

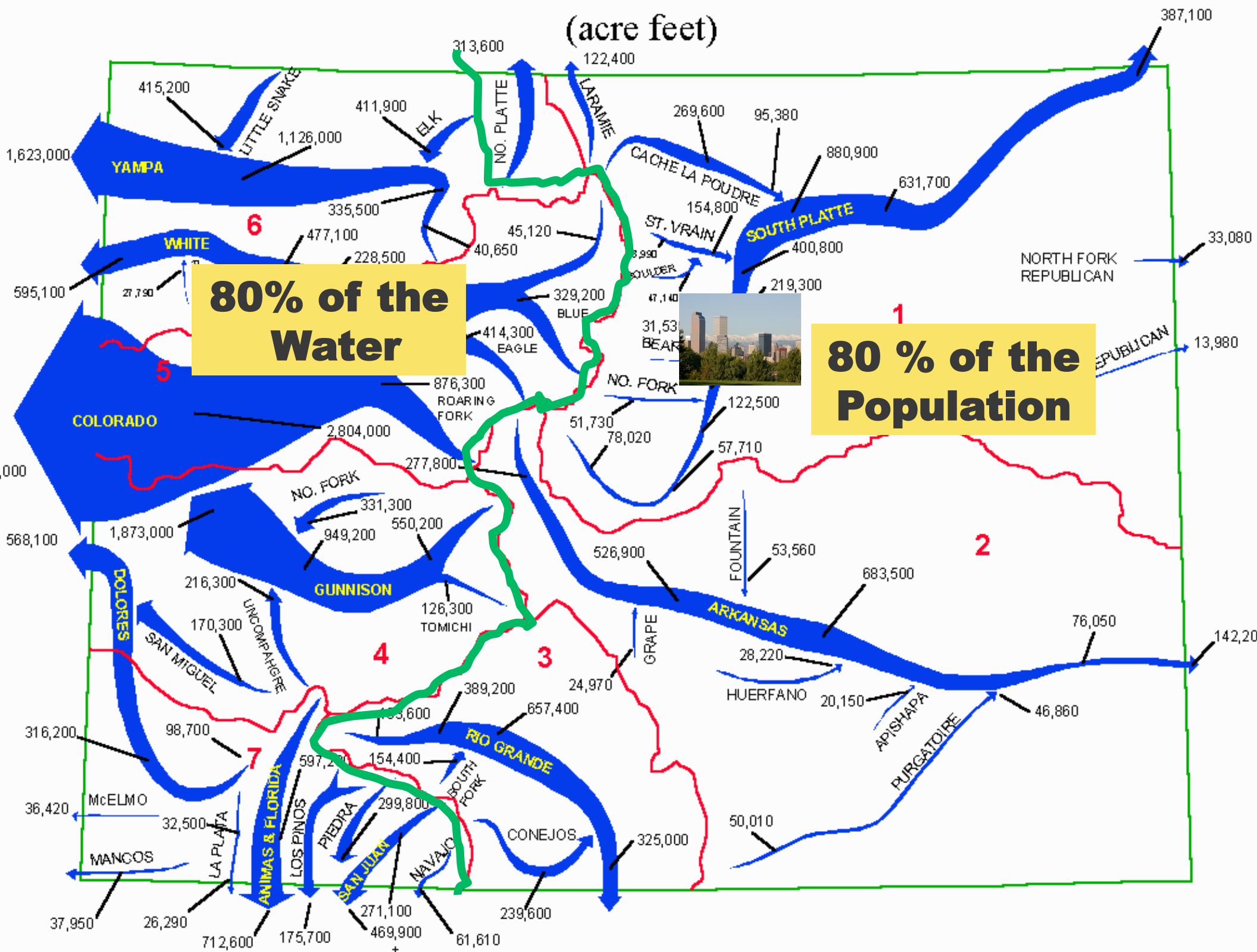


DECISION-MAKING IN THE FACE OF CLIMATE CHANGE

LAURNA KAATZ
DENVER WATER

Advanced Climate Modeling and Decision-Making Support of Climate Services
September 21, 2009

(acre feet)



Wyoming

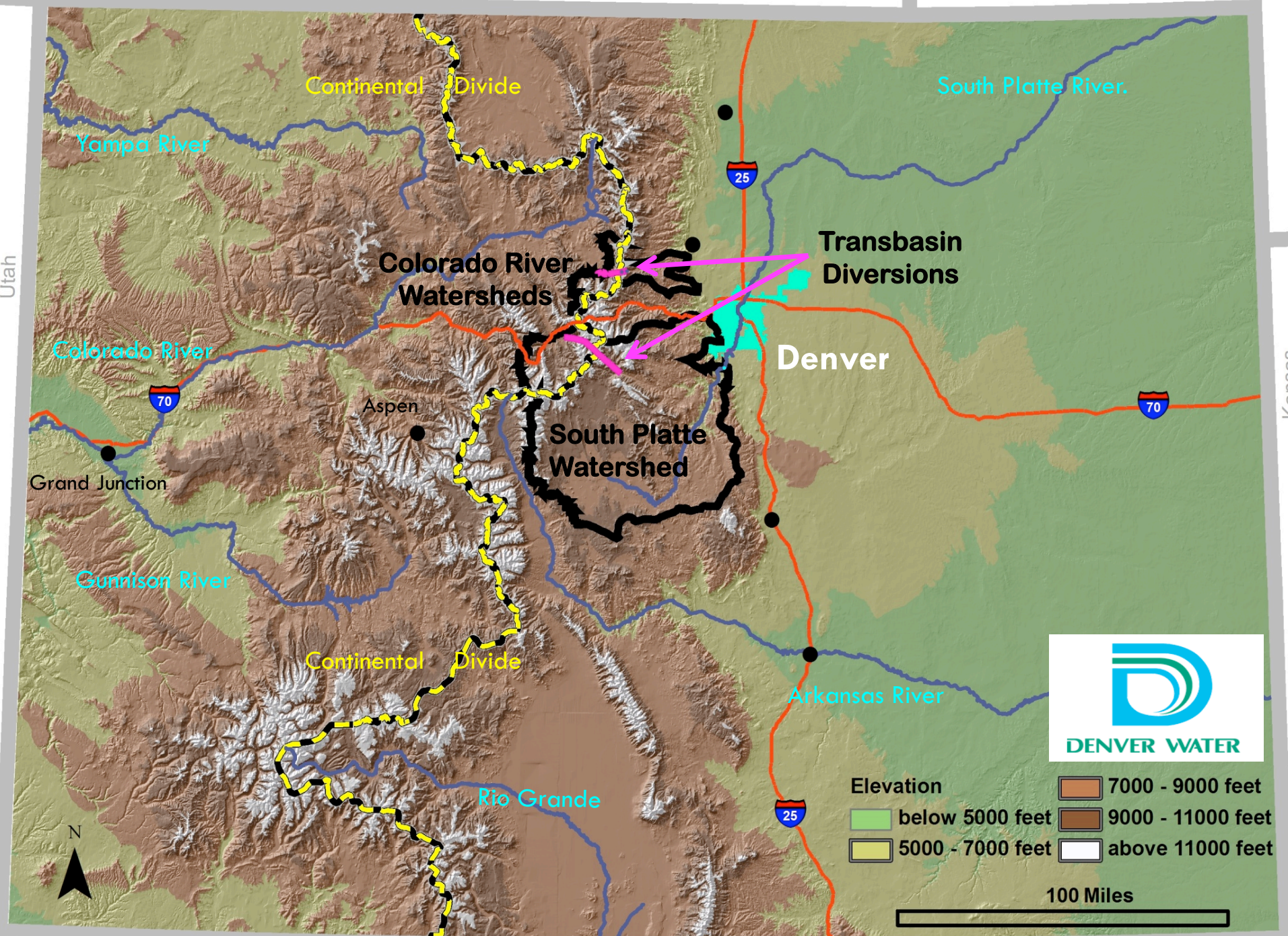
Nebraska

Utah

Kansas

New Mexico

Oklahoma



Concerns



Potential Impacts to Water Resources

5

As Temperatures Increase and Precipitation Patterns Change, there will be Implications to the Hydrologic System:

- ❑ Snowpack
- ❑ Run-Off
- ❑ Drought and Flood
- ❑ Evaporation
- ❑ Soil Moisture
- ❑ Wildfires
- ❑ Water Quality Degradation



DW Planning Division Adaptation Projects

6

- 2005 Simple Assessment:
 - If T increases 2° F, supply decreases 7% and demand increases 6%
 - If T increases 5° F, supply decreases 14%
- Joint Front Range Climate Change Vulnerability Study
 - A regional investigation to develop hydrology models converting temperature and precipitation projections into streamflow
- Water Utility Climate Alliance
 - Climate Modeling White Paper
 - Decision Support Planning Methods White Paper
- RAND Pilot Project
- Integrated Resource Plan 2010

Committees and Groups

7

□ National Participation

▣ Water Utility Climate Alliance

- Decision Support, Science and Research, and Legislative Committees

▣ American Metropolitan Water Association

- Climate Change Committee

▣ Western Urban Water Coalition

- Climate Change Committee

□ Local Participation

▣ Colorado Water Conservation Board

- Climate Change Technical Team

▣ Rocky Mountain Climate Organization

- Water Adaptation Committee

▣ Front Range Climate Group

- Climate Change Technical Team Leader

General 'Needs' Overview

8

How will the hydrologic system change?

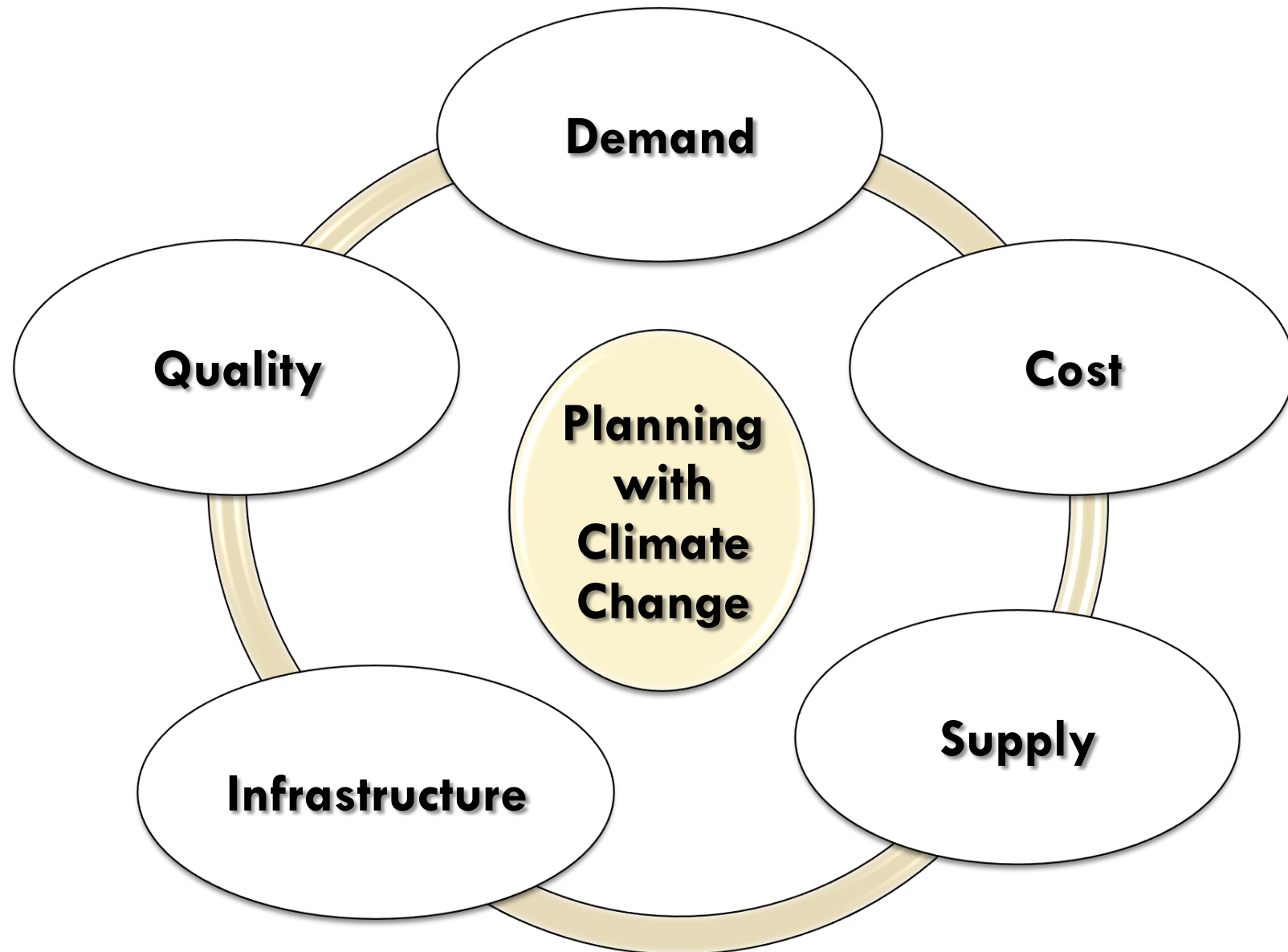
- Accuracy
- Magnitude
- Range
- Timing
- Resolution
- Region specific changes
- User friendly information
- Understanding of uncertainty

Getting to this point:

- Observational Data
- Science
- Modeling
- Downscaling

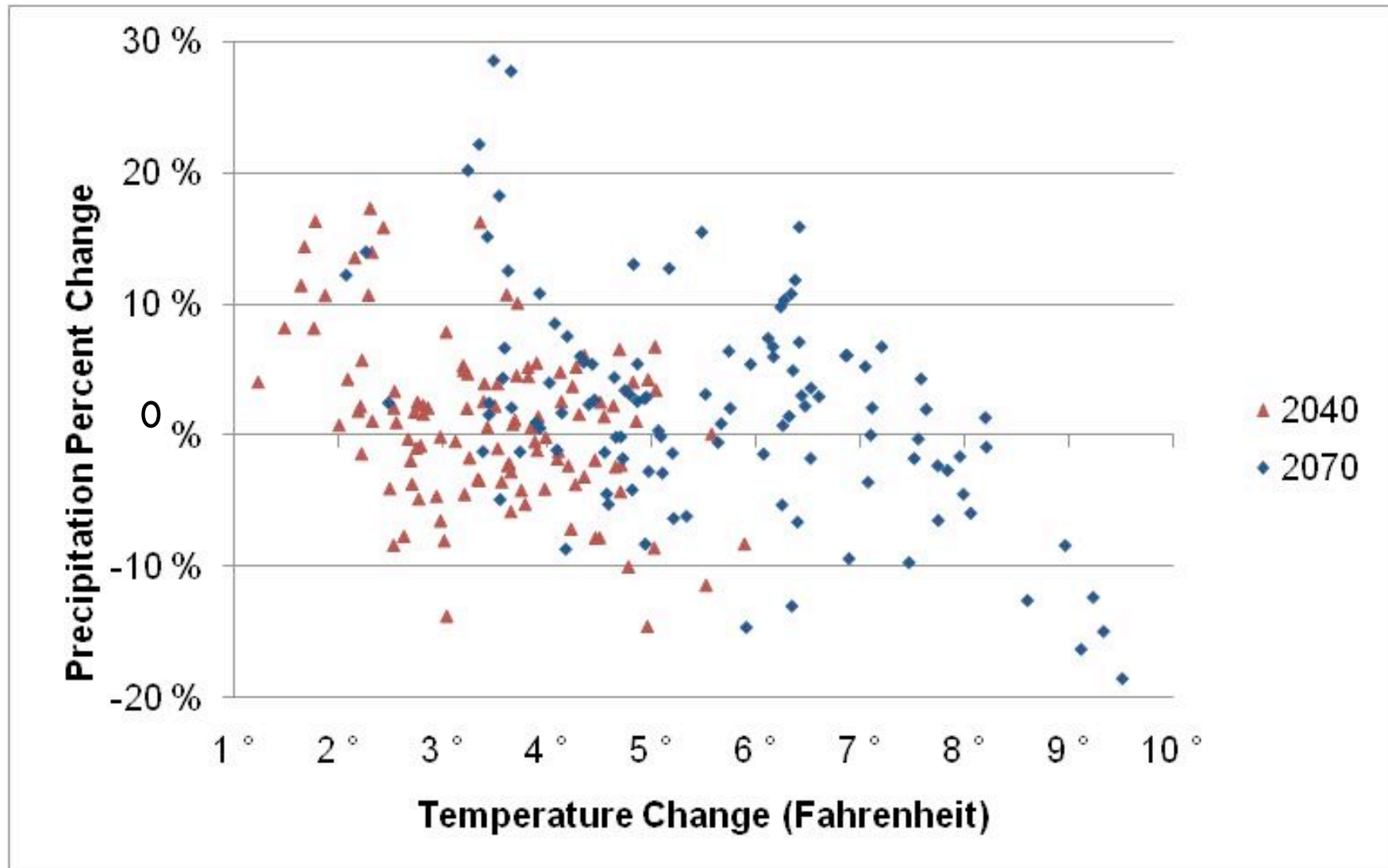
Decisions impacted by Climate Change

9



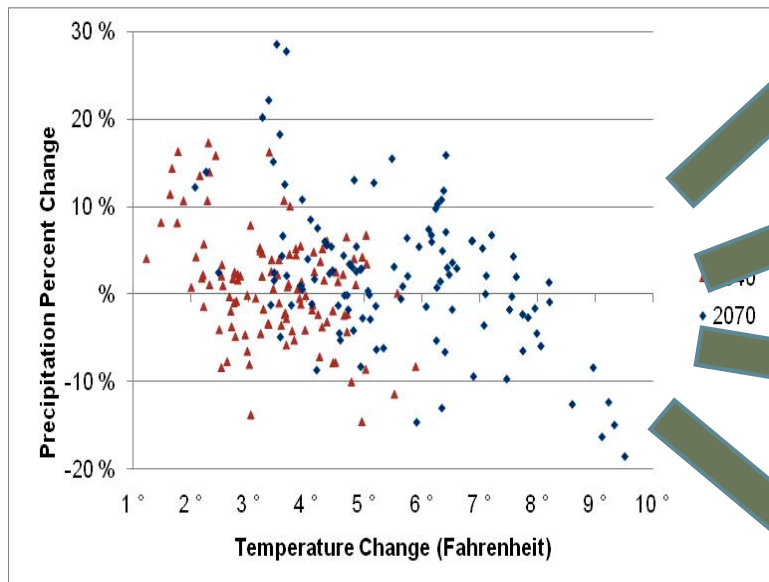
Projected Changes for North Central Colorado

10



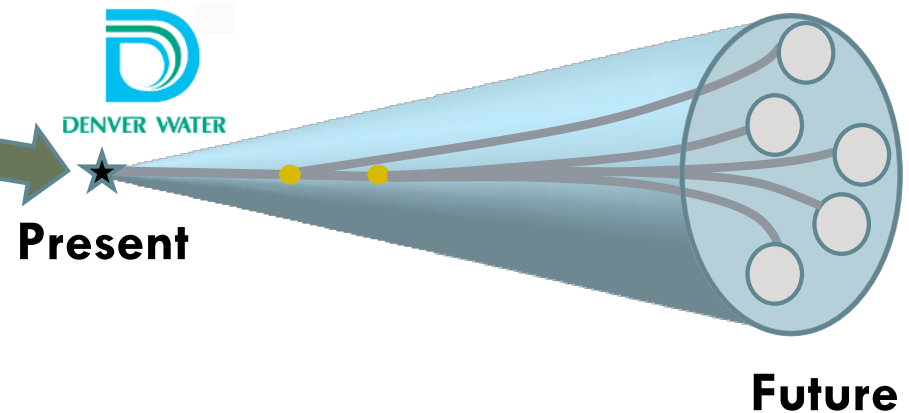
Reactions

11



The Front Range Study

The 'RAND' Approach



A Probabilistic Approach

Questions?



Our Water Pie

13

