



# Integrated Water Resource Plan

## Water and Sewer Board Update

*March 15, 2023*



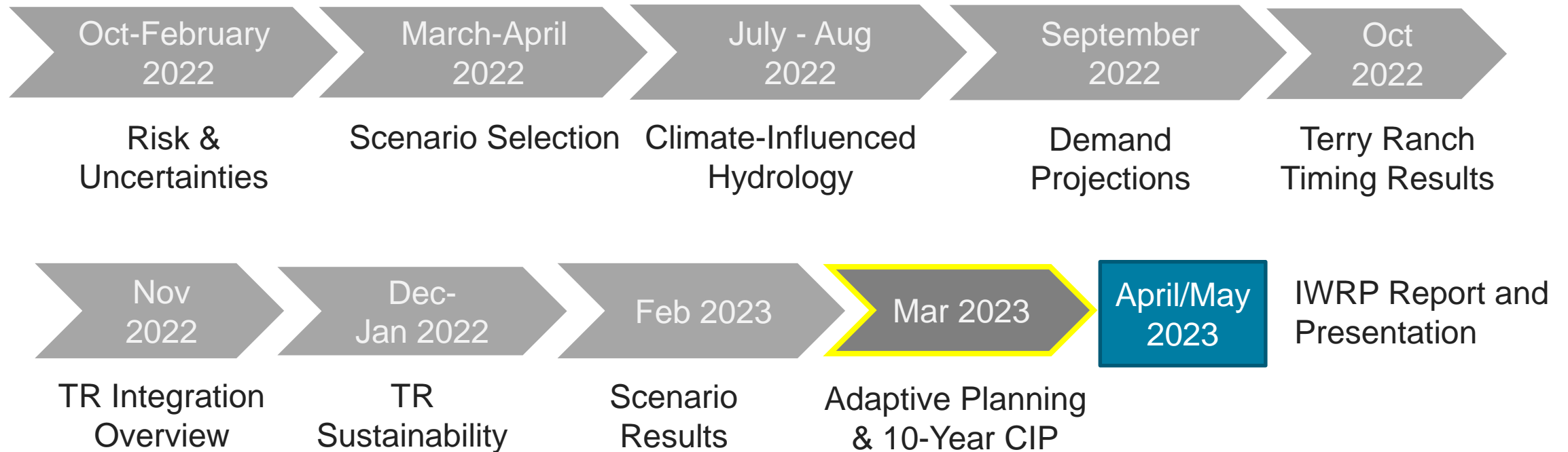


# IWRP Vision Statement

*“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



# Adaptive Plan Implementation

- Identify important on-going questions Greeley needs to monitor.
  - Ensuring water supply is sustainable and affordable
  - Responding to water resource opportunities
  - Monitoring factors that could change IWRP outcomes
- Monitor “indicators” to provide insight into questions
  - Qualitative and quantitative
  - Emphasize flexibility
- Communicate progress to leadership and stakeholder

# Adaptive Plan Questions

1. When does Terry Ranch need to supply water?
2. How is Terry Ranch being implemented over the next 5 and 10 years?
3. What is the status of Greeley's water rights?
4. Are there other water resources opportunities to consider?
5. Has there been a change in the major trends that could trigger a study?

# Adaptive Plan Communication and Reporting

- Annual Report and Presentation to Board
  - April/May of each year
  - Dashboard-like Report
- Status Updates on Key Questions as Required
  - Terry Ranch implementation updates
  - Water supply system health
  - Water rights acquisitions and changes





# Water Resources Adaptive Plan

# Adaptive Plan Presentation

- Proof-of-concept
  - Shows the type of information that will be presented each year
  - Mix of actual data and the type of data to be presented
  - Visuals, figures, statements, etc. are for proof-of-concept – may change as Adaptive Plan is developed in 2024



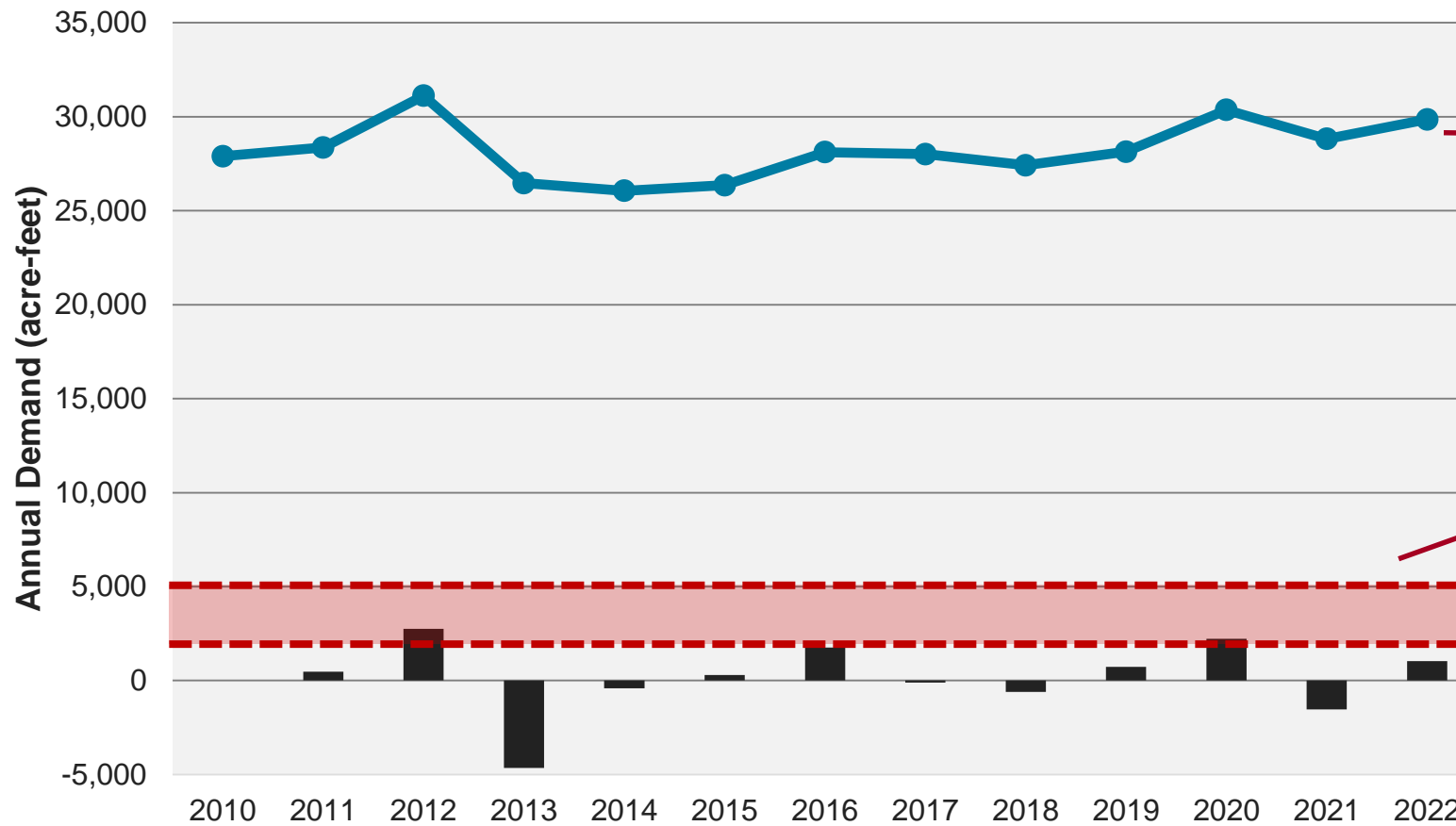
## **Question 1:**

When does Terry Ranch need to supply water?

# When does Terry Ranch need to supply water?

- Compare projected demands to surface water supply
  - Online before demands surpass supply
  - Monitor using demand and supply indicators
- Demand Indicators:
  - Total Annual Demand
  - Residential Per Capita Demand
  - Use of conservation rebates
- Supply Indicators
  - Overall water system health
  - Health by sub-basin

# Demand Indicators – Total Annual Demand



2022 demands were 30,000 acre-feet, a 1,000 acre-foot increase from 2021.

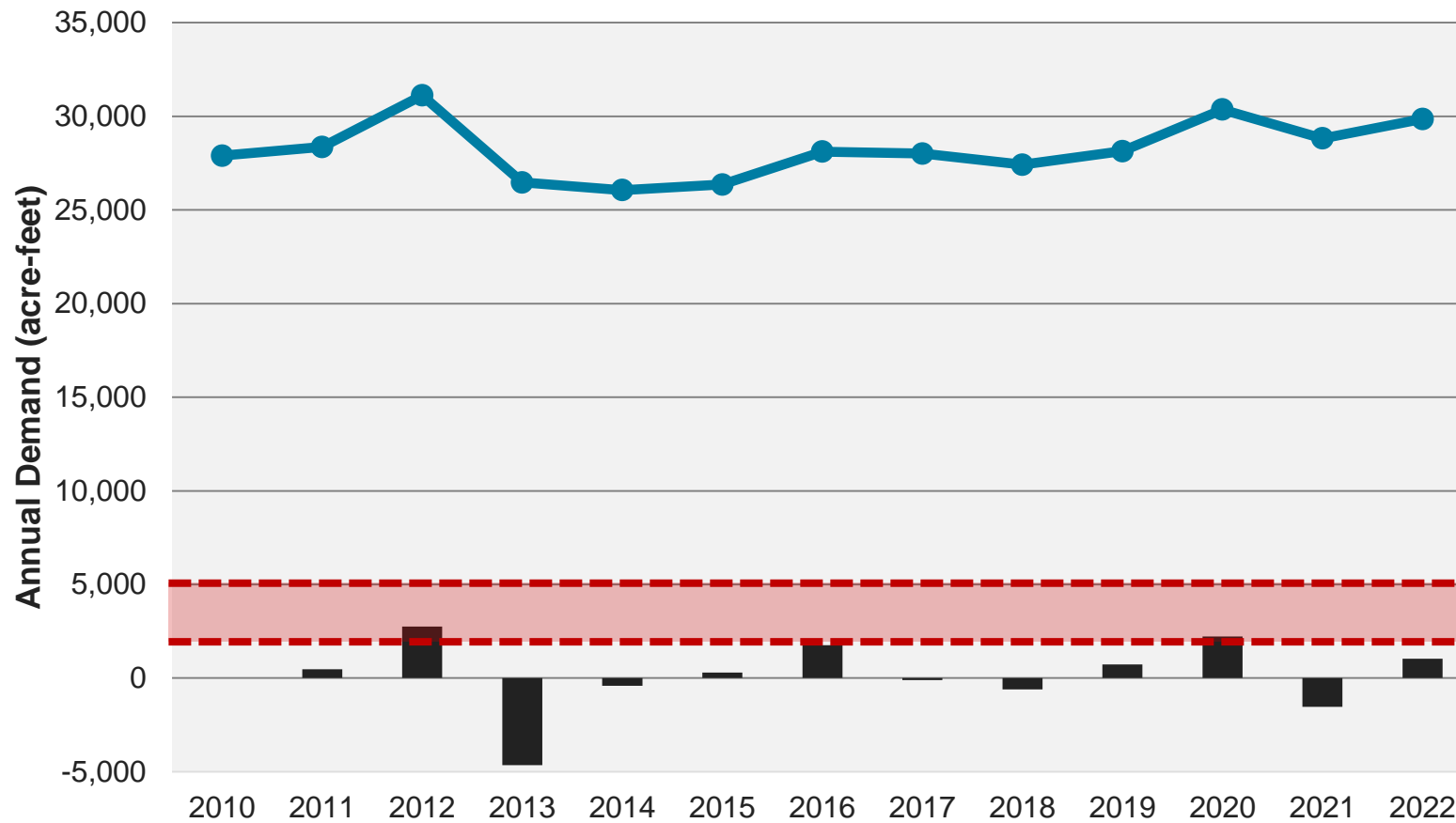
Define level of sustained demand growth reflecting 'real' growth vs. recovery from drought shadow.

Total Annual Demand includes Potable, Non-Potable, and Industrial Demands

■ Year-to-Year Demand Change    ● Historical Demand

Preliminary Numbers Subject to Change

# Demand Indicators – Total Annual Demand



**Adaptive Plan Update:**  
Sustained demand growth did not occur in 2022, continue monitoring leading demand growth indicators.

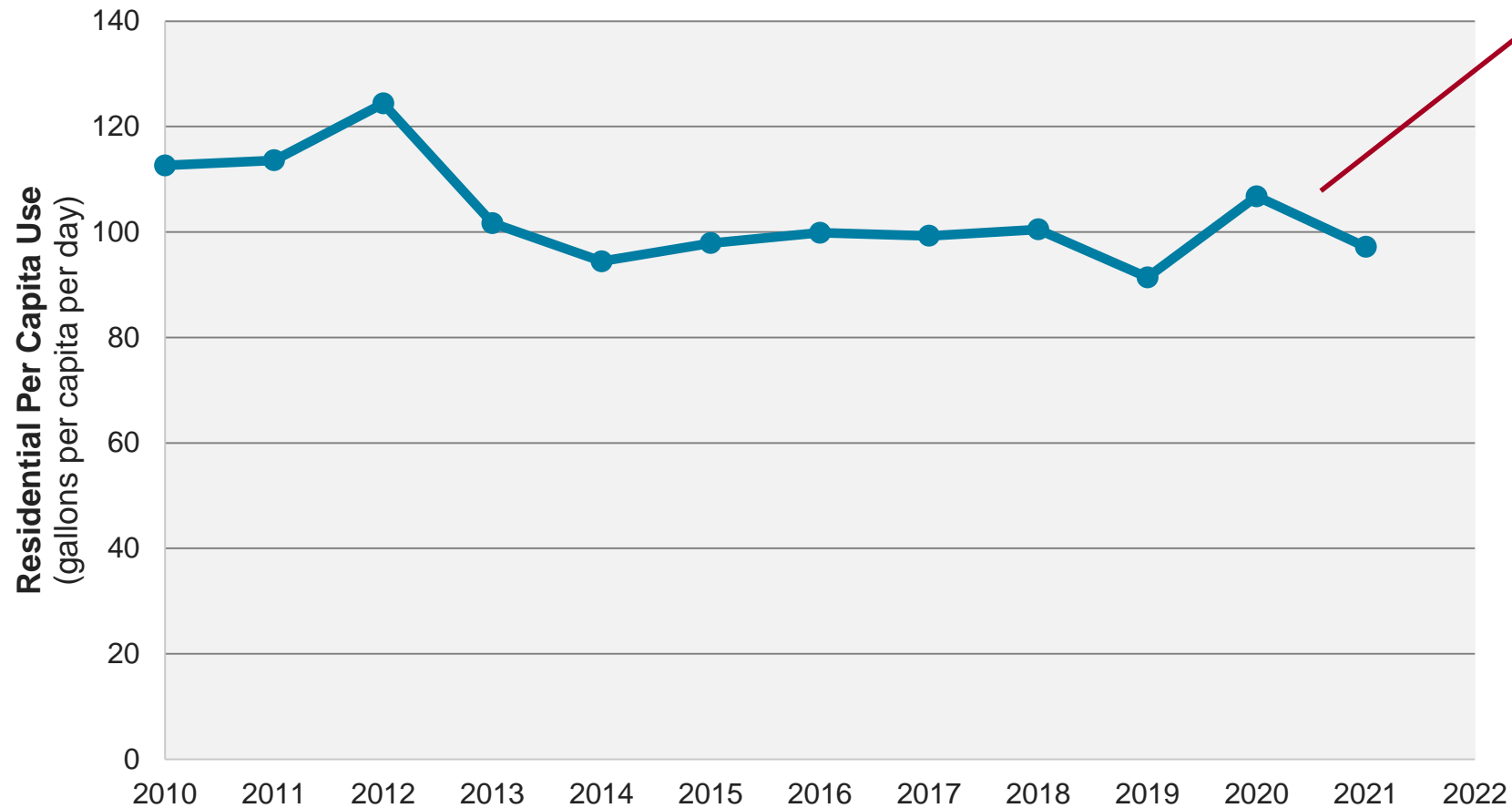
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# Demand Indicators – Per Capita Demand

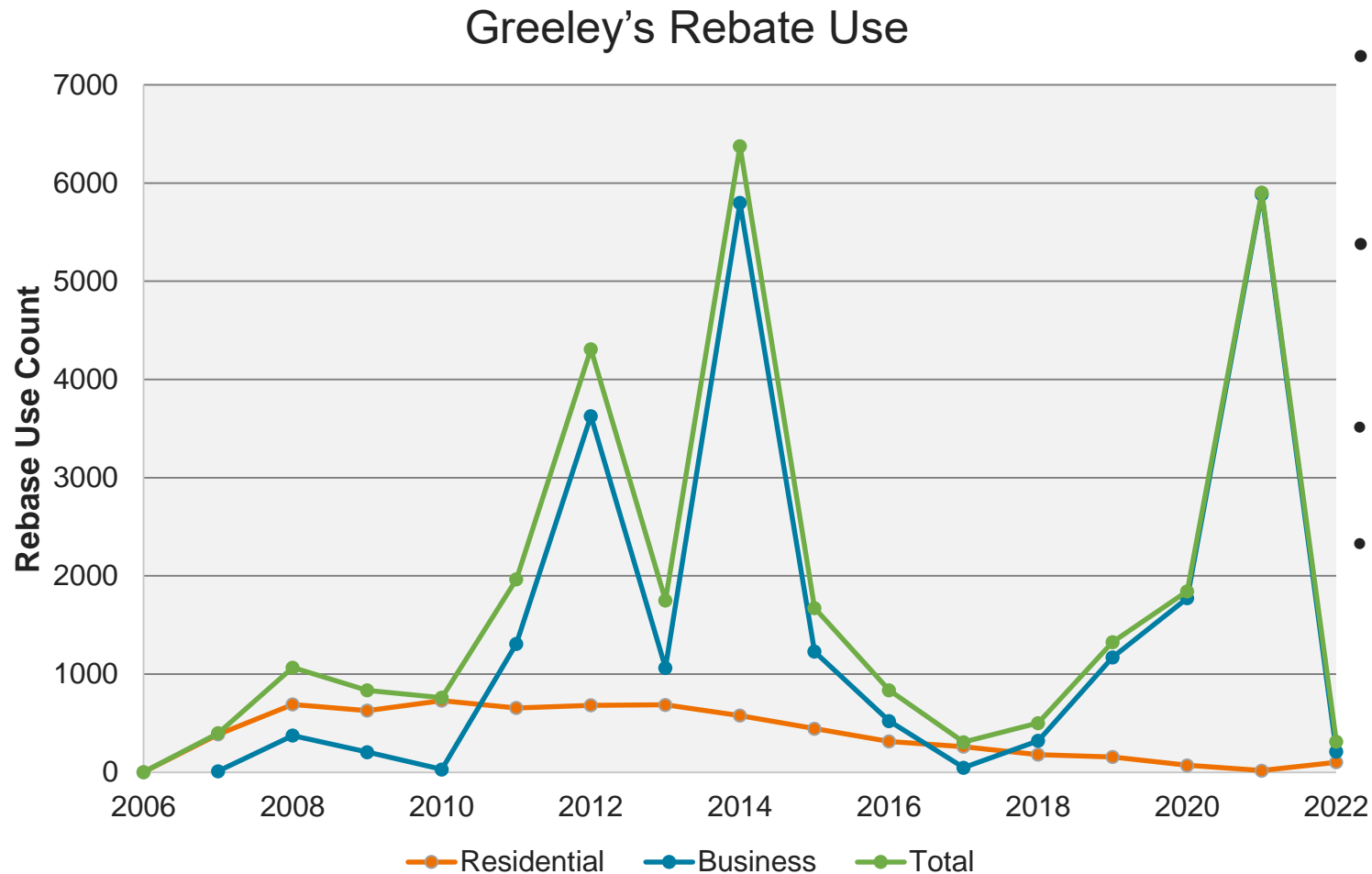
## Residential Per Capita Use



Recent years varied by more than 10%, indicating per capita use is still variable.

**Adaptive Plan Update:**  
Residential per capita use is still variable and may continue to trend downward.

# Demand Indicators – Rebate Use



- Rebate use can be an early indicator or limited future per capita use reductions
- Gradual reduction in residential use, but 2022 uptick in outdoor rebate use
- Recent peaks in business driven by HOAs
- 2023 goal is to increase rebates through targeted outreach

**Adaptive Plan Update:**  
Insufficient long-term trends to draw rebate conclusions from.

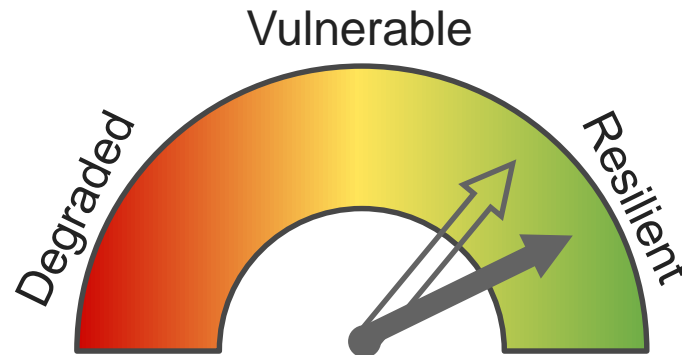


# Supply Indicators Summary



Colorado System

- On-going Colorado River Basin drought could result in yield reductions
- Potential long-term reductions in water supply
- Chimney Hollow (and others) will improve resiliency once completed



Upper Poudre System

- Yields post-wildfires are resilient despite runoff and water quality disruptions
- Recent yields have been consistent with similar historical years



Big Thompson System

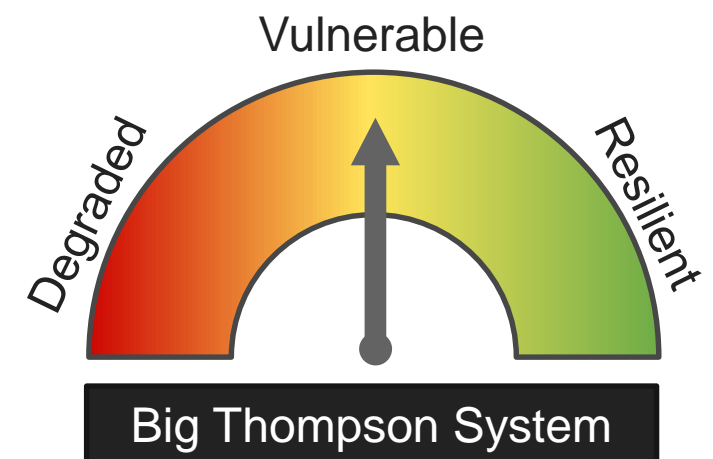
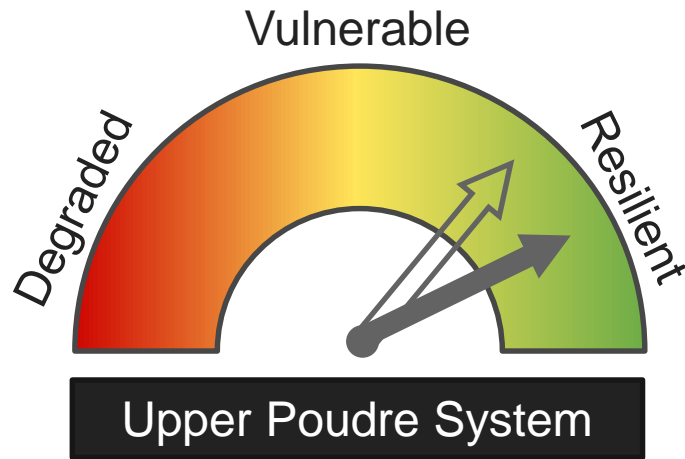
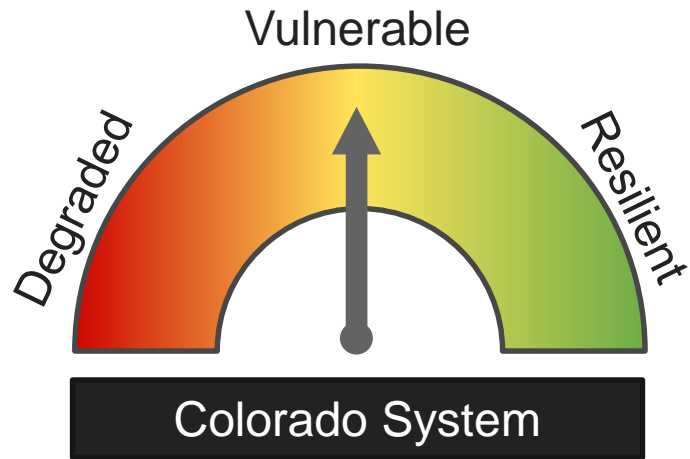
- Junior water rights are more exposed to hydrologic variability
- Future water right changes in Greeley-Loveland system could reduce yield consistency

# Basin-Specific Supply Indicators

- Colorado Basin
  - CBT Quota History
    - Is there any trend downward or long-term period with low quotas?
  - Current Year Quota (actual or anticipated)
- Poudre Basin
  - Native yield at the Canyon Mouth
  - Yield of all Poudre water rights
    - Compared to history/similar past years
- Big Thompson Basin
  - Allocation of GLIC
    - Compared to history/similar past years)

All basins will also include qualitative indicators based on subject matter expertise.

# Supply Indicators Summary

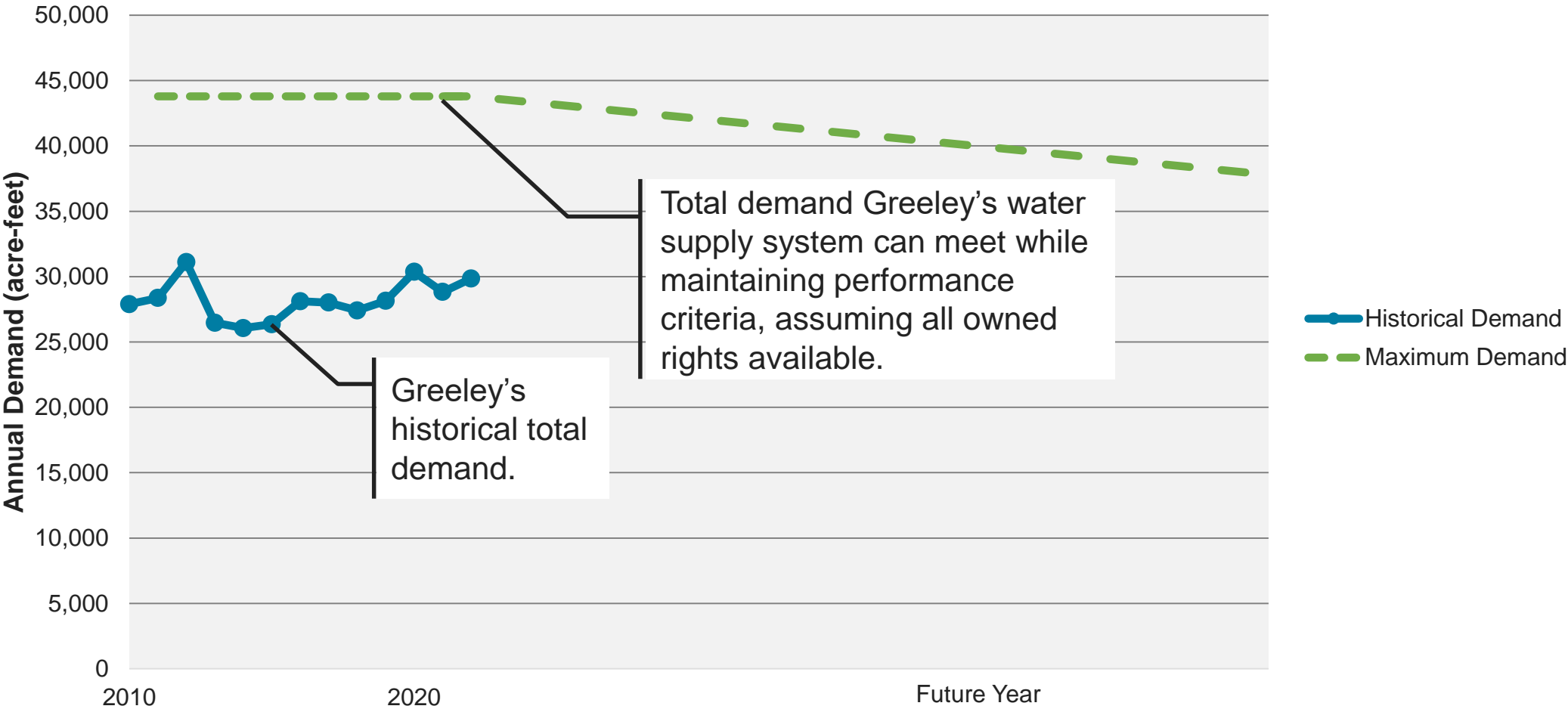


## Adaptive Plan Update:

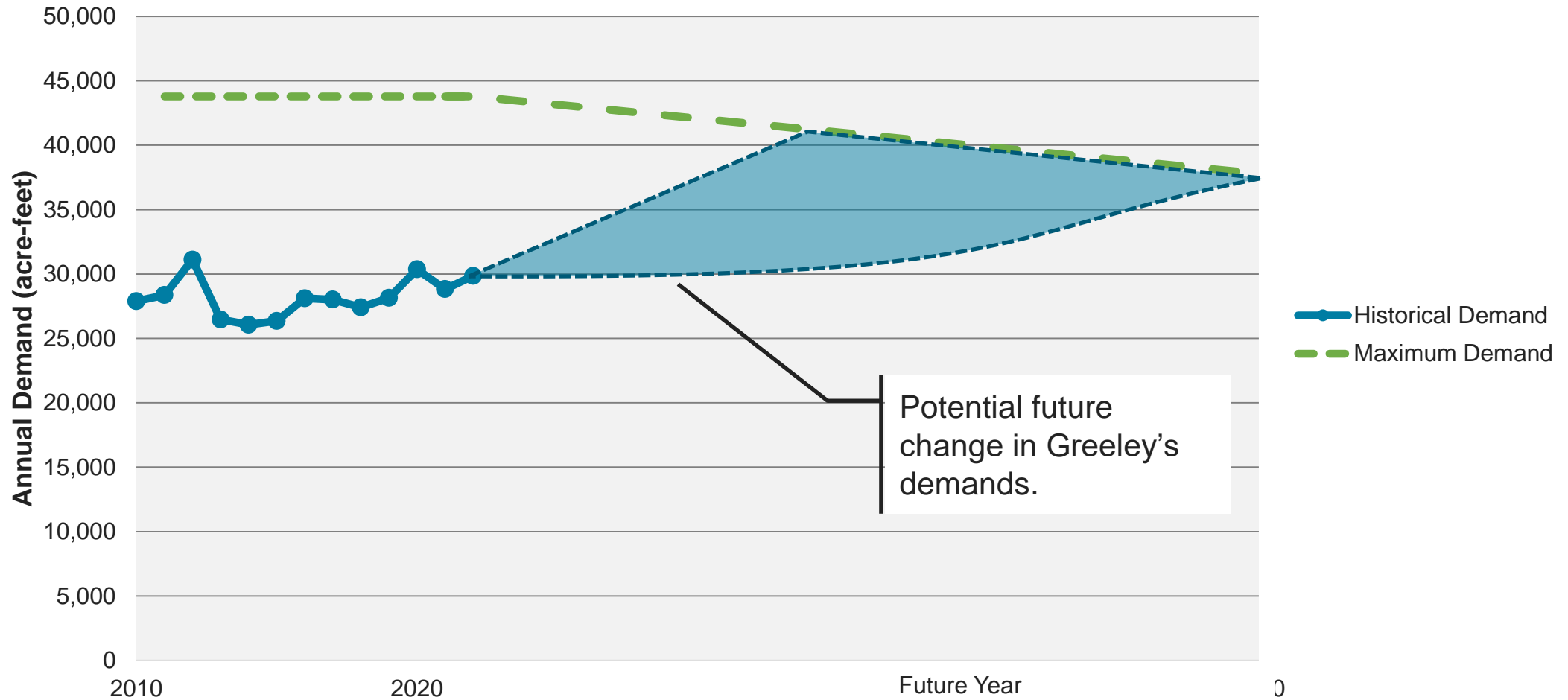
No change to water acquisition and change strategy. Continue monitoring supply indicators.

Preliminary Numbers Subject to Change

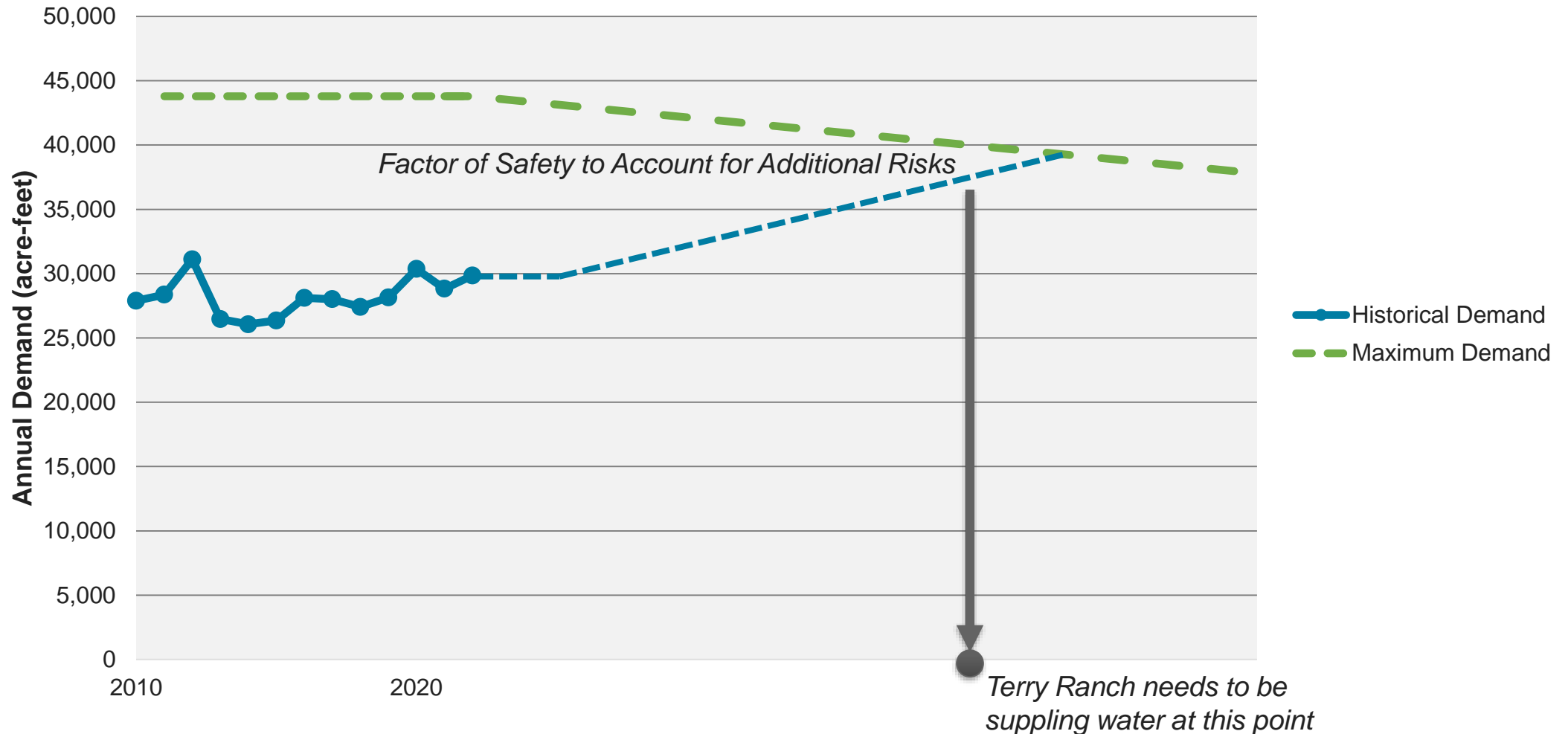
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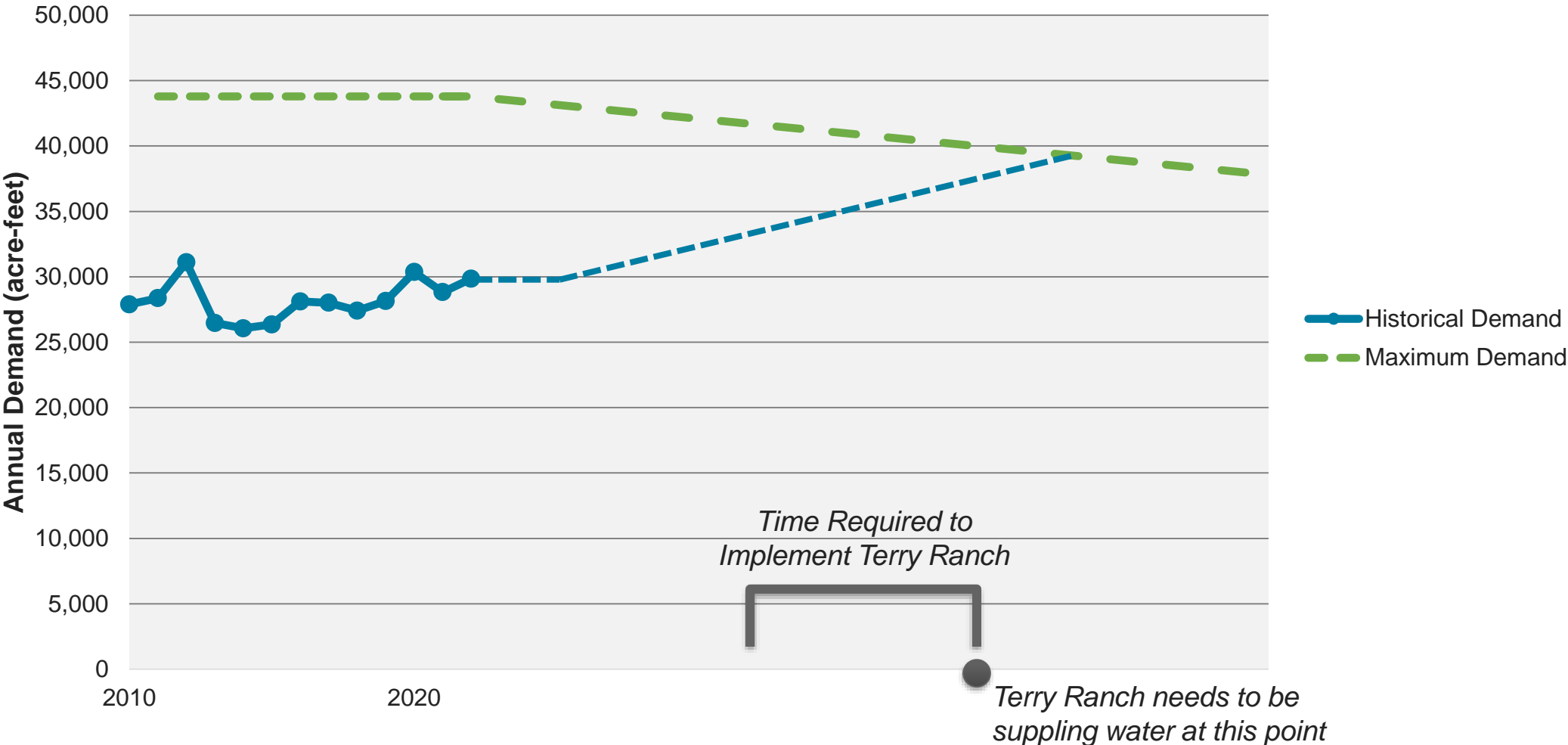
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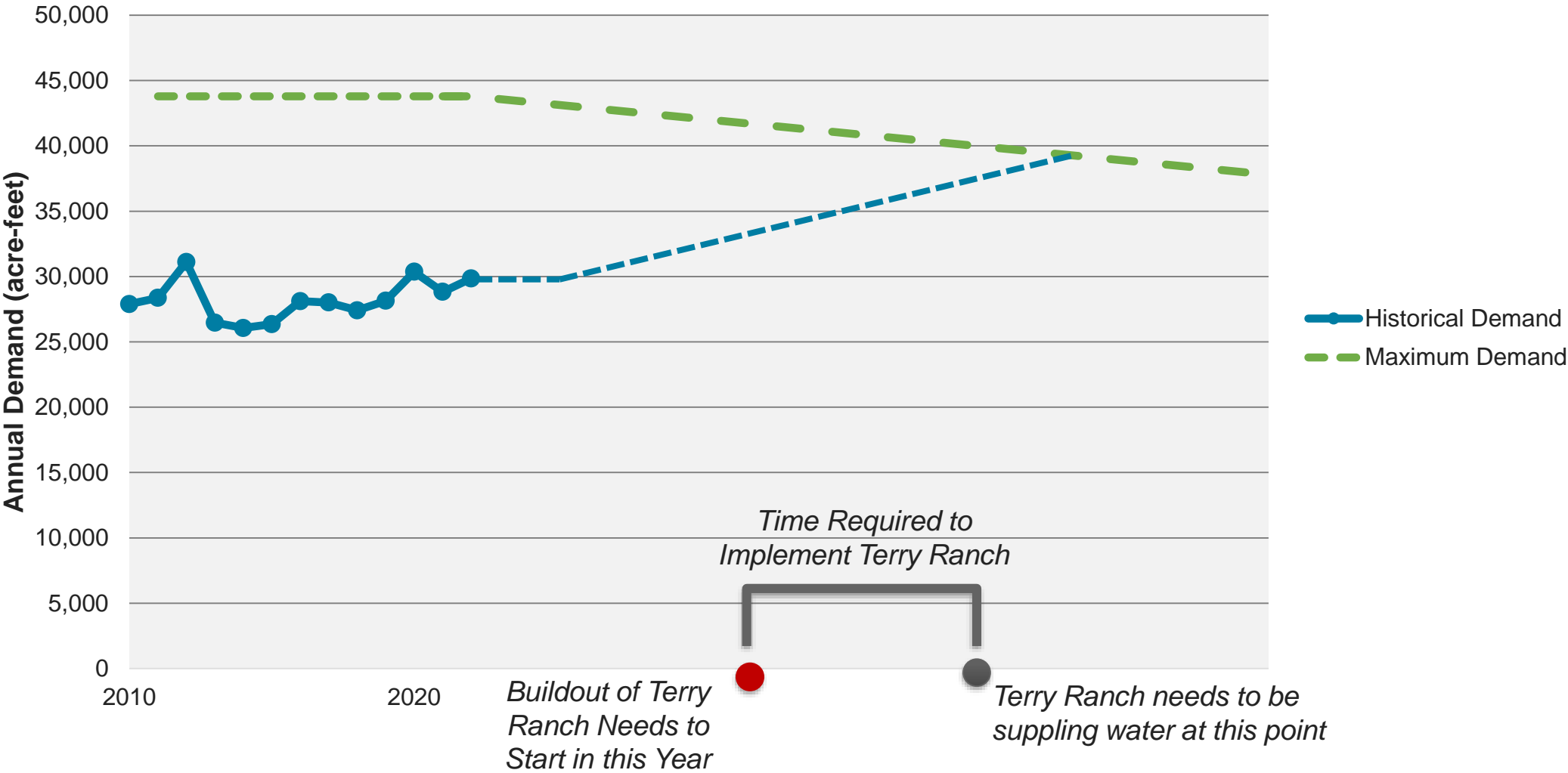
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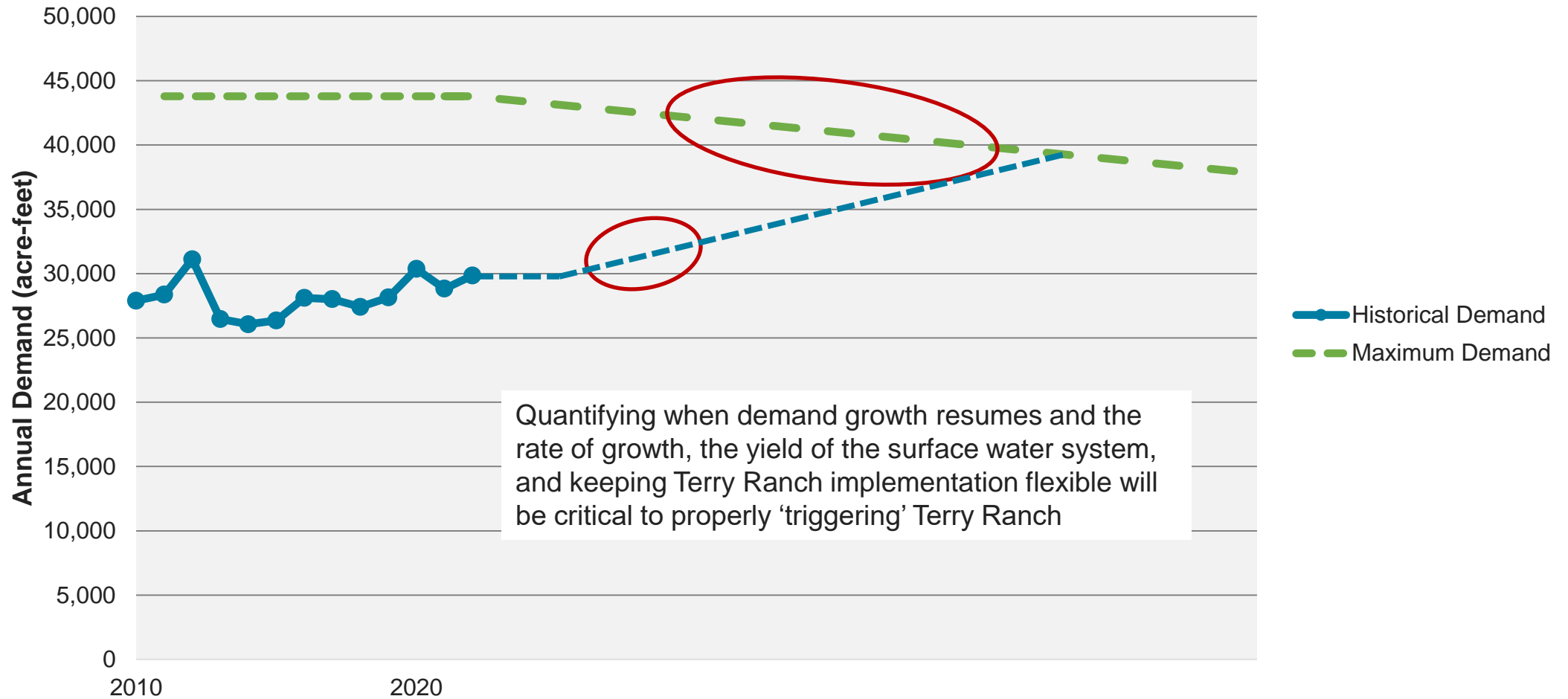


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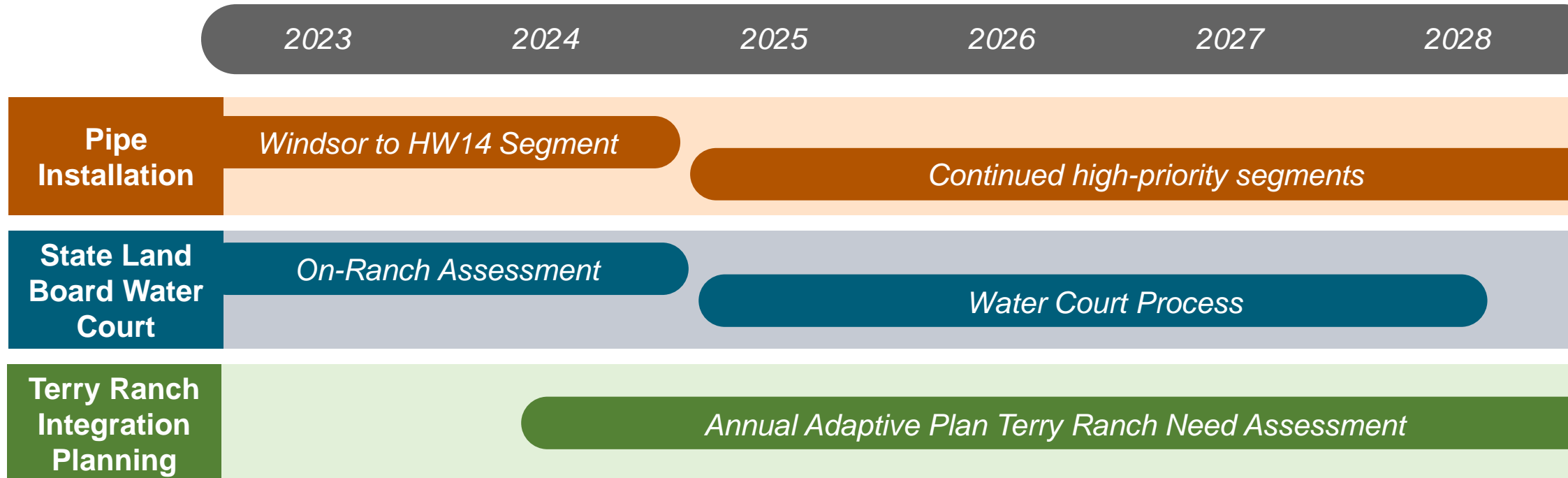


## **Question 2:**

How is Terry Ranch being implemented over the next 5 and 10 years?

# 5-year Terry Ranch Implementation Summary

- The 5-year implementation plan optimizes the initial \$62.5m escrow from the Wingfoot deal



# 10-year Terry Ranch Implementation Summary

- The 10-year implementation plan balances the remaining \$62.5m with Terry Ranch need, implementation flexibility, and other organization capital investments
  - Remaining \$62.5m requires a 1-to-1 Greeley match

*2023 to 2028*

Optimize initial Wingfoot Deal Escrow

*2029 to 2033*

Balance remaining Wingfoot Deal Escrow with need and other organizational investments



# Terry Ranch Implementation Details

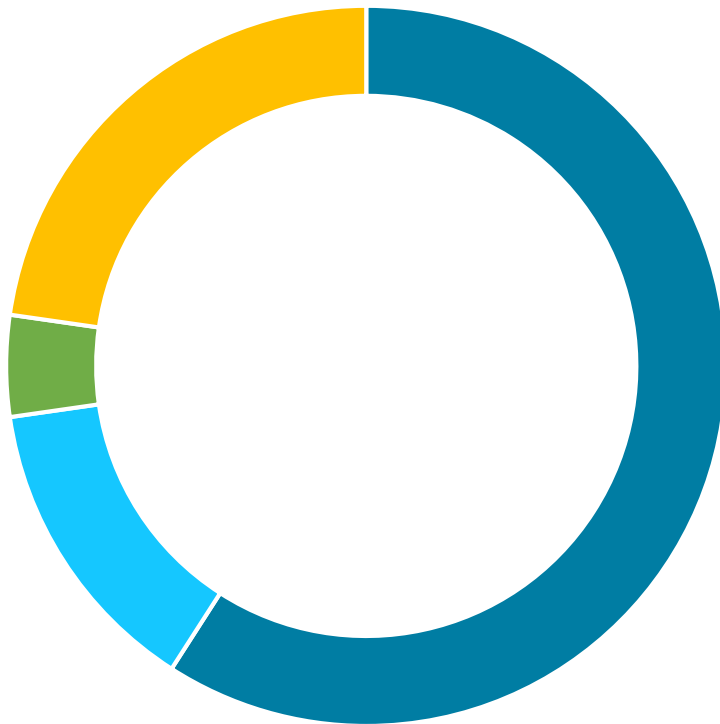
- 5-year Details
  - Completed Progress Updates
  - Budget Update
  - Planned Projects
  - Other important indicators
- 10-year Details
  - 10-year financial outlook
  - Terry Ranch Integration Study Update

### **Question 3:**

What is the status of Greeley's water rights?

# Water Right Acquisition/Change Status

Existing Water Rights Portfolio Status



■ Available For Use ■ Long-Term Leases ■ In-Progress ■ Unchanged

Graphic summarizing recent acquisitions, what is remaining in Greeley's acquisition strategy, and characterization of the priority of remaining water rights.

# Water Right Acquisition/Change Status

- Performance of existing acquisition strategy
  - Existing system resiliency
- Change case outcome updates
  - Will future yields be in line with what was assumed
- Water rights landscape update
  - Price changes, major acquisitions, news, etc.

# Water Rights Change and Acquisition Plan

- Continue change case process for existing water rights as quickly as possible
- Prioritize high-value water rights that can be integrated into Terry Ranch
- Evaluate other water rights opportunities as needed
- Focus financial resources on Terry Ranch implementation and other organizational needs

## **Question 4:**

Are there other water resources opportunities to consider?

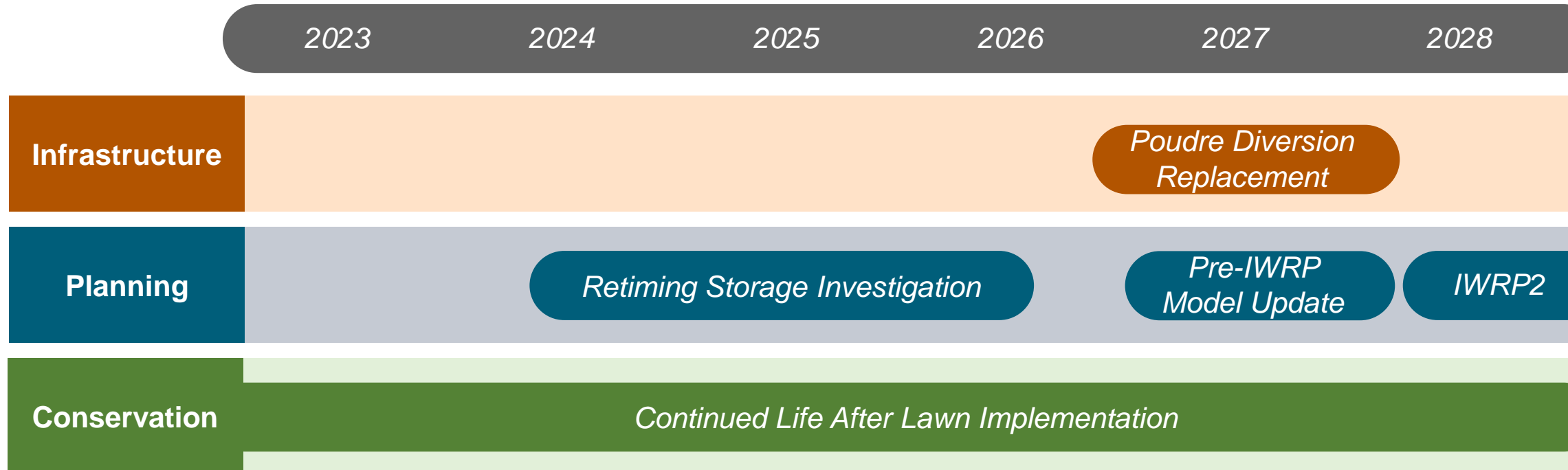


# Additional Water Resources Opportunities

- Update on on-going opportunities
  - Non-potable system, conservation, infrastructure projects
- Opportunities being evaluated
  - Retiming storage
- Regional Project Updates
- Other opportunities on the radar

# Other Water Resources Opportunities Plan





















- Major efforts over the next 5 years are presented below



























## **Question 5:**

Has there been a change in the major trends that could trigger a study?

























# IWRP Planning Scenarios

Planning Scenario Name	Climate Warming	CO River Basin Risk Impacts	Water Supply System Yields	Demands
Unbearable (Hot + High Growth)		 <b>High</b>		
Stressed (Hot + Moderate Growth)		 <b>Moderate</b>		
Continued Trends (Warmer + Growth)		 <b>Moderate</b>		
Optimistic (Warm + Low Growth)		 <b>Low</b>		
No Climate Change (Growth Only)		 <b>Low</b>		

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Recent Trends		 <b>Low</b>		

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No Climate Change (Growth Only)		 <b>Low</b>		
Recent Trends		 <b>Low</b>		

**Adaptive Plan Update:**  
Recent trends track within IWRP Planning Scenarios, no re-evaluation required.

# Major Trends Greeley is Monitoring

- Colorado River Basin
  - CO River Curtailment
  - Ongoing based negotiations
- State of Colorado
  - State Engineer does something unexpected
- Poudre/Big Thompson River Basin
  - WSSC Change case going bad
- Weld County Issues
  - Water supply crisis of nearby community
- City of Greeley
  - Service area expansion, major new development

# Adaptive Plan Summary



# Adaptive Plan Summary

1. When does Terry Ranch need to supply water?
  - Until sustained demand growth occurs, Greeley's current water supply system as planned is sufficient to meet demands.
2. How is Terry Ranch being implemented over the next 5 and 10 years?
  - High-priority pipe will be installed and State Land Board non-tributary designation will be achieved.
3. What is the status of Greeley's water rights?
  - Strategic acquisitions continue and change case progression is consistent with schedule.
4. Are there other water resources opportunities to consider?
  - Greeley will investigate options to provide retiming storage for Terry Ranch and monitor other opportunities.
5. Has there been a change in the major trends that could trigger a study?
  - Current and recent trends are in alignment with IWRP Planning Scenarios.

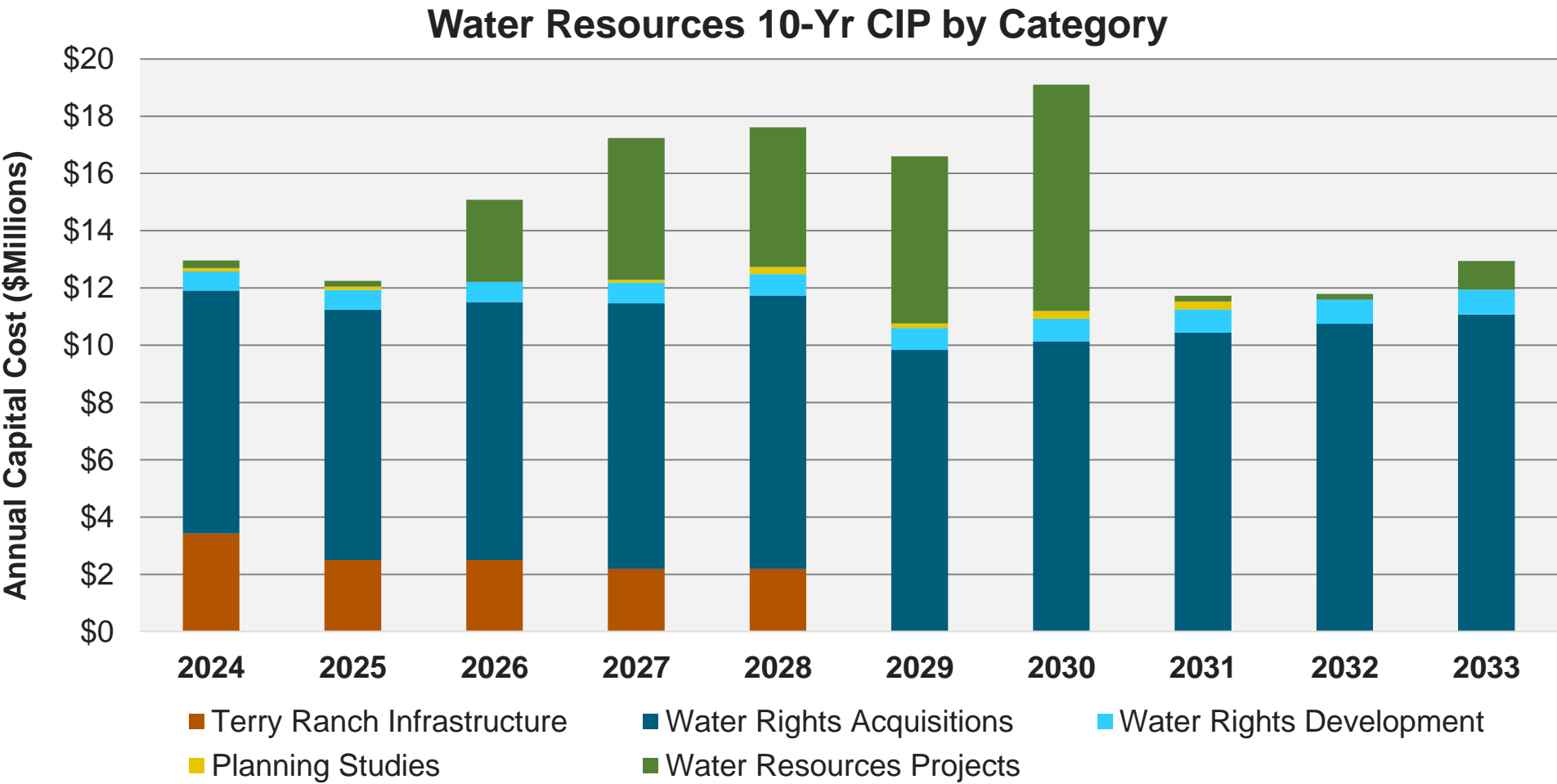


# Water Resources 10-year Capital Improvement Plan

# Water Resources 10-Year CIP

- Aligns with existing CIP and those developed as part of other master planning efforts
  - 10-yr CIP (2024 – 2033), with 5-year detailed CIP
  - Cost by year by project and by category
- Project categories
  - Terry Ranch Infrastructure Projects
  - Water Right Acquisition
  - Water Rights Development
  - Planning Studies
  - Other Water Resources Projects

# Water Resources 10-Year CIP Summary



Preliminary Numbers Subject to Change

# Terry Ranch Infrastructure Projects

- Complete Phases I, II, and III of Conveyance Pipeline
  - 20% City match
  - Capture full \$62.5M from Wingfoot Deal
  - Approx. 15 miles of pipeline
  - Phase IV initiated after 2033 (50% match by City)
- Complete State Land Board Wells (2023-2024)
  - \$1.3M currently budgeted
  - Might need to supplement budget

# Water Rights Acquisitions

- Water Rights Acquisitions
  - \$8,000,000 per year (with 3% annual escalation)
  - Assumes Greeley continues opportunistic and strategic acquisition
  - Equates to 300 – 1,000 AF consumptive units per year of unchanged agricultural water rights

# Water Rights Development

- Water Rights Development – Legal Fees
  - \$350,000 per year (with 3% annual escalation)
  - Based off 2018 to 2022 expenditures
  - Assumes City will consistently work to protect existing water rights and change new water rights
- Water Rights Development – Engineering Fees
  - \$275,000 per year (with 3% annual escalation)
  - Based off 2018 to 2022 expenditures
  - Assumes City will consistently work to protect existing water rights and change new water rights

# Planning Studies

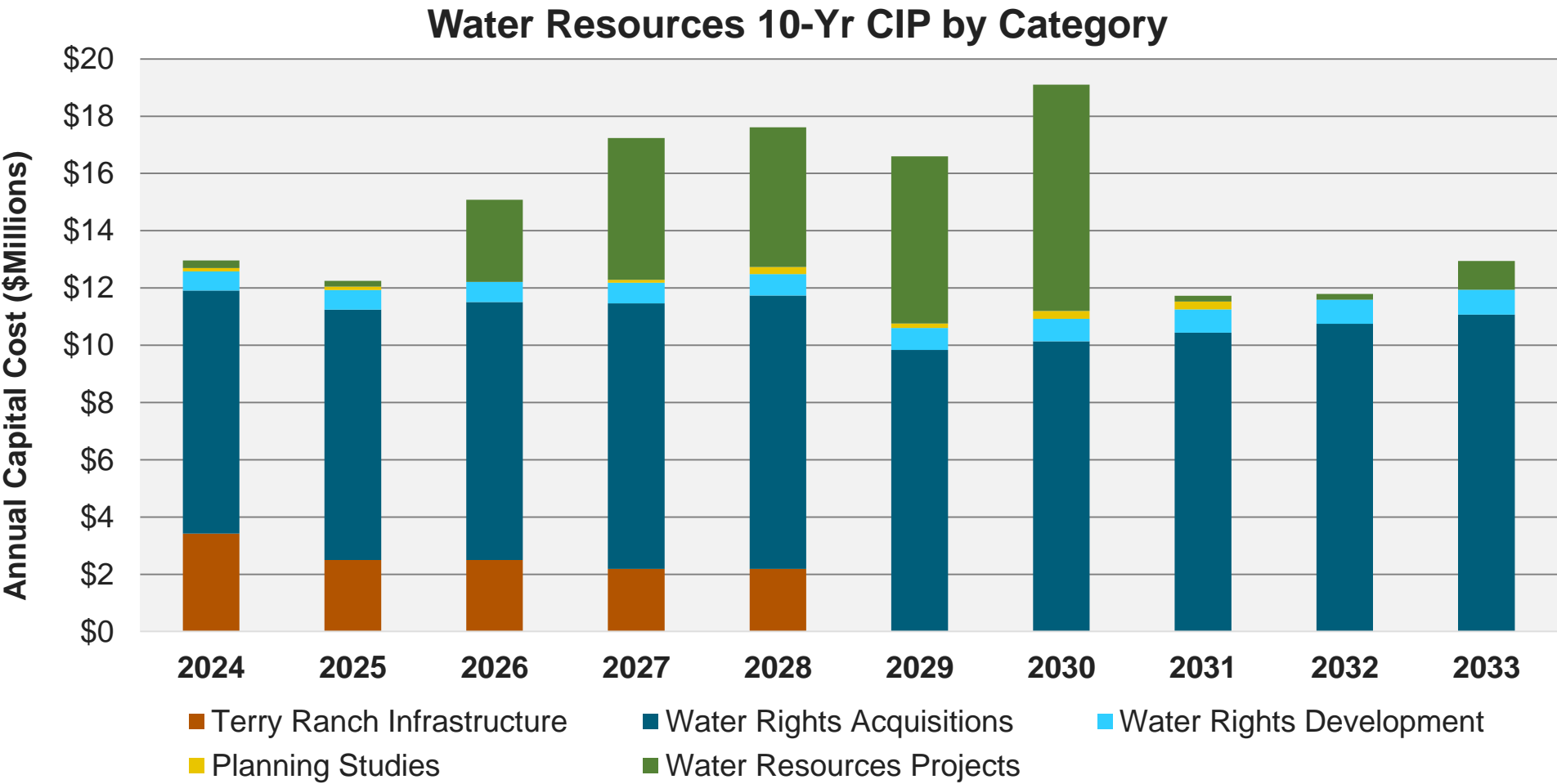
- Storage Retiming Investigation
  - Study needed to better define retiming storage options
  - \$250,000 over 2 years, starting in 2024
- Poudre Basin Model Updates
  - Unlikely to happen until after Halligan ROD
  - Expect cost sharing with model partners (Fort. Collins and Northern Water)
  - \$200,000 over 2 years (Greeley's portion)
- Update to Greeley IWRP
  - In roughly 5 years out
  - \$300,000 over 2 years, starting in 2028
- Terry Ranch Integration Study
  - Refine timing of when water is needed and when to develop on-site infrastructure
  - \$550,000 over 2 years, triggered by Adaptive Plan (budgeted in 2030)



# Other Water Resources Projects

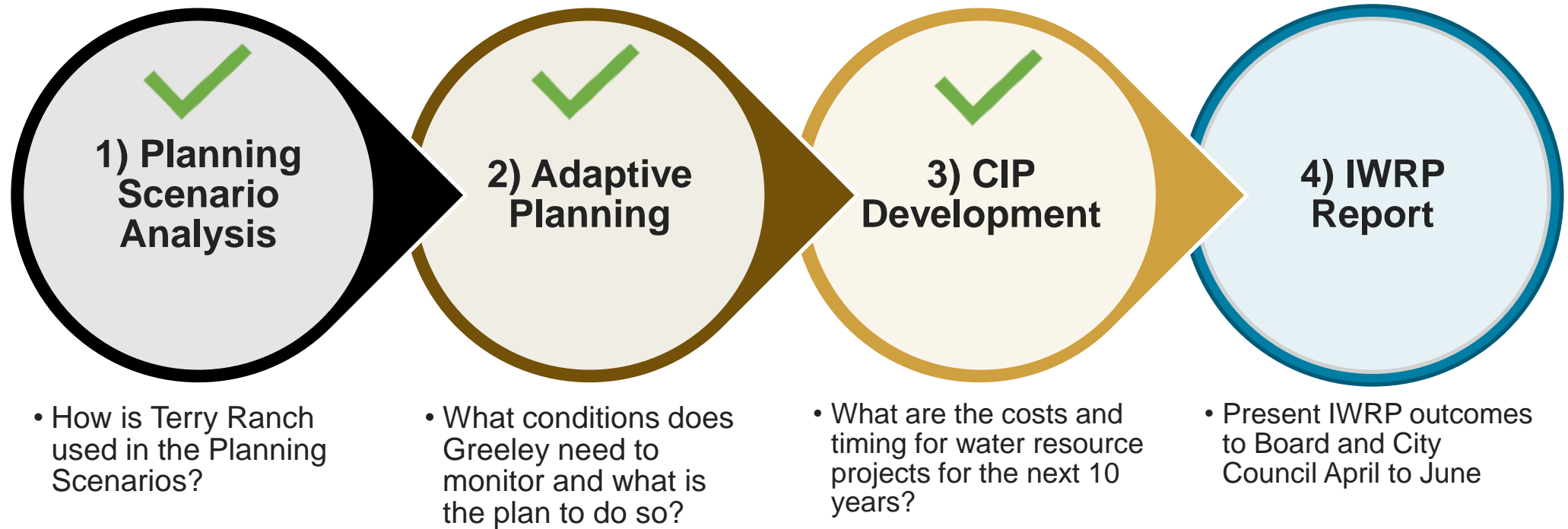
- Continued Life After Lawn Program
- Aerial Imagery and Planimetric Data Acquisition
- Infrastructure projects triggered by need:
  - Rehab of Poudre River Diversion Structure
  - Poudre Raw Water Intake Pipeline Expansion
  - Assessment of the Raw Water Pipeline Between Lake Loveland & Boyd
- Water Rights Infrastructure Projects
  - Lower Latham Bypass Structure - Optimization of Water Rights
  - Expansion of Gravel Pit Storage
  - WSSC Return Flow Structures
- Retiming Storage Project Selected by Investigation

# Water Resources 10-Year CIP Summary



Preliminary Numbers Subject to Change

# Next Steps





**Questions?**