



San Diego County Water Authority Long-Range Demand Forecast

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Urban Water Demand Roundtable – Session V

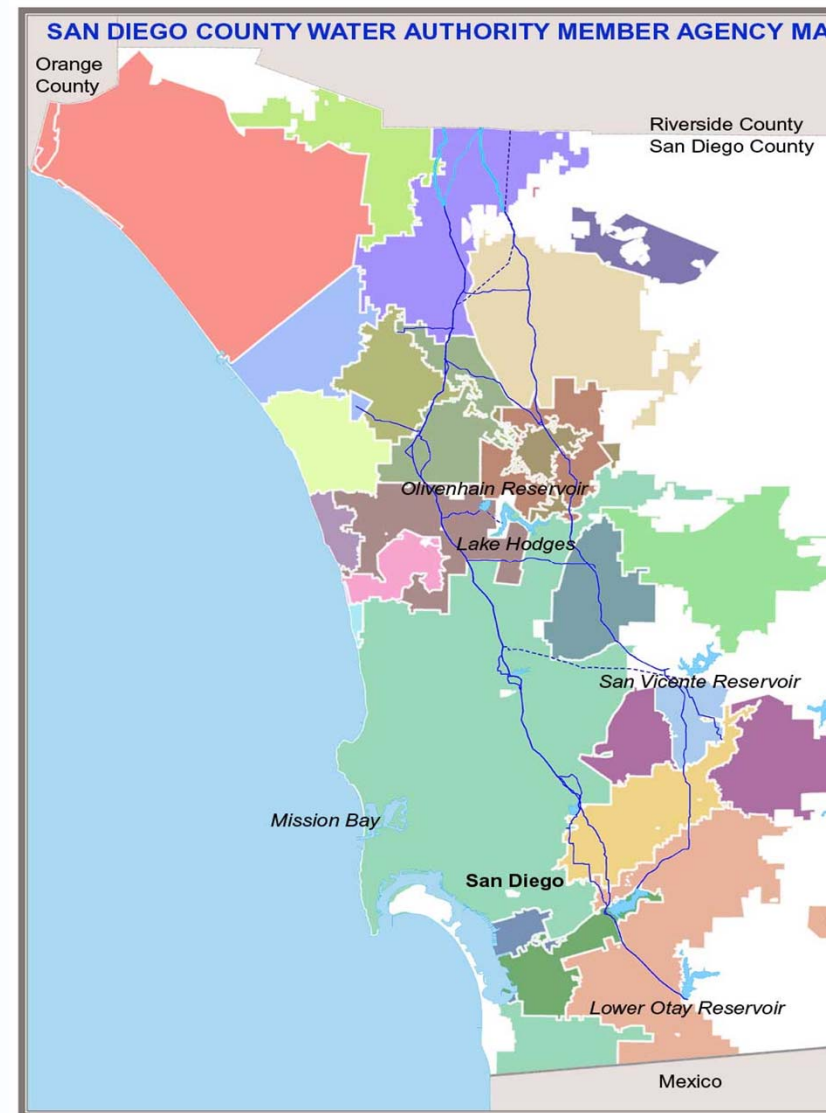
April 19, 2013



San Diego County Water Authority

Agency Background

- Wholesale water agency created by State Legislature in 1944
- Service Area ~ 951,000 acres
- 24 member agencies
- 36-member board of directors

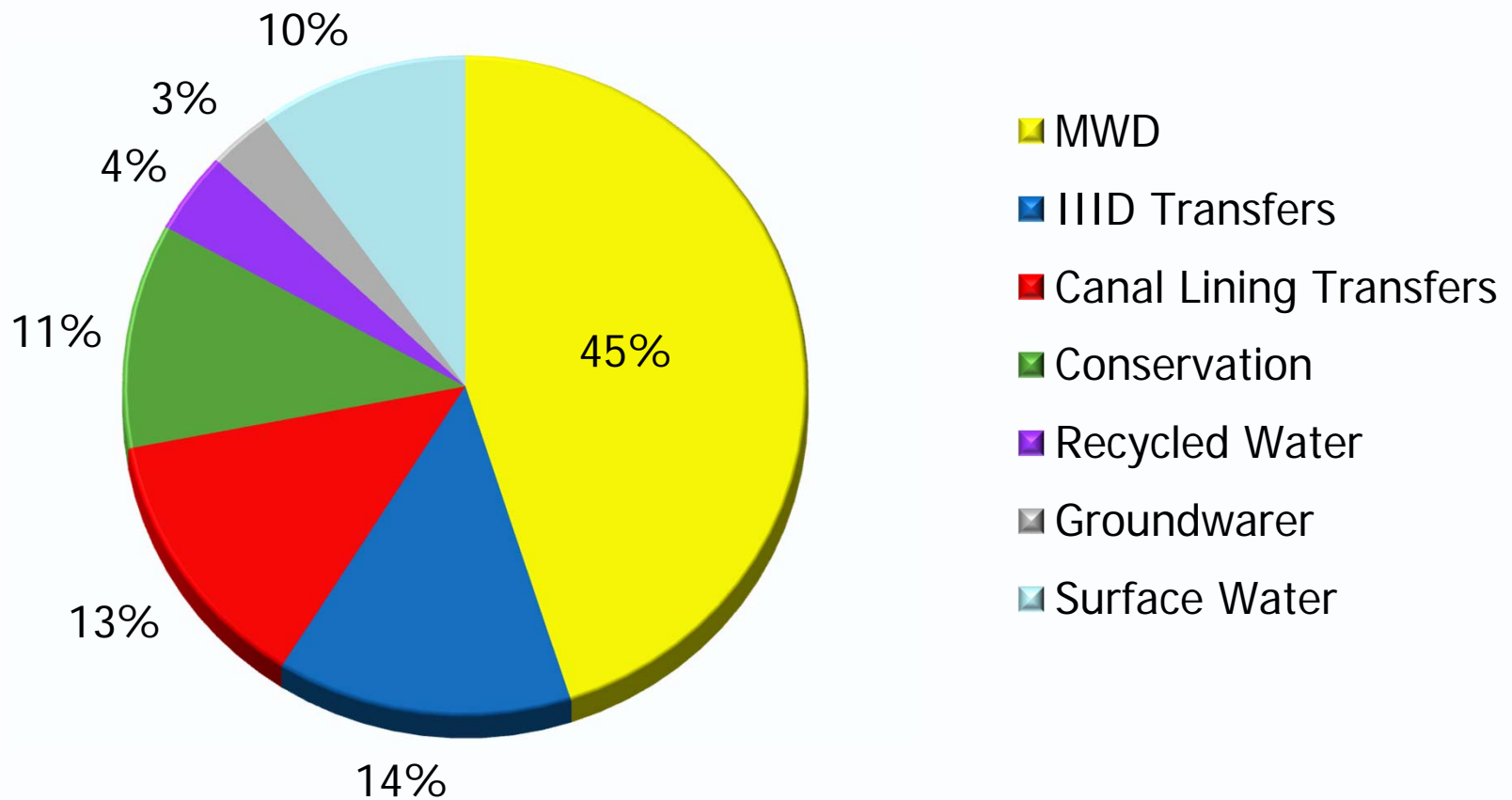


Agency Background (cont.)

- Serve over 3 million people and region's \$188 billion economy
- Major Infrastructure
 - 300-miles of pipelines
 - Reservoir
 - Water Treatment Plant
 - Hydroelectric Generation
- \$3.5 billion Capital Improvement Program

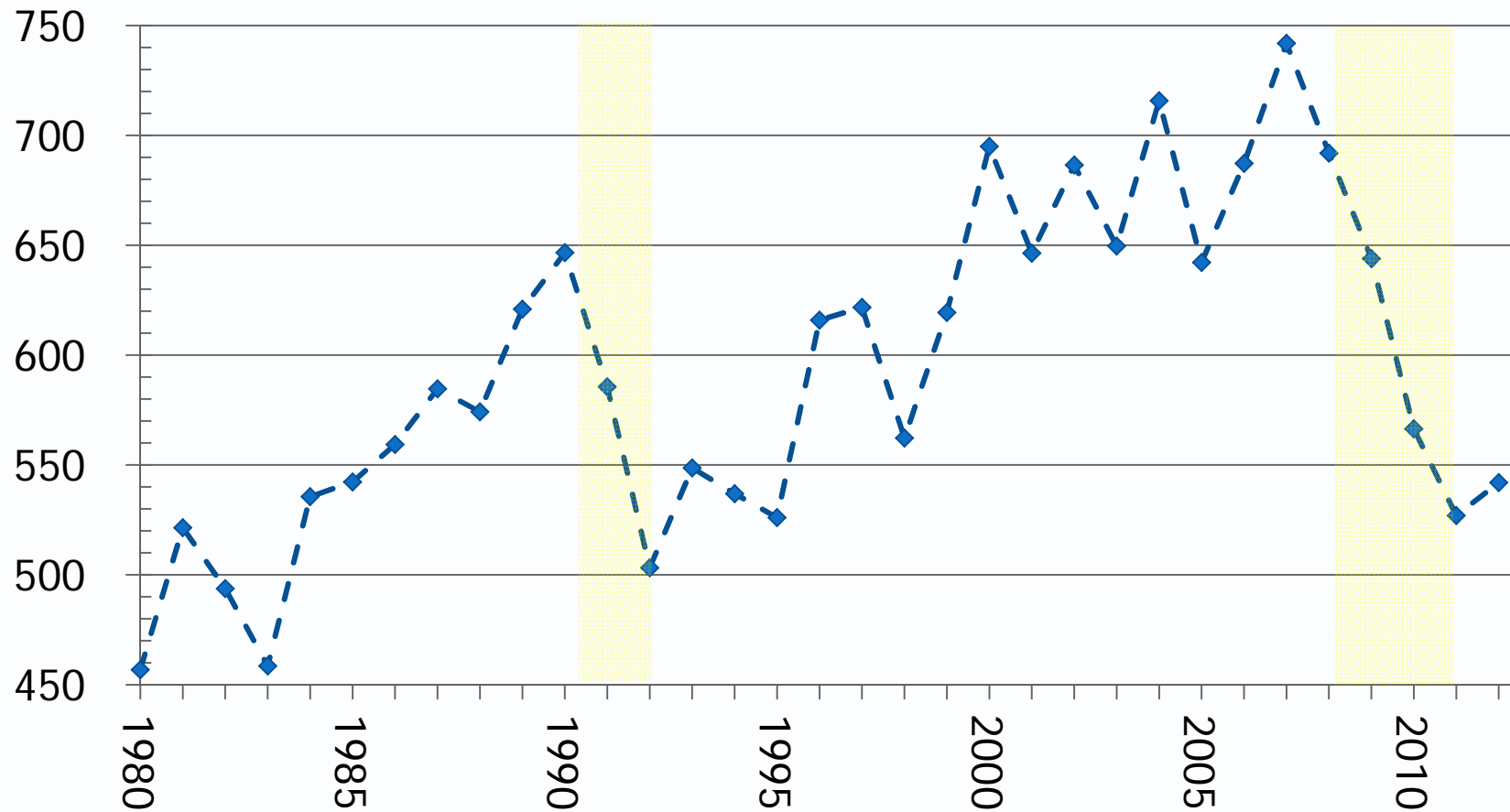


2012 Water Supply Portfolio



Historic Total Demands

Total Demand
(Thousands of Acre-Feet)

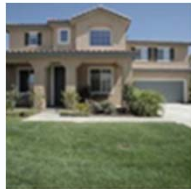


Forecast Schedule and Horizon

- Updated every 5 years
 - coincides with State mandated Urban Water Management Plan updates
- 25-year planning horizon
 - currently extends through 2035
- Based on official demographic and economic projections from the San Diego Association of Governments
 - principal land use planning agency for the region

Demand Forecast Model

- Econometric model (CWA-MAIN)
- Water Authority forecast = sum of member agency level projections
- Forecast generated by major sector
 - Single-family
 - Multi-family
 - Non-residential
 - Agriculture



Modeling Approach

- Models use a "rate of use x driver variable" approach
- Rate of use factors
 - Income
 - Price
 - Weather
- Predictive drivers of demand
 - Housing units
 - Employment counts
 - Agricultural acres

$$Q_{SDCWA} = \sum_j Q_{MA}$$

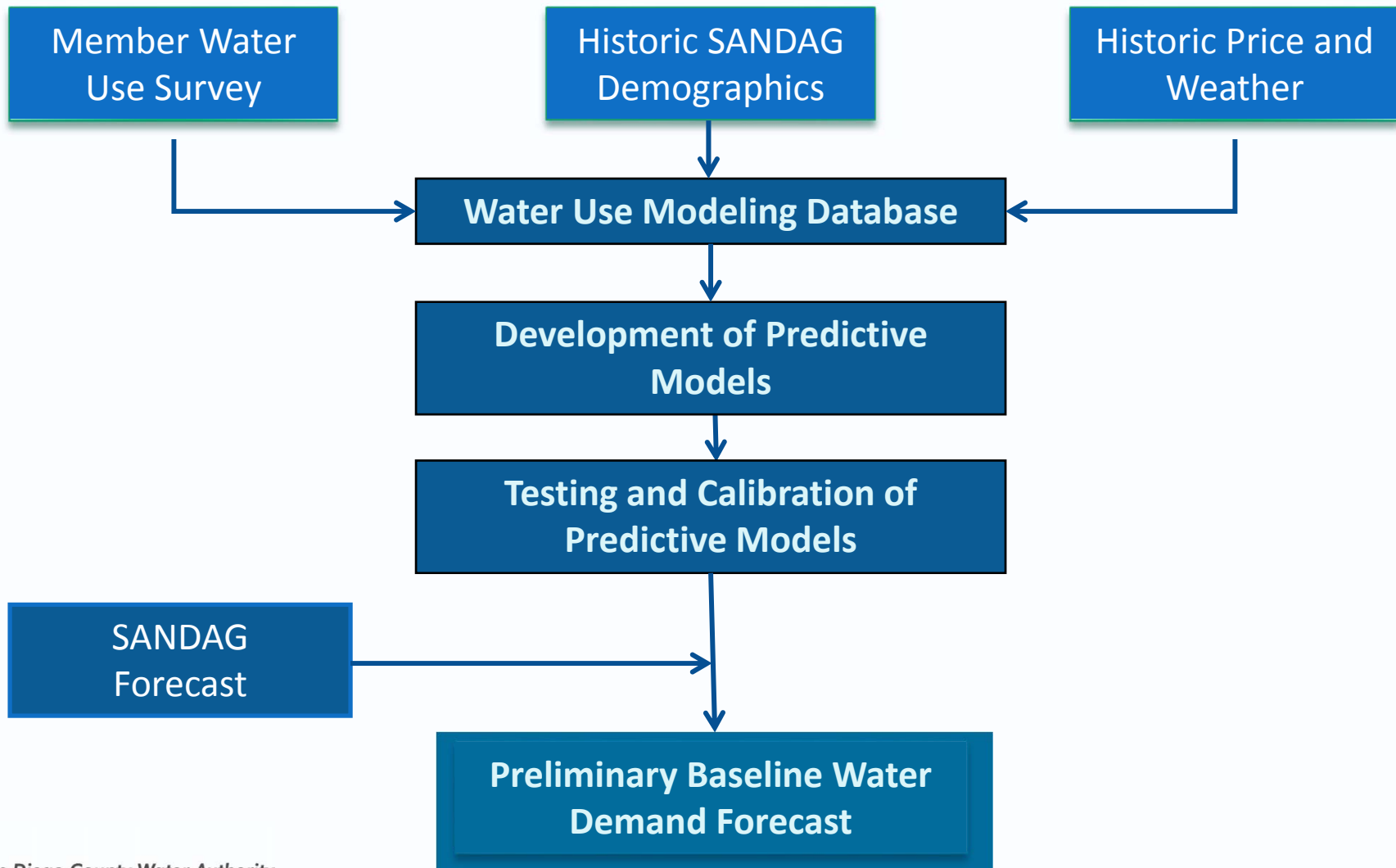


$$Q_{MA} = \sum_i N_i \cdot q_i$$



$$q_i = f(x)$$

Forecast Development Process



SANDAG Demographic & Economic Growth between 2015 and 2035

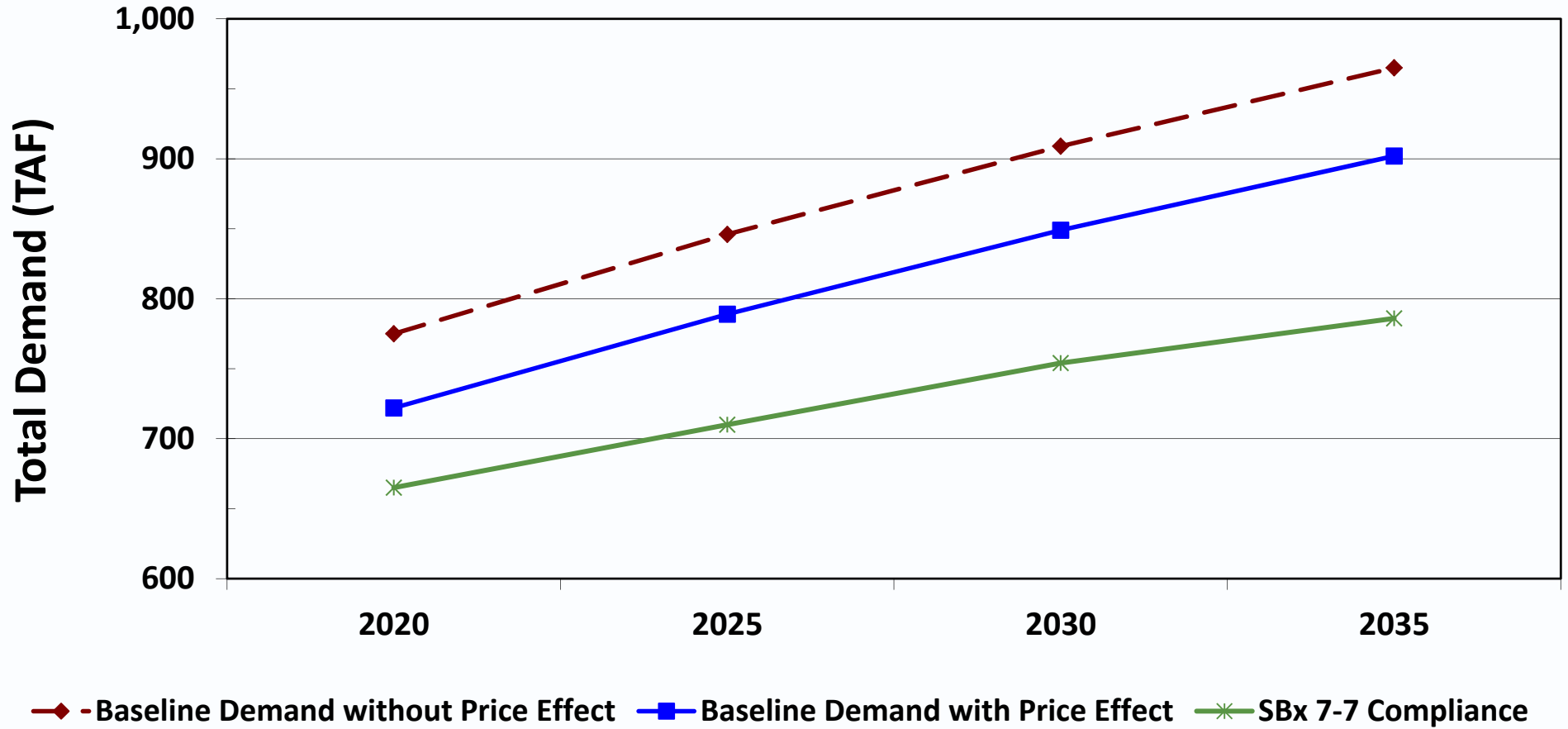
Forecast Variable	Growth - Water Authority Service Area	
Population	+634,945	19%
Single-Family Housing Units	+34,960	5%
Multi-Family Housing Units	+175,315	40%
Employment Counts	+277,648	19%
Median Household Income	+\$14,417	26%

Influence of SANDAG Projections on Demands

Long-Term Variation

Variable	Direction of SANDAG Projections	Influence on Demand Forecast
Occupied Housing Units	+	↑
Household Income	+	↑
MF Housing Density	+	↓
SF Housing Density	-	↑
Total Employment	+	↑

Normal Year Total Baseline Demand Forecast (AF)



Added Forecast Challenges

- Prolonged effects of recession
- “New Normal” - post allocation
- Water rate escalation



What Does the Future Look Like...Now?

