



Integrating Climate Change Analysis into the Metropolitan Transportation Planning Process



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Mid-Region Council of Governments

Albuquerque, New Mexico

- ◆ Albuquerque population = 555,000
 - ◆ Less than 100,000 in 1950
 - ◆ Metropolitan area = 900,000
(Projected >1.3 million by 2040)
- ◆ City area = 190 mi.² / MSA = 8,400 mi.²
- ◆ Surrounded by mountains to the east; tribal lands to north, south, and west
- ◆ Northern edge of Chihuahuan Desert
- ◆ 9" of rain per year
- ◆ Elevation = 5312'



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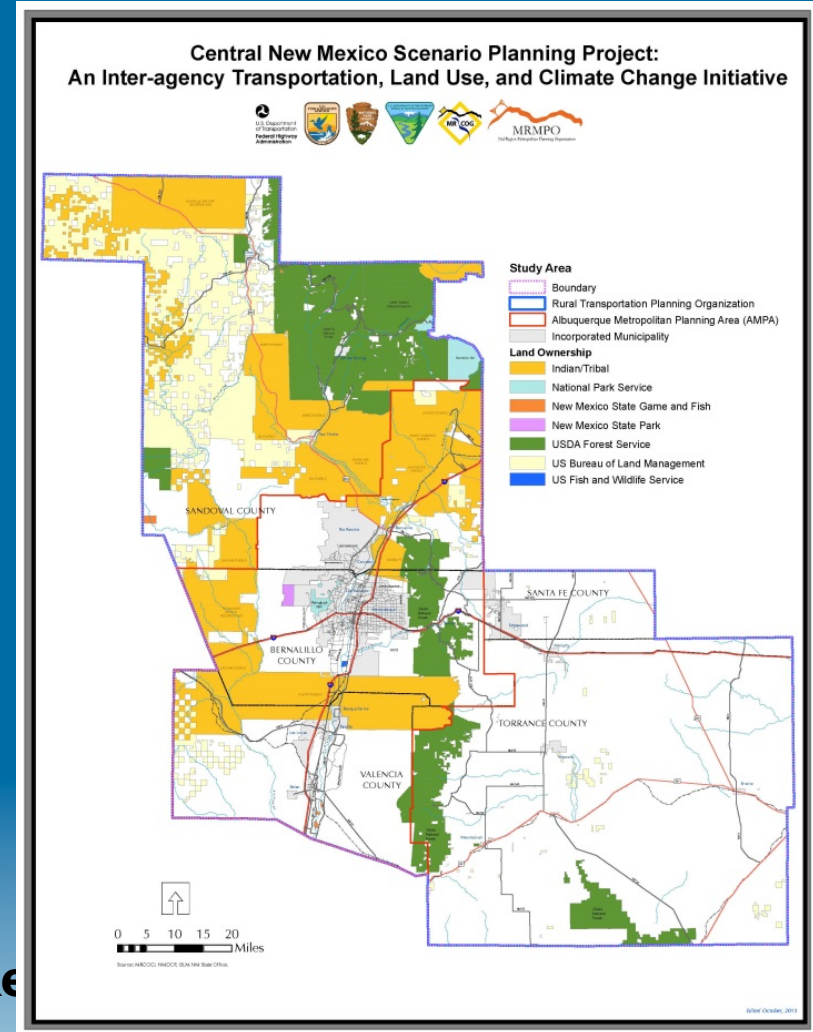


Central New Mexico Climate Change Scenario Planning Project

- ◆ Partnership with FHWA and US DOT Volpe Center
- ◆ Participants
 - ◆ Federal land management agencies
 - ◆ Metropolitan planning stakeholders (e.g. city, county, NMDOT)
 - ◆ Natural resource agencies (e.g. Reclamation, Army Corps of Engineers, water utility authority)
- ◆ Minimal experience with scenario planning



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Integration with 2040 Metropolitan Transportation Plan

Climate Change Analysis

- ◆ Understanding of climate trends
 - ◆ Temperature & precipitation
- ◆ Climate change impacts NM
 - ◆ Droughts
 - ◆ Wildfires
 - ◆ Flooding
 - ◆ Water availability
- ◆ Consider whether development patterns make us more or less resilient to climate impacts

Metropolitan Transportation Plan

- ◆ Long-range (20+ years) transportation plan for the Albuquerque metro area
- ◆ Updated every 4 years (current plan to be adopted April 2015)
- ◆ Projections of growth
- ◆ List of all anticipated transportation projects in the region

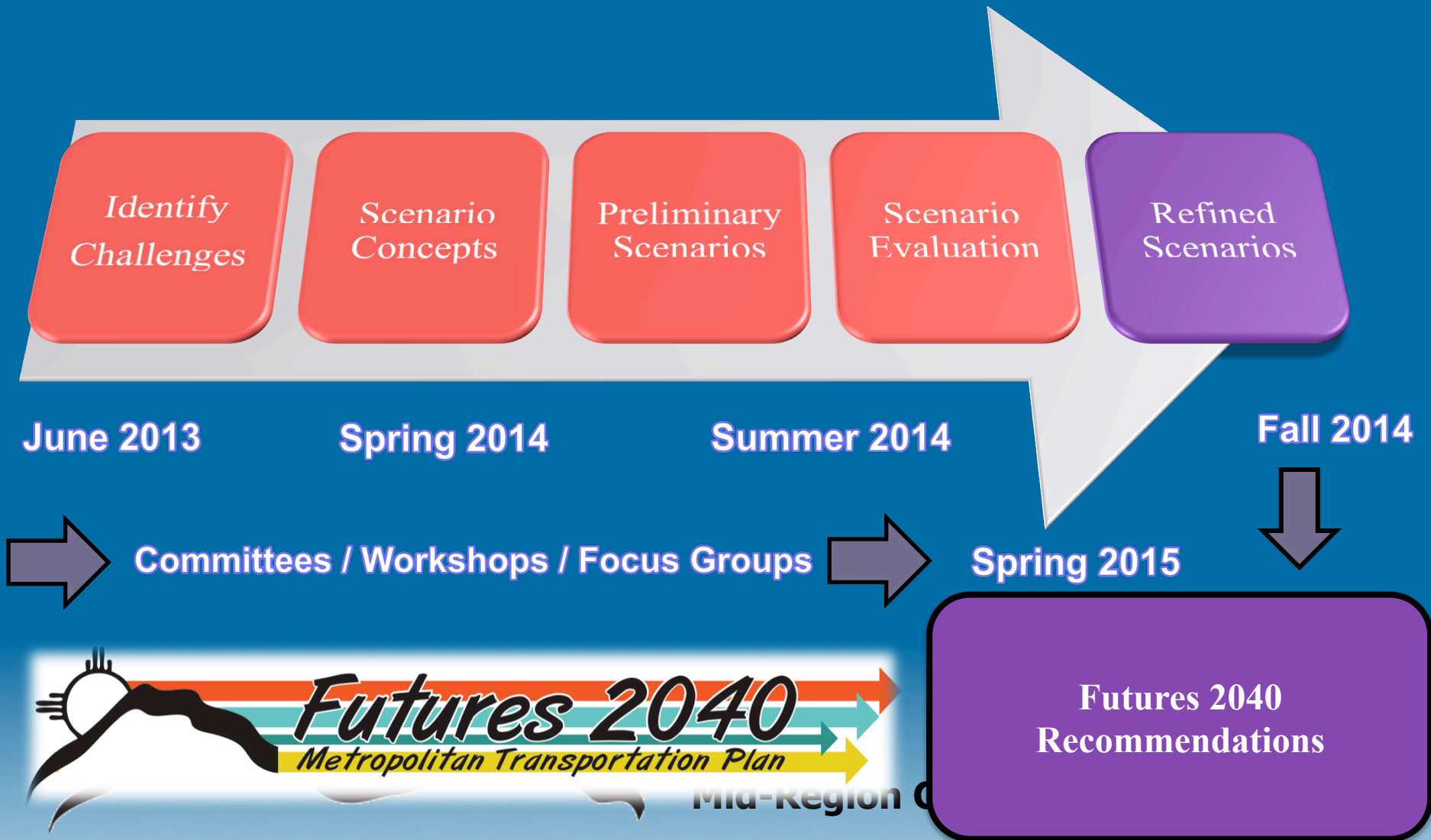


Scenario Planning Objectives

- ◆ Consider alternative development patterns that result in:
 - ◆ smaller regional footprint
 - ◆ improved regional mobility
 - ◆ reduced dependency on single-occupancy vehicles
 - ◆ greater resiliency to climate change impacts
 - ◆ lower greenhouse gas emissions



Scenario Planning Process



Scenario Planning Process

◆ Workshops

- ◆ Feedback on initial land use scenarios
- ◆ Refine scenarios and generate implementation strategies

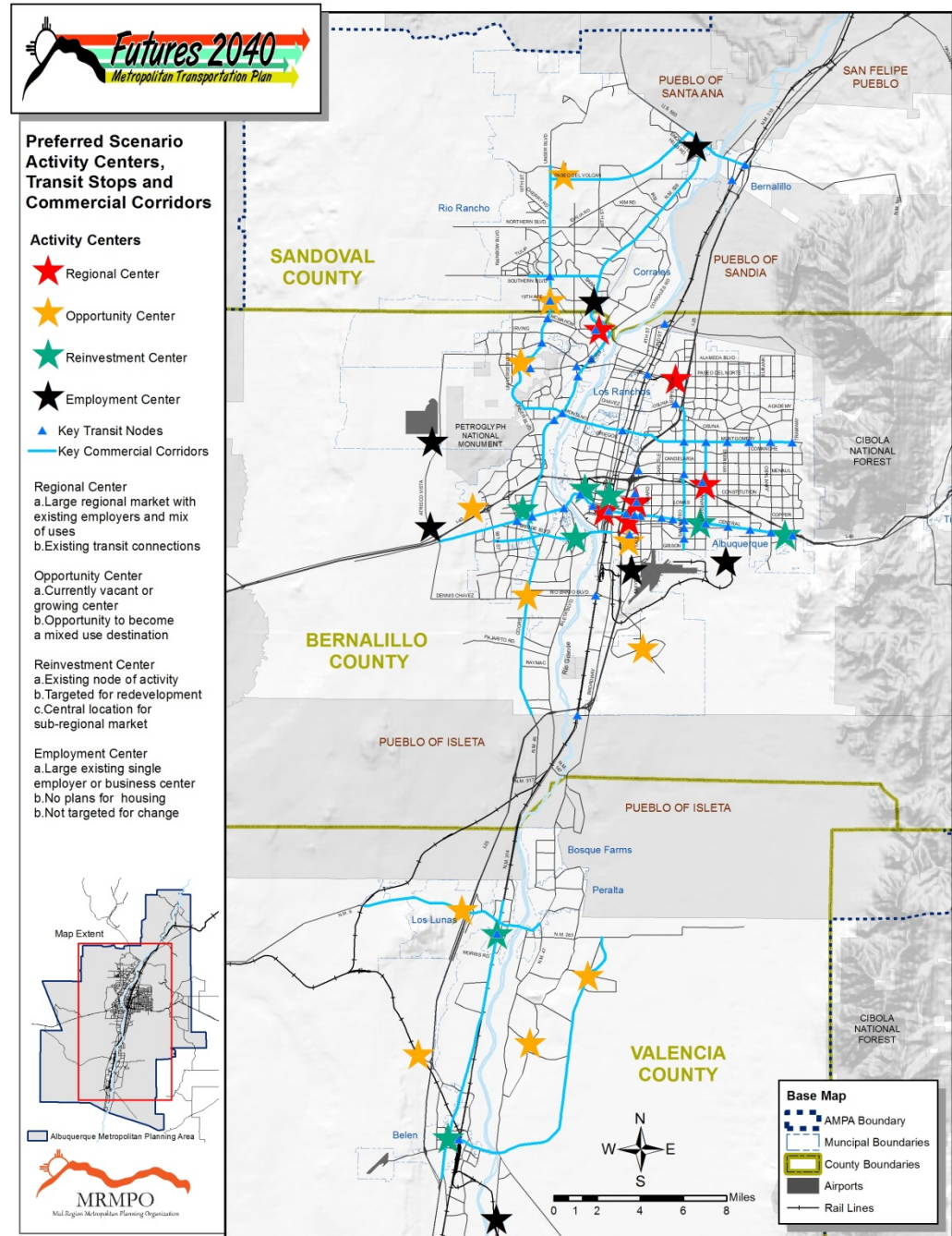
◆ Land use and travel demand models

- ◆ Inputs based on land use plans, zoning
- ◆ Apply “shifters” as means of emphasizing development in certain locations
- ◆ Evaluate distribution of growth and resulting transportation conditions

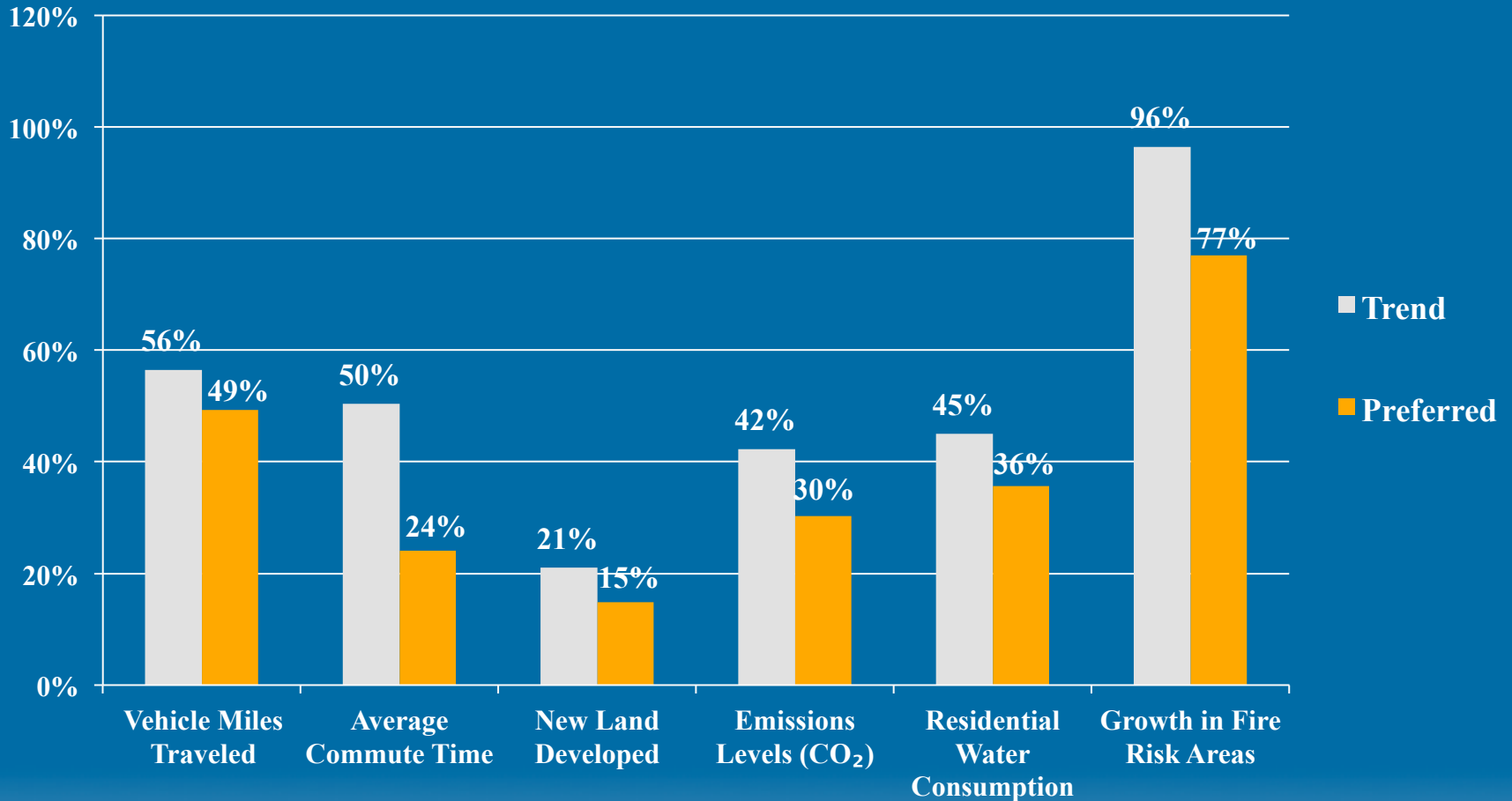


Preferred Scenario

- ◆ Increase attractiveness:
 - ◆ Activity centers
 - ◆ Transit nodes
- ◆ Infrastructure differences:
 - ◆ Same roadway network
 - ◆ Built-out transit network
- ◆ Same levels of population and employment growth as the Trend Scenario



Findings



Lessons Learned

Tying scenario planning to metropolitan transportation planning process has its pros and cons

Pros

- ◆ Structure of MTP (built-in forecasting) ensures scenario planning is linked to policy decisions
- ◆ Market-based modeling tools generated realistic scenarios that were immediately respected

Cons

- ◆ MTP development process is constrained by member agency policies and investment decisions
- ◆ Market-based modeling approach not utilized to diagnose necessary changes in region



Lessons Learned

- ◆ Land use and transportation scenarios lend themselves to creative spatial analysis
- ◆ Creating an inventory of physical infrastructure and built environment in vulnerable locations is a challenging but critical first step
- ◆ Analysis requires understanding of changing conditions and impacts to natural features (e.g. floodplains, fire risk areas)



Thank you!

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