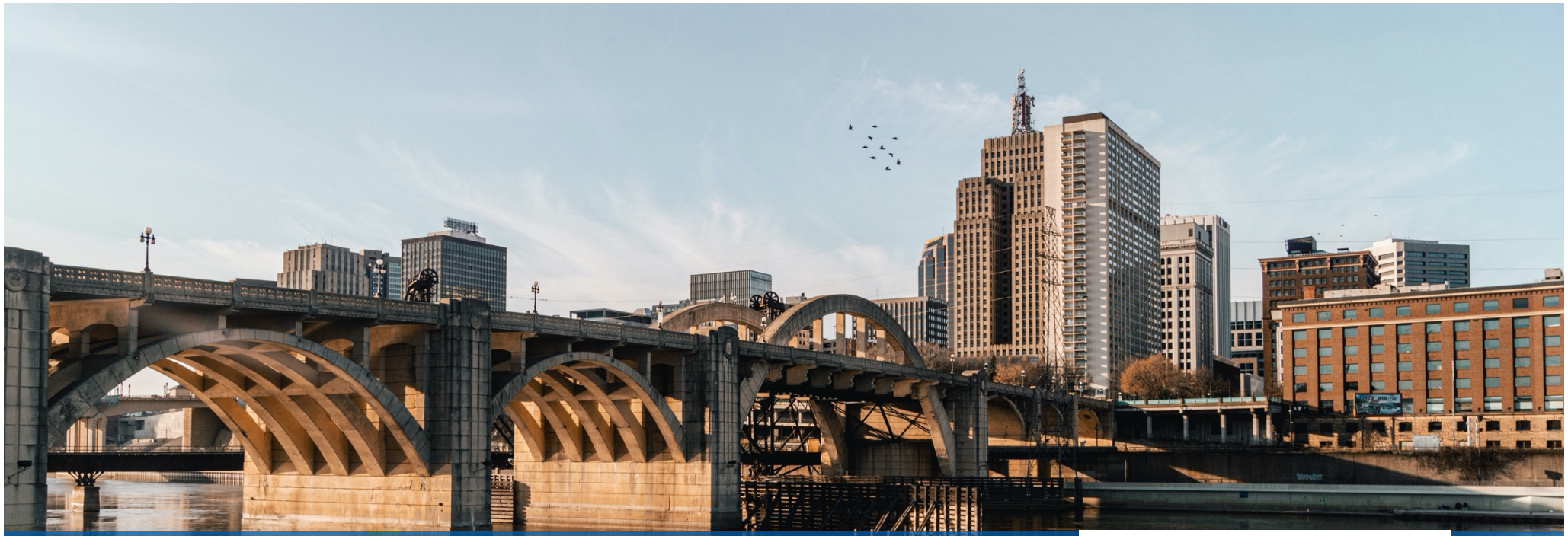


ActivitySim Implementation at the Met Council

METROPOLITAN COUNCIL

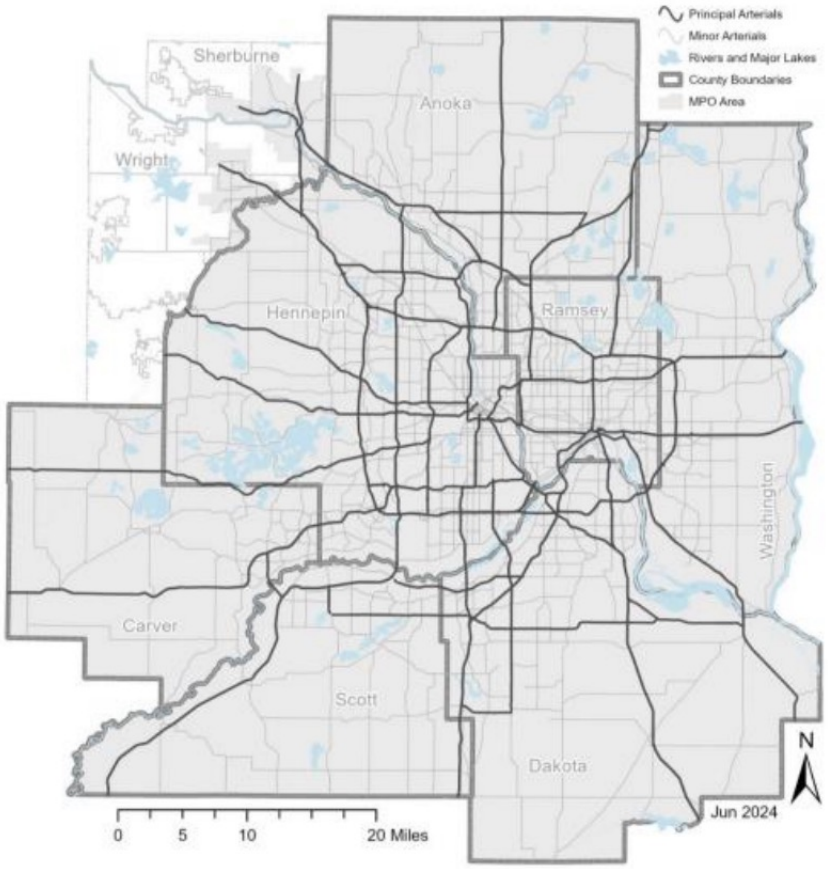
Dennis Farmer, Travel Forecasting Manager, Met Council Transportation Planning

2025 Modeling Mobility Conference

Overview

1. Met Council
2. Overview of Modeling Work
3. Motivations for Implementing ActivitySim
4. Development Work
5. Next Steps
6. Acknowledgements

Metropolitan Council (Met Council)



- MPO for St.Paul-Minneapolis Metropolitan Area
- Operate transit and wastewater systems
- Regional planning agency for 7-county

- 7-counties, portions of two additional counties
- About 3.2 million people; 1.7 million jobs
- About 3,000 square miles

- 17 Council members appointed by Governor
- Transportation Advisory Board consisting of state and local officials, transportation providers, and community members

History of Activity Based Modeling

- Met Council transitioned from a Trip-Based Model to an Activity Based Model in 2018
- Tourcast – the Council's regional ABM travel demand model
- Tourcast used for 2040 and 2050 Transportation Policy Plans (Long Range Transportation Plans) and planning studies around the region
- Council currently working on developing an ActivitySim model for use as production model

Motivation for ActivitySim Project

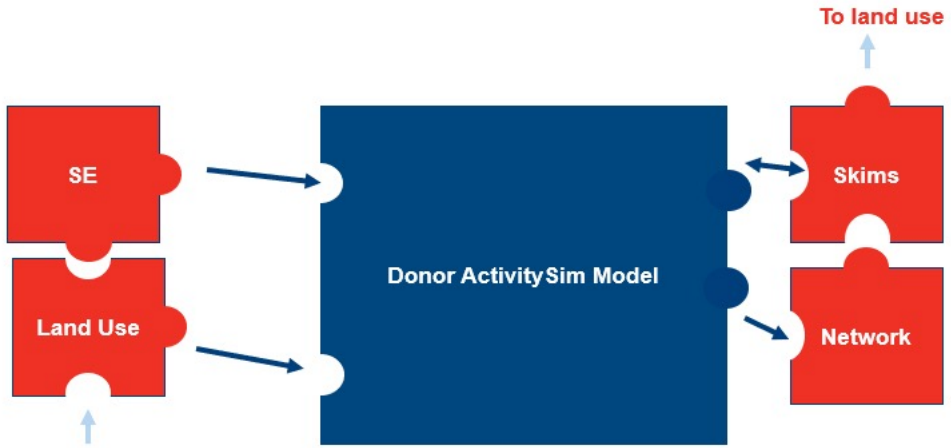
- ActivitySim evaluated to be the best platform to meet our ongoing modeling goals, including:
  - Adopt an ABM with wide user base
  - Collaborate more closely with peer agencies (Consortium)
  - Continuously improve our model through more frequent enhancements and updates
- Anticipated early benefits of implementing ActivitySim model:
  - Telecommute model
  - More transparent code
  - Faster run times (currently about half the runtime, hope to reduce further)

Challenges

- Fitting in model implementation work with limited staff and ongoing planning work
- 2 – 3 modeling staff, 2 data scientists (who support other projects)
- Need to balance project with other planning work:
  - Modeling work for two long range transportation plans - update to 2040 Transportation Policy Plan (TPP) and 2050 TPP
  - Built new base and future year transportation modeling networks
  - Developed regional STOPS transit model
  - GIS support for transportation planners
  - Biennial household travel surveys
- Managed to complete work through an iterative, phased approach to implementation

Phase I

- Selected mature donor model (Southeast Michigan Council of Governments)
- Modified donor model to work with our current Tourcast regional inputs, ancillary models (e.g. Freight, Airport)
- Preformed high level calibration
- Goal: Get pilot model up and running with limited resources
- **Timeline:** June 2021 Through July 2022



Phase II

- Update the model to reflect most recent Travel Behavior inventories – Household Travel Survey and Transit Onboard Survey
- Perform selective re-estimation and calibration of the model to better reflect regional travel conditions
- Create documentation, training, and user guide materials necessary for using ActivitySim as the regional travel demand model
- **Timeline:** July 2023 through December 2024

Next Steps – Phase III

- Have staff perform further internal validation and sensitivity testing
- Use this time for staff to learn and become more familiar with the model
- Further evaluate ActivitySim and compare to Tourcast production model
- Distribute beta model to modeling community for testing
- Identify necessity for remaining consulting work
- **Timeline:** Began Spring 2025 – Goal to transition to production model no later than 2027

Acknowledgements

(In Reverse Alphabetical Order)

- Rachel Wiken, Senior Planner
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- Liz Roten, Senior Data Scientist
- Charles Gorugantula, Principal Data Scientist
- Jonathan Ehrlich, Senior Manager

- RSG and Insight Consulting

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