# The Future of Met Council Forecasts

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# Today's Agenda

- Why we forecast, how we use forecasts
- Forecast model objectives, approach
- Overview of forecast models
- Forecasting for alternative scenarios
- Timeline
- Discussion and advice from the Land Use Advisory Committee

# How we use forecasts

- Metropolitan Land Planning Act (M.S. 473.146 and 473.859)
- Forecasts provide a reasonable basis and yardstick for planning
- Aligning regional and local planning, services, infrastructure provision
  - Regional systems scaled and staged to accommodate forecasts
  - Local plans accommodate the same forecasts

# How we use forecasts

- Population, households and employment into the future
- Regional Framework
- System Statements
- Transportation Modeling


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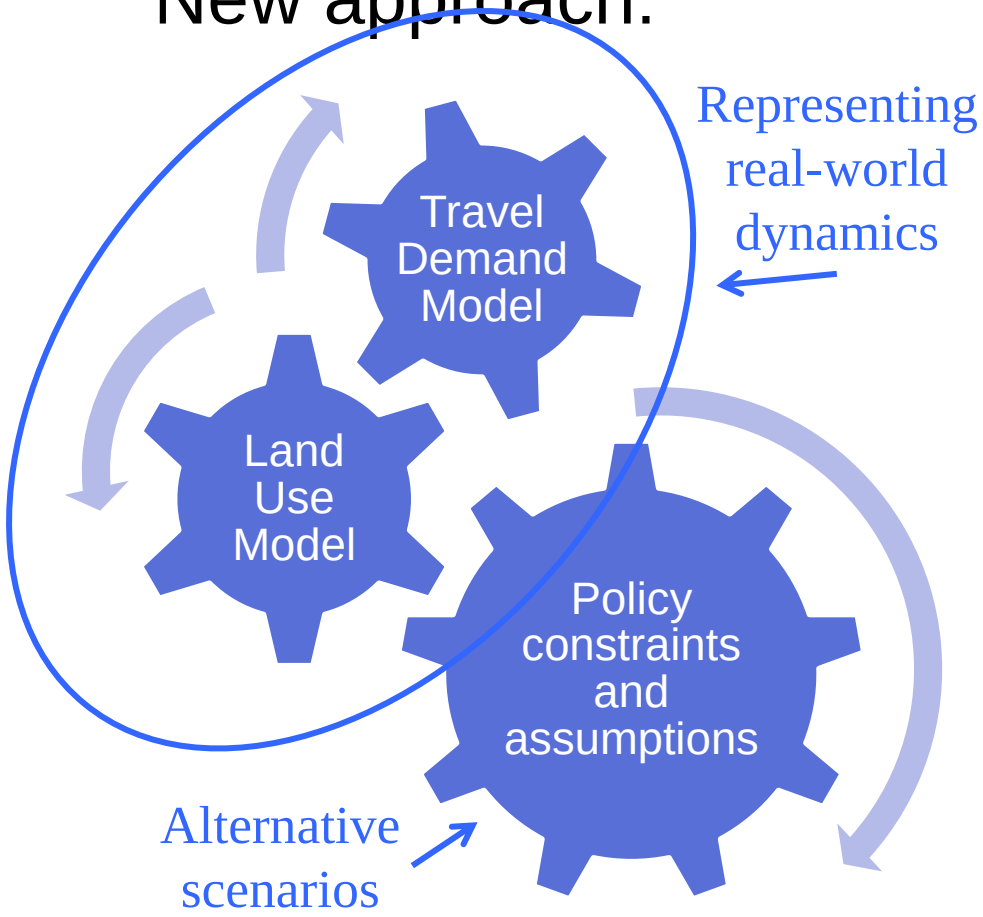
# Program Objectives

- Land economics and geographic science validity
- ***Scenarios:*** Platform for forecasting likely land use and activity patterns
- ***Integrated modeling*** to better reflect interactions of transportation networks with land use patterns

# Approach to local allocation

Previous approach:


New approach:

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# Forecast Solution: MetroCast

A **regional economic model** for region-level economic activity and employment

A **demographic model** for region-level demographics and households formation

A **land use model** for allocating future land use, households and employment to the local level

**Travel demand model**

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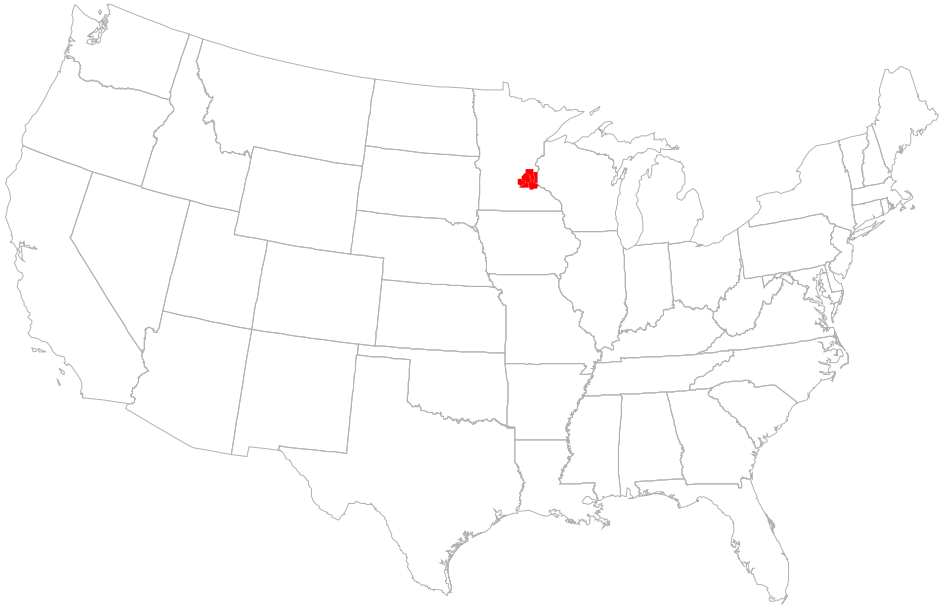
# Regional economic model (REMI)

- How will our regional economy perform relative to the nation?
  - Gross metropolitan product (GMP)
  - Jobs by industry
  - Migration



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# Regional economic model (REMI)

- A model to represent the moving parts of the regional economy
- Partnering with DEED to license REMI
- Models policies that are:
  - Economic in nature
  - Significant at the regional level
- Provides total regional employment

# Regional demographic model

- Extended cohort-component model
- Projects life-cycle events – births, household formation, migration and deaths
- Produces forecasts of regional households and regional population by household type

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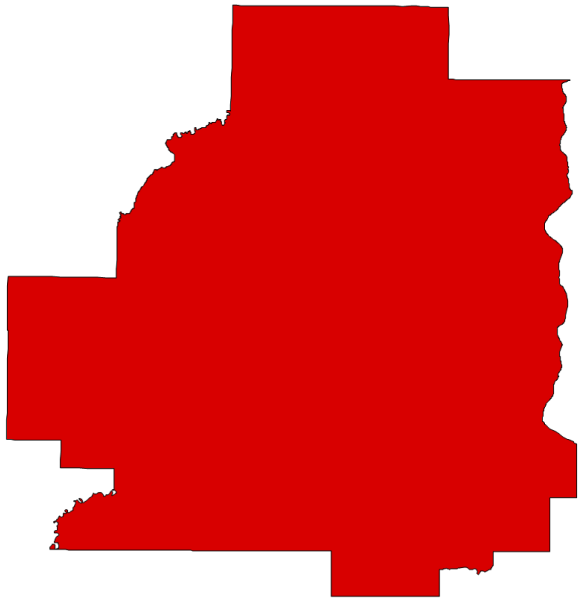
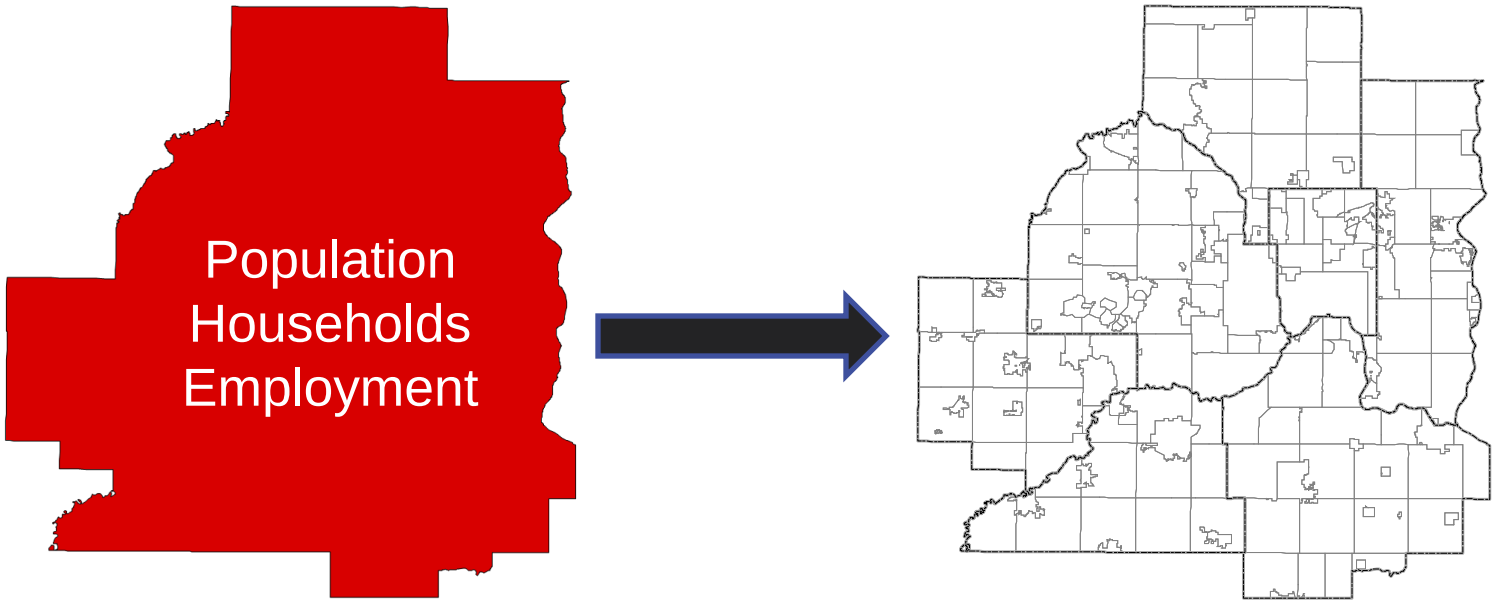
# Regional economic model + Regional demographic model = Regional control totals

- Population
- Households
- Employment



# Land Use Model + Travel Demand Model = Local Land Use Allocation



# Land Use Model (Cube Land)

- Determines where households and firms choose to locate based upon:
  - Neighborhood amenities
  - Accessibility to jobs, households
  - Real estate characteristics (lot size, built square feet)
- Determines which real estate gets developed to satisfy demand and maximize profit
- Subject to a wide range of scenarios (policies, constraints, subsidies)

Graphics: Citilabs

# Land Use Model (Cube Land)

- Model outputs for each local area for each forecast year:
  - Total real estate units
  - Total households (by type)
  - Total employment
  - Land use by real estate type

# Modeling for answers

- All models are simplified representations of real world processes and systems
- Model results depend on the data, assumptions and constraints in the model
- Modeling enables a structured approach for addressing questions

# Examples of Scenarios

- Planned land use and density
- Transitways and changes to transit service
- Protected land and planned parks/reserves
- Water supply (e.g., aquifer depletion)
- Wastewater system capacity constraints
- Economic “shocks” (fuel prices)

# Forecast Timeline (Preliminary)

**2012**

- Release preliminary region-level forecasts
- Release preliminary forecasts with area details

**2013-2014**

- Integrate Land Use Model with updated Travel Demand Model
- Develop forecasts with Framework policy scenarios

**2014-2015**

- Release Framework and Systems Statement Forecasts

# Advice from LUAC

- Council staff invite LUAC to advise forecast development prior to Council action
- Now – a reality check:
  - What real-world considerations – policies, natural constraints or market conditions – should the model be able to represent?
  - What influences the amount and distribution of growth?
- In the spring:  Feedback on forecasts to help ground-truth model results