



Integrated Water Resource Plan

Water and Sewer Board Update

April 19, 2023



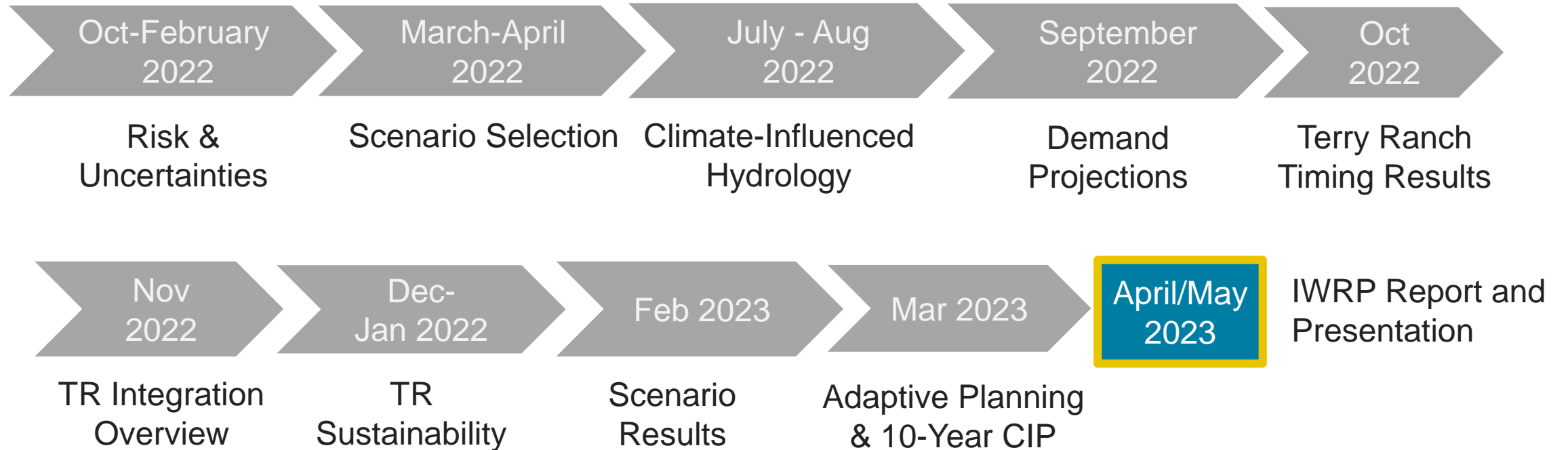


IWRP Vision Statement

“An actionable and adaptive master plan for Greeley’s water resources that uses modern, defensible methods to develop a roadmap ensuring a reliable water supply for our community through an uncertain future.”



IWRP Timeline



IWRP Overall Feedback

- Are outcomes understandable?
- Do you have a good understanding of Greeley's plan for Water Resources?
- Is something missing?

IWRP Summary Presentation

- Intended for public audience
- Four modules covering major IWRP components
- Individual slides on key IWRP information or outcomes
- Can mix-and-match for different audiences
- Will feed IWRP landing page on Greeley's website



IWRP Public Presentation

Integrated Water Resources Plan

City of Greeley

Water and Sewer Department



Agenda



- Background objectives
- How the plan was developed
- What is Greeley's plan for water supplies

Project Team

Greeley Team Project Manager	
Kelen Dowdy	
Greeley Technical Team	Greeley Management Team
<p>Dena Egenhoff Water Conservation Manager</p> <p>Erik Dial Deputy Director of Utility Finance and Customer Service</p> <p>Leah Hubbard Water Resource Operations Manager</p> <p>Daniel Biwer Environmental & Water Resources Attorney</p>	<p>Sean Chambers Water & Sewer Director</p> <p>Ty Bereskie Deputy Director of Water Resources</p> <p>Adam Prior Chief Engineer</p>

Consultant Team Project Manager
Neil Stewart (Stantec)
Consultant Team
<p>Mary Presecan (LRE Water) <i>South Platte River Basin Expert</i></p> <p>Cortney Brand (LRE Water) <i>Terry Ranch Groundwater Expert</i></p> <p>Michelle Johnson (Martin & Wood) <i>Greeley Water Rights Expert</i></p> <p>Adam Jokers (West Water Research) <i>Greeley Issues</i></p> <p>Paul Weiss (Williams & Weiss) <i>Water Supply Modeling Expert</i></p>



Introduction and Background

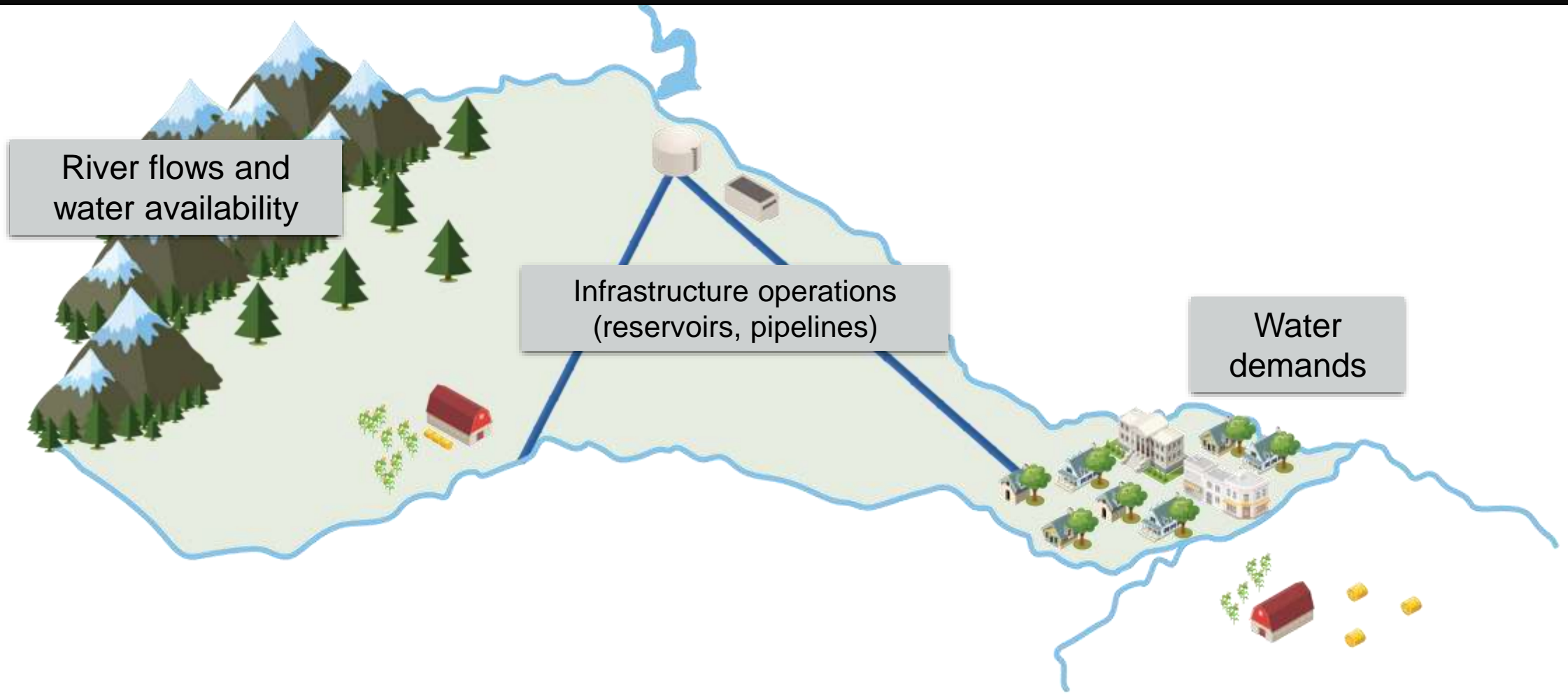
What is an integrated water resources plan – or IWRP?

What are Greeley's IWRP objectives?

How will Greeley use its IWRP?

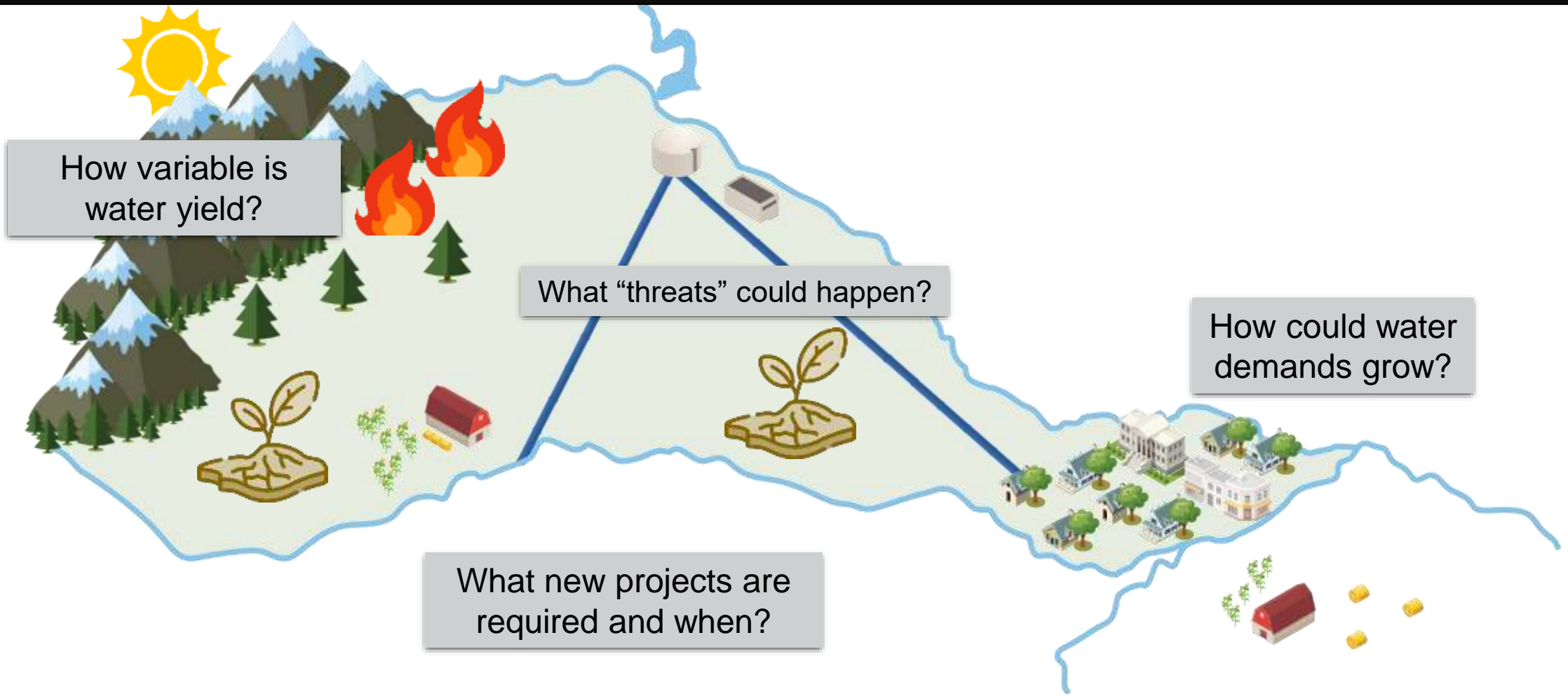
What is an IWRP?

1) Holistic, long-term evaluation of Greeley's water supply system that integrates:

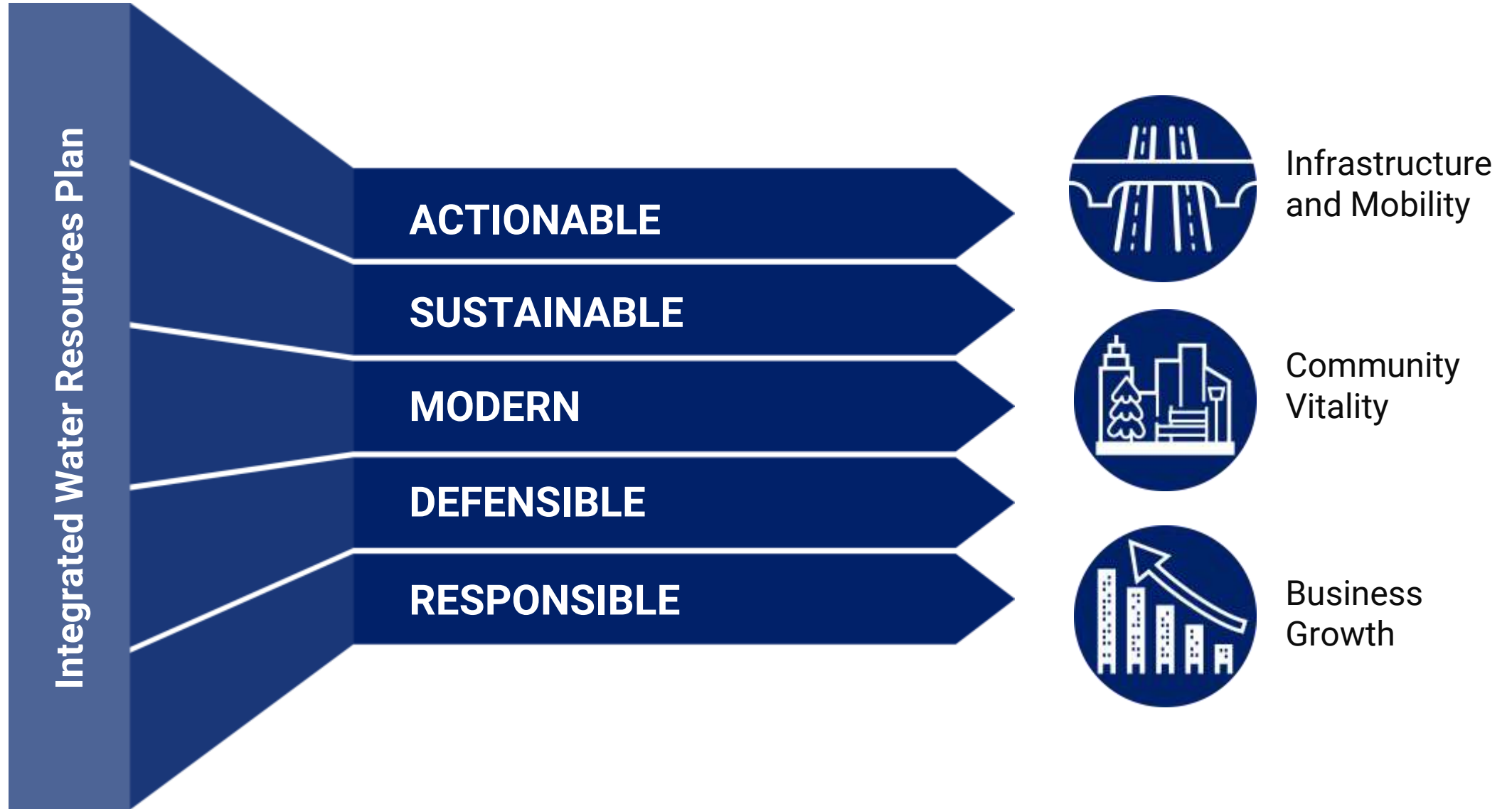


What is an IWRP?

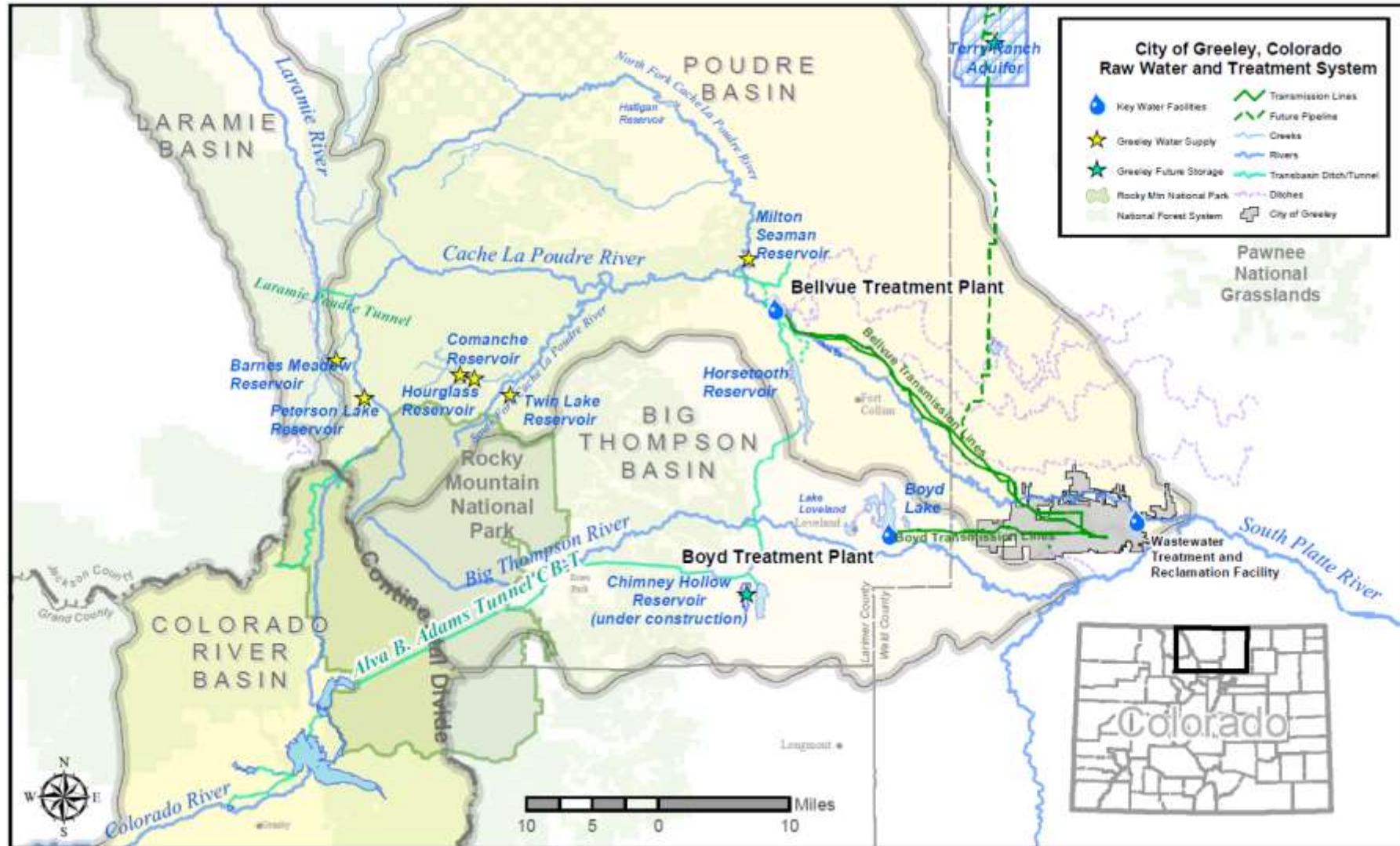
2) Evaluates how changes to future conditions impact the water supply system



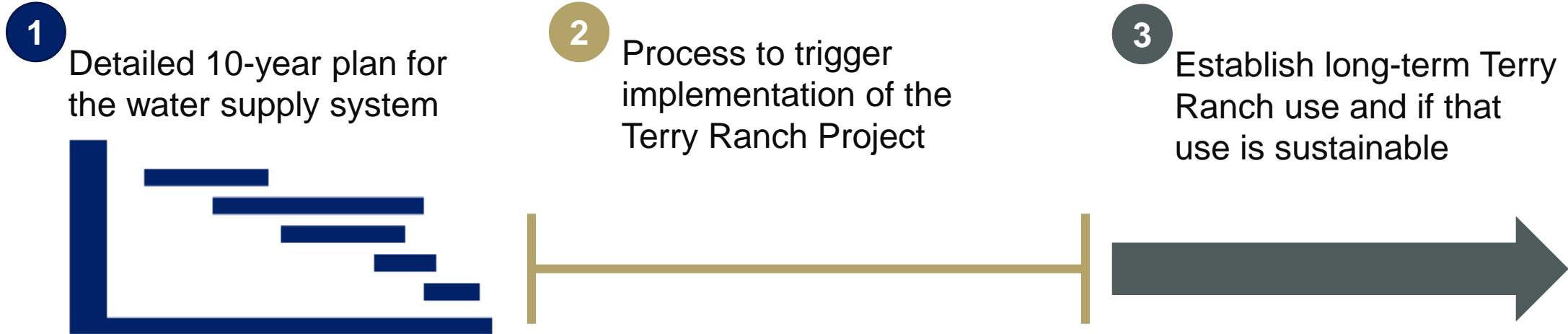
What are Greeley's IWRP objectives?



Greeley's Current Water Supply System



How will Greeley use its IWRP?





Understanding Uncertainty





















What futures did the IWRP plan for?

How could climate change affect Greeley's water supplies?

What could Greeley's future water demands be?

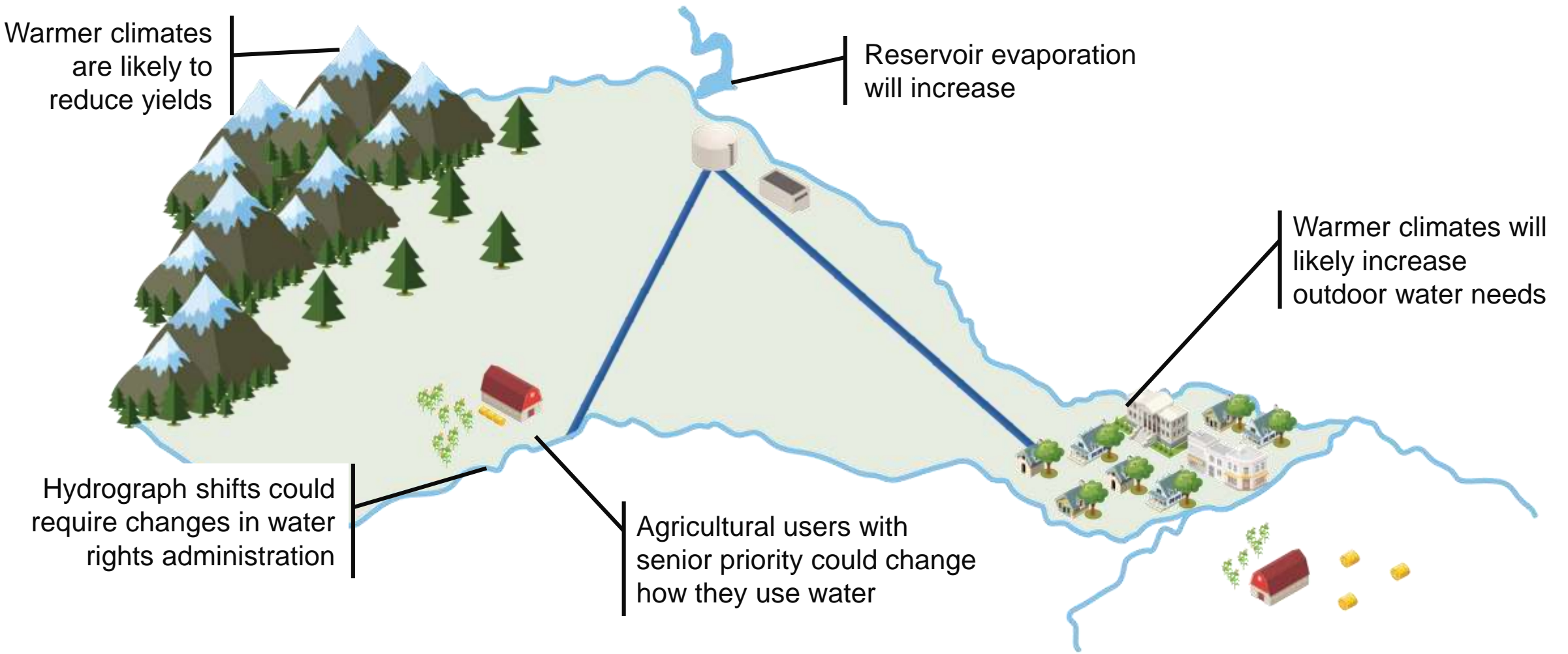
What futures did the IWRP plan for?

- “Planning Scenarios” were defined to vary important future water supply conditions

Planning Scenario Name	Climate Warming	Colorado River Basin Drought Impacts	Water Rights Administration	Demand Growth
Unbearable		 High		
Stressed		 Moderate		
Continued Trends		 Moderate		
Optimistic		 Low		
No Climate Change		 Low		

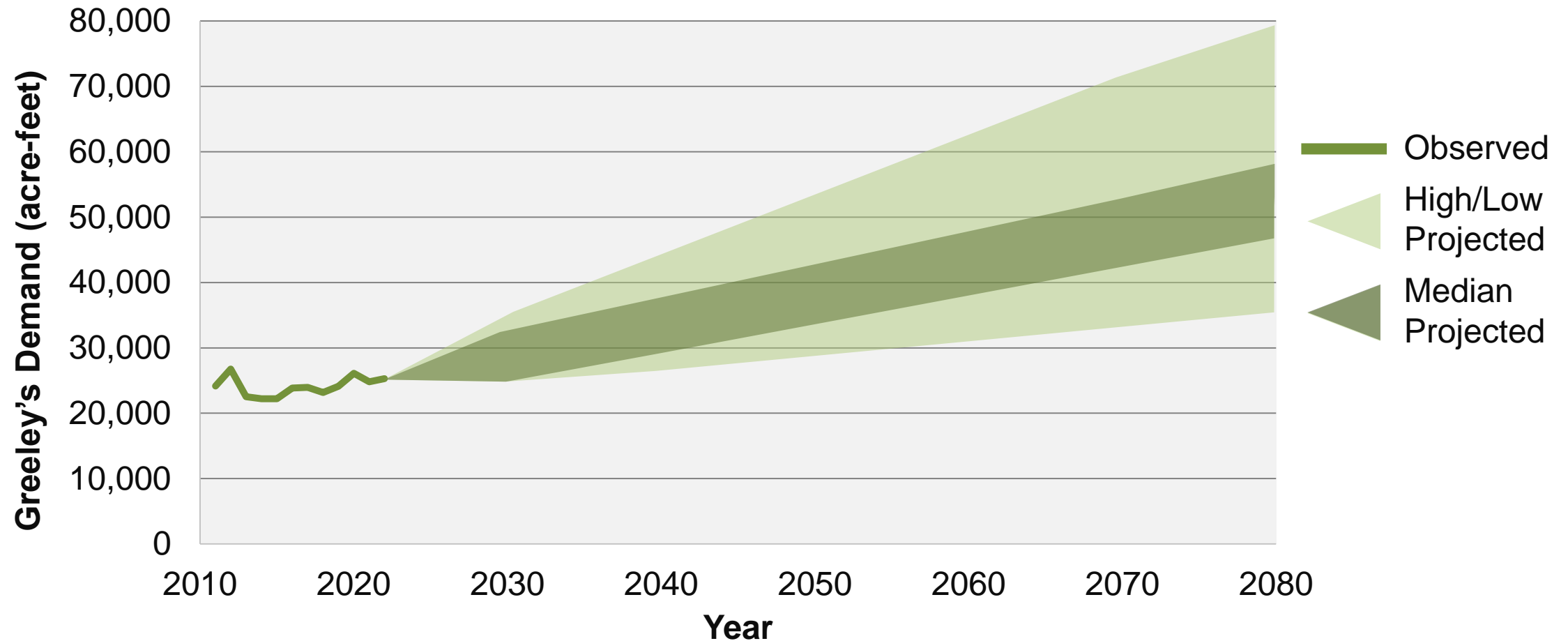
How could climate change impact Greeley's water supplies?

The IWRP reflects the following climate change impacts to Greeley:



What could Greeley's future water demands be?

- Unclear when demand growth will resume
- Future demands highly variable





Developing Greeley's IWRP

How vulnerable is the current water supply system?

How could Greeley use the Terry Ranch Project?

What are the triggers for needing Terry Ranch?

When does the Terry Ranch Project need to be developed?

How vulnerable is the water supply system?

Greeley's Water Supply System able to meet performance criteria for each Planning Scenario

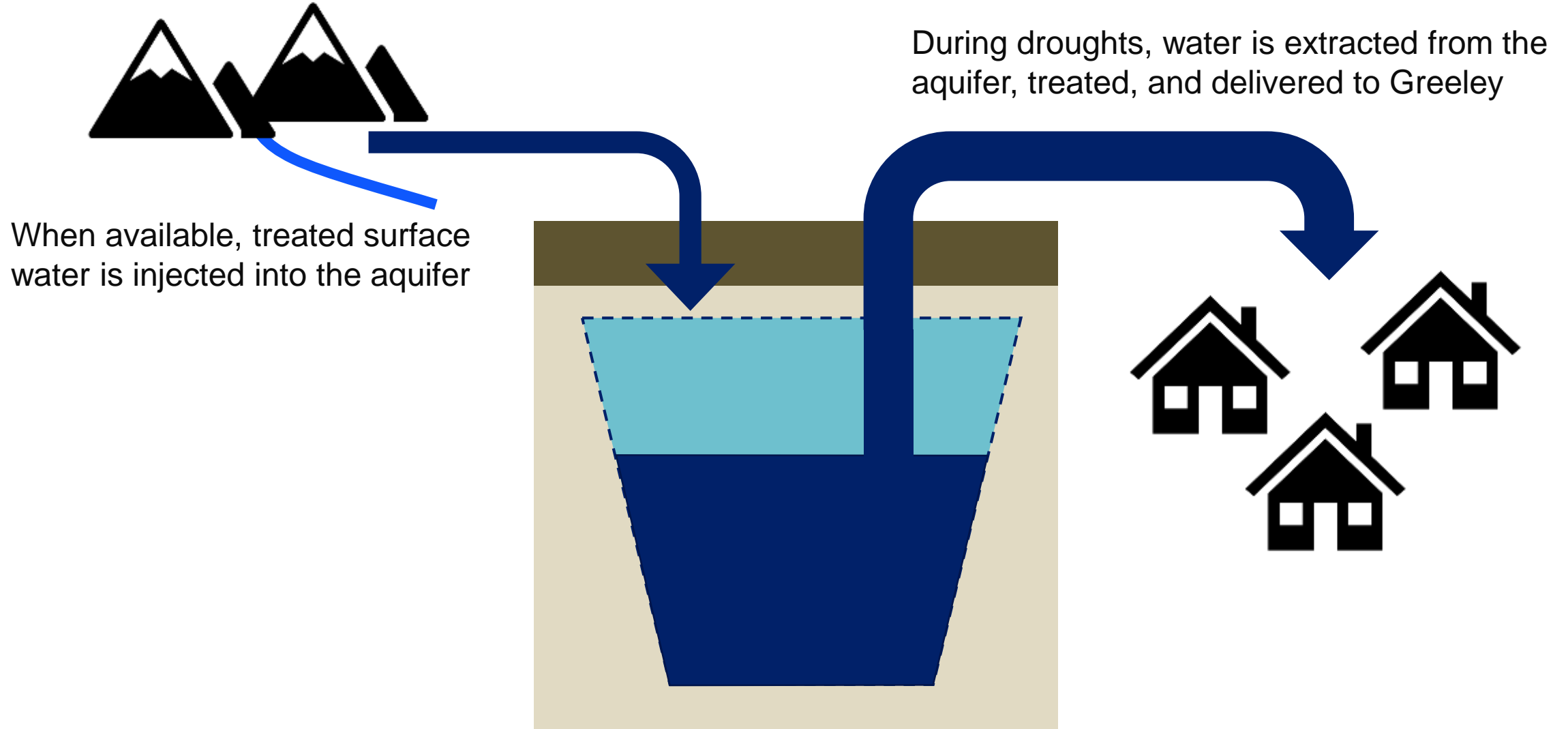
Current System	✓	✓	✓		
Planned System in 10-year CIP	✓	✓	✓	✓	
Long-Term System without Terry Ranch	✓				
Long-Term System with Terry Ranch	✓	✓	✓	✓	



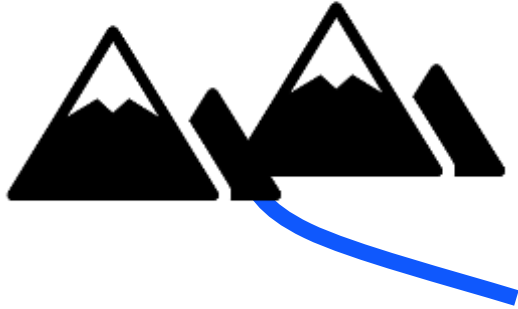
No Climate Change Optimistic Continuing Trends Stressed Unbearable

Planning Scenario

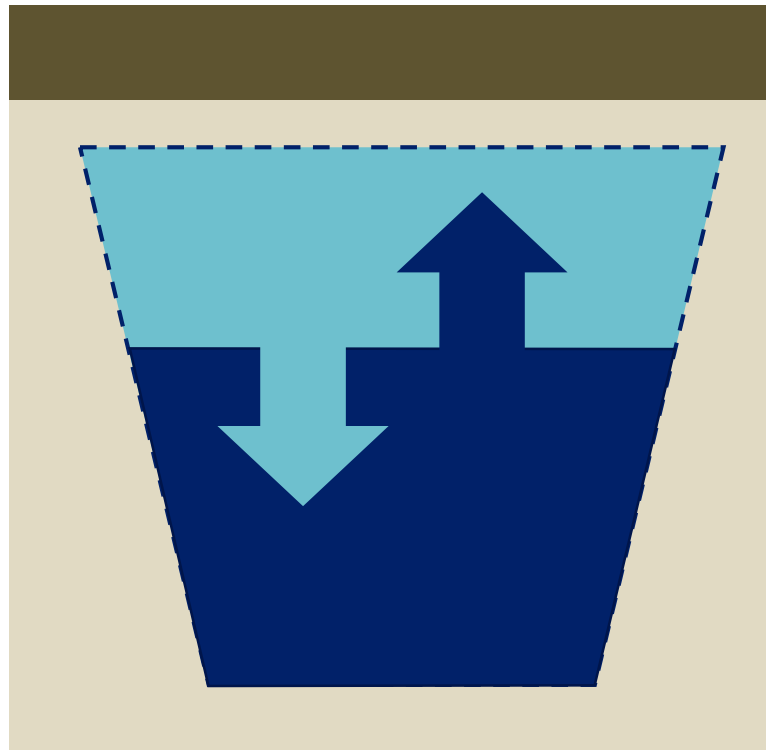
How could Greeley use the Terry Ranch Project?



How could Greeley use the Terry Ranch Project?






Aquifer levels will vary depending on drought conditions – the goal is to keep sufficient water in the aquifer long-term



What are the triggers for needing Terry Ranch?

- After evaluating Planning Scenario performance, the IWRP identified three conditions that will require Terry Ranch Project:

Condition 1:	Sustained High Demand Growth 
Condition 2:	Rapidly Warming Climate 
Condition 3:	Warming Climate and Moderate Demand Growth 

When does Terry Ranch need to be developed?

- Likely not in the next 10 years
 - Larger community required to financially support project
- Determining using demand projections
 - Cannot confidently time without sustained, significant demand growth
- Greeley will continuously monitor Terry Ranch triggers in Adaptive Plan



Greeley's Plan for Sustainable Water Supply

What is the water supply system strategy?

What is Greeley's 10-year plan?

How will Greeley monitor IWRP outcomes?

What is water supply system strategy?

Build Robust Water Portfolio

- Change agricultural water rights
- Continue strategic acquisitions
- Continue investing in storage projects

Responsibly Develop Terry Ranch

- Develop priority Terry Ranch infrastructure
- Study IWRP-recommended projects

Ensure Sustainable and Affordable Water

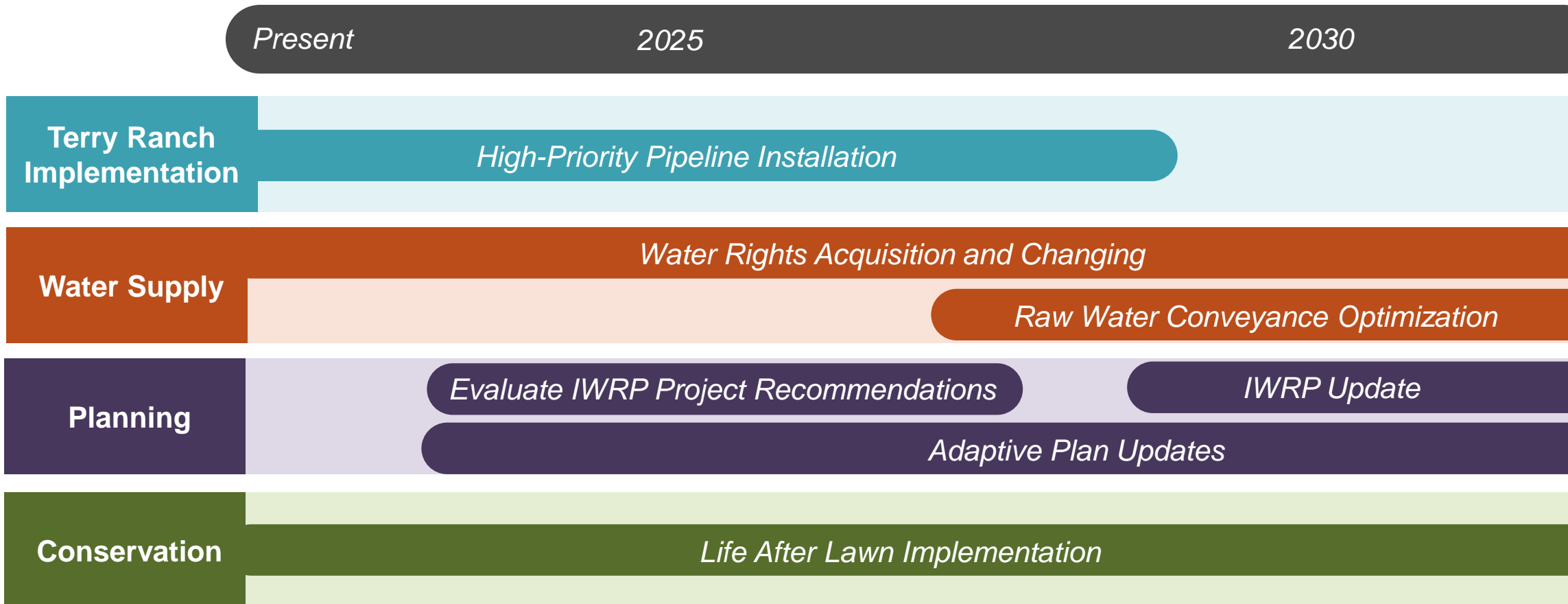
- Monitor demand growth and supply conditions
- Implement Adaptive Planning

What is Adaptive Planning?

- Recognizes uncertainty around IWRP outcomes and recommendations
 - Demand growth, climate change, water rights
- Establishes process to monitor and respond to changes
 - Actions that Greeley will complete annually
- Extends life of IWRP to improve water supply system sustainability

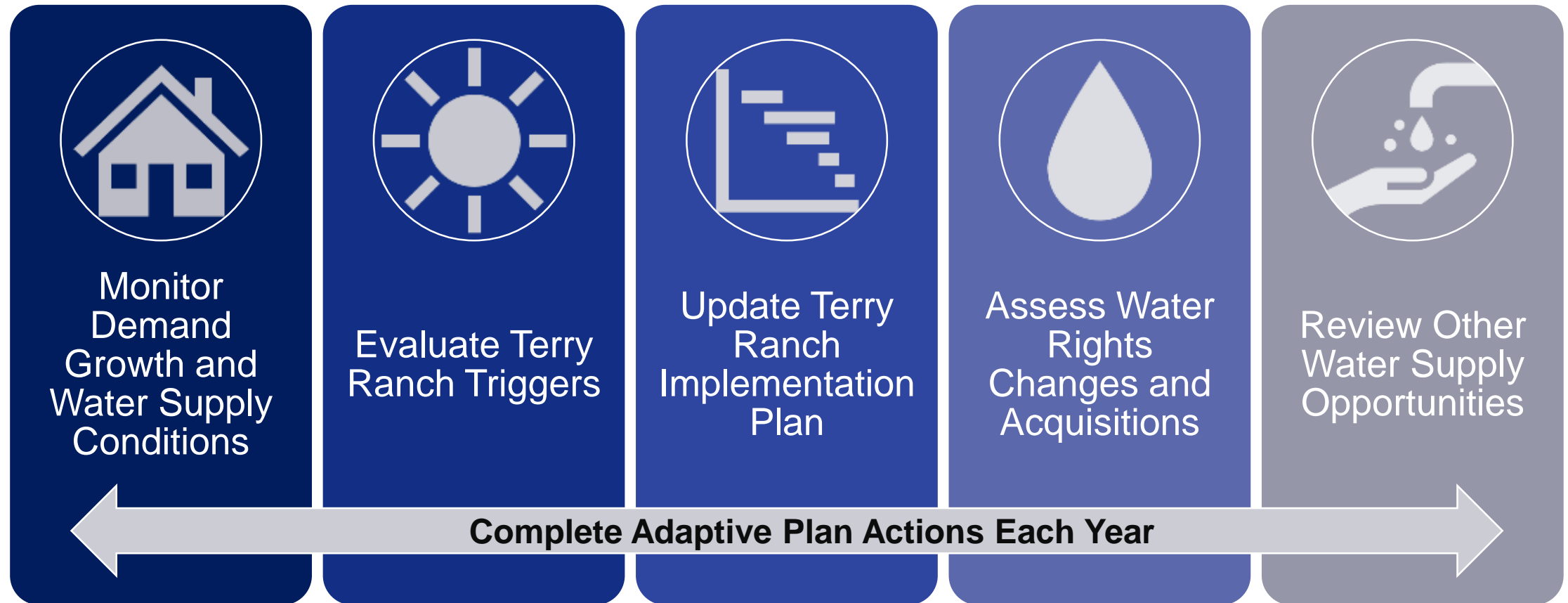
What is Greeley's near-term plan?

- Balance Terry Ranch investment with other needs



How will Greeley monitor IWRP outcomes?

- Adaptive Plan defines actions for Greeley to take each year





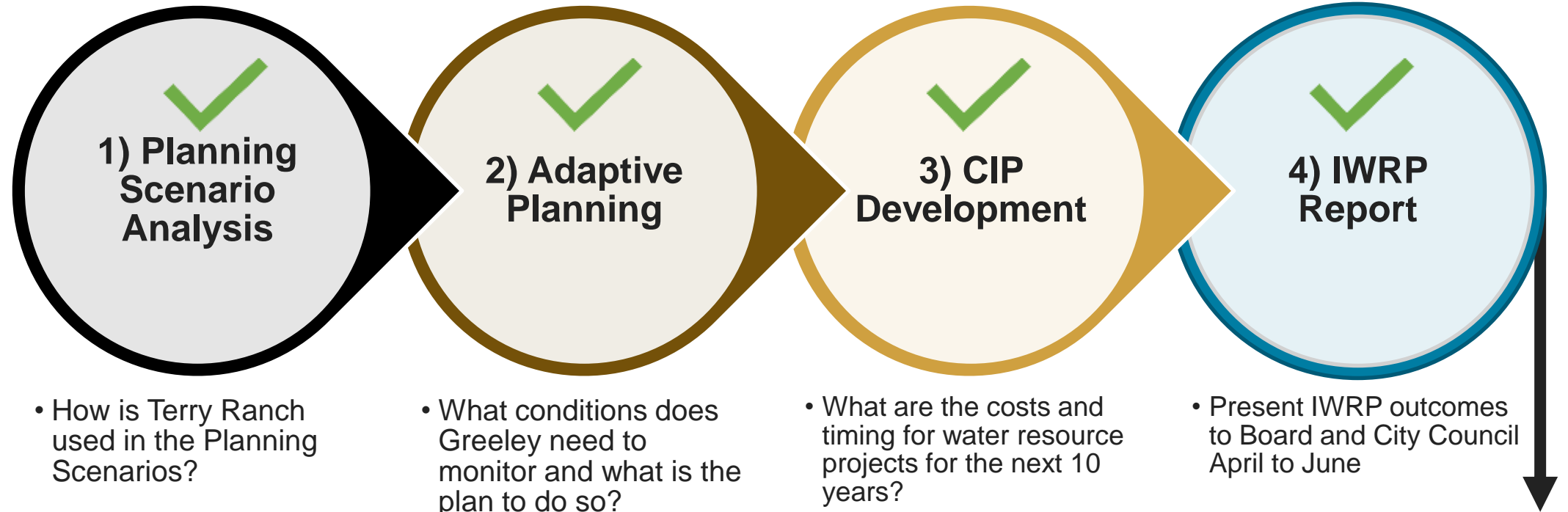
- Greeley's current water supply system is robust under near-term future conditions
- The Terry Ranch Project can sustainably provide water supply long-term in many future conditions
- Adaptive Planning will be implemented to ensure sustainable and affordable water supplies and trigger Terry Ranch implementation

Summary

Thank you



Next Steps



- How is Terry Ranch used in the Planning Scenarios?

- What conditions does Greeley need to monitor and what is the plan to do so?

- What are the costs and timing for water resource projects for the next 10 years?

- Present IWRP outcomes to Board and City Council April to June

- City Council Work Session: 4/25
- Planning Commission: 5/9
- W&S Board Recommendation: 5/17
- IWRP Complete: June



Questions?