

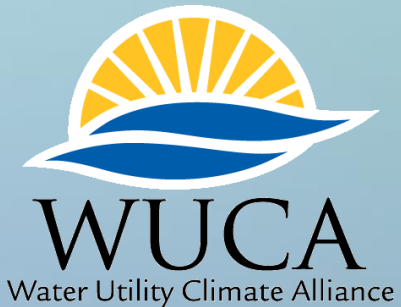
Scenario Design: An Accelerated Introduction to Scenario Planning

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Greg Gates, Hazen and Sawyer

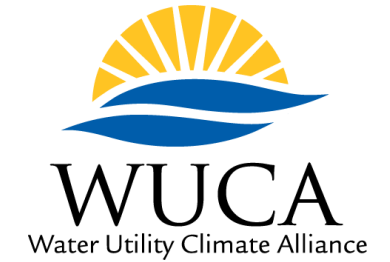


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Overview

Overview: How and why scenario planning is useful

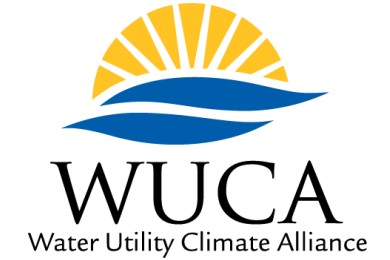


- Developed in 1950s by Herman Kahn and Rand Corporation. Was used to explore possibilities beyond nuclear war. Later, used by Royal Dutch/Shell Oil to help navigate an uncertain business world – made them more resilient to the 1973 oil embargo.
- Emphasizes that we can't predict the future.
- WUCA: Plan for multiple futures!
- There's value in preparing for a range of future outcomes and possibilities (don't put all your planning eggs in one basket).
- Allows your organization to be flexible and nimble to adapt to changing conditions.



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Overview: How and why scenario planning is useful



Planning Techniques

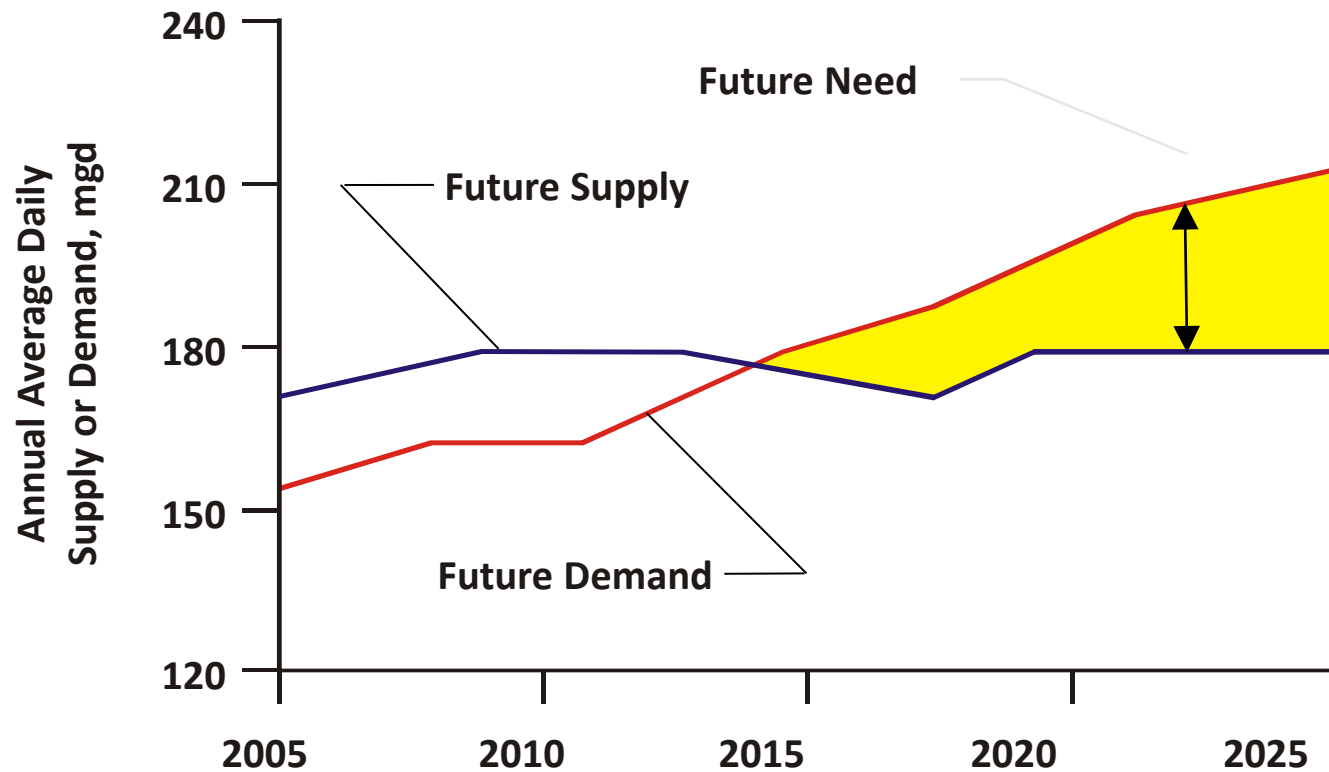
- **Deterministic** – What the past shows us is the best way to predict the future (past IMP)
- **“What if” or “extremes” testing** – Examining specific events or circumstances
- **Robust Decision Making** – uses many simulations to develop an ensemble against which actions can be tested
- **Decision Scaling** – Heavily quantitative, examines failure modes, in a robust decision space.
- **Scenario Planning** – A method for developing future pathways to examine organizational strategies – tends to be less computationally intensive than other approaches



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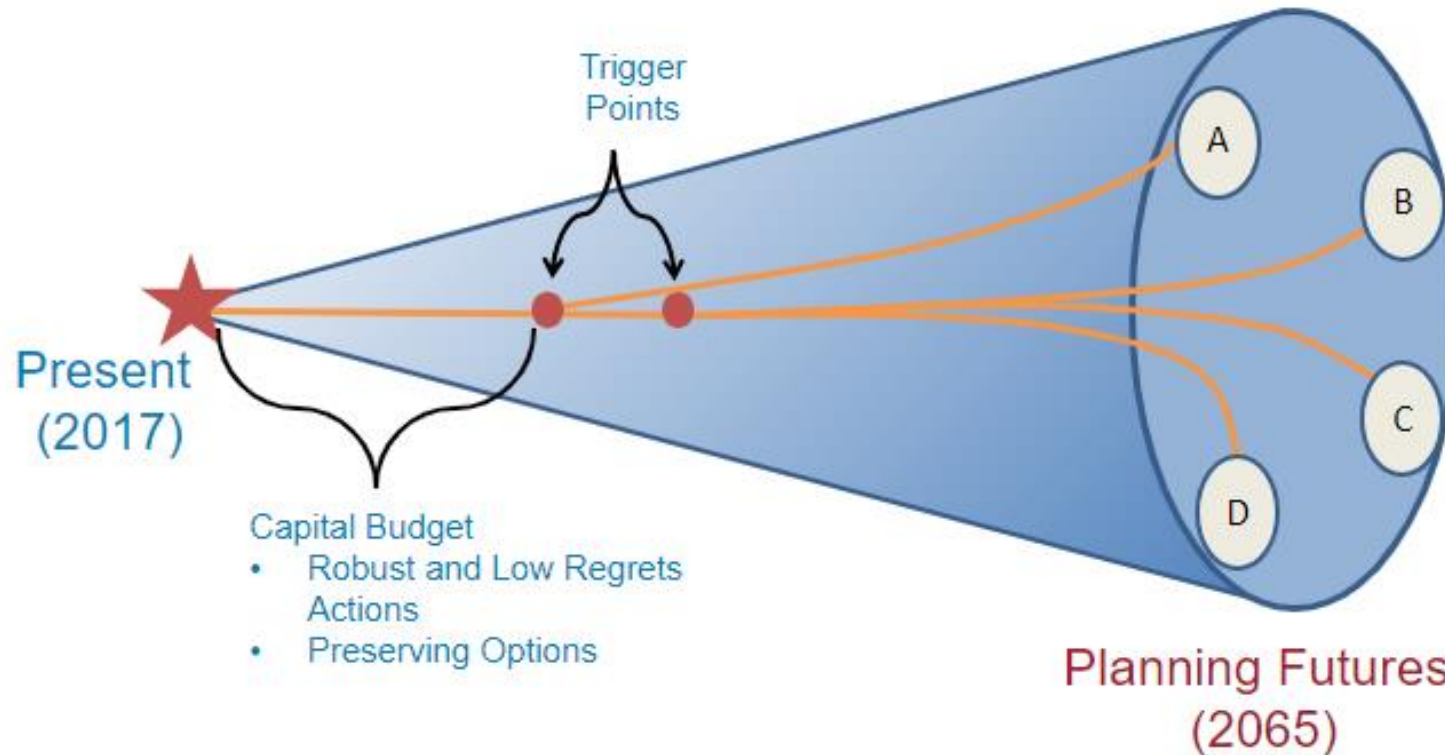
Overview: How and why scenario planning is useful

Deterministic Planning

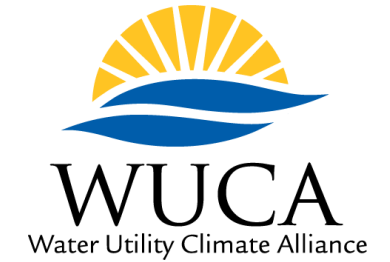


Overview: How and why scenario planning is useful

Scenario Planning: the Cone of Uncertainty



Overview: How and why scenario planning is useful



Scenario Planning: Key Points Before We Get Going...

- Shooting for plausible not probable
Several futures are plausible from any point in time.
- Balance between relevant and challenging
Does it make sense to have every possible challenge hit at the same moment?
- Be open minded
Let go of your bias and listen to your neighbors. We don't have to agree.
- It's just a story...
We're not predicting the future, rather we are developing plausible paths to test our system
- It's about being prepared!

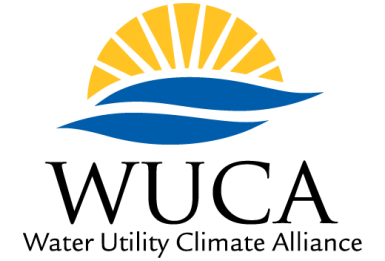


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Scenario Design



Scenario design

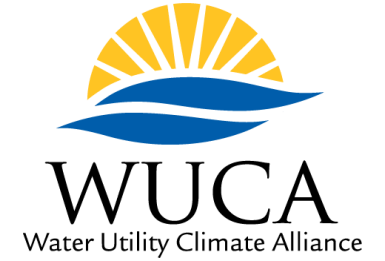


We are going to do an accelerated scenario design exercise to give you experience first-hand in developing scenarios and thinking through how to plan for multiple futures.

Typical scenario development process:



Framing the problem question

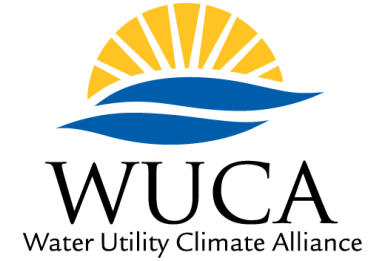


What threats to SPU's supply sources and supply infrastructure reliability could pose challenges over the next 20-30 years?



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Criteria for developing scenarios



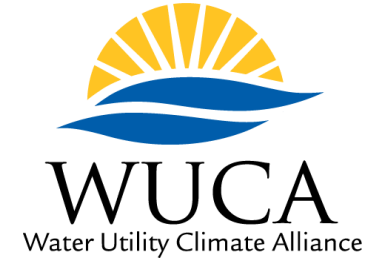
We are aiming to develop scenarios that are:

1. Relevant to the focal question framed above
2. Plausible
3. Represent a range of possibilities and potential futures
4. Independent and divergent – cone of uncertainty
5. Challenge our assumptions about the future



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Brainstorming Threats/Uncertainties



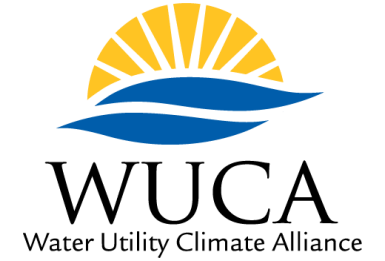
- Split into 6 breakout groups by table
- Work together to jot down thoughts on key threats to SPU's supply sources and infrastructure reliability (use framing question)
- Write threats on large sticky notes, stick on your poster chart
- Consider a range of threats: environmental, regulatory, technological, social, political, institutional, economic, etc.
- Trainers help facilitate - group notes by type/risk
- Be ready to report out your group's top 3

10 mins



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Brainstorming Drivers: Report Out



Report out your group's top 3 and most novel threats **(10 mins)**

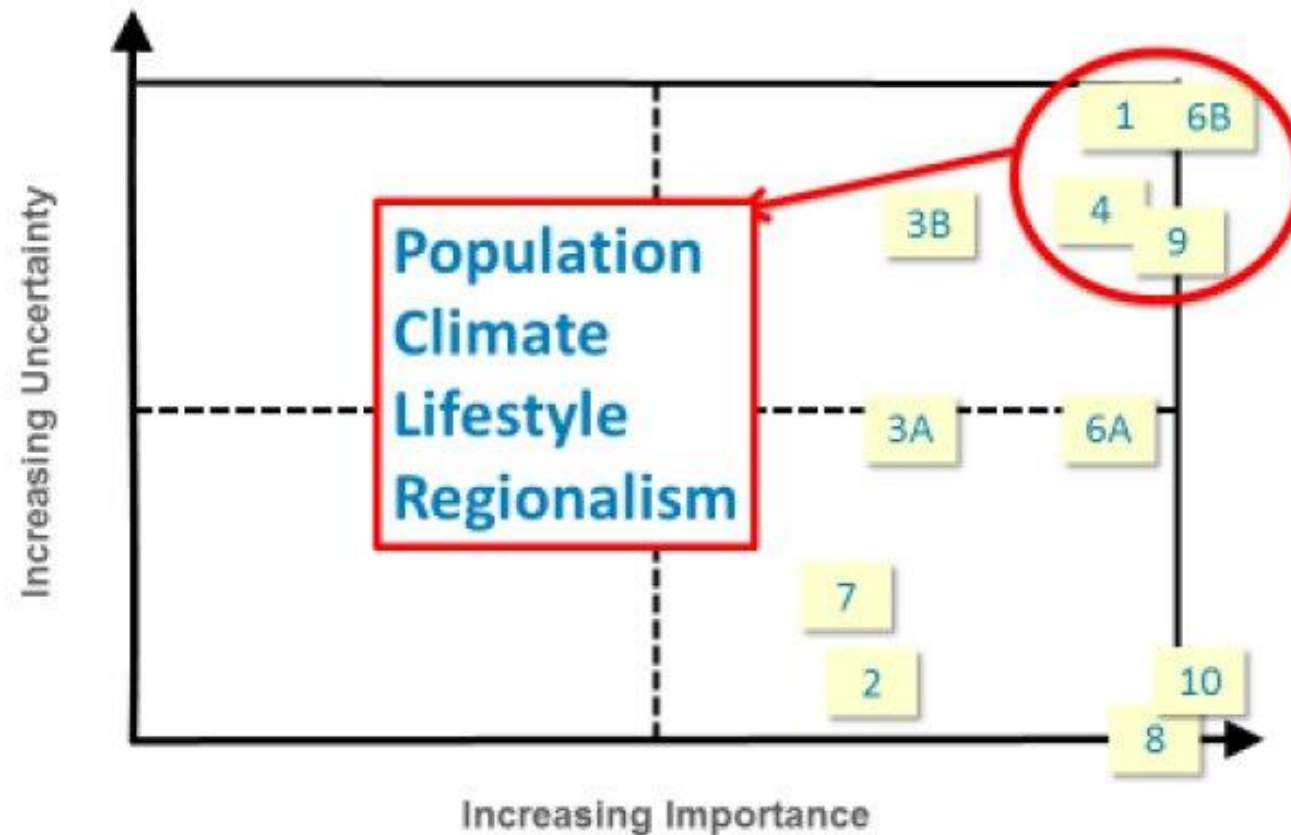
Group 1	Group 2	Group 3	Group 4	Group 5	Group 6
1.	1.	1.	1.	1.	1.
2.	2.	2.	2.	2.	2.
3.	3.	3.	3.	3.	3.



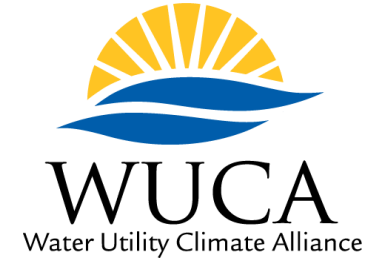
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Prioritize Key Drivers

We are now going to prioritize these threats by Importance and Uncertainty



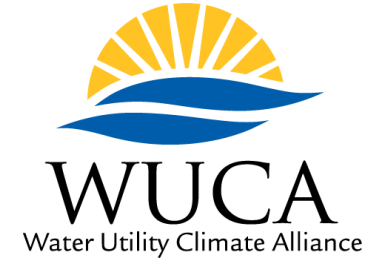
Prioritize Key Drivers



- **Importance** is a relative measure of the magnitude of the influence of a driving force on supply system reliability.
- **Uncertainty** is a relative measure of the ability to predict the state of the driving force over the planning horizon - more range is greater uncertainty.



Prioritize Key Drivers



Which of the threats are the most important/most uncertain?

Goal: As a large group, agree on 2-3 key drivers that are Most Important and Most Uncertain that have the potential to tip the future for SPU supply one direction or another.

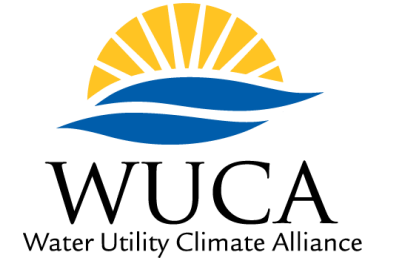
These are our Key Drivers.

10 mins

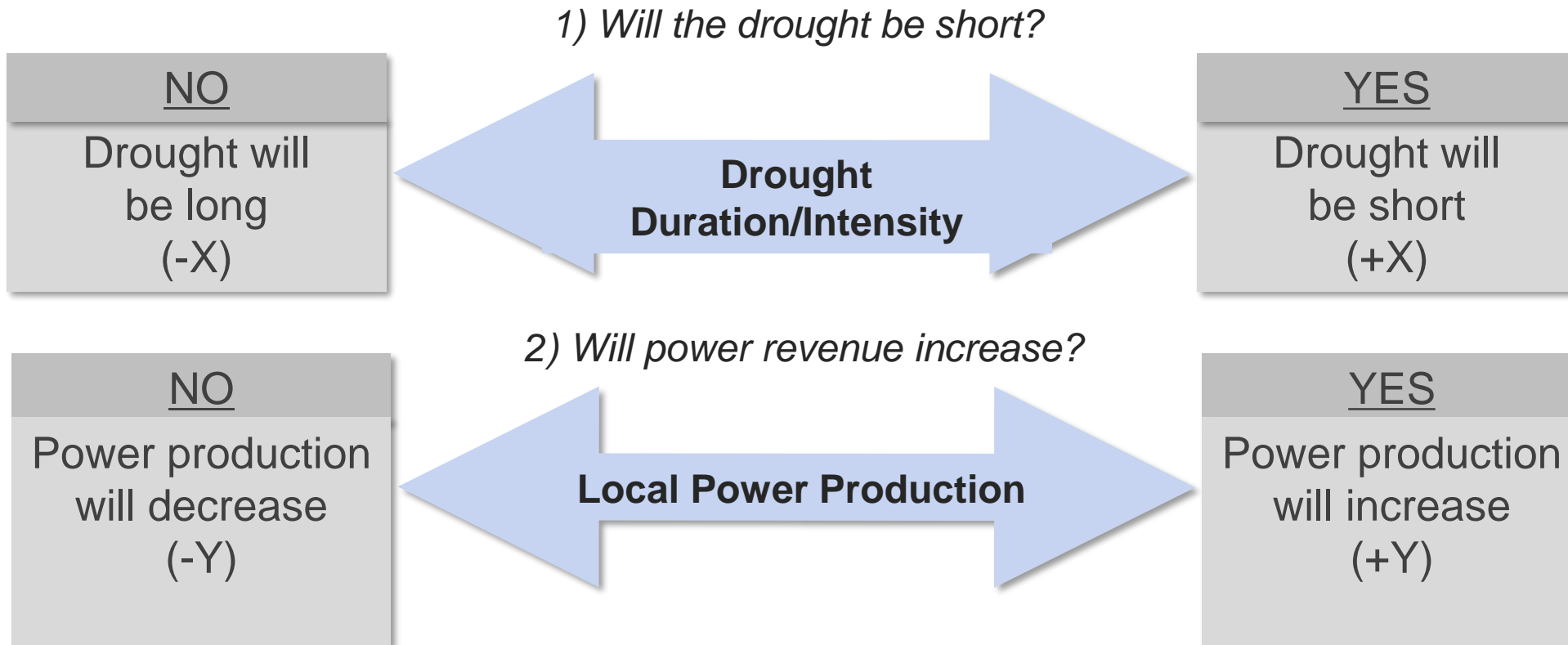


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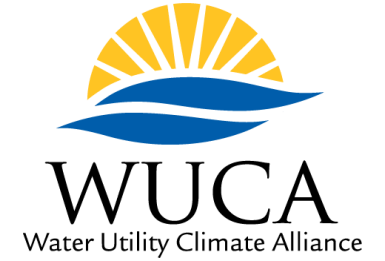
Establishing Endpoints



To develop a scenario matrix we need to establish endpoints that are bounds for the key drivers.



Establishing Endpoints



- Back in your smaller groups discuss the 2-3 key drivers and come up with endpoints for each.
- Trainers help facilitate.
- Be ready to report out your group's endpoints

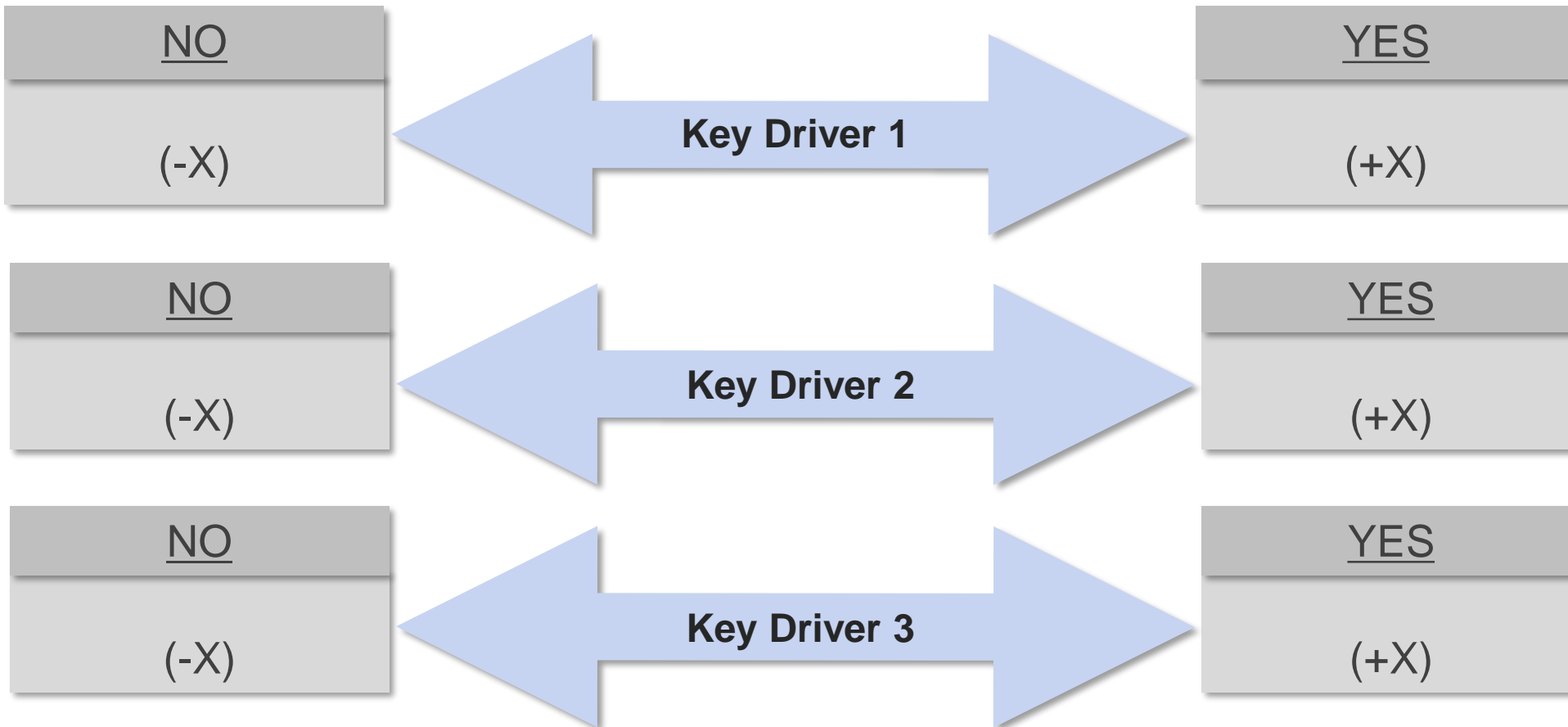
10 mins



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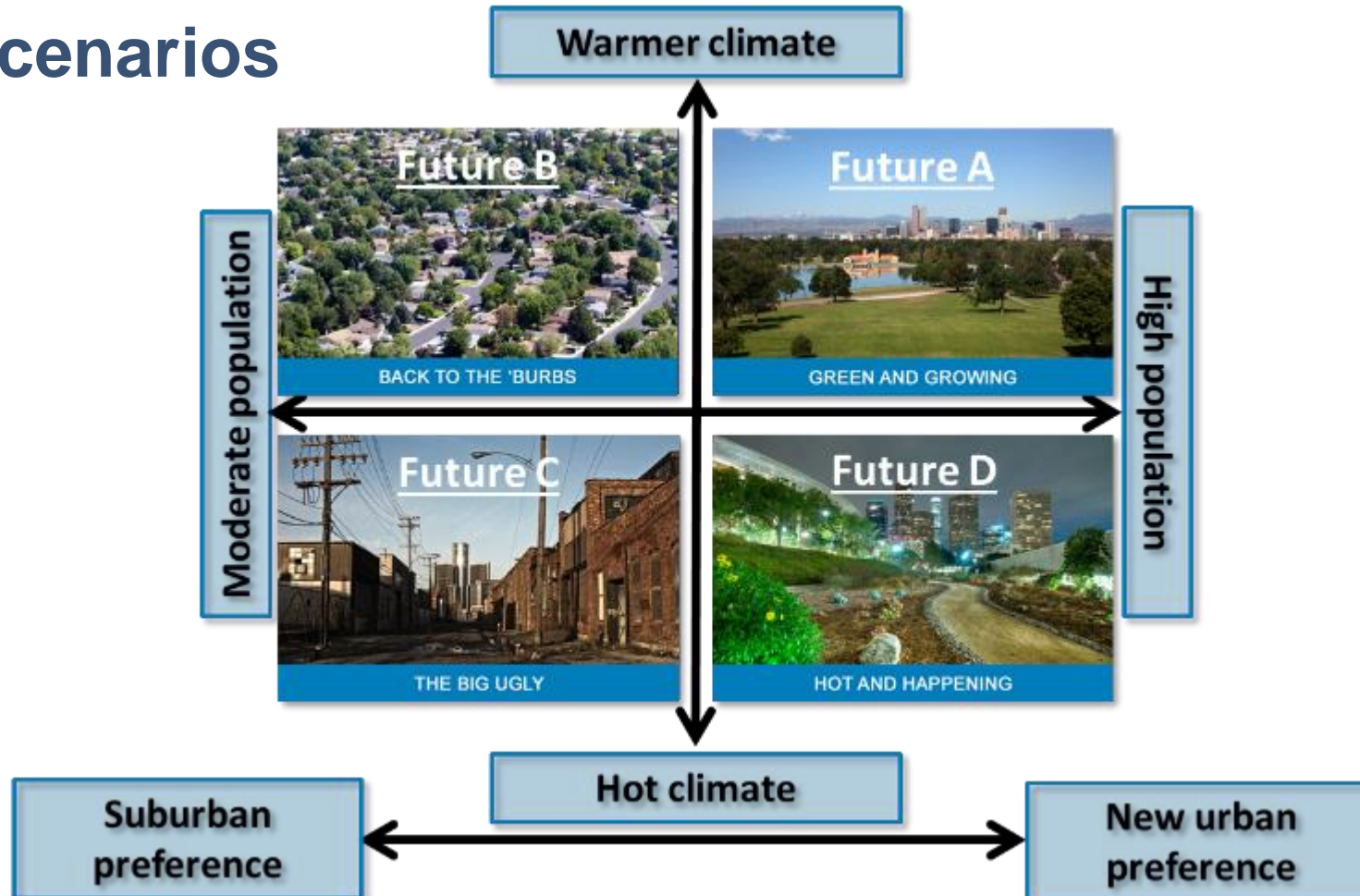
Establishing Endpoints

Report back on endpoints (5 mins)



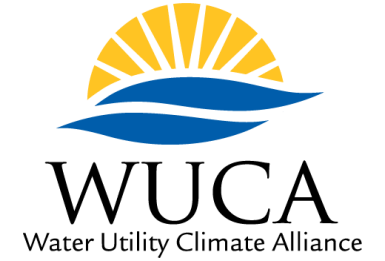
Combining Key Drivers to Develop Scenarios

Build Scenarios



Credit: Denver Water

Combining Key Drivers to Develop Scenarios



Build Scenarios

As a larger group let's decide which two Key Drivers are primary. Pick 2 of the established endpoints for each of these.

Goal: Combine and cross two Key Drivers to develop a 2x2 scenario matrix. This builds 4 scenarios.

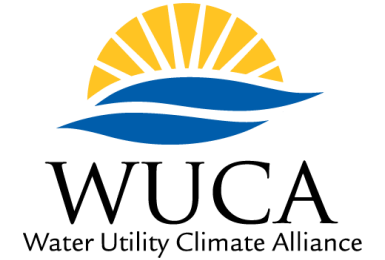
Time dependent: add a 3rd Key Drivers

15 mins



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Examine Scenario Plausibility and Potential Futures



Scenario narratives – help define plausibility and can be simple or complex, qualitative, quantitative, or both.

- What conditions would occur under these?
- How could the two Key Drivers influence each other?
- Are the four scenarios relevant to the focal question we defined at the start?

Now, going back to our criteria for developing scenarios, let's ask:

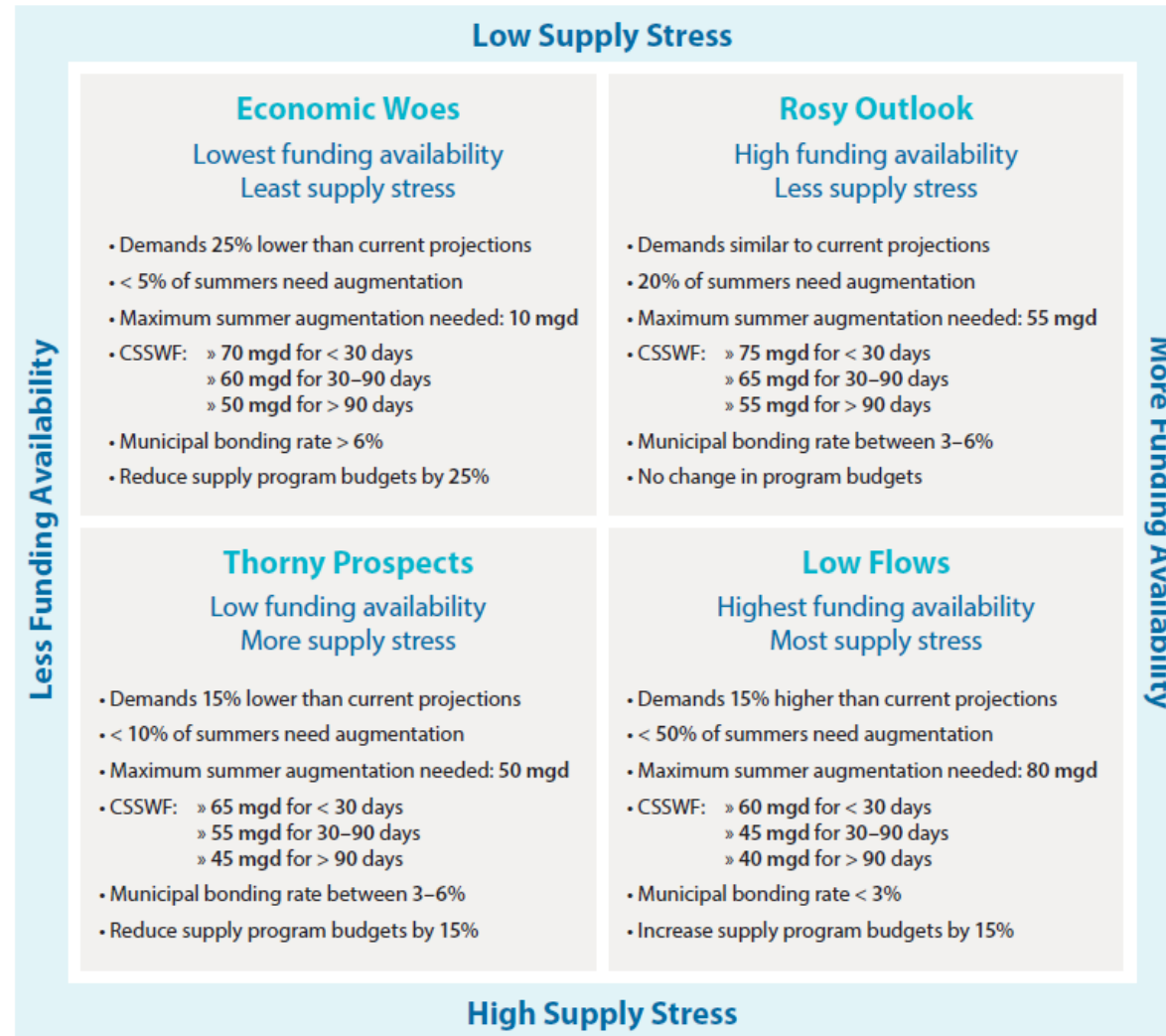
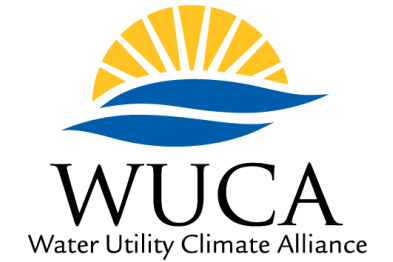
1. Are the scenarios *relevant* to the focal question framed above?
2. Are the scenarios *plausible*?
3. Do they represent *a range* of possibilities and potential futures?
4. Are the scenarios *independent and divergent*?
5. Do they *challenge our assumptions* about the future?

10 mins



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Scenarios Narrative

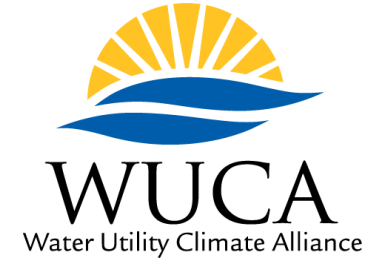


Credit: PWB



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Reflections



- How was your experience of doing scenario planning through this exercise?
- Did you find value in doing this exercise as a foundation for the Supply Alternative process?
- What was the most challenging part of working through this exercise?



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