Workshop #1
Summary
Central New Mexico Climate Change Scenario Planning Project

- Climate futures
  - Temperature
  - Precipitation levels

- Climate change impacts on central New Mexico
  - Will we get hotter and drier?
  - What happens to our water supply?
  - Droughts? Wildfires? Flooding?

- Consider whether development patterns make us more or less resilient to climate impacts
Projected Changes in Climate Means - 2040

- **Future 1**: Warm, Wet
- **Future 2**: Hot, Wet
- **Future 3**: Central
- **Future 4**: Warm, Dry
- **Future 5**: Hot, Dry

Change in annual average temperature (°F) vs. change in average annual precipitation (inches). The graph illustrates the projected changes in climate means for the Mid-Region Council of Governments.
Big Picture Climate Implications

- Greater changes in temperature than in precipitation
- More pronounced temperature increases in the summer
- More extreme, variable precipitation events
- More frequent, longer heat waves and increased incidence of drought
- Higher maintenance costs (e.g., faster pavement deterioration)
- More damage from extreme events (e.g., flash floods, wildfires, and landslides)
- Greater power demand
Water Availability in ABQ Area: 2040

Native (at Otowi) and SJC Water Availability in Rio Grande 2040 Compared to Historic by GCM Grouping

- Warm-Dry: -14% (Native), -6% (SJC)
- Warm-Wet: 10% (Native), 0% (SJC)
- Hot-Dry: -14% (Native), -20% (SJC)
- Hot-Wet: -5% (Native), -3% (SJC)
- Central: -7% (Native), -3% (SJC)
Metropolitan Transportation Plan

- Long-range (20+ years) multi-modal transportation plan for the Albuquerque metro area
- Updated every 4 years (current update → April 2015)
- Projections of growth/development
- List of all anticipated transportation projects in the region and their impacts on roadway conditions
Population Projection

Year 2010: 890,000
Year 2015: 1,000,000
Year 2020: 1,200,000
Year 2025: 1,400,000
Year 2030: 1,600,000
Year 2035: 1,800,000
Year 2040: 2,000,000

Mid-Region Council of Governments
Mid-Region Council of Governments

Employment Projection

2012: 397,000
2030: 582,000

Mid-Region Council of Governments
Scenario Planning

- Approach that uses growth scenarios to understand costs and benefits of development patterns
  - Land consumption
  - Transportation conditions
  - Environmental impacts
  - Economic competitiveness

- Integrate land use and transportation planning to ensure effective long-term policy decisions

Example from Nashville MPO

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Base Case</th>
<th>Alternate Case</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land We Will Consume:</td>
<td>365,000 acres</td>
<td>91,000 acres</td>
</tr>
<tr>
<td>Infrastructure Costs:</td>
<td>$6,957,085,995</td>
<td>$3,406,798,045</td>
</tr>
<tr>
<td>Intersections per acre:</td>
<td>.034</td>
<td>.11</td>
</tr>
<tr>
<td>New Road Miles:</td>
<td>4,544 miles</td>
<td>2,225 miles</td>
</tr>
<tr>
<td>Acres of New Impervious Surfaces:</td>
<td>62,444 acres</td>
<td>35,033 acres</td>
</tr>
<tr>
<td>Vehicle Miles of Travel Increase:</td>
<td>39 miles</td>
<td>35.9 miles</td>
</tr>
<tr>
<td>Density Patterns- Region Wide:</td>
<td>1.13 persons/acre</td>
<td>5.8 persons/acre</td>
</tr>
</tbody>
</table>

Mid-Region Council of Governments
2040 MTP: Scenario Planning

June 2013

- Identify Challenges
- Scenario Concepts
- Preliminary Scenarios
- Scenario Evaluation
- Refined Scenarios

Spring 2014

LUTI Meetings / Workshops / Focus Groups

Summer 2014

Fall 2014

Spring 2015

Futures 2040 Recommendations
Preliminary Scenarios

- Allowable Uses
- Emerging Lifestyles
- Balancing Jobs and Housing
What do the scenarios have in common?

- Local data (except zoning!!)
- Model structure & equations
- Roadway network
- Regional population projection
- Regional employment projection
Zoning: Allowable Uses
Zoning: Emerging Lifestyles
Zoning: Balancing Housing & Jobs
Population Share by County

2012

- Bernalillo: 75%
- Sandoval: 14%
- SSF: 1%
- Torrance: 2%
- Valencia: 8%

EL

- Bernalillo: 69%
- Sandoval: 17%
- SSF: 1%
- Torrance: 1%
- Valencia: 12%

AU

- Bernalillo: 69%
- Sandoval: 18%
- SSF: 1%
- Torrance: 1%
- Valencia: 11%

JH

- Bernalillo: 69%
- Sandoval: 17%
- SSF: 1%
- Torrance: 1%
- Valencia: 12%

Mid-Region Council of Governments
Jobs to Housing Balance

<table>
<thead>
<tr>
<th></th>
<th>West</th>
<th>East</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2012</strong></td>
<td>0.56</td>
<td>1.34</td>
</tr>
<tr>
<td>Allowable Uses</td>
<td>0.52</td>
<td>1.41</td>
</tr>
<tr>
<td>Emerging Lifestyles</td>
<td>0.53</td>
<td>1.40</td>
</tr>
<tr>
<td>Jobs &amp; Housing</td>
<td>0.71</td>
<td>1.27</td>
</tr>
</tbody>
</table>
Roadway Performance

- Systemwide Speed: -47%, -37%, -41%
- Vehicle Miles Traveled: 56%, 49%, 57%
- Transit Ridership: 31%, 36%, 29%

Allowable Uses
Emerging Lifestyles
Jobs-Housing

Mid-Region Council of Governments
Sustainability Measures

Emissions Levels (CO2)
- Allowable Uses: 44%
- Emerging Lifestyles: 31%
- Jobs-Housing: 41%

New Land Developed (Acres)
- Allowable Uses: 51%
- Emerging Lifestyles: 48%
- Jobs-Housing: 51%
Putting it All Together

- All scenarios show deteriorating travel conditions
- Zoning does have an impact on roadway performance; it is now time to test other strategies
- You can have fewer acres consumed by development and less congestion at the same time
- An increase in jobs west of the river appears to help alleviate the river crossing issue, but not commuting time
- Development patterns carry different benefits and costs to the region
Feedback on scenarios

What we heard from the July 2014 workshop

Is there a way to combine Emerging Lifestyles and Jobs and Housing scenarios to reflect different conditions and characteristics of each area?
Consensus?!

Group 1
- Emerging Lifestyles was the consensus as a starting point for a preferred alternative

Group 2
- Selected Emerging Lifestyles as the best scenario, adding some emphasis on getting more jobs on the West Side

Group 3
- Emerging Lifestyles held the most promise

Group 4
- Combine Jobs/Housing with Emerging Lifestyles

Group 5
- Liked the Emerging Lifestyles scenario the best, but the edge of the city will develop somehow and should get more special attention

Group 6
- Emerging Lifestyles scenario is a more realistic and economically efficient scenario

Group 7
- The preferred alternative choice was Emerging Lifestyles

Group 8
- Emerging Lifestyles plus aspects of housing and jobs was preferred

Mid-Region Council of Governments
Emerging Lifestyles Scenario

Benefits
- Addresses changing market demands
- Potential to reduce emissions and water demand
- Concentrates development in centers
- Economic benefits

Drawbacks
- High costs of providing transit service
- Does not fully address river crossing challenge
- Density is a four-letter word
Feedback: Natural Resources and Resiliency to Climate Change Impacts

- Politically difficult to decrease or limit growth
- Incentive-based approach encouraging development in more sustainable locations
- Determine which scenario has the least negative environmental impact

- Open space
- Flood plains
- Wildlife habitat
- Irrigated agriculture
- Water consumption
- Energy use
- Resiliency
What we are doing...

- Calculating amount of agricultural land that is converted to residential or commercial uses
- Working on water consumption analysis related to housing types and land use patterns
Create better connected roads and improve access to transit, especially on west side.

Overabundance of parking → address through parking fees or lowering parking requirements.

Identify certain corridors that could be redeveloped.
Develop a meaningful transit plan

Promote transit access to major west side job centers and improve connections to key destinations

Improve safety of bicycle infrastructure and increase mode share

What to do about Paseo del Volcan?

Add infrastructure and service costs to the performance measure analysis
What We Are Doing

- Road connectivity and bicycle analysis performed off model
- Long range roadway map in progress
- Emphasize development in major activity centers and along key transit corridors (potential to model redevelopment of surface parking lots)
- Created a conceptual transit plan that emphasizes connections to key centers
- Paseo del Volcan has been removed due to financial considerations
Feedback: Land Use and Targeted Growth

- Greater concentration of activities (multi-use centers and job centers west of the river) rather than dispersed development
- More infill, mixed-use and housing on east side
- Downtown should still be the heart of the region
- East Central should be a corridor for enhanced economic development
- As a municipality, ensure master plans and flexible zoning are in place, particularly on the fringe
The Modeled Scenarios

Kendra Watkins, Socio-Economic Program Manager
Scenario Planning Workshop II
August 27, 2014

Mid-Region Council of Governments
Conceptual Scenarios

- Trend
- Preferred
- Preferred Constrained
Building on Past Approaches

- Refined Zoning
- Additional Policy Incentives
- Updated Transportation Networks
- Integrated Land Use / Travel Demand Forecast
...THE SCENARIOS
Trend

- Existing zoning
- No additional policy incentives
- Fiscally constrained roadway network
- Fiscally constrained transit service
Preferred – Zoning

- Mixed use zoning in key centers and transit nodes

EAST
- MF density in key centers: JC, Uptown to bring homes to jobs
- Emphasize Downtown Area

WEST
- Intensify key commercial nodes
- Emphasize key centers: VH, Atrisco, Unser, Cottonwood
Preferred – Incentives

- **Key Centers**
  - Attraction in 21 centers
  - Elevate existing efforts
  - Defined collaboratively

- **Key Transit Nodes**
  - Attraction of 87 nodes
  - High volume & frequency

- Considered Corridors
Preferred – Roadways
Preferred – Transit

Preferred
◆ 2040 Transit

Preferred Constrained
◆ 2025 Transit
...THE SHORT STORY
## Scenario Snapshot

<table>
<thead>
<tr>
<th>COMPONENT</th>
<th>SCENARIO</th>
<th>Trend</th>
<th>Preferred</th>
<th>Preferred Constrained</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zoning</td>
<td></td>
<td>Existing</td>
<td>Alternative Zoning in Key Areas</td>
<td>Alternative Zoning in Key Areas</td>
</tr>
<tr>
<td>Incentives</td>
<td></td>
<td>Existing</td>
<td>Activity Centers &amp; Transit Nodes</td>
<td>Activity Centers &amp; Transit Nodes</td>
</tr>
<tr>
<td>Roadways</td>
<td></td>
<td>2040</td>
<td>2040</td>
<td>2025</td>
</tr>
<tr>
<td>Transit</td>
<td></td>
<td>2012 + Central BRT</td>
<td>2040</td>
<td>2025</td>
</tr>
</tbody>
</table>
Household Results: Snapshot

TREND

- 14% Petroglyphs
- 6% Sandia Pueblo
- 17% 41% KAFB
- 12%

PREFERRED

- 13% Petroglyphs
- 43% Sandia Pueblo
- 16% 12%
- 8% 3%
Employment Results: Snapshot

TREND

PREFERRED
...THE LATEST ADDITION
Model Feedback Loop

Performance Measures

UrbanSim 2012 - 2025

Cube 2025

Cube 2040

UrbanSim 2025 - 2040

Mid-Region Council of Governments
Trend vs. Integrated Trend

- 10% more households near key corridors
- 8% more households in near premium transit
- 5% more households near key centers
Transportation Assumptions

◆ Dave Pennella – Transportation Program Manager

◆ Grant Brodehl – Special Projects Planner
Roadway Network Changes

- Update list of carryover projects from 2035 MTP
- Further changes and additions based on input from member agencies and results of scenario planning workshops
- Paseo del Volcan removed
Maintenance Costs

- Underestimated in 2035 MTP

- Lack of assumptions for maintenance costs meant that all proposed capacity expansion projects were included in project list
Funding Uncertainty

- Federal funding levels are unlikely to increase and may be cut over time
- Fewer major infrastructure projects with federal funding
- Available federal funds are competitive
Constrained Scenario

- Funding uncertainty and greater recognition of maintenance costs may limit future capacity expansion
- Consistent with NMDOT Statewide Long-Range Transportation Plan
Constrained Scenario

- Assumes that future transportation funding levels fall below current levels in the near future
- 2025 roadway and transit network
  - More limited roadway and transit networks than Preferred scenario
  - In essence, it will take 25 years to build what would only take 10 years in the Trend/Preferred scenarios
Transit Providers: ABQ Ride

• ABQ Ride
  – 3 rapid ride, 22 local and 16 commuter routes; paratransit
  – Ridership (FY 12): 13,059,274
  – Passenger Miles Traveled (FY 12): 48,244,579
  – Budget (FY 15): $46.8 million
  – Primary local fund source: General Fund
ABQ Ride: True Vehicle Availability

ABQ Ride, 66, 766/777, 790: True Vehicle Availability

- No Vehicle Owned
- Vehicle Owned, Unavailable
- Vehicle Owned, Available

Percentage of Population

Vehicle Availability

- 66
- 766/777
- 790

505.247.1750
www.riometro.org
Transit Providers: Rio Metro

- Rio Metro Regional Transit District (RMRTD)
  - Rail Runner, fixed route, commuter bus, demand response, community transportation (taxi), ABQ Ride
  - Ridership (FY 12): 1,217,841
  - Passenger Miles Traveled (FY 12): 52,000,595
  - Budget (FY 15): $49.5 million
  - Primary local fund source: 1/8th-cent gross receipts tax
Rio Metro Services and Connections
Methodology

• 2012 and 2040 network route selection
• Inputs
  – Headway (minutes between buses)
  – Avg. speed (miles per hour)
  – Length of route (miles)
  – Span of service (hours per day)
• Outputs
  – Vehicle revenue hours (hours in service)
  – # of buses
• Calculating costs
  – Determine difference in vehicle revenue hours between 2012 and 2040 networks
  – Use cost per revenue hour data to determine how many additional vehicle revenue hours can be “purchased” within revenue constraints
2012 Network Assumptions

- Not an exact replication of existing ABQ Ride network
- *Models* existing ABQ Ride rapid ride and local routes operating at peak frequency all day
- Assumes buses travel entire length of route
- Excludes commuter routes
ABQ Ride System Map (2012 Network)

For more detailed information visit www.myabqride.com or call 243-7433 (243-RIDE)
2040 Network Assumptions

- 3/8\textsuperscript{th}-cent increase in RMRTD gross receipts tax ($63 million)
  - $42 million for expanded and new ABQ Ride BRT, rapid ride and local fixed routes (including capital improvements)
  - $13 million to construct Rail Runner capital improvements and increase vehicle revenue hours by one third
  - $8 million to proportionally expand all other ABQ Ride/RMRTD services
    - Includes vehicle replacement for new services
- Continued federal funding for capital infrastructure (e.g. Small Starts and TIP funds)
- Existing COA/RMRTD budgets fund 2012 network
- Costs/revenues/GRT inflate at equal rates
2040 Network Summary

• Route types
  – Four BRT routes, 8-15 minute headways, 17-18 hour spans
  – Three rapid ride routes, 15 minute headways, 17-19 hour spans
  – Seven primary local routes, 15-20 minute headways, 17 hour spans
  – Eight secondary local routes, 25-40 minute headways, 15 hour spans
  – Eight tertiary local routes, 25-40 minute headways, 15 hour spans

• Vehicle revenue hours
  – 2012: 448,888
  – 2040: 833,392 (+384,504 / 86% increase)
What is Bus Rapid Transit?

- **Uniquely Designed Buses**
- **Stations with Raised Platforms**
- **Dedicated Bus Lanes**
- **Off-Bus Fare Machines**
- **Signal Priority**
2012 vs. 2040 Frequency Comparison

2012 vs. 2040 Transit Network Frequency Comparison*

- 2012 Network
- 2040 Network

Headway (Minutes)
- < 15
- 15 - 19
- 20 - 24
- 25 - 29
- 30+

*Indicates transit route operating at highest frequency within corridor. Does not account for cumulative effect of overlapping services within same corridor.
Final Considerations

- What is transit’s role in meeting regional travel needs?
- What is a reasonable expectation for the region’s transit system?
- How might proposed transit service characteristics vary based on location in the AMPA (What do we want and where)?
- Trade-offs (e.g. congestion mitigation vs. ridership)
- How could the 2040 network be influenced by the RMRTD’s visioning process?
- Need for more detailed, route-level analysis to better approximate cost effectiveness and efficiency of proposed services
Scenario Performance
Comparing Scenarios

- Trend/Preferred vs. 2012
- Preferred vs. Trend
- Preferred vs. Constrained
New Employment: Trend vs. Preferred
New Households: Trend vs. Preferred
Differences: Preferred – Trend
Employment: Preferred vs. Constrained
Households: Preferred vs. Constrained
Differences: Constrained – Preferred
Valencia County: Households
Valencia County: Differences
Summary Travel Statistics

- Systemwide Speed: -28% (Trend), -24% (Preferred), -27% (Constrained)
- Vehicle Hours Traveled: 101% (Trend), 82% (Preferred), 90% (Constrained)
- Vehicle Miles Traveled: 42% (Trend), 37% (Preferred), 37% (Constrained)
Congested Conditions

<table>
<thead>
<tr>
<th>Percentage of Overall Network</th>
<th>Percentage of Freight Network</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.0%</td>
<td>6.9%</td>
</tr>
<tr>
<td>6.1%</td>
<td>6.8%</td>
</tr>
<tr>
<td>17.4%</td>
<td>5.0%</td>
</tr>
</tbody>
</table>

2012
Trend
Preferred
Constrained

Mid-Region Council of Governments
Volume-to-Capacity Ratio – River Crossings

Mid-Region Council of Governments
Commuting Measures

- **River Crossing Trips**: 29% (Trend), 26% (Preferred), 31% (Constrained)
- **Proximity to Employment Sites**: 47% (Trend), 78% (Preferred), 80% (Constrained)
- **Average Commute Time**: 20% (Trend), 11% (Preferred), 13% (Constrained)

**Mid-Region Council of Governments**
Change in Daily Traffic Volume (2040 Trend - 2012 Baseline)
Transit Impacts

- Transit Ridership
  - Trend: 27%
  - Preferred: 104%
  - Constrained: 65%

- Passenger Miles Traveled
  - Trend: 27%
  - Preferred: 78%
  - Constrained: 50%

Mid-Region Council of Governments
Traveler Behavior - Preferred

- Greater increase in transit and non-motorized mode share
- Reduced levels of congestion
- Lower levels of driving overall
- Travel increases in locations with greater capacity
Accessibility (Proximity Measures)

Mid-Region Council of Governments
## Urban Footprint and Economic Impacts

<table>
<thead>
<tr>
<th>Decrease in VMT and VHT</th>
<th>Reduced footprint</th>
</tr>
</thead>
<tbody>
<tr>
<td>- More efficient roadway system overall</td>
<td>- Lower roadway maintenance costs</td>
</tr>
<tr>
<td>- More disposable income, less $ spent on transportation costs</td>
<td>- More efficient provision of services</td>
</tr>
<tr>
<td>Improved access to labor and goods</td>
<td>- May require upgrading existing utilities</td>
</tr>
</tbody>
</table>
Resiliency and Development Patterns

- Reducing paved surfaces in general is a good thing
  - Reduce runoff
  - Fewer surfaces that can crack and be damaged by weather
  - Reduce urban heat island
- Need to provide green spaces and green infrastructure
Resiliency Measures

Forest-fire risk locations
- Wildland-Urban Interface
  - Intermix – low-density housing intermingles with agricultural vegetation
  - Interface – areas with housing and low-density vegetation within fire's reach (1.5 miles) of a contiguous block of wildland vegetation

Flood risk locations
- FEMA-designated 100-year floodplains

Crucial habitat areas
- Western Governors Association Crucial Habitat Assessment Tool (CHAT)
Resiliency Measures

- Growth was not prevented from occurring in any of these areas.
- Incentivize growth in other locations and see if we can minimize risks.
- Carrots rather than sticks.
Resiliency – Composite Scores

- Development in High Flood-Risk Areas
  - Trend: 53%
  - Preferred: 47%
  - Constrained: 50%

- Development in High Forest Fire Risk Areas
  - Trend: 54%
  - Preferred: 44%
  - Constrained: 45%

- Development in Crucial Habitat Areas
  - Trend: 34%
  - Preferred: 35%
  - Constrained: 34%
## 100-Year Floodplains

<table>
<thead>
<tr>
<th>County</th>
<th>2012</th>
<th>Trend</th>
<th>Preferred</th>
<th>Constrained</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HH + Emp</td>
<td>HH + Emp</td>
<td>% Difference</td>
<td>HH + Emp</td>
</tr>
<tr>
<td>Bernalillo</td>
<td>8,508</td>
<td>16,928</td>
<td>99%</td>
<td>16,777</td>
</tr>
<tr>
<td>Sandoval</td>
<td>4,293</td>
<td>8,835</td>
<td>106%</td>
<td>8,029</td>
</tr>
<tr>
<td>Santa Fe</td>
<td>111</td>
<td>272</td>
<td>145%</td>
<td>266</td>
</tr>
<tr>
<td>Valencia</td>
<td>21,558</td>
<td>26,720</td>
<td>24%</td>
<td>25,710</td>
</tr>
<tr>
<td>Total</td>
<td>34,470</td>
<td>52,755</td>
<td>53%</td>
<td>50,782</td>
</tr>
</tbody>
</table>

### Percent of new development in existing floodplains

<table>
<thead>
<tr>
<th>County</th>
<th>Trend</th>
<th>Preferred</th>
<th>Constrained</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sandoval</td>
<td>70%</td>
<td>65%</td>
<td>66%</td>
</tr>
<tr>
<td>Valencia</td>
<td>88%</td>
<td>88%</td>
<td>85%</td>
</tr>
</tbody>
</table>
Mid-Region Council of Governments

Wildland-Urban Interface

Composite Score

- 2012 = 3.14
- Trend = 4.85
- Preferred = 4.53
- Constrained = 4.57
Wildland-Urban Interface

Composite Score

- 2012 = 3.14
- Trend = 4.85
- Preferred = 4.53
- Constrained = 4.57
Wildland-Urban Interface

- Trend sees greater growth in “Intermix” and “Interface” areas
- Disproportionately high growth in “Intermix,” especially Sandoval County

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Intermix</th>
<th>Interface</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trend</td>
<td>94%</td>
<td>29%</td>
<td>45%</td>
</tr>
<tr>
<td>Preferred</td>
<td>76%</td>
<td>26%</td>
<td>38%</td>
</tr>
</tbody>
</table>

Households + Employment

Percent Increase from 2012

Mid-Region Council of Governments
## Crucial Habitat Assessment Areas

### Developing in Existing Urban Footprint

<table>
<thead>
<tr>
<th>County</th>
<th>HH+Emp</th>
<th>HH+Emp</th>
<th>HH+Emp</th>
<th>HH+Emp</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bernalillo</td>
<td>14,638</td>
<td>35,568</td>
<td>186</td>
<td>50,392</td>
</tr>
<tr>
<td>Sandoval</td>
<td>13,481</td>
<td>628</td>
<td>6,637</td>
<td>20,746</td>
</tr>
<tr>
<td>Valencia</td>
<td>3,355</td>
<td>707</td>
<td>42</td>
<td>4,104</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>31,474</strong></td>
<td><strong>36,903</strong></td>
<td><strong>6,865</strong></td>
<td><strong>75,242</strong></td>
</tr>
</tbody>
</table>

### Preferred Vs 2012

<table>
<thead>
<tr>
<th>County</th>
<th>HH+Emp</th>
<th>HH+Emp</th>
<th>HH+Emp</th>
<th>HH+Emp</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bernalillo</td>
<td>16,358</td>
<td>48,044</td>
<td>157</td>
<td>64,559</td>
</tr>
<tr>
<td>Sandoval</td>
<td>10,483</td>
<td>397</td>
<td>2,762</td>
<td>13,642</td>
</tr>
<tr>
<td>Valencia</td>
<td>2,628</td>
<td>473</td>
<td>48</td>
<td>3,146</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>29,469</strong></td>
<td><strong>48,914</strong></td>
<td><strong>2,964</strong></td>
<td><strong>81,347</strong></td>
</tr>
</tbody>
</table>

### Preferred vs. Trend

<table>
<thead>
<tr>
<th>County</th>
<th>HH+Emp</th>
<th>HH+Emp</th>
<th>HH+Emp</th>
<th>HH+Emp</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bernalillo</td>
<td>1,720</td>
<td>12,476</td>
<td>-29</td>
<td>14,167</td>
</tr>
<tr>
<td>Sandoval</td>
<td>-2,998</td>
<td>-231</td>
<td>-3,875</td>
<td>-7,104</td>
</tr>
<tr>
<td>Valencia</td>
<td>-727</td>
<td>-234</td>
<td>3</td>
<td>-958</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>-2,005</strong></td>
<td><strong>12,011</strong></td>
<td><strong>-3,901</strong></td>
<td><strong>6,105</strong></td>
</tr>
</tbody>
</table>
### CHAT – New Development Areas

#### Trend Difference - New Development Areas

<table>
<thead>
<tr>
<th>County</th>
<th>Rank 1</th>
<th>Rank 2</th>
<th>Rank 3</th>
<th>Rank 4</th>
<th>Rank 5</th>
<th>Rank 6</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HH+Emp</td>
<td>HH+Emp</td>
<td>HH+Emp</td>
<td>HH+Emp</td>
<td>HH+Emp</td>
<td>HH+Emp</td>
</tr>
<tr>
<td>Bernalillo</td>
<td>2745</td>
<td>12030</td>
<td>6808</td>
<td>26597</td>
<td>6431</td>
<td>30532</td>
</tr>
<tr>
<td>Sandoval</td>
<td>479</td>
<td>6668</td>
<td>1817</td>
<td>14474</td>
<td>460</td>
<td>-5873</td>
</tr>
<tr>
<td>Santa Fe</td>
<td>0</td>
<td>19</td>
<td>1387</td>
<td>2789</td>
<td>5203</td>
<td>270</td>
</tr>
<tr>
<td>Torrance</td>
<td>1</td>
<td>1076</td>
<td>1546</td>
<td>2221</td>
<td>6539</td>
<td>0</td>
</tr>
<tr>
<td>Valencia</td>
<td>-167</td>
<td>-168</td>
<td>2215</td>
<td>3878</td>
<td>7641</td>
<td>-347</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>3225</td>
<td>19793</td>
<td>11558</td>
<td>46081</td>
<td>18633</td>
<td>24929</td>
</tr>
</tbody>
</table>

#### Preferred Difference - New Development Areas

<table>
<thead>
<tr>
<th>County</th>
<th>Rank 1</th>
<th>Rank 2</th>
<th>Rank 3</th>
<th>Rank 4</th>
<th>Rank 5</th>
<th>Rank 6</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HH+Emp</td>
<td>HH+Emp</td>
<td>HH+Emp</td>
<td>HH+Emp</td>
<td>HH+Emp</td>
<td>HH+Emp</td>
</tr>
<tr>
<td>Bernalillo</td>
<td>1341</td>
<td>1177</td>
<td>8803</td>
<td>-35222</td>
<td>7530</td>
<td>3198</td>
</tr>
<tr>
<td>Sandoval</td>
<td>4108</td>
<td>7241</td>
<td>5830</td>
<td>-8574</td>
<td>343</td>
<td>0</td>
</tr>
<tr>
<td>Santa Fe</td>
<td>0</td>
<td>14</td>
<td>1351</td>
<td>2239</td>
<td>4823</td>
<td>268</td>
</tr>
<tr>
<td>Torrance</td>
<td>1</td>
<td>1086</td>
<td>1624</td>
<td>1380</td>
<td>6342</td>
<td>2</td>
</tr>
<tr>
<td>Valencia</td>
<td>160</td>
<td>22</td>
<td>2113</td>
<td>2333</td>
<td>6811</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>5450</td>
<td>9518</td>
<td>17608</td>
<td>-40177</td>
<td>19038</td>
<td>3468</td>
</tr>
</tbody>
</table>

### Preferred vs. Trend

<table>
<thead>
<tr>
<th>County</th>
<th>Rank 1</th>
<th>Rank 2</th>
<th>Rank 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HH+Emp</td>
<td>HH+Emp</td>
<td>HH+Emp</td>
</tr>
<tr>
<td>Bernalillo</td>
<td>-1404</td>
<td>-10853</td>
<td>1995</td>
</tr>
<tr>
<td>Sandoval</td>
<td>3629</td>
<td>573</td>
<td>4013</td>
</tr>
<tr>
<td>Valencia</td>
<td>0</td>
<td>-5</td>
<td>-36</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>2225</td>
<td>-10285</td>
<td>5972</td>
</tr>
</tbody>
</table>
CHAT Analysis

- More new development in CHAT 1 areas in Sandoval County in particular
- Much less new development in CHAT 2 areas
- Overall, less new development in previously undeveloped high risk areas than the Trend scenario
Water Consumption Trends

- How we grow impacts how much water we consume
- Analyze consumption patterns by land use and housing mix

[Graph showing water consumption trends by year and housing type]

Average Single Family Home Water Consumption by Zip Code (units/year)
Water Questions

- Water consumption rates by industrial, institutional, and commercial users
- Agricultural to urban conversion
- Future improvements in efficiency
Incentivizing development in urban core and strategic growth centers does minimize development at risk due to climate change-related impacts.
Resiliency Analysis

- We already have a lot of development in floodplains. How do we prepare? Minimize development in new floodplains to ensure better allocation of resources.

- Targeting growth can improve resiliency to wildfires, reduce water consumption
  - Provide more flexibility to pursue other uses, such as agriculture
Did we achieve greater differences?

- Differences between the Emerging Lifestyles (EL) and the Allowable Uses (AU) scenarios from Workshop #1

  vs.

- Differences between Preferred and the Trend scenarios in Workshop #2
Accessibility Measures

EL vs. AU
Pref. vs. Trend

Activity Centers
Transit
Employment Sites

-1.5% 3.5%
19.2%
21.4%
14.3%
20.8%

Mid-Region Council of Governments
Sustainability Measures

- New Land Developed: -2% EL vs. AU, -6% Pref. vs. Trend
- Emissions Levels: -9% EL vs. AU
- Development in High Flood-Risk Areas: 4% EL vs. AU, -4% Pref. vs. Trend
- Development in Forest Fire Risk Areas: 2% EL vs. AU, -7% Pref. vs. Trend

Mid-Region Council of Governments
Implementation

Futures 2040 Strategies
2040 MTP: Scenario Planning

June 2013

- Identify Challenges
- Scenario Concepts
- Preliminary Scenarios
- Scenario Evaluation
- Refined Scenarios

Spring 2014

Summer 2014

Fall 2014

Spring 2015

UTI Meetings / Workshops / Focus Group

Futures 2040 Recommendations
Implementation Discussion

Phase I
1. List of potential strategies
2. Top three strategies

Phase II
3. Prioritize strategies
4. Discuss how to achieve the top strategies
Phase II Discussion

◆ What first steps might agencies need to take to help implement the top strategies?

◆ What incentives would be most effective for attracting or detracting development to key places?
Action Steps

Incentives