. The draft 2045 population/household forecasts are based on the PSU (Portland State University) population forecasts: "Josephine and Jackson County Jurisdictional Area Population Forecasts between 2015 and 2068." Using the OED's "Rogue Valley Industry Employment Projections 2017-2027", TPAU was able to approximately forecast the sectorial employment growth from 2017 to 2045 in the SOABM area, and present these draft forecasts graphically.

We are looking forward to your local knowledge and valuable inputs.

Cc: Brian Dunn, ODOT TPAU Manager