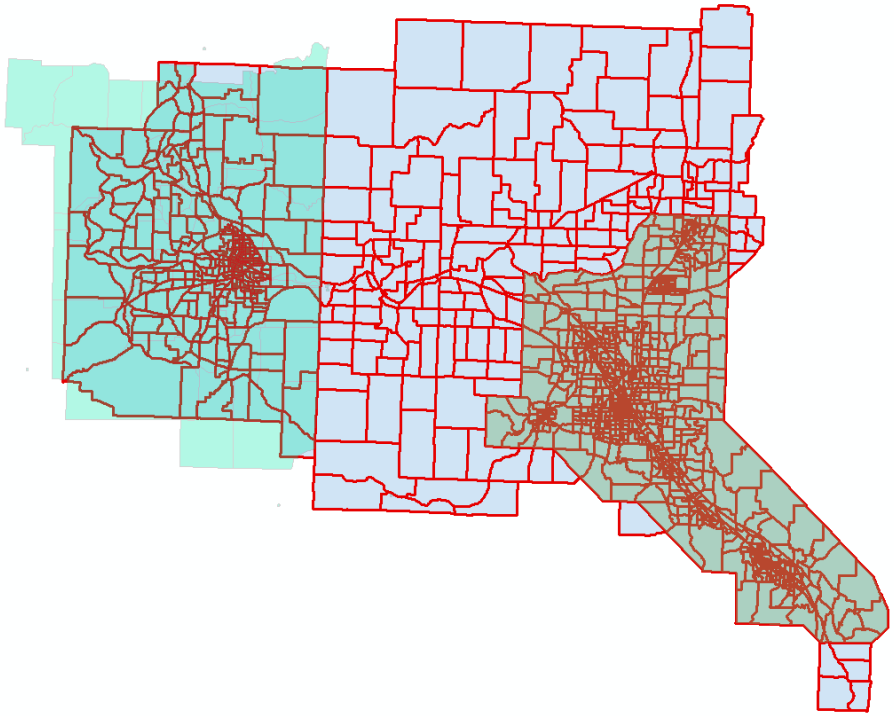


Southern Oregon Activity Based Model (SOABM)

Presented by:
Alex Bettinardi, P.E., ODOT-TPAU ,and
August 8, 2018

Overview

- Why an ABM
- Advantages of ABM
- Why Now
- How does it Effect You

ABM (Activity Based Model) Summary highlights

ABM – models people

Trip Based – models zones or groups of people

Additional detail allows for more (and more detailed) questions to be modeled

The additional information comes at a cost of more input level detail and a more complex model

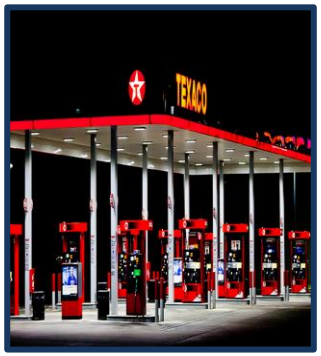
Given the questions being asked and anticipated to be asked…

Increased questions around bike / ped / transit information

Strategic and visioning work was showing a shift toward more pricing and technology questions (AVs)

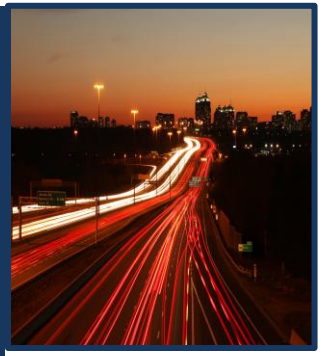
Funding realities point to less and less large highway expansion projects which is where Trip-based models shine

…the ABM is the planned platform for future travel demand model development.



Other Influences:

- Deals with trip chaining
- Move to Performance Measures / Equity
- Better accounting for peak spreading
- The ability to test congestion pricing
- ABM aligns with ODOT tool suite



Expanded Functionality

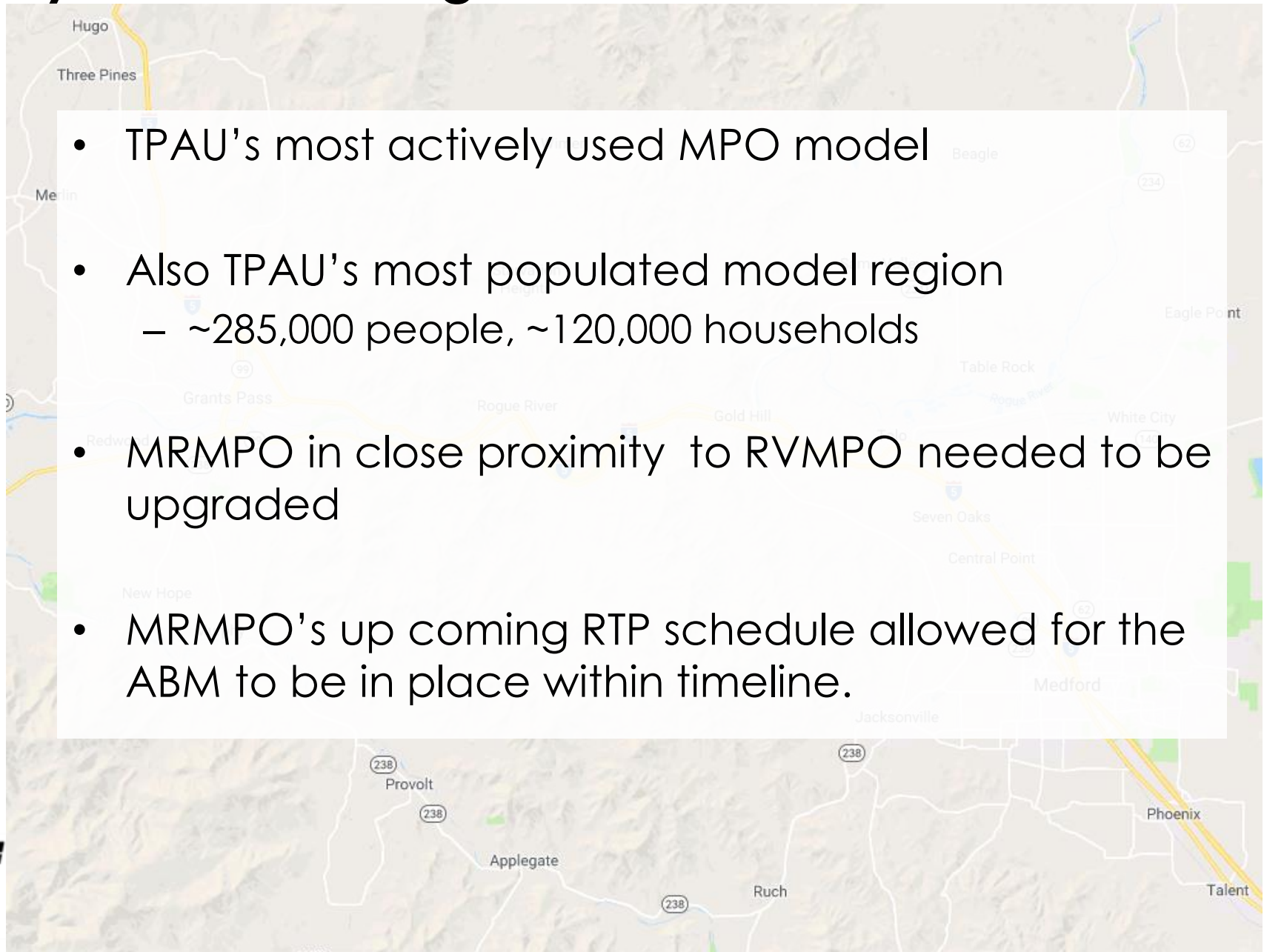
Policy Topic	Trip-Based Models	Activity-Based Models
Traditional highway projects		
Transit expansion projects		
Air quality conformity / emissions		
Traffic impact studies		
Bike/walk planning		
Land use planning (mixed uses, transit-oriented developments)		
System management and operations		
Highway pricing studies (such as tolling)		
Equity analysis (including the effects of policies and investments on disadvantaged populations)		
Peak spreading		

Suitability for Analyzing Topic:  *Good*  *Fair*  *Limited**

**Trip-based models may provide less detail than desired; ABMs may require disproportionate work effort with excessive detail.*

Source: Modified and adapted from information provided by RSG, Inc.

Why Southern Oregon



- TPAU's most actively used MPO model
- Also TPAU's most populated model region
  - ~285,000 people, ~120,000 households
- MRMPO in close proximity to RVMPO needed to be upgraded
- MRMPO's up coming RTP schedule allowed for the ABM to be in place within timeline.

Why Now: ABM Approach Background

Short History – but a long thoughtful decision

- 2012-2013: ODOT-TPAU decision to move forward with ABM
  - Borrow & validate with OHAS, not estimate new
  - Use off-the-shelf tested and proven **CT-RAMP** framework,
  - Oregon application called **OR-RAMP**
- 2014-2016: Southern Oregon **proof of concept** developed and delivered
  - Housing two MPOs in one model – worked
  - Some limited development/calibration still needed (as planned)
  - ODOT developing formalized approach to releasing the ABM
- March 2017 – development/calibration contract kick-off
  - Consultants complete 2010 calibration work – 2018
  - Develop scenarios in coordination with locals (both MPOs)

The Peer Review Panel

WSP

Oregon Modeling Steering Committee

ActivitySim

An open platform for activity-based travel modeling

Welcome

The mission of the ActivitySim project is to create and maintain advanced, open-source, activity-based travel behavior modeling software based on best software development practices for distribution at no charge to the public.

The ActivitySim project is led by a consortium of Metropolitan Planning Organizations (MPOs) and other transportation planning agencies, which provides technical direction and resources to support project development. New member agencies are welcome to join the consortium. All member agencies help make decisions about development priorities and benefit from contributions of other agency partners.

Timeline: Next Steps

RTP Scenario Data needs

Summer 2018:

Finalize Peer review of 2010 calibration year

Summer 2018:

Finalize 2016 base year

Late 2018:

Creating 2045 future year inputs

A lot of the data that the current model already requires…

Zones and Network

Households / Employment

Schools,
Parks,
Parking

…but there are some new “twists”

Some additional detail needed

Reviewing at the zone (TAZ) level,

But inputs are actually at a sub zone (MAZ) level

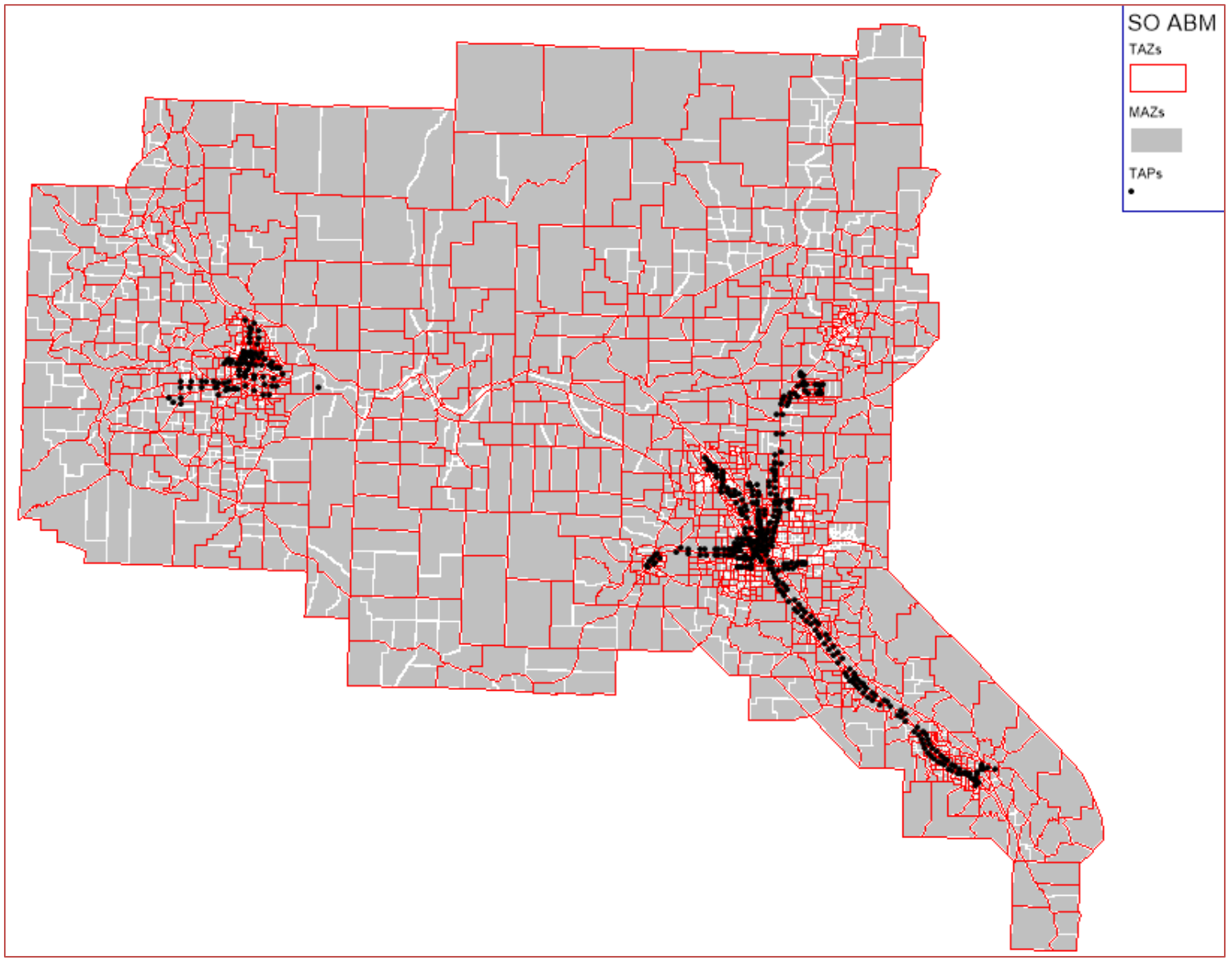
Some additional employment categories

And Household detail

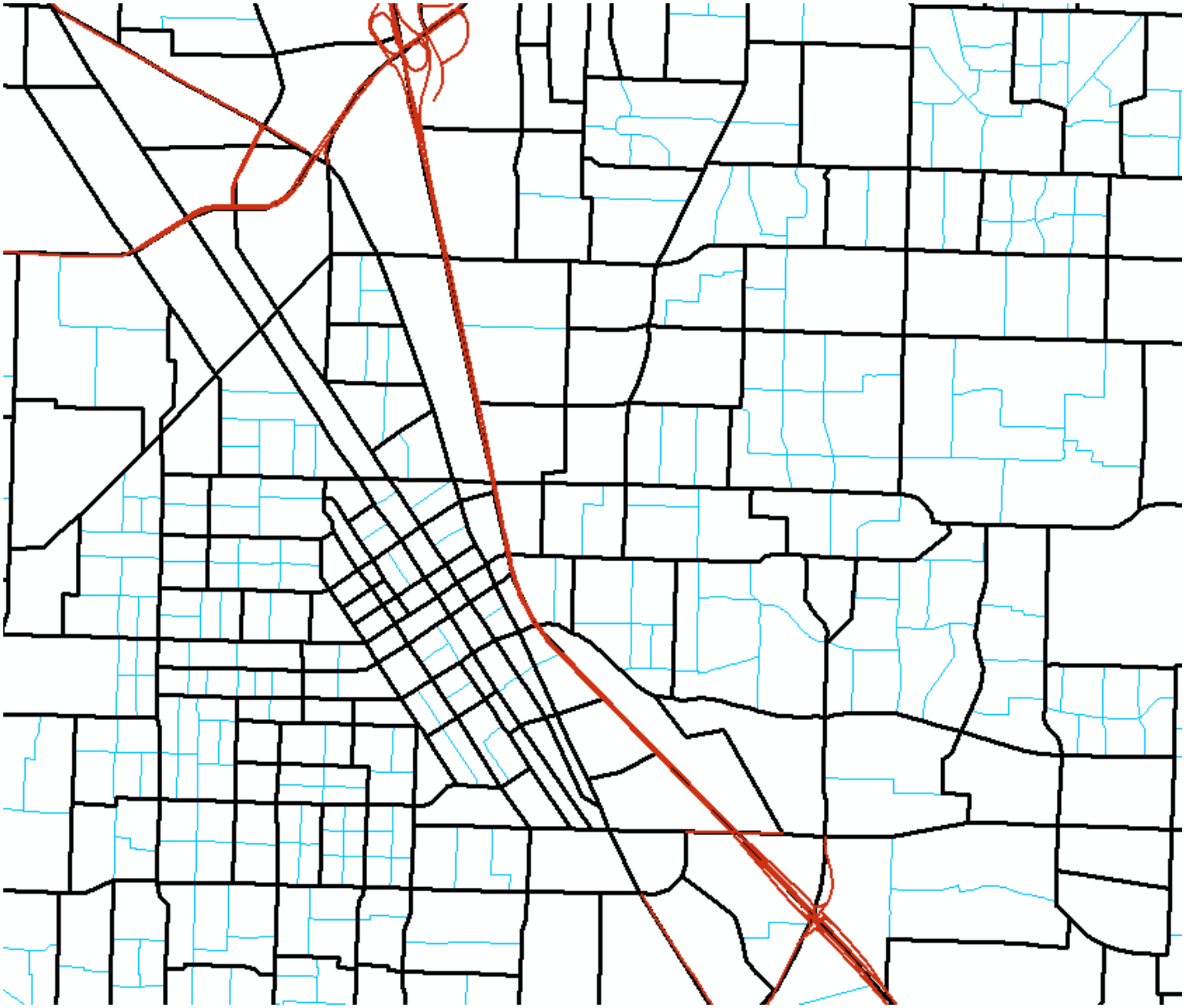
Active Mode (bike / walk) connections

Additional parking inventory detail

ABM Zone Structure



MAZ / TAZ difference for downtown Medford



Zones by Jurisdiction:

Area	TAZs	MAZs	MAZ per TAZ
Ashland	113	214	1.89
CentralPoint	65	148	2.28
EaglePoint	40	79	1.98
Jacksonville	34	53	1.56
Medford	331	713	2.15
Phoenix	37	70	1.89
Talent	29	53	1.83
WhiteCity	44	65	1.48
OtherRVMPO	159	198	1.25
RVMPO Total	852	1593	1.87
OtherJacksonCounty	156	286	1.83
GrantsPass	173	312	1.80
OtherMiddleRogue	73	170	2.33
OtherJosephineCounty	94	209	2.22
Model Total	1348	2570	1.91

Again, Extra Detail = Expanded Functionality

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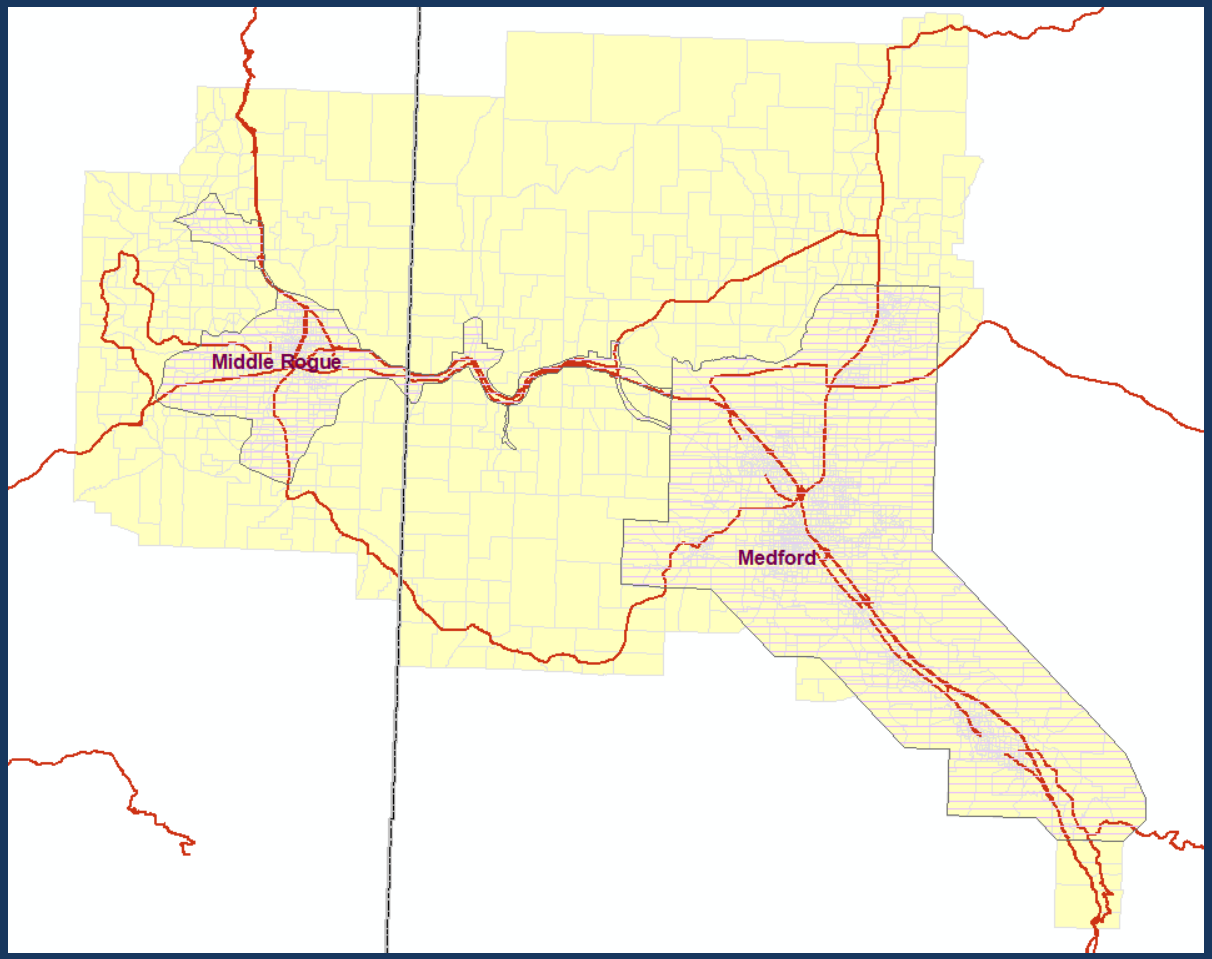
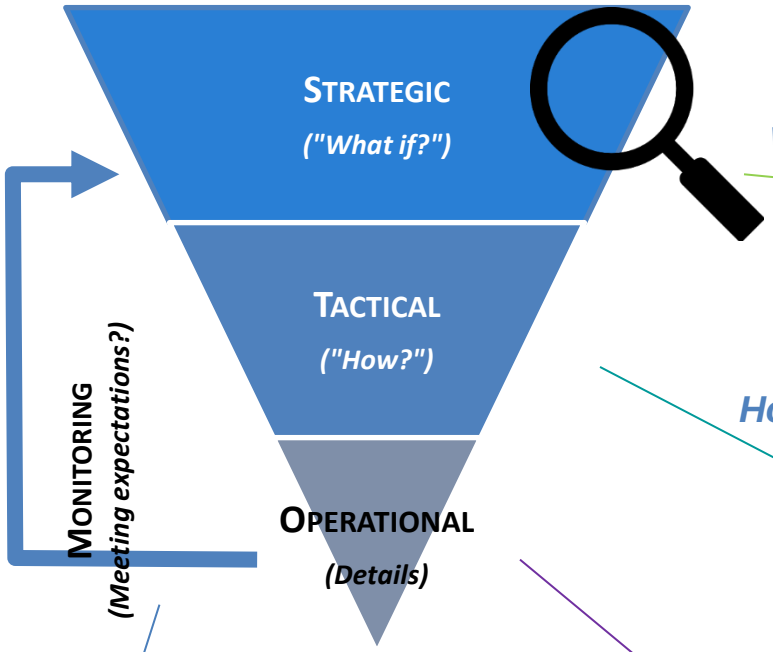
The ABM is the next generation Travel Demand Model for the RVMPO / MRMPO area.



What further information does the TAC need from ODOT to feel more comfortable with the ABM?

A 100,000ft Overview Tool Overview



What if?

Strategic Models can help with long-term visioning/ policymaking/funding/resilience analysis, but sacrifice detail.

How?

Tactical Models use fixed assumptions (e.g. a single economy, fixed fuel prices) to work out how to best implement allotted funding.

Details?

Operational Models help with short-term implementation details (e.g. signal timing).

Meeting Expectations?

Monitoring should reflect observed (not modeled) behavior