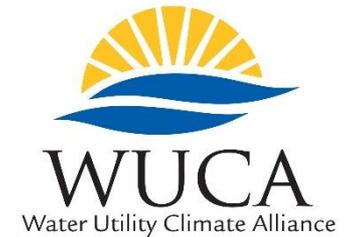


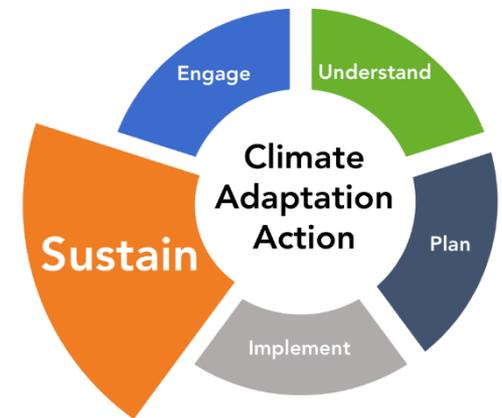
Building Resilience to a Changing Climate: A Technical Training in Water Sector Utility Decision Support



Key Takeaways from Day 1

Heather Dalrymple, Austin Water / WUCA

Brad Spangler, Meridian Institute



Day 1 Key Takeaways: Climate Science

- Temperatures are rising – the climate is changing
- We expect more warming in the future
 - Timing and magnitude are uncertain
- We can **project** potential changes in climate, but can't **predict** them
- There are many sources of uncertainty including uncertainty about future emissions and exactly how the climate will change
- We expect some sources of uncertainty to never go away

Day 1 Key Takeaways: Climate Models

- Climate models are the best source of information on future climate
 - They have important limitations
 - Their outputs are projections, not predictions
 - The models tend to be improving but require extensive vetting and assessments before use

Day 1 Key Takeaways: Downscaling and Hydrologic Models

- Models can be used in a variety of ways to better understand the past and think about the future.
- Downscaling and hydrology modeling provide **local-scale insights** of global scale information.
- Downscaling exists on a continuum of tradeoffs between computational efficiency and method complexity.
- Model uncertainty is unavoidable.
 - Representation of uncertainties is hard but necessary.
 - Uncertainties are always there; just understanding them now.
 - Previous studies may be over-confident.

Day 1 Key Takeaways: Downscaling and Hydrologic Models

- Be extra careful not to confuse high resolution with increased accuracy.
- It is critical to understand important processes and uncertainties in **your** system
- Models are tools that can be useful, if used appropriately.
Be a savvy consumer
- Consult local experts and national resources (e.g., OSU, UW, NCAR https://ncar.github.io/dos_and_donts)

Day 1 Key Takeaways: Planning

- The challenge of anticipating climate change is making decisions in light of uncertainty
 - *NOTE: this is the challenge of anticipating **any** future change*
- Uncertainty approaches are better suited to identify and assess options for anticipation of climate change
 - Adaptive management, risk management
 - No regrets, low regrets
 - Incremental, modular (scalable), diversification
- Decision support can help in analyzing options
 - Traditional approaches (e.g., BCA) can still be useful
- Other factors besides climate are also changing and can be relevant.

Reflections on the Day?

Day 1 Wrap-Up

- Please complete your Day 1 feedback form
- Coffee available tomorrow starting at 8:00 am
- Please be seated and ready to go by 8:30 am