

Adams County Water Master Plan

NOVEMBER 2026

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ADAMS COUNTY PROJECT TEAM

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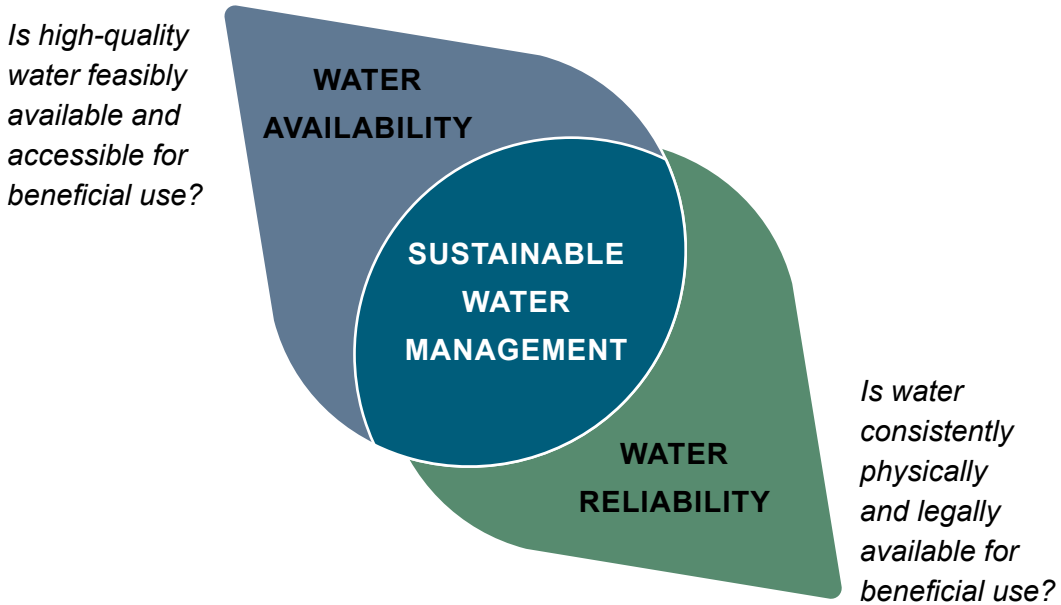
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EXECUTIVE SUMMARY

The Adams County Water Master Plan focuses on managing water supply and demand at the county scale. Water management is a paradigm that jointly considers water availability and water reliability. While considering these two concepts together is important, approaching water management at a county-scale is complex. Varying jurisdictional boundaries, different levels of data availability and quality, and diverse water management approaches make implementing meaningful strategies challenging. These challenges are likely to be exacerbated under conditions such as drought and population growth.

The Adams County Water Master Plan aims to examine the state of sustainable water management in Adams County. While Adams County is not a water provider, it recognizes that water supply issues need to be prioritized to advance and create a sustainable future. As one of the fastest growing counties in Colorado, Adams County acknowledges the importance of understanding the impact of growth on water resources, as well as how water resources will shape future land uses. However, summarizing water demands and supplies at the County scale is complex. Interconnected systems — managed by different entities with varying policies and planning objectives — make it challenging to summarize data in meaningful ways.



Over the course of a year, Adams County worked with water providers, key stakeholders, and the public to complete a robust land-use based water demand analysis for current and future water demand. The analysis was informed by and aligned with the Advancing Adams County plans and coupled with water supply information and a groundwater model to perform a water availability assessment that focused on unincorporated areas of Adams County. The results from these efforts, as well as the engagement activities, lead to the identification of ten key water management challenges and the identification of 13 priority strategies to advance sustainable water management across Adams County. This plan also serves as the water element for the Advancing Adams County Comprehensive Plan.

WATER SUPPLIES AND PROVIDERS

Adams County's water supply system is diverse and complex, reflecting the broader water supply challenges facing Colorado's Front Range. Adams County is served by over 80 individual water providers — one of the highest counts in the State — that depend on a combination of renewable water supplies, deep non-renewable groundwater from the Denver Basin aquifers, reuse water, and imported and wholesale water. While most of Colorado's water use is supported by surface water, over 60% of Adams County's water providers rely primarily on groundwater sources, particularly in unincorporated and rapidly developing areas. These various sources of supply differ significantly in terms of their regulatory oversight, long-term sustainability, and vulnerability to drought and climate change.

RENEWABLE WATER SUPPLY



Renewable water supplies include the South Platte River and alluvial groundwater aquifers that replenish annually.



All renewable water sources are subject to **prior appropriation and augmentation plans** for use.



Much of the Adams County's sources are **already over-appropriated**, meaning development of additional renewable water sources will potentially be expensive and require unique solutions.

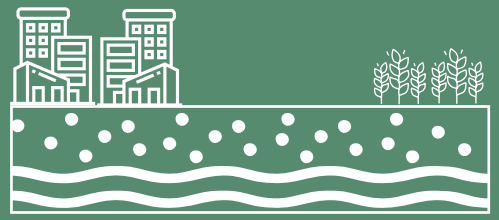


While they are renewable, reliability of these sources is threatened by **climate change** and **increasing competition** for water rights.

40%

Renewable water sources are the **primary source for 40%** of Adams County's water providers. These providers tend to be the larger providers, serving the western portions of Adams County.

NON-RENEWABLE WATER SUPPLY



The non-renewable source in Adams County is the Denver Basin aquifer system. This system is a **deep, slowly recharging source** that is non-renewable on human timescales.

Non-renewable supplies are widely used in eastern Adams County, and by small and rural providers, but **groundwater levels are declining rapidly** in many areas.

While useful for short-term reliability, long-term dependence on Denver Basin groundwater is **unsustainable** without significant conservation or transition strategies.

60%

Non-renewable water sources are the **primary source for 60% of water providers** in Adams County and most self-supplied users.



WATER REUSE

Reuse extends water supplies by reclaiming treated wastewater for non-potable (e.g., irrigation applications), and increasingly, for limited potable applications.

In Colorado, only certain water rights are legally eligible for reuse.

Reuse is a key tool for conservation and increasing reliability, supporting both augmentation and long-term supply strategies in alignment with the Colorado Water Plan.

0%

While some Adams County providers have reuse supplies, reuse is not a primary source of water for any major water providers within Adams County.



IMPORTED AND WHOLESALE WATER



Imported (transbasin) water supplies are often fully consumable and critical to many major providers in Adams County. However, these types of projects are controversial and are becoming increasingly difficult to permit and construct due to environmental, legal, and interbasin concerns.



Wholesale water, from entities like Denver Water and City of Westminster, allow smaller or newer providers to access high-quality treated supplies without developing independent sources but may present challenges like contract restrictions or a lack of water supply diversity.

34%

Roughly 34% of Adams County's water providers purchase wholesale water.



WATER DEMANDS

Land use, development standards, and climate trends drive water demands. Agricultural, industrial, residential and non-residential uses all use water differently. A residential development built to a high-water efficiency standard may use less water than a similar development built without efficiency standards in place. Alternatively, an efficient industrial development may use more water than an efficient residential development. Regardless of the type of land use, water demands tend to increase in the event of a hot and dry summer versus a wet and cool summer. Adams County's water demand profile reflects a diverse mix of agricultural, commercial, residential, industrial, and landscape water uses, each shaped by regional land use patterns and growth trajectories. Where and how Adams County develops will influence water demand now and into the future, necessitating careful planning to ensure future demands are met.

This plan leverages a land use-based water demand analysis to estimate water demands now and into the future. The baseline analysis accounts for spatial data, demographic trends, and water use benchmarks. The analysis of future demand accounts for land use changes, as well as the potential impacts of climate change and water conservation measures, providing a range of scenarios to inform long-term water resource planning.

Comparing Adams County land use today to Adams County land use in 2040, anticipated land use changes include:

- ✓ Growth of incorporated areas (i.e., annexations continue in municipal planning areas)
- ✓ Growth in areas where community services already exist
- ✓ Continued residential, commercial, and industrial development at varying intensities
- ✓ Conversion of agricultural lands to other land use types, especially near municipalities

Based on the current and future land use analysis:

- ✓ Baseline water demands are estimated to be approximately 105,000 acre-feet/year countywide, with domestic and non-residential uses accounting for 69% and agriculture contributing 31%.
- ✓ Baseline demands in incorporated areas are being driven primarily by municipal and industrial uses, whereas baseline demands in unincorporated areas are being driven primarily by agriculture.
- ✓ Looking to 2040, water demands are projected to increase significantly in the areas of Adams County that are expected to undergo annexation and development or redevelopment, while the rest of unincorporated Adams County may experience stagnant or slightly declining demands over time due to reductions in irrigated agricultural land.
- ✓ Projected 2040 water demands in unincorporated Adams County range between 16,000-26,000 AF/year depending on growth, and the degree to which water conservation and climate change drive demands over the next 15 years.



WATER AVAILABILITY

This plan focuses on water availability in unincorporated areas of Adams County that depend on non-renewable groundwater within the Denver Basin aquifers. These areas are both the areas at the greatest risk of having water availability and reliability challenges, as well as the areas where County policies will most directly influence future development.

Based on the assessment:

- ✓ Overall, Adams County is estimated to have adequate supplies to meet future 2040 water demands.
- ✓ Based on an analysis of available groundwater in the Denver Basin aquifer beneath Adams County, unincorporated areas are projected to have sufficient supplies to meet current and 2040 demand levels for up to 300 years, in line with Adams County's long-term planning standard. However, continued development of these resources will lead to rising production and treatment costs, along with a decline in the long-term reliability and availability of the Denver Basin aquifer.

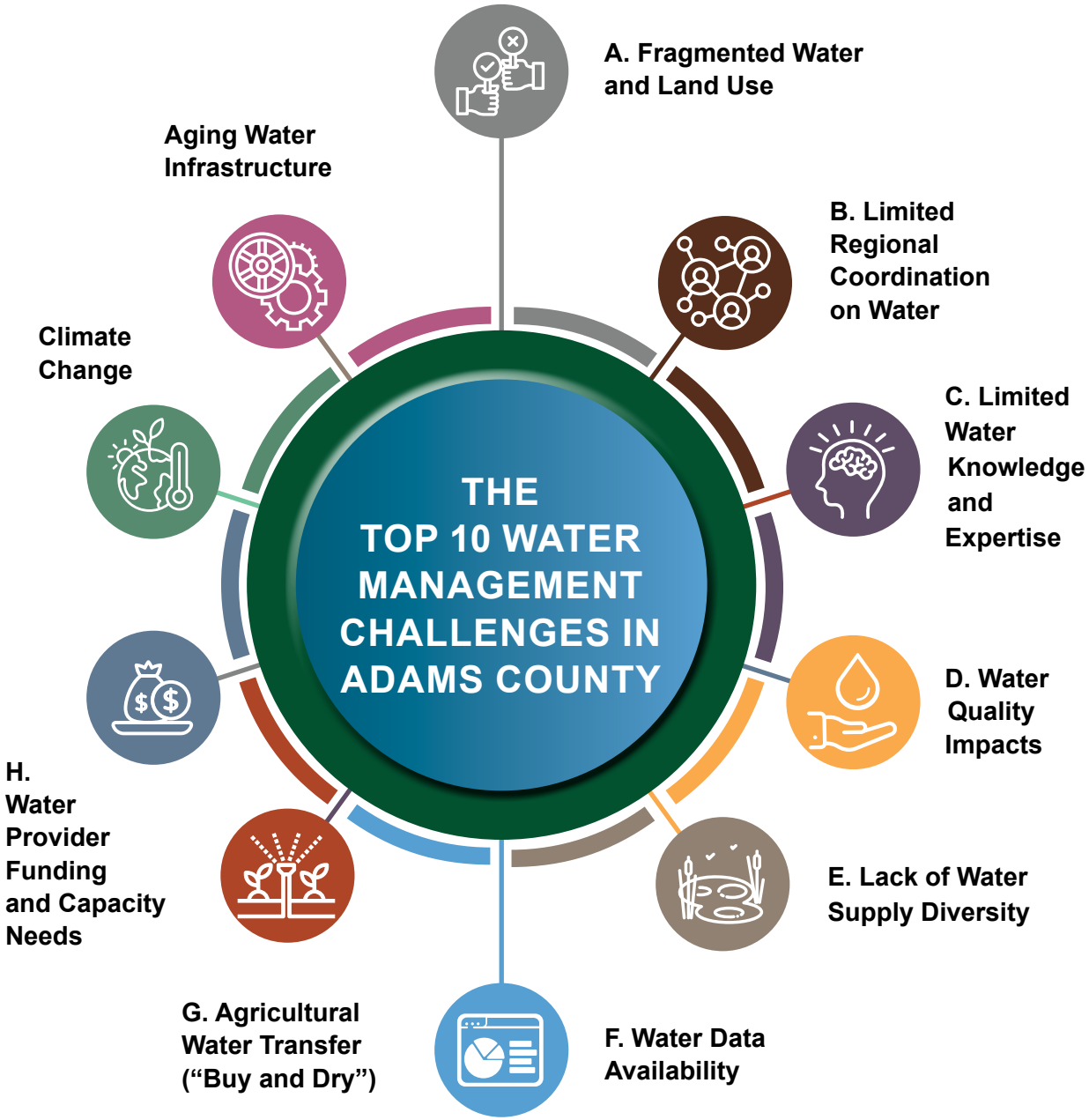
WATER CHALLENGES AND STRATEGIES

While Adams County has sufficient water supply to meet demands, there are certain geographic areas of Adams County that are at greater risk to specific water availability and reliability challenges (e.g., unincorporated areas of Adams County dependent on non-renewable groundwater). Additionally, even in the areas with adequate supplies there are inherent risks to the reliability of these sources due to factors such as climate change. The effort led to the identification of 10 water management challenges that synthesize over 40 identified risks. Together, the challenges aim to capture the primary water issues facing Adams County in terms of water supply, demand, and availability.

Each of the 10 water management challenges can be addressed in multiple ways. This plan identifies 13 priority, county-led strategies to initiate over the next five years. These priority strategies focus on the Adams County's role in advancing sustainable water management across the County and connect to the Advancing Adams County Comprehensive Plan. Of these, Adams County has a particularly important role to play in unincorporated areas of the County served by non-renewable groundwater supplies via land use decisions, as well as opportunities to increase water literacy across the County, and support providers through data sharing, collaboration, and education.



WATER CHALLENGES AND STRATEGIES



A1. Update water adequacy requirements/demand standards and improve related Adams County review processes

A2. Continue to work with water providers on land use planning and forecasting

A3. Update development codes to promote water efficiency in new development and redevelopment

A4. Create a groundwater overlay district to support sustainable development in areas with non-renewable groundwater supply

B1. Expand participation in regional water management groups and planning processes

B2. Establish an Adams County-led water efficiency program in partnership with water providers

C1. Dedicate Adams County staff to lead water efforts across Adams County

C2. Pursue water training and education for Adams County staff and leadership

D1. Guide property owners to repair/replace septic systems and/or connect to local sewer systems

E1. Support and/or partner with providers to apply for grant funds for storage, reuse, and renewable supply development

F1. Require observation wells or participation in a shared groundwater monitoring program for developments using Denver Basin or designated basin groundwater

G1. Leverage innovative land use and water management tools to retain valuable agricultural land and businesses

H1. Explore revitalization authorities to support water-related reinvestment



Chapter 1

INTRODUCTION

Chapter Contents

1.1 Planning Process Overview

1.2 Advancing Adams and the Water Master Plan

1.3 Connections to Other Regional Planning Efforts

1.4 Plan Orientation

Adams County is a diverse and rapidly growing area located in the northeast part of the Denver Metro area. There are ten incorporated municipalities that are partially or fully within Adams County (Arvada, Aurora, Bennett, Brighton, Commerce City, Federal Heights, Lochbuie, Northglenn, Thornton, and Westminster). The unincorporated communities of Strasburg, Henderson, and Watkins are also within Adams County. These incorporated and unincorporated population centers, along with the rural and agricultural areas of Adams County, all need reliable access to quality water to thrive.

This plan focuses on water supply and demand, a regional issue that is managed at different scales, often in a decentralized way. Water management is a paradigm in which water availability and water reliability are jointly considered. While considering these two concepts together is important, approaching water management at a regional scale is complex (Figure 1). Varying jurisdictional boundaries, different levels of data availability and quality, and diverse water management approaches make implementing meaningful strategies challenging. These challenges are likely to be exacerbated under conditions such as drought and population growth.

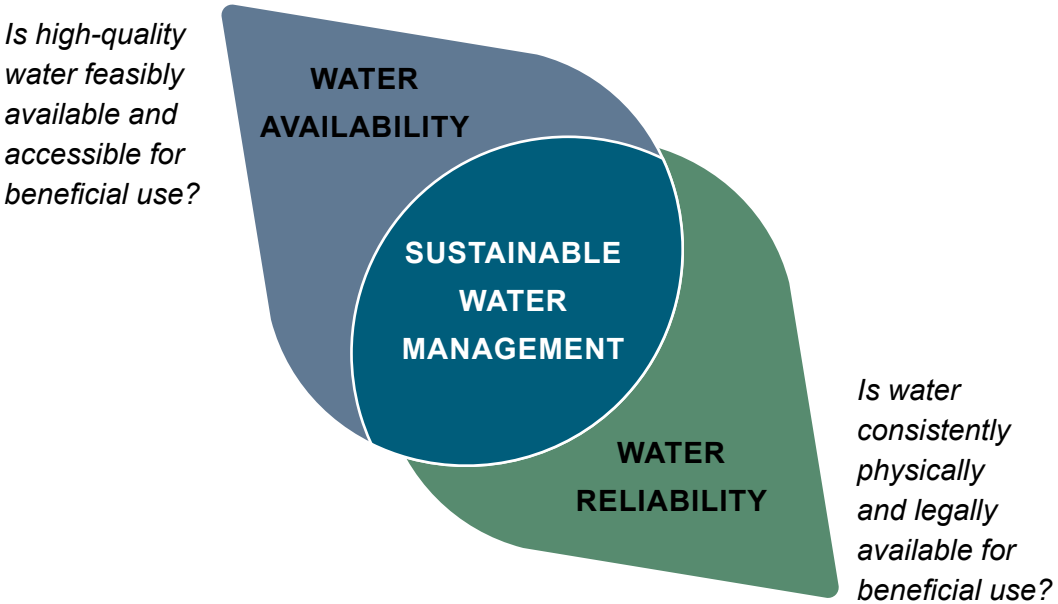


Figure 1. Sustainable Water Management

While Adams County is not a water provider, Adams County recognizes the need to consider the impacts of Adams County's influence on water supply and demands, to advance and create a sustainable future. As one of Colorado's fastest-growing counties, Adams County recognizes that rapid growth puts increasing pressure on water supplies — and that limited water availability will, in turn, influence where and how future development can occur. However, summarizing water demands and supplies at Adams County-scale is complex. Interconnected systems — managed by different entities with varying policies and planning objectives — make it challenging to summarize data in meaningful ways. Currently, Adams County has roughly 80 different water providers, with over 4,000 water rights, 300 diversion structures, and approximately 14,000 wells. Additionally, supplies are sourced from watersheds and aquifers located within and outside of Adams County.

This Adams County Water Master Plan aims to take a holistic approach in understanding Adams County's water supply and demand, identifying water management-related risks and challenges, and clarifying Adams County government's role in connecting community members with one of the most vital resources — water.

The plan, developed with Colorado Water Plan grant funding from the Colorado Water Conservation Board, helps Adams County address water management-related challenges and opportunities head-on. Per C.R.S. §30-28-106, "it is the duty of a county Planning Commission to make and adopt a master plan for the physical development of the unincorporated territory of the county." Legislation adopted in 2024 (SB24-174), emphasizes the nexus between future growth, water availability, and water demands as part of long-range community planning. While previously encouraged, this legislation now requires counties to include a water supply element in their comprehensive master plans.

C.R.S. §30-28-106 Requirements

The water supply element in a county master plan must:

- be developed in consultation with entities that supply water for use within the county or region
- estimate a range of water supplies and facilities needed to support the potential public and private development described in the master plan
- include water conservation policies

The Advancing Adams Comprehensive Plan, developed under the Advancing Adams initiative, is an overarching comprehensive master plan that sets forth the community's vision for future land use, housing and population growth, the natural and built environments, economic development, cultural heritage, and corridors and subareas. It includes a framework of goals, policies and strategies to achieve that vision. In alignment with C.R.S. §30-28-106, **the Adams County Water Master Plan serves as the water element for the Adams County Comprehensive Plan, providing valuable insight to Adams County's water supply, demand, and capacity to support future growth.** Through development of the Water Master Plan and its implementation, Adams County is playing an increasingly valuable role convening and collaborating across a complex regional tapestry of water providers, municipalities, and water users.

1.1 PLANNING PROCESS OVERVIEW

The development of the Adams County Water Master Plan originated with the 2023 Adams County Community Water Baseline Report. The Adams County Water Master Plan took the baseline analysis further by coordinating with water providers and the community through a year-long analysis and planning process. Key steps of the planning process are detailed in Figure 2. The Water Master Plan technical analysis leverages publicly available data used in the baseline report and was expanded to include information collected through a survey sent to water providers, as well as groundwater modeling and analysis, to further shape and inform the plan. Specific details about the engagement, data sources and analysis approaches are provided in the following chapters, as well as the Water Master Plan Appendices.

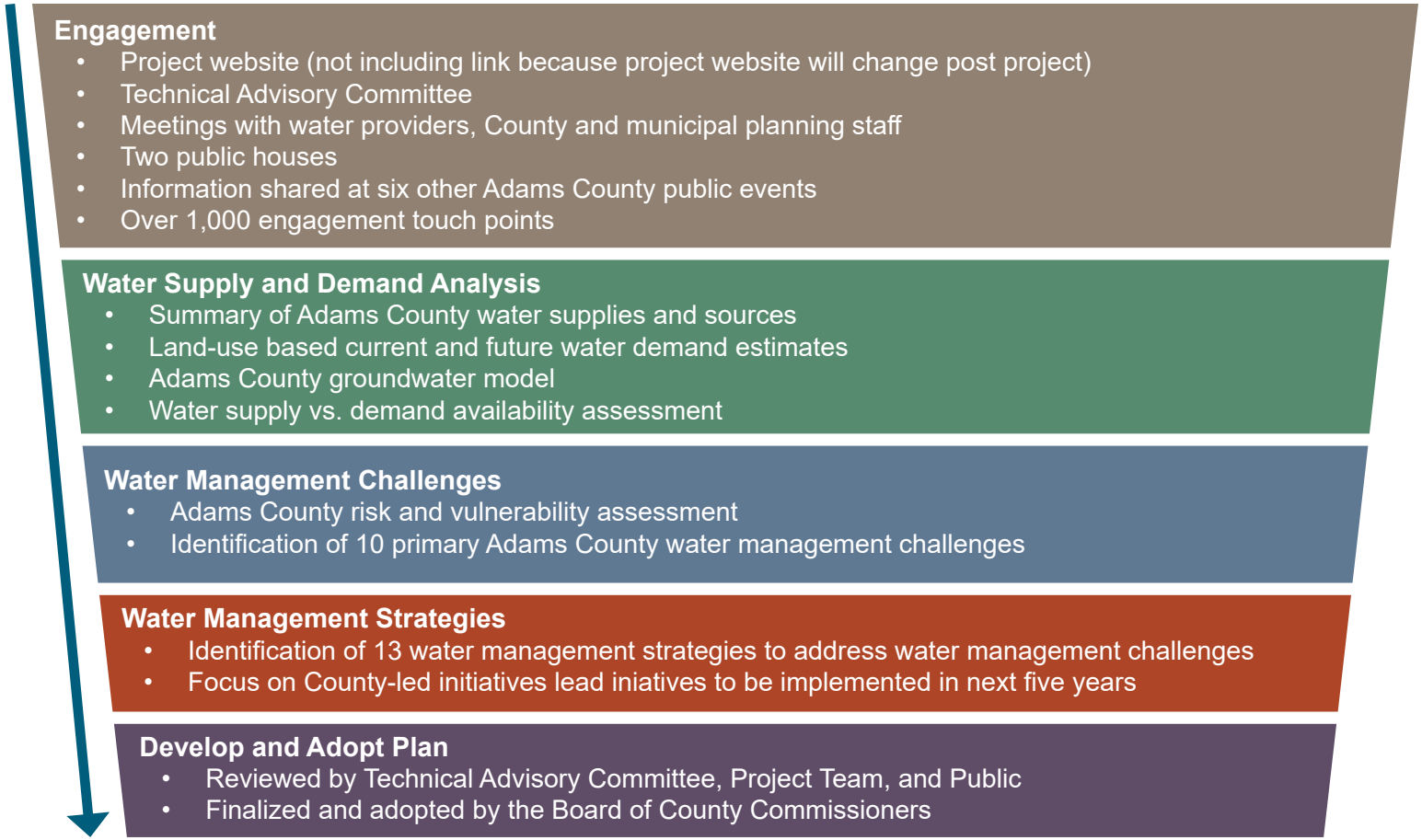


Figure 2. Major Steps of the Planning Process

PLAN ENGAGEMENT MILESTONES

Stakeholder engagement was essential in developing a plan that addresses the unique challenges and opportunities in Adams County. There were over 1,000 unique engagement touchpoints over the course of the project via Technical Advisory Meetings (TAC), public events, meetings with Planning Department staff from all major municipalities in Adams County, water providers not involved in the TAC, as well as engagement with the Planning Commission and Board of County Commissioners (BOCC).



Figure 3. Planning Process Engagement Milestones

1.2 ADVANCING ADAMS AND THE WATER MASTER PLAN

Land use and development patterns influence current and future water demands. For example, agricultural, industrial, and urban development all use water differently. Where and how Adams County develops, as outlined in the Advancing Adams Comprehensive Plan, will influence water demand now and into the future. The Advancing Adams Comprehensive Plan explored three planning scenarios to inform the final plan. Scenarios included:

A. **Stay the Course** – continue with the path that is established by current zoning, which includes growth in single-family development, industrial uses and warehousing, and strip-style commercial development.

B. **Many Small Nodes of Growth** – accommodates growth by proposing many small mixed-use nodes throughout Adams County, with a focus on Town Centers near transit lines and where community services already exist.

C. **Fewer, Concentrated Nodes of Growth** – builds on the Town Center concept and promotes fewer, denser Urban Centers.

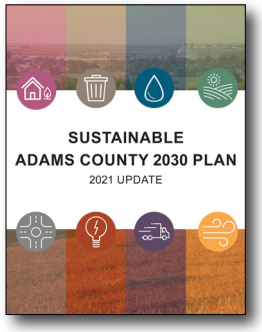
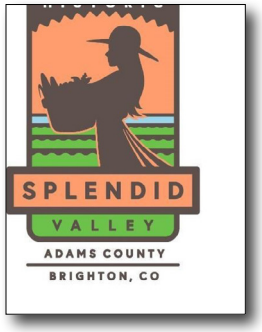
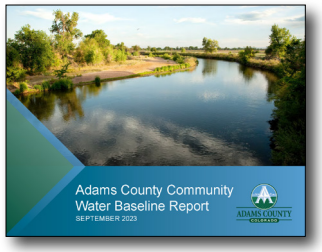
Ultimately, the Advancing Adams Comprehensive Plan and its associated Future Land Use Map (FLUM) align most closely with Scenario B, promoting land use patterns that support complete communities that have housing, services, employment, and mobility options. The FLUM depicts a guiding vision for future land use and development in Adams County, whereas the Adams County Development Standards and Regulations establish the regulatory zoning, uses, and development standards. The 2026 Adams County Land Use Code Update intends to align the development standards and regulations with the Advancing Adams and FLUM vision.

This Water Master Plan leverages the Advancing Adams FLUM's Scenario B as a basis for the future water demand analysis. Because the Adams County FLUM does not prescribe future land uses for incorporated areas, the Water Master Plan analysis was also informed by municipal comprehensive plan and future land use maps, as well as Adams County subarea plans.

Beyond the FLUM, the chapters, goals, policies and strategies in the Advancing Adams Comprehensive Plan provide a solid foundation for water-related matters in Adams County. This Water Master Plan builds on those ideas, creating a more specific plan of action to advance Adams County's most pressing water management challenges (see Water Management Challenges and Strategies chapter). In addition to the Advancing Adams Comprehensive Plan, Adams County is involved in or leading several other efforts with water-related elements and implications (see Table 1).



Table 1. Recent Adams County Water Related Planning and Regulatory Efforts

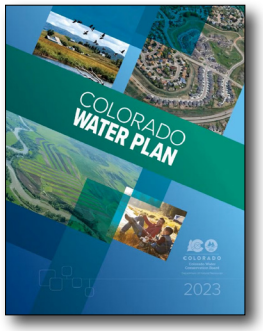
Related Effort	Title	Summary	Adams County Water Master Plan Connections
	2021 Sustainable Adams County 2030 Plan	This plan sets goals, targets, and strategies to advance sustainability across topics including energy efficiency and renewable energy, waste reduction, water quality and quantity, transportation options, food access, and sustainable neighborhoods. The plan includes both Countywide, community-focused goals and strategies and Adams County operations-focused goals and strategies.	Community water efficiency is the focus of *Goal 9*: *Promote water use efficiency for new and redeveloped residential and commercial properties in unincorporated Adams County*. Under this goal there is a specific strategy to "Develop a comprehensive Countywide Water Master Plan" (Strategy 9.3).
	2016 Historic Splendid Valley Plan	This plan, jointly adopted by Adams County and the City of Brighton, focuses on the Historic Splendid Valley, an agricultural area in south Brighton. The plan includes three overarching goals: preserve agricultural land, encourage local food production and consumption, and promote agritourism. It includes land use and water conservation recommendations and details about water requirements necessary to continue agricultural practices.	Water demand analysis conducted though the Adams County Water Master Plan process took a parcel-level approach to evaluate current and future water demand for agricultural lands in Adams County. Agricultural Water Transfer ("Buy and Dry") was also identified as one of the primary challenges in the Adams County Water Management Challenges and Strategies Chapter.
	2023 Adams County Community Water Baseline Report	This foundational report establishes an inventory of publicly available water supply and management information. It includes County-level metrics that quantify growth patterns, changing land use patterns, and surface and groundwater supply; a summary of water providers with key information for some of the largest providers; and a list of notable water supply related risks and vulnerabilities.	The Adams County Water Master Plan builds on the data and analysis included in the 2023 report. The Water Master Plan expands on the data analysis through a comprehensive water demand analysis, groundwater modeling, as well as a water availability assessment – focusing on unincorporated Adams County. The Water Master Plan planning process also engaged water providers across Adams County to collect baseline information on current system demands and any concerns regarding future water availability.

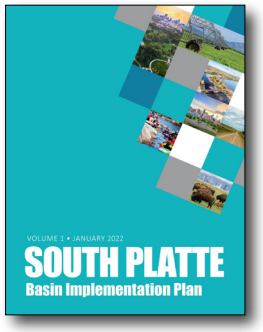
Related Effort	Title	Summary	Adams County Water Master Plan Connections
	Adams County Land Use Code 2026 Update	The Land Use Code guides how property is used and developed in unincorporated Adams County. It impacts housing, environment, sustainability, landscaping, commercial and industrial activities, process, governance, and more. The code update will make it easier for staff and the public to use, implement the Advancing Adams Comprehensive Plan (2022), and incorporate best practices and community feedback.	The intersection of land use and water resource planning is considered in the Fragmented Land Use and Planning Challenge of the Water Master Plan. Strategy A1, A3, and A4 focus on the intersection of the Land Use Code and water management.

1.3 CONNECTIONS TO OTHER REGIONAL PLANNING EFFORTS

Recognizing that water management requires coordination beyond Adams County control, this plan seeks to align with regional and statewide water planning efforts. Other related efforts that were considered during plan development are summarized in Table 2.

Table 2. Related State and Region Water and Planning Efforts

Related Effort	Title	Summary	Adams County Water Master Plan Connections
	2023 Colorado Water Plan	This plan serves as a framework for helping Colorado meet its water management challenges through collaborative action around water development and water conservation.	The Colorado Water Plan estimates that if no new projects or strategies are implemented Colorado may need between 230,000 and 740,000 acre-feet of additional water by 2050. The plan identifies four focus areas for collaboration (vibrant communities, thriving watersheds, robust agriculture and resilient planning) to address this gap and other water issues. The Adams County Water Master Plan connects to the Colorado Water Plan by levering similar assumptions as the Colorado Water Plan for the future demand scenarios described in the Water Demands chapter, as well as in the challenge and strategy identification and prioritization process described in the Water Management Challenges and Strategies chapter.

Related Effort	Title	Summary	Adams County Water Master Plan Connections
	2022 South Platte Basin Roundtable and Implementation Plan	The South Platte Basin Roundtable is a forum to facilitate discussion on water management issues in the South Platte Basin. The associated Basin Implementation Plan (BIP), developed by basin stakeholders, focuses on the current and future water needs in the South Platte and Republican River Basins, where Adams County is located.	More specific to Adams County, the South Platte Basin Roundtable Implementation Plan estimates the South Platte Basin average annual municipal and industrial water gap ranges between 190,000 and 400,000 acre-feet per year by 2050. The plan includes a number of goals and projects to close this gap. This, as well as the South Platte Decision Support system, was used to inform the analysis described in the Water Demands chapter, as well as in the challenge and strategy identification and prioritization process described in the Water Management Challenges and Strategies chapter.
	Metro Basin Roundtable	The Metro Basin Roundtable is a forum to facilitate discussion on water management issues in the Denver Metro region. It lies within the South Platte Basin and includes about half of the State of Colorado's population. Part of Adams County falls within the Metro Basin round table.	More specific to Adams County, the Metro Basin Roundtable estimates the Metro Basin area may need an additional 183,000 to 272,000 acre-feet to meet its 2050 demands, assuming passive water conservation. The South Metro area of the basin is expected to need approximately 25,900 acre-feet of additional annual supplies to replace non-renewable Denver Basin groundwater by 2050. This information was used to inform the challenges and strategies described in the Water Management Challenges and Strategies chapter.
MHFD MILE HIGH FLOOD DISTRICT	Mile High Flood District	The Mile High Flood District (MHFD) is a special district that serves as a regional resource for floodplain management, flood warning program, stream projects, watershed master planning, research, and development referrals. MHFD spans the Denver Metro region, including Adams County.	While not as specific to water supply, there is an important intersect between water supply and watershed planning. The Mile High Flood district includes watershed master planning with details on projects to remediate stormwater quality and flood risks. Additionally, the district provides education and completes stream restoration projects with local governments. These details were considered through the Plan process, especially to inform the challenges and strategies described in the Water Management Challenges and Strategies chapter.

1.4 PLAN ORIENTATION

The Adams County Water Master Plan summarizes current and anticipated future conditions for Adams County's water supplies, water demands, and water availability. It identifies the top water management challenges facing Adams County and prioritizes 13 strategies to address those challenges. The Water Master Plan's appendices provide technical documentation and additional detail related to development and implementation of the Water Master Plan.

WATER SUPPLIES AND PROVIDERS

An overview of current water supplies and how Adams County receives water

WATER DEMANDS

An estimate of current and future (2040) water demands in Adams County

WATER AVAILABILITY

A summary of Adams County water supply needs to support potential development

WATER MANAGEMENT CHALLENGES AND STRATEGIES

Top 10 water management challenges for Adams County based on supplies, demands, and availability

Summary of priority strategies for Adams County government to lead and support to address water management challenges

IMPLEMENTATION NEXT STEPS

A summary of resources to support plan implementation, recommendations for keeping the plan up to date, and recommendations for tracking and reporting implementation progress

APPENDICES

I. Water Demand Analysis
II. Groundwater Analysis
III. Water Management Challenges and Strategies
IV. Engagement Summary
V. Implementation Plan

Figure 4. Water Master Plan Chapters

Additional documentation, including summary of the water demand analysis and groundwater analysis, water management challenges and strategies creation, engagement summary, as well as a glossary of key terms, and implementation plan appendix with key details on implementing the strategies outlined in the plan. Some of these appendices are confidential for Staff use, due to inclusion of sensitive water data (e.g., Water Demand Analysis and Groundwater Analysis appendices).



Chapter 2

Water Supplies and Providers

Chapter Contents

2.1 Adams County Water Supplies

2.2 Adams County Water Providers

Adams County's water supply system is diverse and complex, reflecting the broader water supply challenges facing Colorado's Front Range. Adams County is served by 86 individual water providers — one of the highest counts in the State — that depend on a combination of surface water, tributary groundwater, and deep non-renewable groundwater from the Denver Basin aquifers as their source of supply. While most of Colorado's water use is supported by surface water, over 60% of Adams County's water providers rely primarily on groundwater sources, particularly in unincorporated and rapidly developing areas. Groundwater is also used as a primary source for agricultural irrigation, drawn from a range of aquifer systems, including tributary alluvial and deeper confined aquifers like the Arapahoe and Laramie-Fox Hills formations within the Denver Basin aquifer. These various sources of supply differ significantly in terms of their regulatory oversight, long-term sustainability, and vulnerability to drought and climate change.

This chapter provides an overview of Adams County's key water sources, followed by a discussion of the various types of water providers that manage and deliver these supplies across the region.



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2.1 ADAMS COUNTY WATER SUPPLIES

Within Adams County, there are four main sources of water supply:

- Renewable Water Supplies: Surface Water and Alluvial Groundwater
- Non-Renewable Water Supplies: Denver Basin Aquifer
- Water Reuse
- Imported and Wholesale Water

The following sections summarize each source and include case studies highlighting the different water management considerations related to the source.

RENEWABLE WATER SUPPLIES: SURFACE WATER AND ALLUVIAL GROUNDWATER

Renewable water sources are regularly replenished through the natural hydrologic cycle (e.g., rain or snow). Renewable water supplies in Adams County consist of both surface water and alluvial groundwater sources. **Surface water** includes rivers, streams, and reservoirs that are replenished annually by snowmelt and precipitation, primarily originating from mountain watersheds. **Alluvial groundwater** (also referred to as tributary groundwater) is stored in permeable materials such as sand and gravel adjacent to rivers, most notably the South Platte River in the Adams County region. This groundwater is hydrologically connected to surface flows, meaning streamflow directly contributes to aquifer recharge and, conversely, groundwater pumping can deplete nearby surface water.



Key Takeaways for Renewable Water Supplies

Renewable water supplies include the South Platte River and alluvial groundwater aquifers that **replenish annually**.

All renewable water sources are subject to **prior appropriation and augmentation plans** for use.

Much of the Adams County's sources are **already over-appropriated**, meaning development of additional renewable water sources will potentially be expensive and require unique solutions.

While they are renewable, reliability of these sources is threatened by **climate change** and **increasing competition** for water rights.

40%

Renewable water sources are the **primary source for 40%** of Adams County's water providers. These providers tend to be the larger providers, serving the western portions of Adams County.

Within Adams County, there are five primary surface water sources (Figure 5, Figure 6, and Figure 7):

South Platte River

The dominant surface water feature in Adams County, the South Platte River supports municipal, agricultural, and industrial uses and serves as the backbone of the region's water supply and return flow systems.

Clear Creek

Flowing along Adams County's southern edge, Clear Creek provides a surface water source for several major providers, including Westminster and Thornton.

Sand Creek

This urban tributary runs through the southern portion of Adams County, primarily serving as a stormwater conveyance corridor and habitat corridor rather than a water supply source.

Big Dry Creek

Extending through western Adams County, Big Dry Creek receives treated effluent from several municipalities and plays a growing role in streamflow restoration and water quality monitoring.

Box Elder Creek

Located in the eastern part of Adams County, Box Elder Creek primarily serves rural agricultural users and contributes to localized groundwater recharge and flood management.



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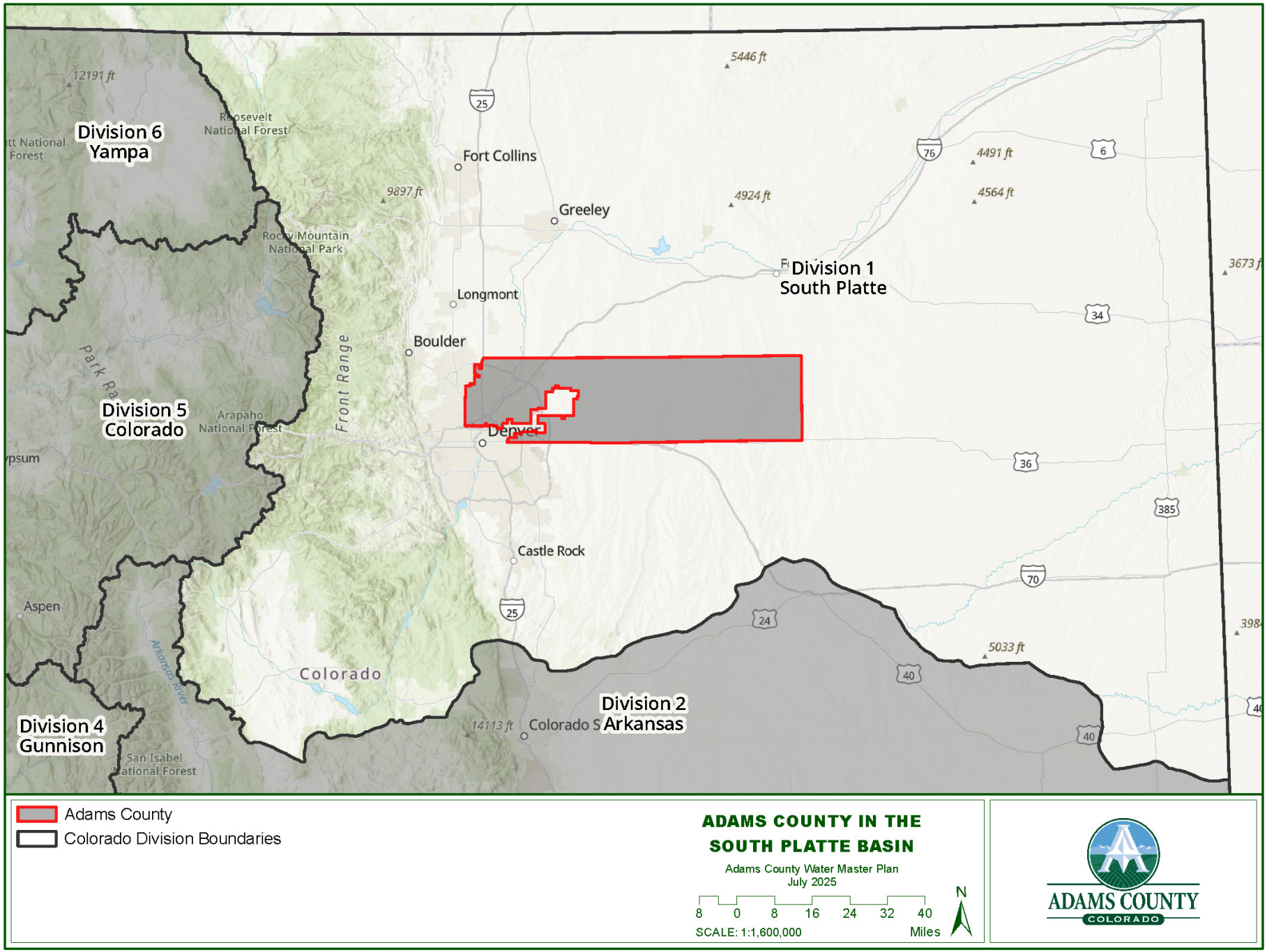
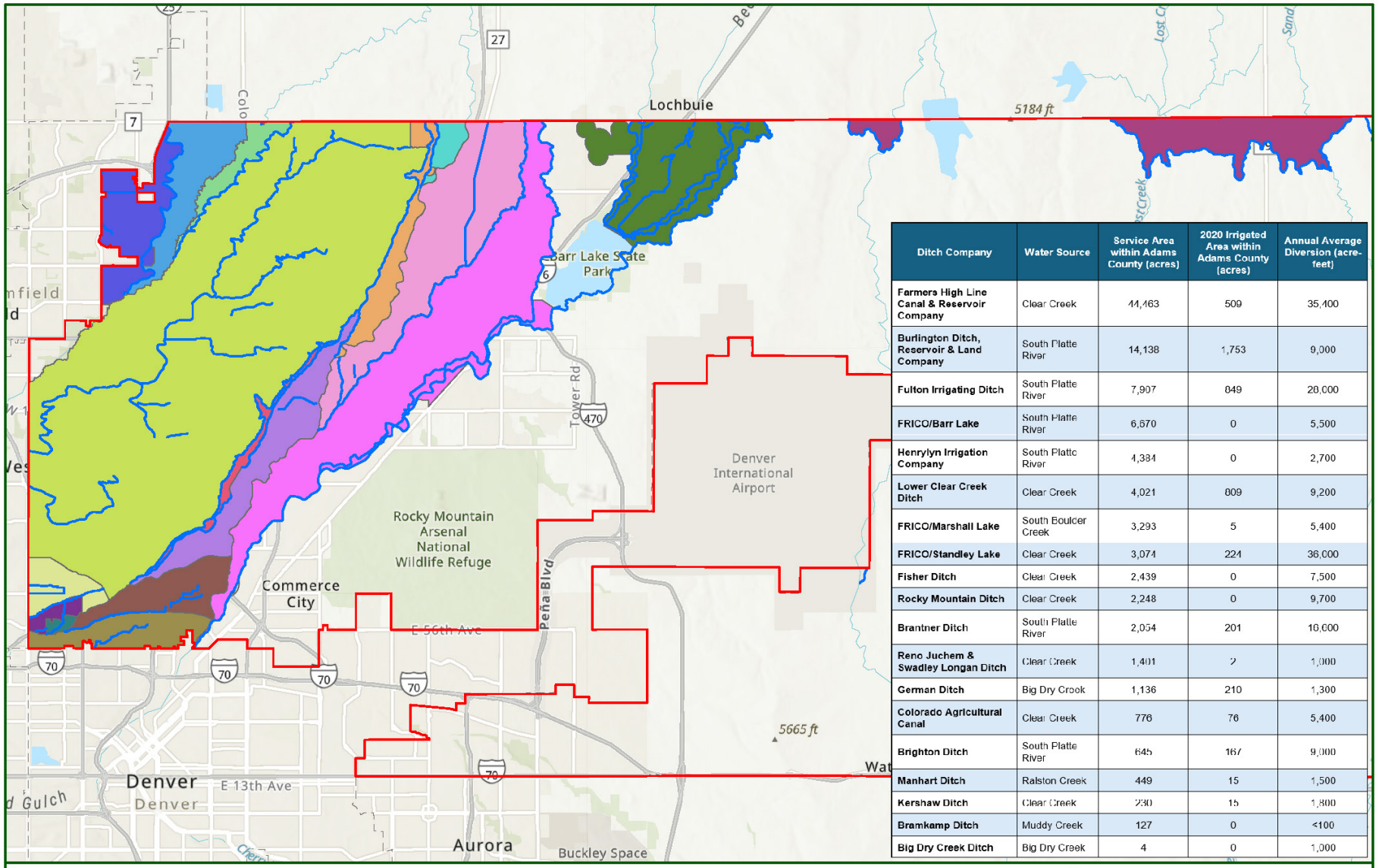


Figure 5. Adams County in the South Platte Basin



Ditch Company	Water Source	Service Area within Adams County (acres)	2020 Irrigated Area within Adams County (acres)	Annual Average Diversion (acre-feet)
Farmers High Line Canal & Reservoir Company	Clear Creek	44,463	509	35,400
Burlington Ditch, Reservoir & Land Company	South Platte River	14,138	1,753	9,000
Fulton Irrigating Ditch	South Platte River	7,907	849	20,000
FRICO/Barr Lake	South Platte River	6,870	0	5,500
Henrylyn Irrigation Company	South Platte River	4,384	0	2,700
Lower Clear Creek Ditch	Clear Creek	4,021	809	9,200
FRICO/Marshall Lake	South Boulder Creek	3,293	5	5,400
FRICO/Standley Lake	Clear Creek	3,074	224	36,000
Fisher Ditch	Clear Creek	2,439	0	7,500
Rocky Mountain Ditch	Clear Creek	2,248	0	9,700
Brantner Ditch	South Platte River	2,054	201	10,000
Reno Juchem & Swadley Longan Ditch	Clear Creek	1,401	2	1,000
German Ditch	Big Dry Creek	1,136	210	1,300
Colorado Agricultural Canal	Clear Creek	776	76	5,400
Brighton Ditch	South Platte River	645	167	9,000
Manhart Ditch	Ralston Creek	449	15	1,500
Kershaw Ditch	Clear Creek	230	15	1,800
Bramkamp Ditch	Muddy Creek	127	0	<100
Big Dry Creek Ditch	Big Dry Creek	4	0	1,000

Figure 6. Ditch Service Areas and Canals

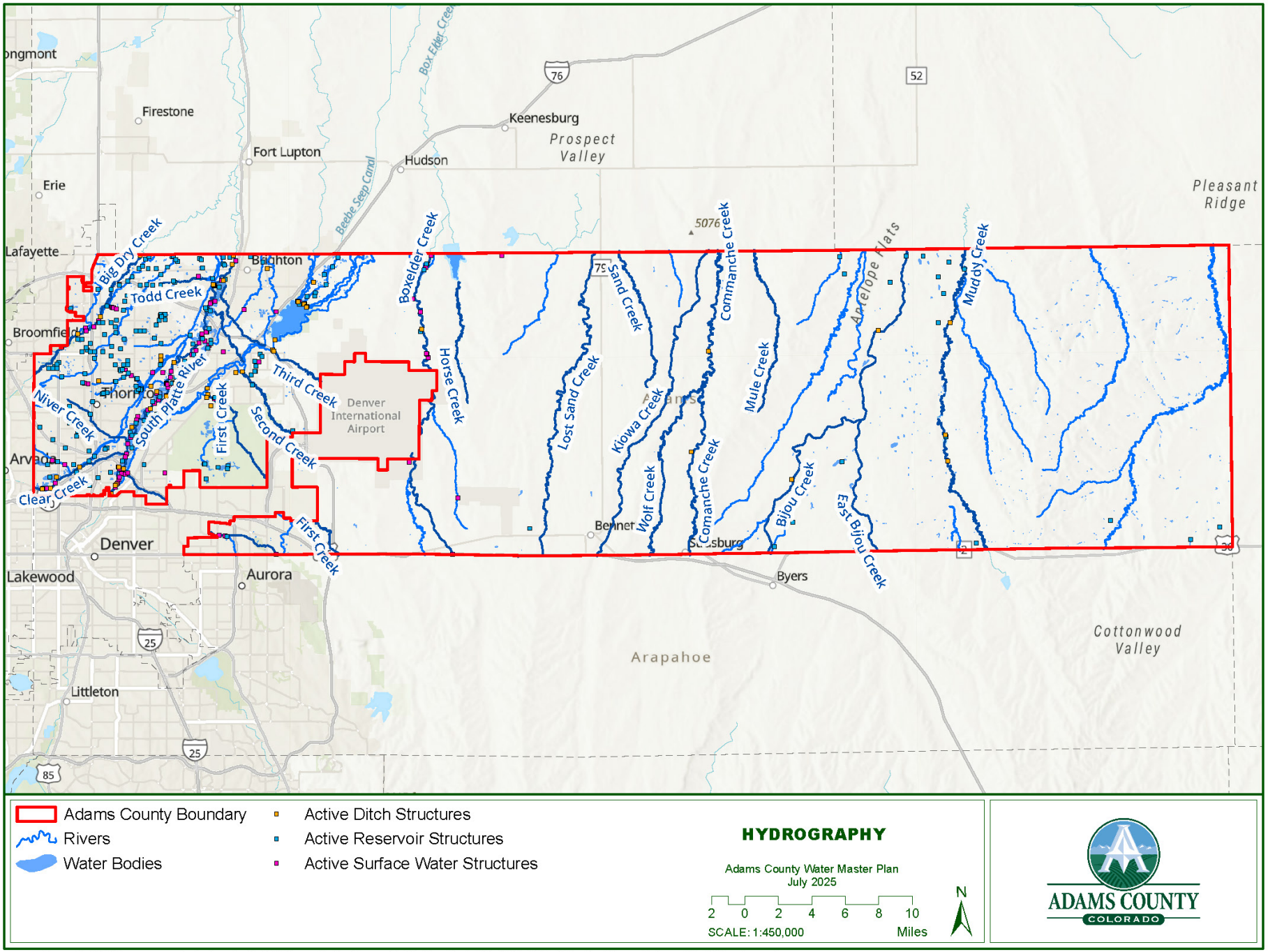


Figure 7. Adams County Hydrography and Surface Water Structures

Additionally, irrigation ditches, canals, lakes, and reservoirs play a role in Adams County's surface water (Figure 6 and Figure 7):

- **Irrigation ditches and canals** divert water from the South Platte River and other surface water sources. Historically, irrigation ditches and canals served agricultural land throughout Adams County. Today, many ditches also provide municipal water supply. In Colorado, ditch company shares are tied to specific beneficial uses (e.g., irrigation, stock, municipal, etc.) that define how the water can be used. Any shift in use (e.g., from irrigation to municipal) requires a formal change of use approved through water court, ensuring that the historical return flow and timing of use are maintained to protect downstream water rights.
- **Lakes and reservoirs** store water during periods of low demand and/or high water supply and release water during periods of high demand, drought, or when natural stream flows are insufficient. In addition to supporting municipal and agricultural supply, reservoirs are essential for retiming water deliveries to meet augmentation requirements, facilitate water exchanges, and enhance overall system reliability.

Return Flows

Return flows refer to the portion of water that, after being diverted for use (such as irrigation or municipal supply), is not consumed and returns to the surface water or groundwater system. This water can re-enter streams, rivers, or aquifers and may be reused by other water users downstream. Return flows are a critical part of Colorado's water supply and water rights system.

Types of Water Providers that Rely on Surface Water Supplies in Adams County

Within Adams County there are a variety of different water providers that rely on surface water sources. These include:

- Most municipal water utilities
- All ditch companies (50+)
- Most water and sanitation districts
- Regional water providers (e.g., Denver Water)



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REGULATORY CONSIDERATIONS

Surface and alluvial groundwater are administered by Colorado's Office of the State Engineer in accordance with the Prior Appropriation Doctrine, in which more senior water rights have priority to divert and use water before users with more junior water rights. A water right's priority is determined by the date of appropriation, or the date on which that water right was first put to a beneficial use. The earlier the date, the more senior the water right. The State, Adams County, and water providers all play important roles in managing renewable water supplies (Table 3).

A court-approved augmentation plan is required to obtain a well permit for withdrawal of alluvial (tributary) groundwater. For new surface water diversions, augmentation plans are common but not always required, depending on the potential for injury to senior water rights. In all cases, augmentation plans allow for out-of-priority diversions by providing replacement water to the stream in terms of time, place, quantity, and quality. Within the Adams County region, many of these renewable water supplies are already fully appropriated and/or require an augmentation plan (typically involving the change of senior water rights) to be considered a reliable source of new supply to support future growth. Challenges and opportunities with managing these renewable surface water supplies are summarized on the following pages.

For additional discussion of Colorado's water rights, please refer to the Adams County Community Water Baseline Report.

Table 3. Roles in Managing Renewable Water Supplies

State's Role	Adams County/Local Jurisdiction's Role	Water Provider's Role
• The Colorado Division of Water Resources (DWR), also known as the State Engineer's Office, administers water rights, oversees well permitting for alluvial/tributary groundwater, and ensures compliance with interstate compacts and water court decrees. • The Colorado Water Conservation Board (CWCB) develops State water policy, provides funding for water projects, and works to protect and develop Colorado's water resources.	• Coordinates with local water providers and sanitation districts to support water infrastructure planning and development. • Engages in watershed management and stormwater quality programs to protect water sources and ensure sustainable use. • Leverages its land use authority, regional planning influence, and coordination role to promote or incentivize an emphasis on renewable water sources.	• Manages the delivery, treatment, and distribution of water to residents and businesses. • Develops and maintains infrastructure, monitors water quality, and implements conservation measures to ensure a reliable water supply. • Responsible for the long-term planning of their systems, which often includes acquiring new water rights or changing the use of existing water rights.

Challenges

Associated with Non-Renewable Water Supplies

Tightening River Administration

Many large regional water providers currently hold significant portfolios of conditional water rights that have not yet been exercised (i.e., put to beneficial use). As these entities build out and begin diverting their water, the amount of "free river" will decline, increasing pressure on available supplies (i.e., when a river has more water than is needed to satisfy all water rights, allowing junior users to divert without restriction.). Water providers relying on junior water rights will face growing challenges in acquiring and developing firm (i.e., reliable) water sources without seniority.

Augmentation Requirements

Augmentation plans are required to pump from alluvial groundwater wells. This is to protect senior water rights from being impacted. Therefore, any water provider developing junior groundwater rights must also secure a firm, reliable source of augmentation water supply, such as reusable effluent, irrigation water rights, or senior water stored and released under an approved augmentation plan. Historically, most senior water rights in the region have been appropriated for agriculture — diverted directly from the South Platte River or its ditches for crop irrigation. Augmentation requirements place pressure on municipalities and metro districts to acquire senior water rights, often through "buy-and-dry" transactions, where farmland is permanently taken out of production to supply urban growth. Adams County has long recognized agriculture as a vital part of its cultural heritage and has worked to preserve farmland through its land use planning policies. Accordingly, the transfer of agricultural water rights (or "buy and dry") is identified as a key challenge within this Plan, with strategies aimed at protecting long-term water security for actively irrigated farmland.

Climate Change

Surface water and alluvial groundwater are particularly susceptible to the impacts of climate change. According to the Technical Update to the Colorado Water Plan, available flows on the South Platte River are expected to diminish, with peak runoff occurring earlier in the season reducing the reliability of supplies for late-summer municipal and agricultural uses. Climate change is also expected to have a negative impact on ecosystem health, particularly for areas east of I-25, due to rising temperatures, reduced snowpack, and diminished stream flow.

Varying Access Across the County

While renewable supplies are proximate to many urban areas on the western side of Adams County, access to these supplies is limited in the eastern portions of Adams County. As a result, these areas are more reliant on non-renewable sources.

Water Quality

The main water quality concerns for surface water supplies stem from both urbanization and agricultural activity along the South Platte River and its tributaries. These concerns affect both potable water treatment needs and regulatory compliance for water providers. Algal blooms and seasonal variability of water quality in lakes and reservoirs can reduce the volume of water that is economically treatable, reducing availability during peak demand periods. Surface water and alluvial groundwater are also at higher risk of PFAS (per- and polyfluoroalkyl substances) contamination which requires costly treatment solutions.

Opportunities

Associated with Non-Renewable Water Supplies

Less Dependence on Non-Renewable Resources

Denver Basin groundwater is declining due to unsustainable pumping and limited natural recharge. It is considered a non-renewable source of water. An emphasis on renewable water supplies supports long-term water supply sustainability and aligns with the Colorado Water Plan's goal to encourage a transition away from non-renewable groundwater supplies such as the Denver Basin aquifers.

Firm Yield through Augmentation and Reuse

Alluvial groundwater can be legally and sustainably developed when paired with augmentation water from reusable water supplies. This expands firm yield options without requiring new surface diversions or "buy-and-dry" transactions.

Proximity to Growth Corridors

Renewable water sources like the South Platte River lie near rapidly urbanizing areas in western Adams County. This enables the development of water supplies close to demand, reducing the need for long transmission infrastructure.

Opportunities for Regional Collaboration

Shared augmentation plans or cooperative reuse projects (e.g., regional reservoirs, joint wellfields) can enhance reliability and reduce costs. These sources can serve as a bridge supply until long-term projects or the other regional effort comes online.





CITY OF NORTHGLENN CASE STUDY

Northglenn is a municipality located in western Adams County that provides water to its population through a municipal water utility. The City of Northglenn's primary water supply originates from snowmelt and rainfall in the Clear Creek watershed, which is conveyed through a network of ditches (such as the Church Ditch) and stored in Standley Lake. Northglenn owns shares in the Church Ditch and the Farmers Reservoir and Irrigation Company (FRICO), granting it rights to divert water to Standley Lake for municipal use. The City operates a water treatment facility that processes this stored water to meet the community's drinking water needs. However, challenges such as limited availability of additional water rights and sole reliance on Standley Lake for storage have prompted Northglenn to explore alternative storage solutions, including aquifer storage and recovery, to enhance supply resilience.

BURLINGTON DITCH, RESERVOIR, AND LAND COMPANY CASE STUDY

The Burlington Ditch is part of one of the largest irrigation systems in northeastern Colorado. Today, it serves over 14,000 acres of Adams County, making it a critical component of the local agricultural economy (Figure 6). The company operates in conjunction with the Farmers Reservoir and Irrigation Company and the Henrylyn Irrigation District. The two companies share headworks and infrastructure to manage water distribution effectively. Several entities have successfully changed the use of Burlington Ditch shares from agricultural to municipal purposes through Colorado's Water Court process. Notably, in 1987 Thornton sought to change 501 shares of Burlington Ditch water rights from irrigation to municipal use. The application, filed in Case No. 87CW107, provided Thornton with over 1,000 acre-feet of fully consumable water annually.

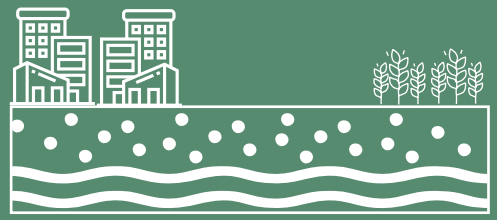
NON-RENEWABLE WATER SUPPLIES: DENVER BASIN AQUIFER

Non-renewable sources of water in Adams County include non-tributary groundwater, or groundwater that is not hydrologically connected to surface water sources like streams, lakes, and rivers. Non-tributary groundwater is categorized into three groups: designated groundwater, non-tributary groundwater, and Denver Basin groundwater. Each of these three types of groundwater are administered differently in the State of Colorado. The majority of Adams County resides in the Denver Basin aquifer system, with portions of Adams County falling within designated basins.

The Denver Basin aquifer system is a deep bedrock groundwater source that is a critical groundwater resource for Colorado's Front Range, supplying water to rapidly growing urban, suburban, and rural communities along the I-25 corridor. Originally developed in the 1970s and 1980s as an alternative to limited surface water supplies, the aquifer system became especially important for municipal and domestic water use in areas lacking access to renewable water sources. Today, these aquifer supplies are used as a supplemental supply by many of Adams County's water providers, or as the primary source of irrigation and drinking water throughout eastern portions of Adams County.



Key Takeaways for Non-Renewable Water Supply



The non-renewable source in Adams County is the Denver Basin aquifer system. This system is a **deep, slowly recharging source** that is non-renewable on human timescales.

Non-renewable supplies are widely used in eastern Adams County, and by small and rural providers, but **groundwater levels are declining rapidly** in many areas.

While useful for short-term reliability, long-term dependence on Denver Basin groundwater is **unsustainable** without significant conservation or transition strategies.

60%

Non-renewable water sources are the **primary source for 60% of water providers** in Adams County and most self-supplied users.

The Denver Basin aquifer system consists of four primary aquifers: Dawson, Denver, Arapahoe, and Laramie-Fox Hills (Figure 8).

- **Dawson Aquifer:** Shallowest and most productive of the four aquifers; designated as "not non-tributary," meaning pumping may require augmentation. Primarily used in areas near the foothills. Less relevant for most of Adams County due to limited geographic extent.
- **Denver Aquifer:** One of the most commonly used aquifers for municipal supply in Adams County.
- **Arapahoe Aquifer:** Deeper than the Denver Aquifer, with generally higher yields than other Denver Basin aquifers. Often used when the overlying aquifers become depleted or are insufficient.
- **Laramie-Fox Hills Aquifer:** The deepest and typically lowest-yielding of the four. Water quality can be poorer and often requires additional treatment (e.g., reverse-osmosis system). Generally used as a backup or supplemental supply when shallower aquifers are no longer viable.

These aquifers are confined and recharge extremely slowly, often over thousands of years. As such, they are considered non-renewable on human timescales. This aquifer system has long been a source of supply for the region; however, since the 2002 drought, declining groundwater levels, due to increased water demands, have led to concern about the basin's long-term viability as a reliable source of supply.

In addition to the Denver Basin aquifers, within Adams County there are two Designated Groundwater Basins (Figure 8). Though the Denver Basin aquifers and Designated Groundwater Basins overlap geographically, they are governed by different legal and administrative rules.

- **Lost Creek Basin:** The Lost Creek Basin spans northeastern Adams County and adjacent areas. It includes the Denver Basin Groundwater system, as well as other areas where groundwater is slightly connected to surface streams but regulated separately under designated basin rules. It is more developed than other basins in the region, with a growing number of municipal and special district wells replacing traditional agricultural use, leading to increasing pressure on groundwater resources. Additionally, within the Lost Creek Basin the alluvial aquifer is no longer available for new well permits, as the State has declared that the alluvium is over appropriated.
- **Kiowa Bijou Basin:** Located in southeastern Adams County and extending into Elbert and Arapahoe Counties, the Kiowa-Bijou Basin remains largely agricultural and rural in nature. Groundwater here is generally deeper and more isolated from surface systems, with limited municipal development to date, though urban expansion may increase future demand on the basin.

Types of Providers that Rely on Non-Renewable Groundwater Supplies in Adams County

Within Adams County there are a variety of different water providers that use and rely on non-renewable groundwater supplies. These include:

- Self-supplied users (e.g. metro districts, developers/HOAs, and farmers in eastern Adams County)
- Smaller municipal providers in eastern Adams County (e.g., Bennett)
- Smaller water and sanitation districts (e.g., Strasburg Water and Sanitation District)
- Conjunctive use systems, operated by most major water providers, which blend surface water and groundwater supplies to enhance reliability

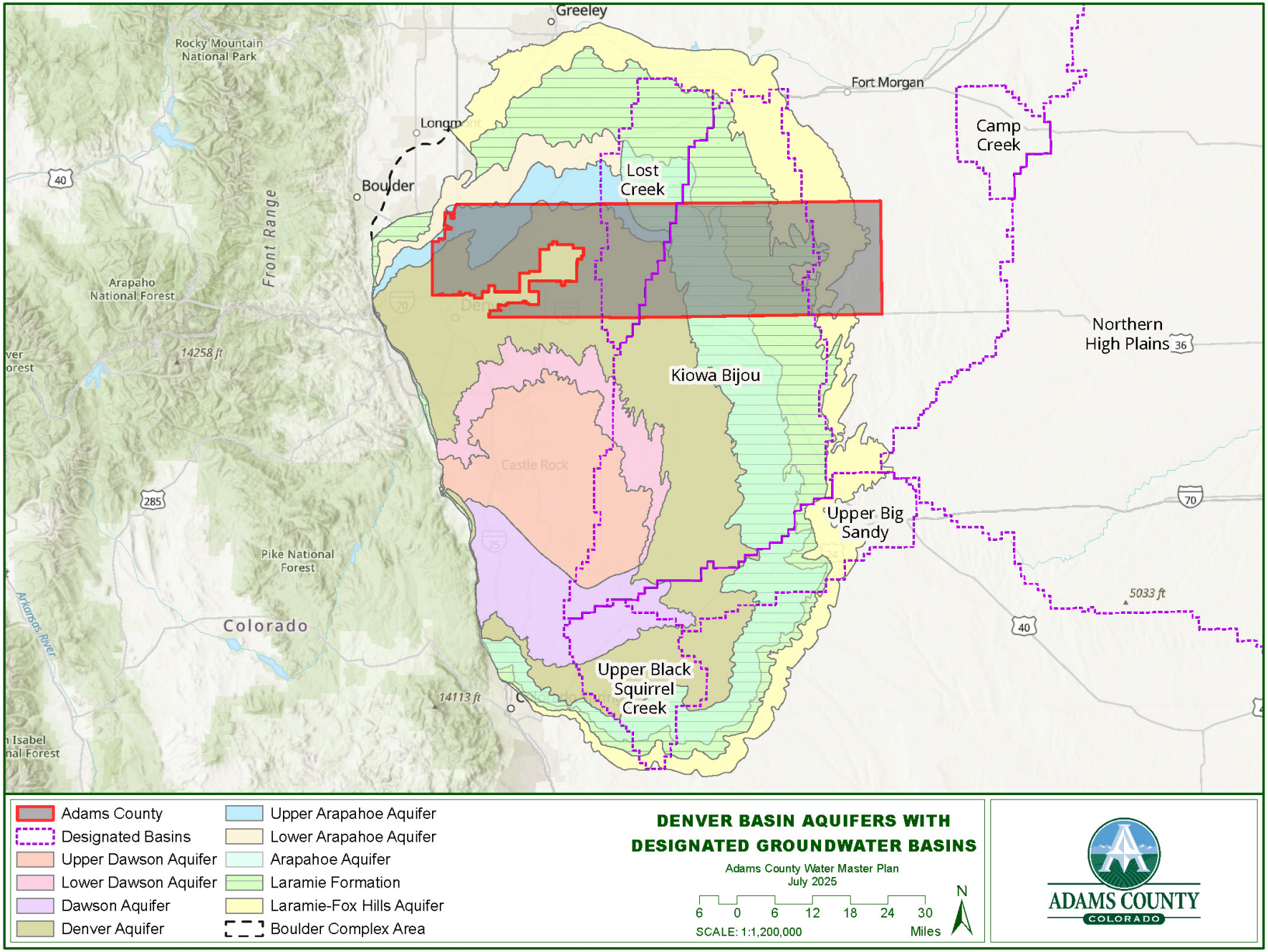


Figure 8. Denver Basin Aquifers With Designated Groundwater Basins, June 2025

REGULATORY CONSIDERATIONS

Denver Basin groundwater is administered by the Colorado Division of Water Resources (DWR) under the 100-year aquifer life rule, which permits property owners to withdraw a specified volume of groundwater over a 100-year period, based on the saturated thickness of the aquifer beneath their land. The legal classification of the water as either non-tributary or not non-tributary determines whether pumping must be augmented to protect senior surface water rights. Non-tributary groundwater (such as deeper portions of the Denver Basin aquifers in some areas) does not require augmentation, while not non-tributary groundwater (such as the Dawson Aquifer in parts of western Adams County) does require augmentation to offset impacts on nearby surface streams.

All wells constructed in the Denver Basin aquifer system, but outside of the Designated Groundwater Basins, must be permitted through DWR and are often subject to metering and annual water use reporting requirements. In contrast, within the Designated Groundwater Basins, groundwater is managed by the Colorado Ground Water Commission, which may apply additional permitting, monitoring, and administrative regulations. While the legal framework allows for planned aquifer depletion over time, it does not ensure long-term sustainability, creating pressure on communities and water providers to develop alternative sources of supply. Adams County, for example, applies a more conservative “300-year rule” for new developments, requiring proof that a groundwater supply will last for at least 300 years to ensure greater long-term reliability (see Water Management Challenges and Strategies). Across the County there are over 14,000 wells (Figure 9). The State, Adams County, and water providers all play important roles in managing non-renewable water supplies (Table 4).

Conjunctive Use

Conjunctive use of water resources in Colorado refers to the coordinated management of surface water and groundwater supplies to optimize water availability, reliability, and long-term sustainability. Many major water utilities in Adams County operate conjunctive use systems that utilize surface water supplies when available (e.g., during spring runoff) while relying on groundwater during dry periods, droughts, or when surface water supplies are limited. Excess water is stored in reservoirs or underground, such as in aquifer storage and recovery (ASR) facilities, for future use. Conjunctive use helps conserve groundwater resources during wet years and maintain stream flows during dry ones.



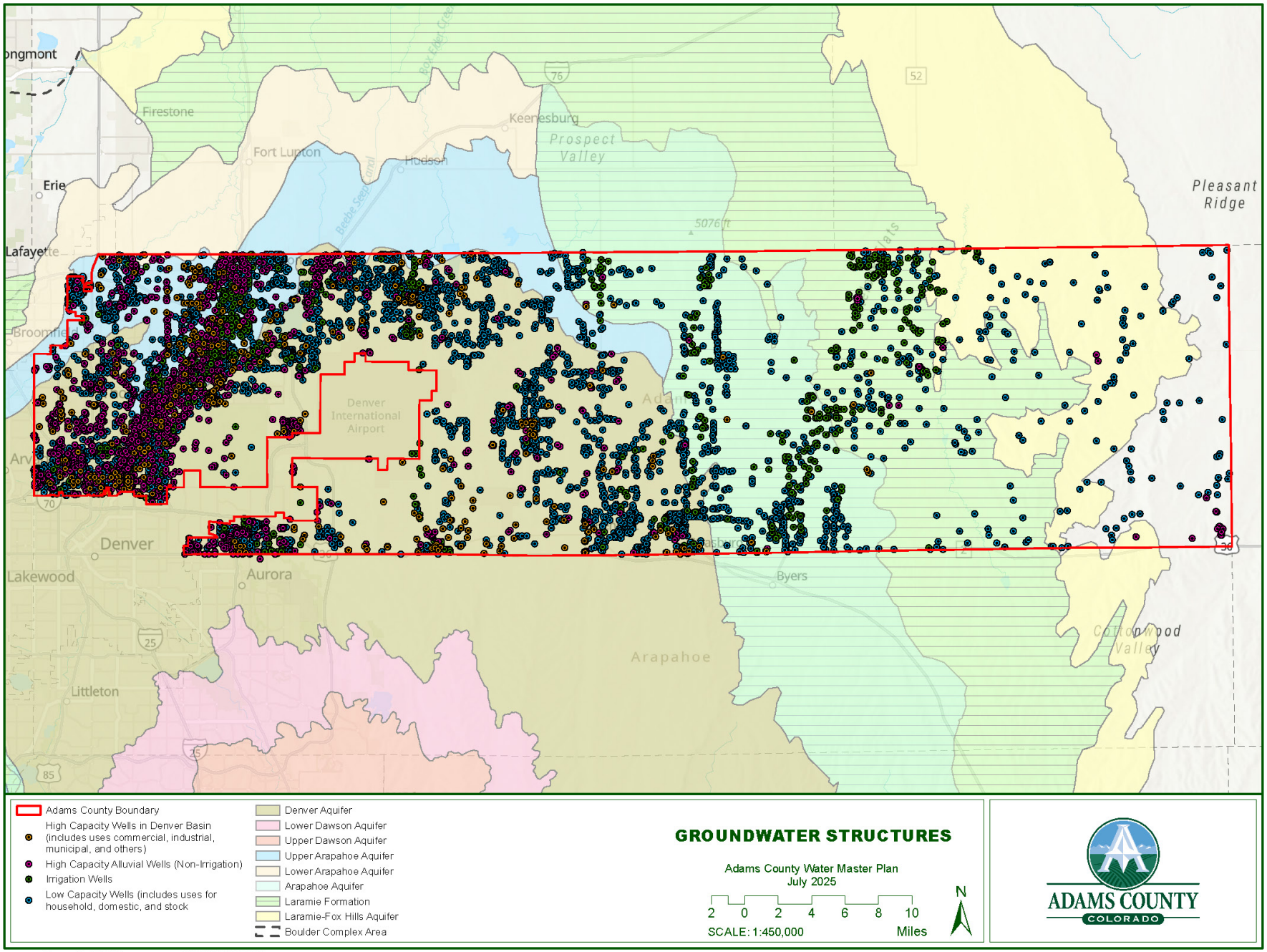


Figure 9. Adams County Groundwater Structures

Table 4. Roles in Managing Non-Renewable Water Supplies

State's Role	Adams County/Local Jurisdiction's Role	Water Provider's Role
• Permits wells and sets withdrawal limits based on the 100-year rule. • Classifies aquifers as non-tributary, not non-tributary, or designated. • Administers the Colorado Ground Water Commission for Designated Basins. • Enforces metering, reporting, and augmentation requirements.	• Reviews development proposals for adequacy of water supply (e.g., ensuring compliance with Adams County's 300-year rule). • Can set specific development requirements related to water use and water efficiency as part of subdivision and zoning approvals. • Influences reliance on Denver Basin groundwater through land use and planning decisions. • Coordinates with local districts and regional planning agencies on regional infrastructure investments and strategies to reduce reliance on non-renewable groundwater.	• Drills, operates, and maintains Denver Basin wellfields. • Monitors groundwater levels and water quality. • Responsible for long-term planning, including transitions to renewable supplies (e.g., surface water, reuse). • Ensures compliance with permits, augmentation plans, and relevant decrees.

While the Denver Basin aquifer system is largely considered a non-renewable water source, it is a critical component of Adams County's water supply, serving areas of Adams County that lack access to renewable surface water supplies. Some of the challenges and opportunities associated with non-renewable water supplies are summarized in on the following page.



Challenges

Associated with Non-Renewable Water Supplies

Declining Water Levels

Water levels are dropping by 30-100 feet per decade in some areas, reducing well productivity (see Water Availability). Since the Denver Basin aquifer is not meaningfully recharged on human timescales, overuse results in permanent depletion. Also, as water levels decline, wells must be drilled deeper and energy use for pumping increases. Deeper aquifers contain iron, manganese, or radionuclides, requiring costly treatment.

Infrastructure and Equity Challenges

Smaller or rural water providers relying on water from the Denver Basin aquifer may face higher per-capita costs to treat groundwater, develop infrastructure (e.g., drill deeper wells), and fund transition strategies to renewable water supplies. Smaller providers serving rural areas may also have less capacity, technical expertise, and financial resources to adequately monitor groundwater resources and project the reliable yield of these supplies far into the future.

Legal and Planning Uncertainty

While Denver Basin groundwater is legally permitted under Colorado's 100-year aquifer life rule, Adams County applies a more conservative 300-year rule when evaluating the adequacy of water supplies for new development. This discrepancy can create conflicting standards between State water rights administration and local land use approvals, but helps ensure greater long-term reliability of this water resource (see Water Management Challenges and Strategies).

Opportunities

Associated with Non-Renewable Water Supplies

Short-to-Medium-Term Reliability

The Denver Basin provides a known, accessible, "bridge" supply that can support development while longer-term, renewable sources are pursued. The Denver Basin aquifer system is essential to agriculture in Adams County, as well as smaller providers and self-supplied users without access to other sources of supply (see Water Availability).

Distributed Availability and Regional Infrastructure Potential

Wells can be located close to demand, reducing transmission costs in areas not yet connected to centralized water infrastructure. Also, Denver Basin supplies may serve as part of regional conjunctive use systems, where multiple providers share wellfields, pipelines, and treatment infrastructure to improve reliability, reduce costs, and facilitate a coordinated transition to renewable supplies.

Legal Certainty (with Permits)

Rights to Denver Basin water are quantified and protected by the State, offering a level of legal and operational stability. However, groundwater permits do not guarantee the long-term reliability of these supplies.



ESTATES AT BROMLEY CASE STUDY

In Adams County, several water providers rely heavily — or even exclusively — on the Denver Basin aquifer system for their water supply. This includes homeowners' associations (HOAs) and metro districts serving individual developments. For example, at the Estates at Bromley, the HOA is responsible for maintaining six community wells, drilled into the Laramie-Fox Hills aquifer, which serve 56 residential lots. HOA dues are established to maintain infrastructure, and special assessments are levied for major system repairs. During the planning process, the HOA provided the following input: "it would be great to see a plan that addresses rural residents who get their water from wells and isn't solely focused on improving the supply for urban areas and cities."

WATER REUSE

Water reuse in Colorado involves reclaiming treated wastewater for beneficial purposes, thereby extending water supplies beyond a single use. In Colorado, only certain types of water rights can be legally decreed for reuse. These include fully consumable supplies such as water diverted from one basin to another (transbasin diversions), non-tributary groundwater, changed irrigation rights (where the historical return flows have been quantified and replaced), and any other water right decreed for successive uses under a court-approved water right. Native basin surface water rights generally cannot be reused after the first use unless specifically decreed for that purpose, as return flows are legally owed to the stream to protect downstream water rights.

Specifically, there are three different types of reuse water sources:

- **Non-potable Reuse:** Treated wastewater repurposed for uses not involving human consumption, such as landscape irrigation, industrial processes, and agricultural applications. This approach conserves potable water for essential uses, like drinking, cooking, and showering.
- **Indirect Potable Reuse (IPR):** Highly treated reclaimed water is introduced into natural water bodies like aquifers or reservoirs, serving as an environmental buffer before being extracted and treated again for potable use.
- **Direct Potable Reuse (DPR):** Advanced treatment processes purify reclaimed water to drinking standards, allowing it to be directly integrated into the potable water supply without an environmental buffer.

Key Takeaways for Water Reuse

Reuse extends water supplies by reclaiming treated wastewater for non-potable (e.g., irrigation applications), and increasingly, for limited potable applications.

In Colorado, only certain water rights are legally eligible for reuse.

Reuse is a key tool for conservation and increasing reliability, supporting both augmentation and long-term supply strategies in alignment with the Colorado Water Plan.

0%

While some Adams County providers have reuse supplies, reuse is not a primary source of water for any major water providers within Adams County.



Several municipalities in Adams County, including Bennett and Westminster, use reuse water for non-potable purposes such as irrigating city-owned parks and green spaces. Many utilities also rely on reuse water as a source of augmentation supply, and in some cases, such as Aurora, as an indirect potable water supply.

REGULATORY CONSIDERATIONS

The Colorado Division of Water Resources (DWR) oversees the administration of water rights, including those decreed for reuse. Any changes to water rights, such as converting them to fully consumable status or incorporating them into augmentation plans, require approval through the water court system to ensure compliance with the prior appropriation doctrine and protection of existing water rights.

The Colorado Department of Public Health and Environment (CDPHE) regulates water reuse in the State, primarily through two key regulations: Regulation 11 and Regulation 84. Regulation 11 establishes a framework for treating and reintroducing reclaimed water directly into potable water systems without an environmental buffer (direct potable reuse), whereas Regulation 84 governs the use of reclaimed water for non-potable purposes, aiming to promote water conservation while protecting public health and the environment. The State, Adams County, and water providers all play important roles in managing reuse water supplies (Table 5). Some of the challenges and opportunities with managing reuse supplies are summarized on the following page.

Table 5. Roles in Managing Resue Water Sources

State's Role	Adams County/Local Jurisdiction's Role	Water Provider's Role
• CDPHE develops and enforces regulations that govern the safe use of reclaimed water for both potable and non-potable purposes. • DWR administers the legal and operational aspects of reuse water rights. • Provides guidance and support to water utilities and other stakeholders in developing and managing water reuse programs. Many reuse projects are eligible for CWCB grant funding. • Conducts stakeholder processes to gather input on regulatory updates and to educate the public on the benefits and safety of water reuse.	• While local jurisdictions do not permit the reuse of water itself, they can approve or deny the physical infrastructure necessary to implement reuse systems through their 1041 powers. • Local jurisdictions can help administer federal or State grant applications for large-scale reuse projects and support regional infrastructure planning.	• Providers design, build, and maintain treatment, storage, and distribution systems for non-potable and potable reuse — such as purple pipe networks or advanced treatment trains for DPR. • Providers must track and report reuse volumes, comply with water rights decrees (e.g., augmentation plans or successive use provisions), and meet CDPHE requirements.

Challenges

Associated with Water Reuse

Regulatory Compliance

Water rights limitations may not allow for successive use (i.e., reuse) of water supplies. Also, stringent State regulations make reuse impractical for some water providers. Non-potable systems require dedicated infrastructure (often called “purple pipe” systems), whereas direct potable reuse requires advanced treatment processes, both of which may be cost-prohibitive to some utilities.

Opportunities

Associated with Water Reuse

Water Conservation

Reuse reduces the volume of treated potable water needed to meet non-potable demands, such as irrigation, and (in the case of DPR) can directly supplement drinking water supplies. Reuse water can also serve as an augmentation source, preserving raw (i.e., non-potable) water for other uses. Maximizing reuse aligns with Colorado Water Plan goal to “encourage the development and expansion of both non-potable and potable water reuse as a critical tool to stretch existing water supplies.”





PRAIRIE WATERS AND WATER INFRASTRUCTURE AND SUPPLY EFFICIENCY CASE STUDY

The Prairie Waters Project, developed by the City of Aurora, is a large-scale potable water reuse system designed to improve drought resilience and long-term water security. The project captures treated effluent from Aurora's wastewater treatment plant after it is discharged into the South Platte River, then recovers it approximately 34 miles downstream near Brighton through a network of wells, pipelines, and advanced treatment facilities. After being pumped back to Aurora, the water undergoes extensive purification, including ozonation, filtration, and UV disinfection, before being reintroduced into the potable system. This indirect potable reuse project allows Aurora to reuse fully consumable supplies multiple times, significantly increasing the yield of its existing water rights and reducing dependence on new acquisitions.

A portion of this treated water is delivered through the Water Infrastructure and Supply Efficiency (WISE) pipeline network to participating members of the South Metro Water Supply Authority. The WISE Project is a collaborative regional water supply initiative involving Aurora Water, Denver Water, and the South Metro Water Supply Authority (SMWSA). Its primary objective is to provide a sustainable and renewable water supply to communities in the south Denver Metro area by reducing reliance on non-renewable groundwater sources. The project achieves this by utilizing existing infrastructure to distribute treated water to various communities, thereby maximizing the use of available water resources. By leveraging existing infrastructure and fostering inter-agency collaboration, this partnership exemplifies a model for regional cooperation in water resource management.

IMPORTED AND WHOLESALE WATER

In Colorado, imported (or transbasin) water refers to water diverted from one river basin to another, typically across the Continental Divide, to meet the demands of areas with limited local water resources. These diversions are crucial for supplying water to Colorado's population east of the Continental Divide, and many of Adams County's largest water providers rely on imported water as part or all of their water supply. Under Colorado water law, imported water is often considered fully consumable, meaning it can be reused for irrigation, augmentation, or municipal purposes. Notable transbasin diversion projects that may be serving Adams County include:

- **Thornton Water Project:** Transports water purchased in the 1980s through Larimer, Weld and Adams counties to the city of Thornton.
- **Moffat Tunnel Collection System:** Transports water from the Fraser River Basin to Gross Reservoir and then to Denver Water's service area. While not directly in Adams County, Denver Water's treated supply reaches parts of western Adams County via wholesale or contract service (Figure 10).



Key Takeaways for Imported and Wholesale Water



Imported (transbasin) water supplies are often fully consumable and critical to many major providers in Adams County. However, these types of projects are controversial and are becoming increasingly difficult to permit and construct due to environmental, legal, and interbasin concerns.



Wholesale water, from entities like Denver Water and City of Westminster, allow smaller or newer providers to access high-quality treated supplies without developing independent sources but may present challenges like contract restrictions or a lack of water supply diversity.



34%

Roughly 34% of Adams County's water providers purchase wholesale water.

In Colorado, imported (or transbasin) water refers to water diverted from one river basin to another, typically across the Continental Divide, to meet the demands of areas with limited local water resources. Under Colorado water law, imported water is often considered fully consumable, meaning it can be reused for irrigation, augmentation, or municipal purposes. These diversions are crucial for supplying water to Colorado's population east of the Continental Divide, and many of Adams County's largest water providers rely on imported water as part or all of their water supply. That said, while transbasin diversions have been a water management tool in Colorado for more than a century, moving water from one basin to another has created tensions. Balancing water demand needs, while protecting environmental and agricultural interests and lands is complicated and can result in outcomes that impact local communities. Basins of origin have seen reduced streamflows, loss of productive agricultural lands, and water quality impacts. As pressures continue to grow understanding these impacts, especially where and if new transbasin projects are being considered is key to creating a sustainable future for not just Adams County, but the entire State of Colorado. Notable transbasin diversion projects that may be serving Adams County include:

- **Denver Water:** Denver Water is Colorado's largest water utility, supplying water to the City and County of Denver and surrounding suburbs through contractual agreements with various water providers. In Adams County, Denver Water provides wholesale water to several providers including North Washington Street, South Adams, North Pecos, and Crestview Water and Sanitation Districts (Figure 10). Additionally, the City of Westminster has contracts with Denver Water for raw water from the Moffat Tunnel.
- **City of Westminster:** the City of Westminster provides water to the City of Federal Heights and the unincorporated area of Shaw Heights.

Types of Providers that Rely on Wholesale Water

- Mobile home parks and small private systems
- Municipalities and water and sanitation districts that require supplemental supplies, or do not have a water portfolio of their own (e.g., Crestview, Federal Heights, Brighton)
- Metro districts serving one (or several) communities

Types of Providers that Rely on Imported Water

- Large municipal water providers (e.g., Aurora Water, Thornton, Westminster, Northglenn)
- Any provider receiving deliveries from Denver Water
- Regional utilities like Denver Water



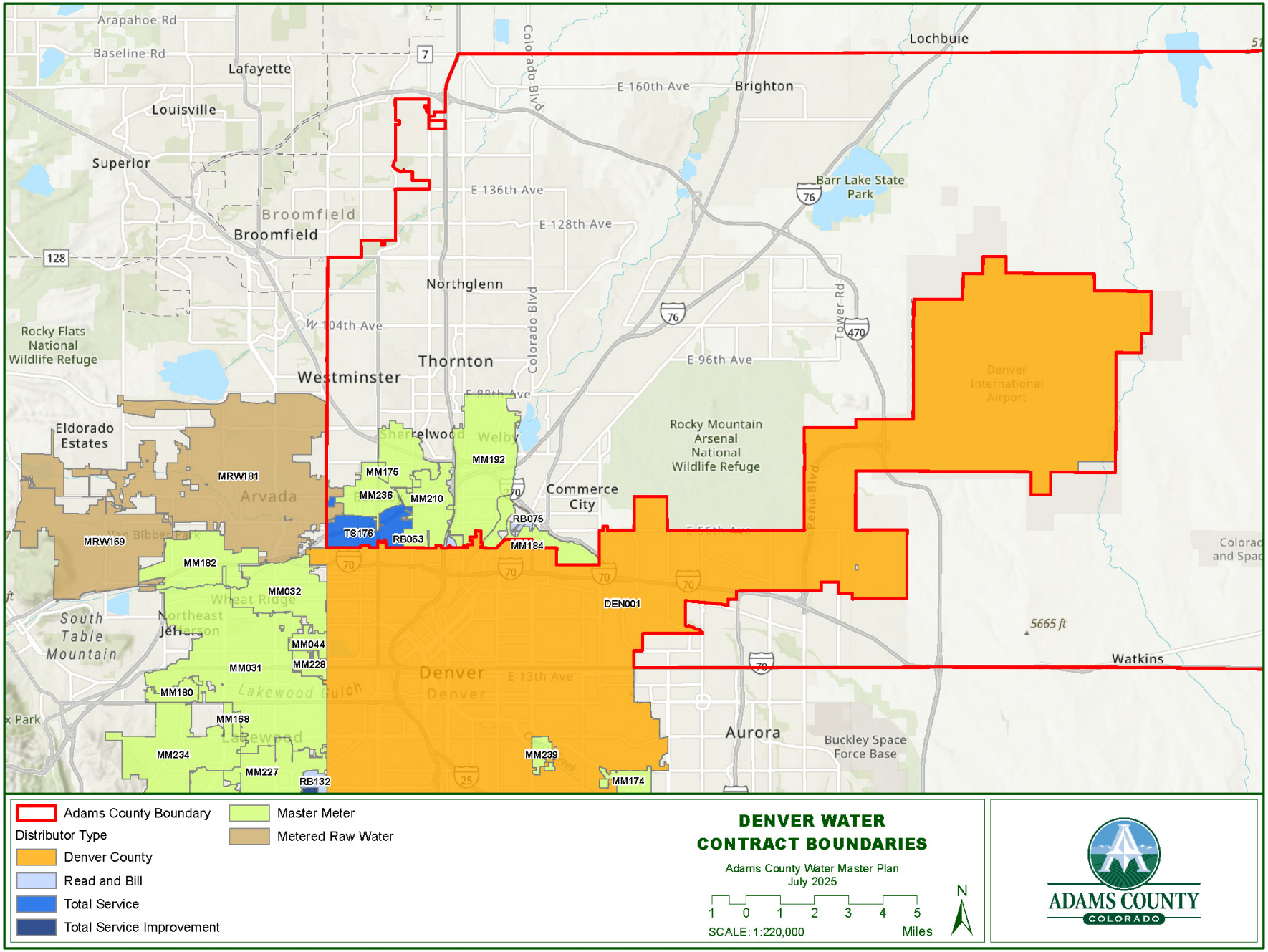


Figure 10. Denver Water Wholesale Contract Boundaries

REGULATORY CONSIDERATIONS

Regulatory considerations for imported versus wholesale water differ (Table 6). As Colorado continues to grow, and water availability of all sources becomes more limited, new imported, or transbasin water, will likely become increasingly more difficult, controversial, expensive, and complicated to permit. Imported water must be decreed for use in the receiving basin and often involves detailed accounting and administration under court-approved augmentation plans. Under Colorado water law, imported water is typically considered fully consumable, allowing for reuse, successive use, or discharge without return flow obligations — but only if explicitly authorized by decree. Projects involving transbasin diversions may require coordination between basin roundtables, conservancy districts, and the Colorado Water Conservation Board (CWCB), especially if the diversions impact instream flows or downstream rights. Large-scale imports may be subject to National Environmental Policy Act (NEPA), 401/404 permitting, and State Engineer's Office approvals for structures crossing multiple jurisdictions or involving significant environmental impact.

Wholesale agreements often include usage limits, delivery schedules, and conditions related to firm versus interruptible supply. These contracts are legally binding and may include drought curtailment provisions. Entities purchasing wholesale water may be required to protect or replace return flows, especially when using the water for types of use not originally decreed (e.g., from irrigation to municipal use). Contracts may be contingent on available infrastructure capacity, and some require providers to construct or connect to shared conveyance systems, which can trigger local or State permitting. Challenges and opportunities associated with imported and wholesale water are summarized on the following page.

Table 6. Roles in Managing Imported and Wholesale Water

State's Role	Adams County/Local Jurisdiction's Role	Water Provider's Role
• Colorado Water Courts adjudicate water rights associated with transbasin and storage projects, while DWR administers those rights in real time, ensuring compliance with the doctrine of prior appropriation and interstate compact obligations (e.g., the Colorado River Compact). • For wholesale water supplies, the State's role is more indirect but includes oversight through entities like CDPHE, which regulates water quality, and the Colorado Public Utilities Commission (PUC), which may regulate rates and service areas for certain wholesale providers.	• Review and approve land use and infrastructure proposals, including 1041 permits for major water projects such as pipelines or reservoirs — this includes evaluating impacts from transbasin diversions (e.g., Larimer County's review of the Thornton pipeline).	• Hold water rights or contracts and operate under decreed use conditions. • Negotiate and manage wholesale agreements • Maintain the pipelines, pump stations, interconnects, and storage needed to reliably deliver water to contract customers.

Challenges

Associated with Imported and Wholesale Water

Interbasin Conflicts and Public Opposition

Diversions from one basin to another (particularly from the western slide of the continental divide to the eastern side of the continental divide) are controversial, drawing concerns over environmental impacts and equity between regions.

Infrastructure and Environmental Permitting

Transbasin diversion projects often require significant infrastructure investment and must undergo NEPA, 401/404, and CWCB reviews, which can delay or outright inhibit implementation. Litigation over environmental issues poses serious obstacles for most large-scale storage and infrastructure projects.

Contract Limitations

Wholesale water contracts may have usage caps, peak use restrictions, or drought curtailments. The purchasing entity often has limited control over their water supplies, especially during times of shortage.

Opportunities

Associated with Imported and Wholesale Water

Fully Consumable Water Rights

Transbasin water is typically considered fully consumable, enabling successive uses, reuse, and augmentation without return flow obligations.

Increased Reliability and Diversification of Supplies

Large transbasin projects have enabled urban growth along the Front Range by delivering water to areas with limited local supply. Imports also diversify a community's portfolio by supplementing native surface or groundwater supplies, improving resilience in dry years.

Infrastructure Efficiency

Wholesale water leverages regional storage, treatment, and delivery systems reducing the need for costly, duplicative infrastructure at the local level.

Near-Term Supply Security

Wholesale agreements can provide immediate or short-term water security, especially for fast-growing or newly urbanizing areas without existing water supply portfolios



THORNTON WATER PROJECT CASE STUDY

The Thornton Water Project is a 70-mile pipeline initiative designed to transport approximately 14,000 acre-feet of water annually from the Cache la Poudre River (via water rights acquired by Thornton in the 1980s) to meet the City's long-term municipal needs. While segments of the pipeline through Weld and Adams counties proceeded with construction, the project faced significant permitting challenges in Larimer County. In 2018, Larimer County denied Thornton's initial 1041 permit application, citing non-compliance with several land use criteria. After subsequent legal appeals upheld the denial, Thornton submitted a revised application in 2023, featuring a shortened route and additional mitigation measures. Despite continued public opposition advocating for the use of the Poudre River as a natural conveyance, Larimer County commissioners approved the permit in May 2024, allowing the project to advance with stipulated conditions. This project provides an example of the types of permitting challenges, and potential costs, associated with large transbasin diversions.



CRESTVIEW WATER AND SANITATION DISTRICT CASE STUDY

The Crestview Water and Sanitation District in Adams County relies entirely on wholesale water deliveries from Denver Water to meet its municipal supply needs (Figure 10). This contractual relationship is governed by Denver Water's operating rules, which stipulate that during periods of drought or water shortages, deliveries to distributors like Crestview may be curtailed or reduced. Such limitations are part of Denver Water's broader water shortage response strategy, which aim to manage supply and demand during times of scarcity. Consequently, Crestview faces potential risks associated with supply reductions during drought conditions, underscoring the importance of contingency planning and adequate drought response measures for wholesale water customers, to ensure service reliability.

2.2 ADAMS COUNTY WATER PROVIDERS

Adams County residents, businesses, and agricultural receive water from one of three types of "providers."

- Public Water Systems
- Irrigation and Ditch Companies
- Self-Supplied Users

The following sections summarize each.

PUBLIC WATER SYSTEMS

Public water systems (also called “public water providers” or “water providers”) play a central role in delivering safe and reliable drinking water to residents, businesses, and institutions across Adams County. Their supply portfolios, infrastructure, and service strategies collectively shape Adams County’s ability to meet growing demand, respond to drought, and coordinate with broader regional and State water planning efforts.

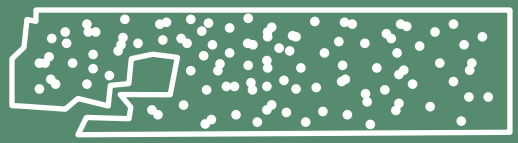
According to the Colorado Department of Public Health and Environment’s (CDPHE) Public Water System (PWS) database, Adams County is served by 86 public water providers (Figure 11). CDPHE defines a PWS in alignment with the federal Safe Drinking Water Act (SDWA). A PWS is any system that provides water for human consumption through pipes or other constructed conveyances and has:

- At least 15 service connections, or
- Regularly serves at least 25 individuals daily for at least 60 days out of the year

These providers vary widely in the composition of their water supply portfolios, customer demand profiles, physical infrastructure, and geographic service areas. Most are centralized utilities that deliver potable (and in some cases, non-potable) water to residential, commercial, and institutional customers. While some, such as large municipalities and water and sanitation districts, serve tens of thousands of connections, others operate at a much smaller scale, supplying water to only a handful of users or individual developments.

CDPHE’s PWS database identifies the primary water source for each provider. While most major providers draw from a combination of surface water, groundwater, and imported supplies, the database reflects only the dominant source type for each system. As shown in Figure 12, more than 60% of water providers in Adams County rely on groundwater as their primary and/or only source of supply.

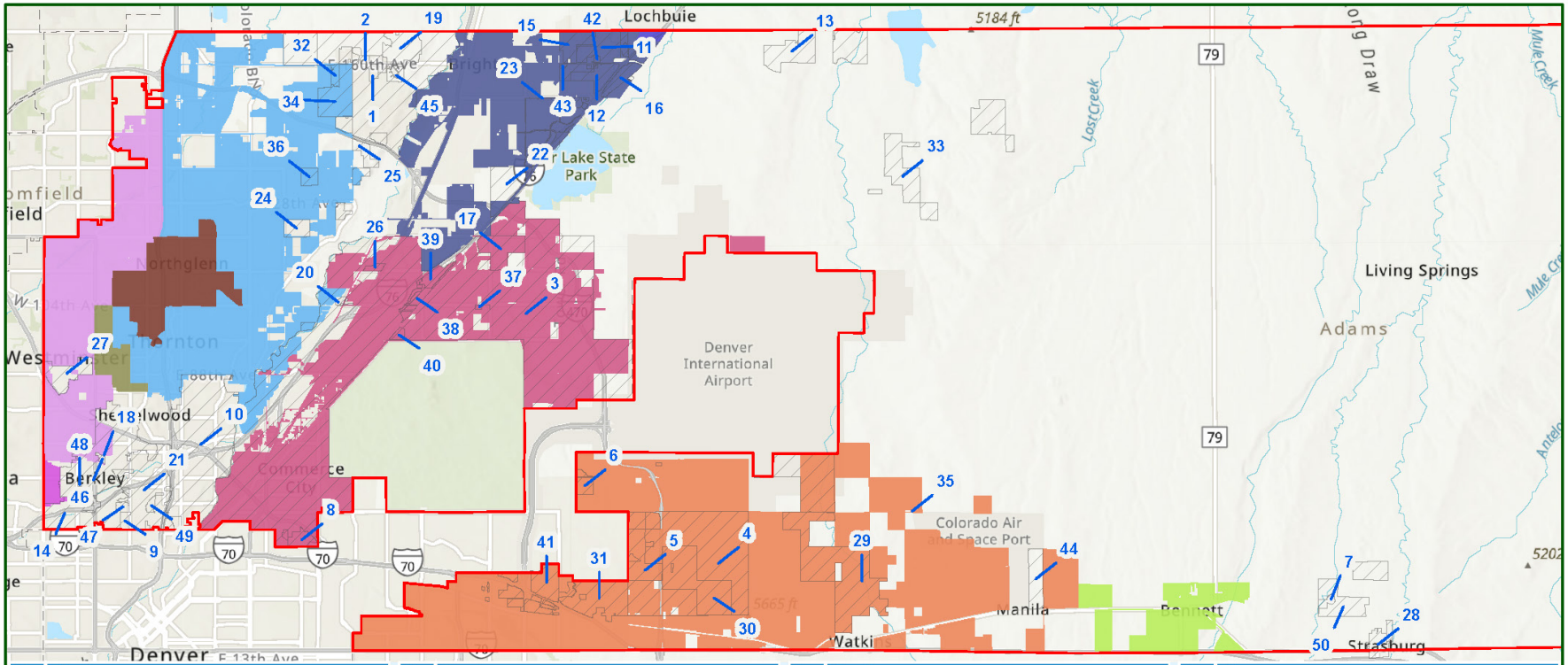
Key Takeaways for Public Water Systems



The large number of public water systems in Adams County underscores the importance of regional coordination in planning for resilient and efficient water service to Adams County residents.



Although many water providers in Adams County rely primarily on groundwater sources, most of Adams County’s population is served by native surface water supplies delivered by a few large municipal systems.



No.	District	No.	District	No.	District	No.	District
1	Todd Creek Village Metro	14	Berkeley Water and Sanitation	27	Shaw Heights Water	40	Eagle Creek Metropolitan District
2	Hi-Land Acres Water and Sanitation	15	Bromley Park Metropolitan District 2	28	Strasburg Water & Sanitation	41	Sand Creek Metro
3	South Adams County Water & Sanitation	16	Bromley Park Metropolitan District 6	29	Box Elder Water and Sanitation	42	Adams East Metropolitan District
4	Central Adams County Water & Sanitation District	17	Buffalo Ridge Metropolitan District	30	First Creek Ranch Metropolitan District	43	Bromley Park Metropolitan District 5
5	Second Creek Ranch Metro District	18	Crestview Water & Sanitation	31	Himalaya Water and Sanitation	44	Rocky Mountain Rail Park Metropolitan District
6	Colorado International Center Metro District No 3	19	Eagle Shadow Metropolitan District No 1	32	Lakeview Estates Water District	45	Creekside South Estates Metro District
7	Eastern Adams County Metro Dist	20	Hazeltine Heights Water and Sanitation	33	Horse Creek Metropolitan District	46	Pomponio Terrace Metro District
8	Industrial Park Water and Sanitation	21	North Pecos Water & Sanitation	34	Heritage Todd Creek Metro Dist	47	Pecos Logistics Park Metro District
9	North Lincoln Water & Sanitation	22	Prairie Center Metro District No 1	35	Transport Metro District No 1	48	Berkley Shores Metro District
10	North Washington Water & Sanitation	23	Prairie Center Metro District No 2	36	Amber Creek Metro District	49	Quantum 56 Metropolitan District
11	Brighton Crossing Metro District #4	24	Wright Farms Metropolitan District	37	Aspen Hills Metro District	50	Eastern Adams County Metro Dist
12	Bromley Park Metropolitan District 3	25	Riverdale Peaks II Metro Dist	38	Aberdeen Metro District No 1		
13	Greatrock North Water & Sanitation	26	Riverdale Dunes Metro District 1	39	Aberdeen Metro District No 2		

Figure 11. Water Provider Service Territory Boundaries

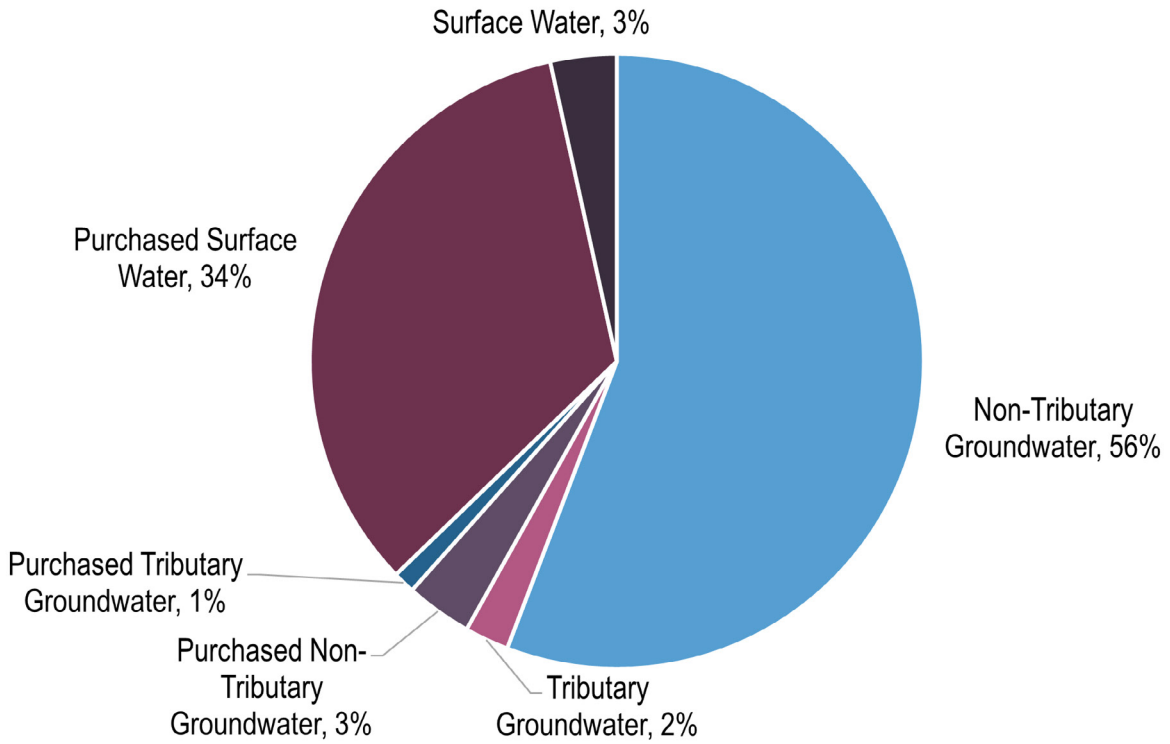


Figure 12. Breakdown of Water Provider Sources in Adams County

Despite the large number of water providers in Adams County, the largest 15 serve approximately 500,000 residents – roughly 94% of Adams County's total population, based on the State Demography Office's latest (2023) estimate of 533,500. Figure 13 summarizes the estimated number of Adams County residents served by each of these 15 providers.[1]

[1] *Note that values presented in Figure 13 are rounded and intended for planning-level purposes only; they do not represent precise service population counts.*

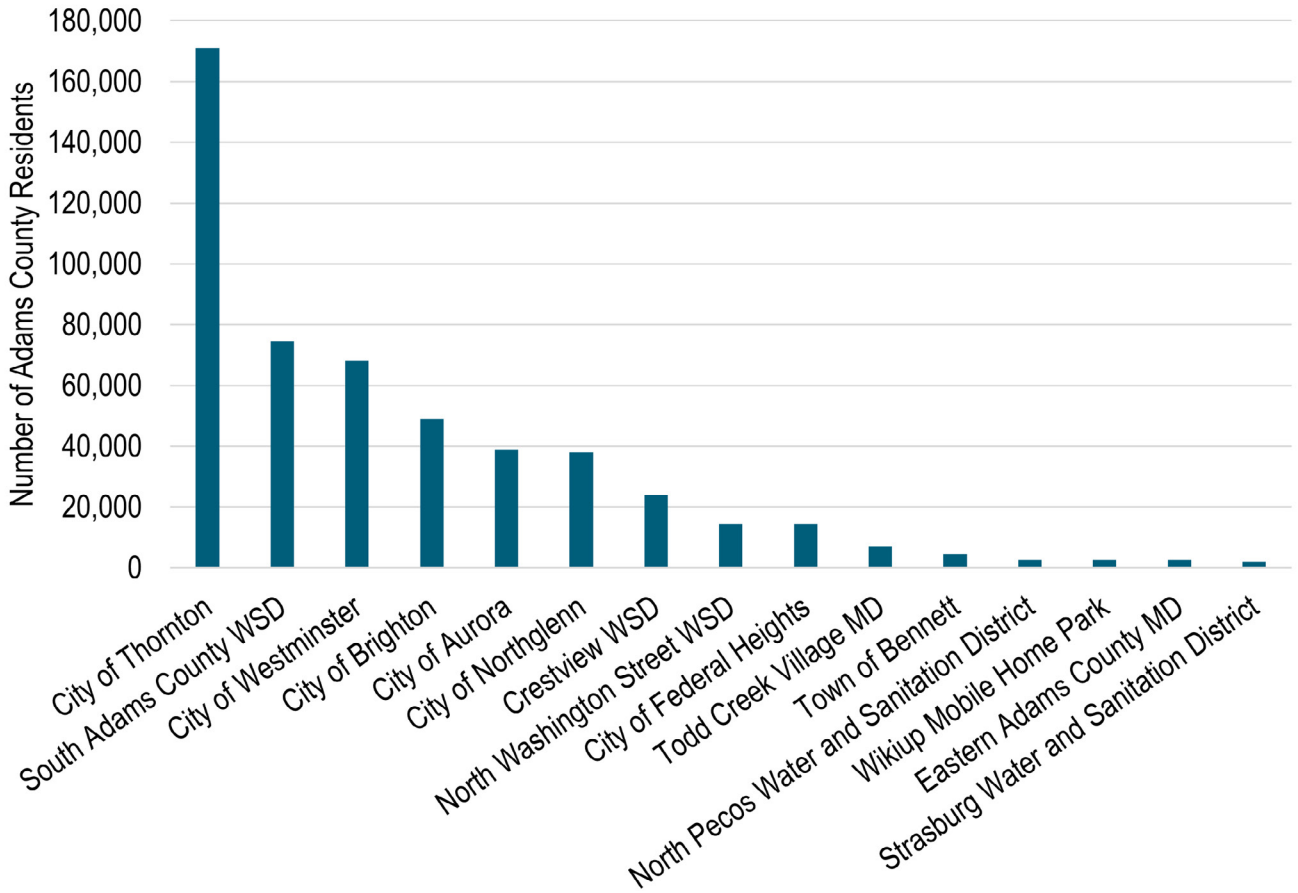


Figure 13. Estimate of Adams County Residents Served by the Largest 15 Water Providers, Spring 2025

Figure 14 estimates the number of Adams County residents served by each water source, based on the water supply profiles for the largest 15 providers.[2] While, most of Adams County's water providers rely primarily on groundwater sources, the majority of Adams County's population receives its water from surface water sources since some of Adams County's largest providers (e.g. Thornton, Westminster, and Northglenn) rely almost exclusively on surface water.

[2] *These estimates are likely to change over time, especially as Thornton's Water Project comes online which aims to transfer an average of 14,000 acre-feet per year from the Cache la Poudre River basin. Information was derived from a combination of sources including the Baseline Report, water provider survey responses, and the Colorado Water Conservation Board's 1051 Public Data Reports. The State's 1051 reports are compiled from provider-submitted data as required by House Bill 10-1051 to support coordinated water planning at both the regional and State levels.*

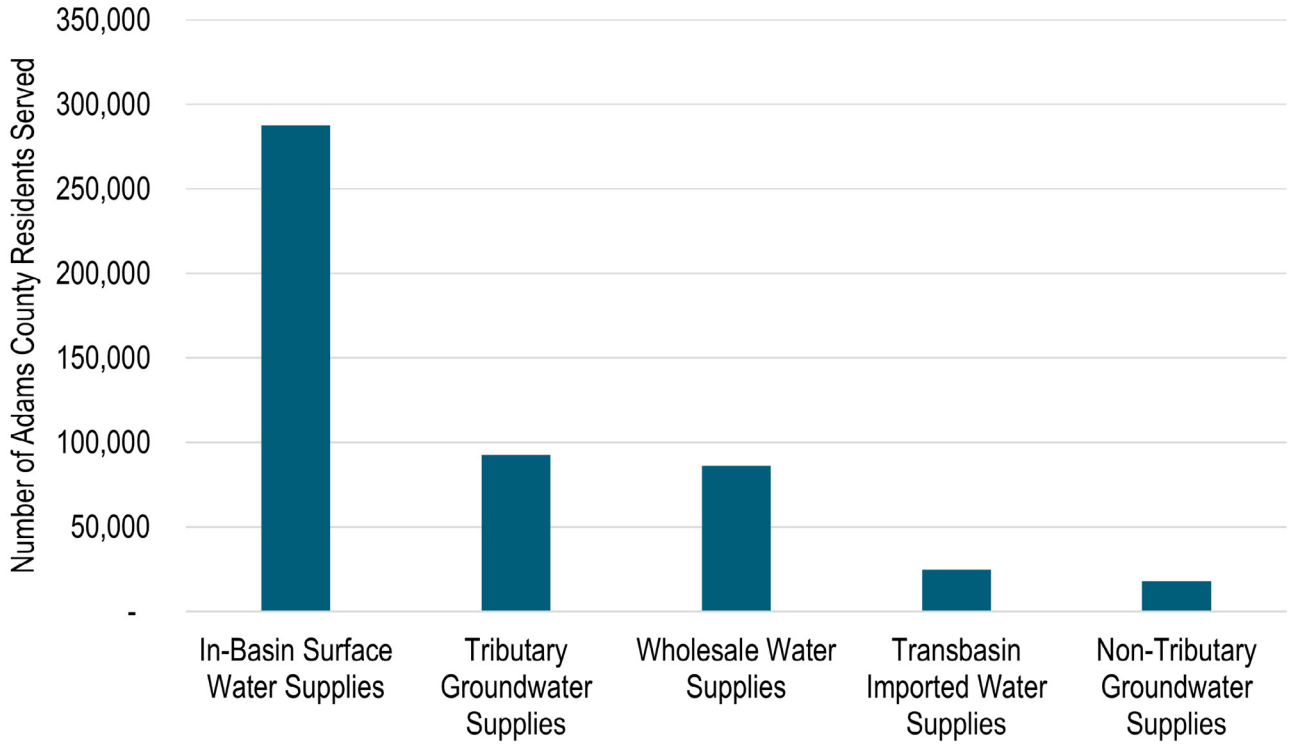


Figure 14. Estimate of Adams County Residents Served by Water Source Based on the Largest 15 Providers, Spring 2025



IRRIGATION AND DITCH COMPANIES

Ditch companies play a foundational role in the water supply landscape within Colorado. These entities, many of which were established in the late 19th and early 20th centuries, own and operate senior water rights and delivery infrastructure that convey surface water from rivers and streams to agricultural lands, municipalities, and industrial users. In Adams County, municipalities and water providers often lease or acquire shares in local ditch companies to secure reliable surface water supplies. Ditch companies also serve as the primary water source for many of the irrigated agricultural lands in Adams County, supporting both legacy farming operations and transitional land uses at the urban-agricultural interface.

As was indicated in the Baseline Report, the Colorado Decision Support System (CDSS) lists 56 individual irrigation and ditch companies for Adams County, about 50% of which are sourced from the South Platte River, with the remaining 50% sourced from a variety of gulches and creeks. A full list of these companies can be found in the Water Demand Analysis Appendix. A map of key ditch systems in Adams County, as defined by the Division of Water Resources and Colorado Water Conservation Board in the South Platte Decision Support System, is provided in Figure 6.





SELF-SUPPLIED USERS

In Adams County, self-supplied users are primarily rural subdivisions and individual properties that rely on privately held groundwater rights rather than municipal water systems. These users typically operate domestic wells permitted for household use and limited outdoor irrigation, drawing primarily from Denver Basin aquifers. Some subdivisions have adjudicated collective water rights, allowing them to share groundwater supplies among residents or to support community wells. These self-supplied systems are common in unincorporated areas where municipal infrastructure is limited.

Figure 15 shows the distribution of groundwater wells permitted for domestic use within areas of Adams County that are not served by a municipal or special district water provider. While this dataset likely does not capture every self-supplied user in Adams County, it provides a representative overview of where such users are concentrated and the approximate scale of self-supplied groundwater use. In total, approximately 330 domestic wells were identified.

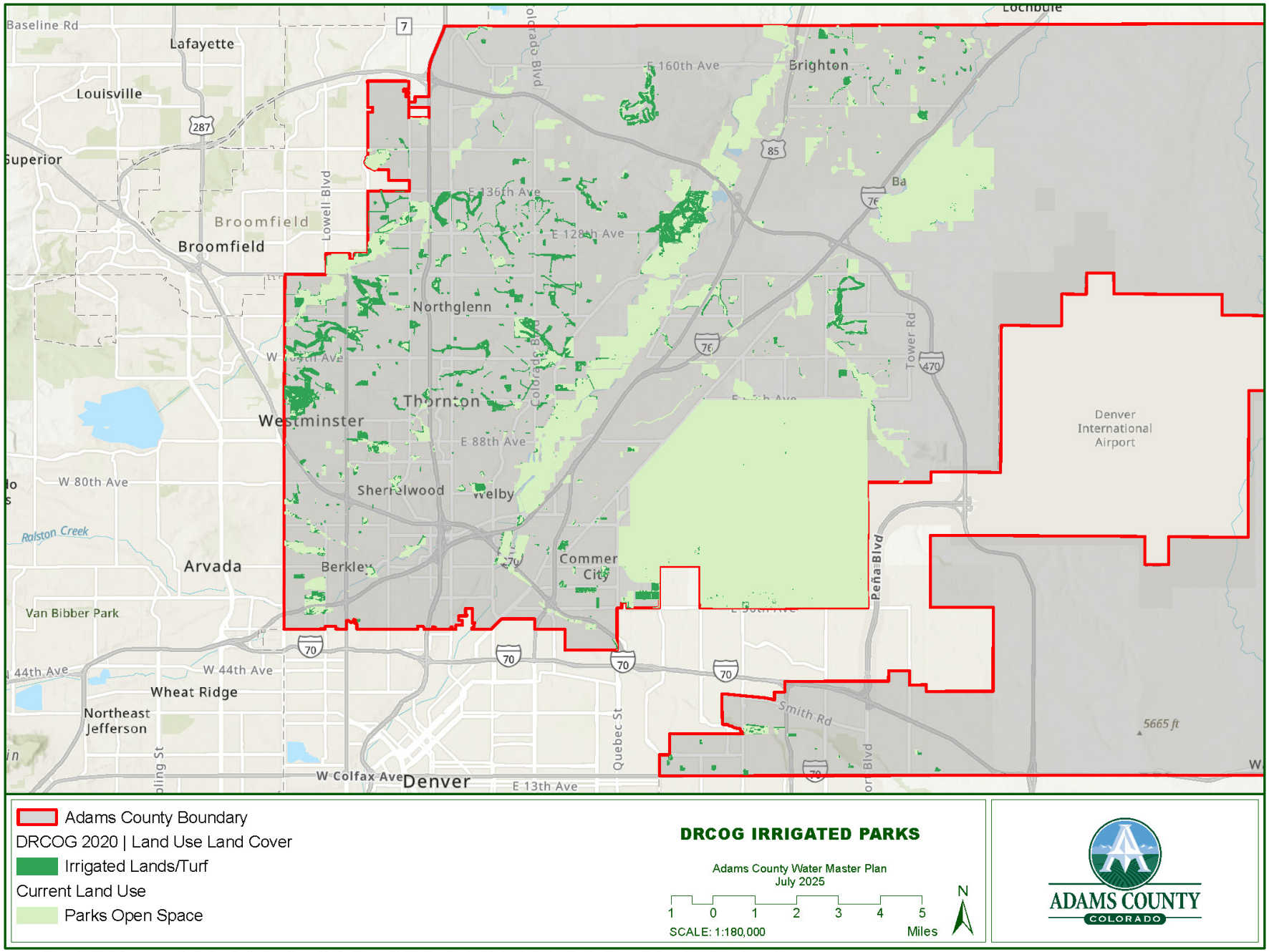


Figure 15. Adams County Self-Supplied Users



Chapter 3

WATER DEMANDS

Chapter Contents

3.1 Regional Framework

3.2 Current Land Use in Adams County

3.3 Baseline Water Demands

3.4 Future Land Use and Growth Assumptions

3.5 Future Demand Projections

Adams County's water demand profile reflects a diverse mix of agricultural, domestic, non-residential, and landscape water uses, each shaped by regional land use patterns and growth trajectories. Agricultural demand continues to play a significant role, particularly in Adams County's eastern areas, while domestic and non-residential demands are concentrated in urban centers and areas targeted for future development. Adams County's evolving land use, population growth, and changing climate all contribute to increasing water demands, which in turn puts pressure on water resources, necessitating careful planning to ensure future demands are met (see Advancing Adams and the Water Master Plan).

A demand analysis was completed to estimate current and forecasted water needs through 2040. Spatial data, demographic trends, and water use benchmarks were collected to produce demand projections for regions of Adams County using both a land-use based approach and a StateCU analysis to estimate agricultural demands. These projections also account for potential impacts of climate change and conservation measures, providing a range of scenarios to inform long-term water resource planning.

Chapter 3: Key Takeaways

Baseline demands total approximately 105,000 acre-feet/year countywide.

Domestic and non-residential uses account for 69% and 31% of baseline water demands.

Demands in incorporated areas are driven primarily by municipal and industrial uses, whereas demands in unincorporated areas are driven primarily by agriculture.

Looking to 2040, water demands are projected to increase significantly in the areas of Adams County that are expected to undergo annexation and development or redevelopment, while the rest of unincorporated Adams County may experience stagnant or slightly declining demands over time due to reductions in irrigated agricultural land

Projected 2040 water demands in unincorporated Adams County range between 16,000-26,000 acre-feet/year depending on growth, and the degree to which water conservation and climate change drive demands over the next 15 years.

3.1 REGIONAL FRAMEWORK

Adams County was divided into four regions, to establish a more meaningful framework for presenting water demand, and ultimately water availability, information (Figure 16). Specifically, the four regions include:

- **Incorporated:** Currently incorporated cities and towns as of 2025. This region represents areas served by water providers where Adams County has limited control over water supply planning, zoning, and land use policy.
- **Annexing:** Currently unincorporated areas that will likely annex into a city or town by 2040. Characterizing supplies and demands for these areas helps Adams County and municipalities better plan for this transition. These areas were identified based on municipal planning area and growth management area boundaries and one-on-one meetings with each of the 10 respective municipalities (Federal Heights, Northglenn, Arvada, Lochbuie, Brighton, Bennett, Aurora, Westminster, Commerce City, and Thornton).
- **Unincorporated:** Areas outside of cities and towns that are unlikely to annex by 2040 and/or are more rural or undeveloped. This region represents areas where Adams County has land use authority and the ability to regulate future growth through its zoning and development codes. This region is intended to help Adams County understand whether available supplies can sustain current and future levels of population and water demand.
- **Intensifying:** Unincorporated areas that are expected to develop/intensify by 2040 but are unlikely to annex. This helps Adams County understand whether available supplies can support planned intensification in these areas. These areas were identified based on Adams County's planning staff input and review of subarea plans.

Adams County has the most influence over unincorporated areas, where Adams County development regulations apply. As a result, the analysis focuses on unincorporated areas and areas that may change from unincorporated to incorporated by 2040, in alignment with Advancing Adams plans and local jurisdiction comprehensive plans.

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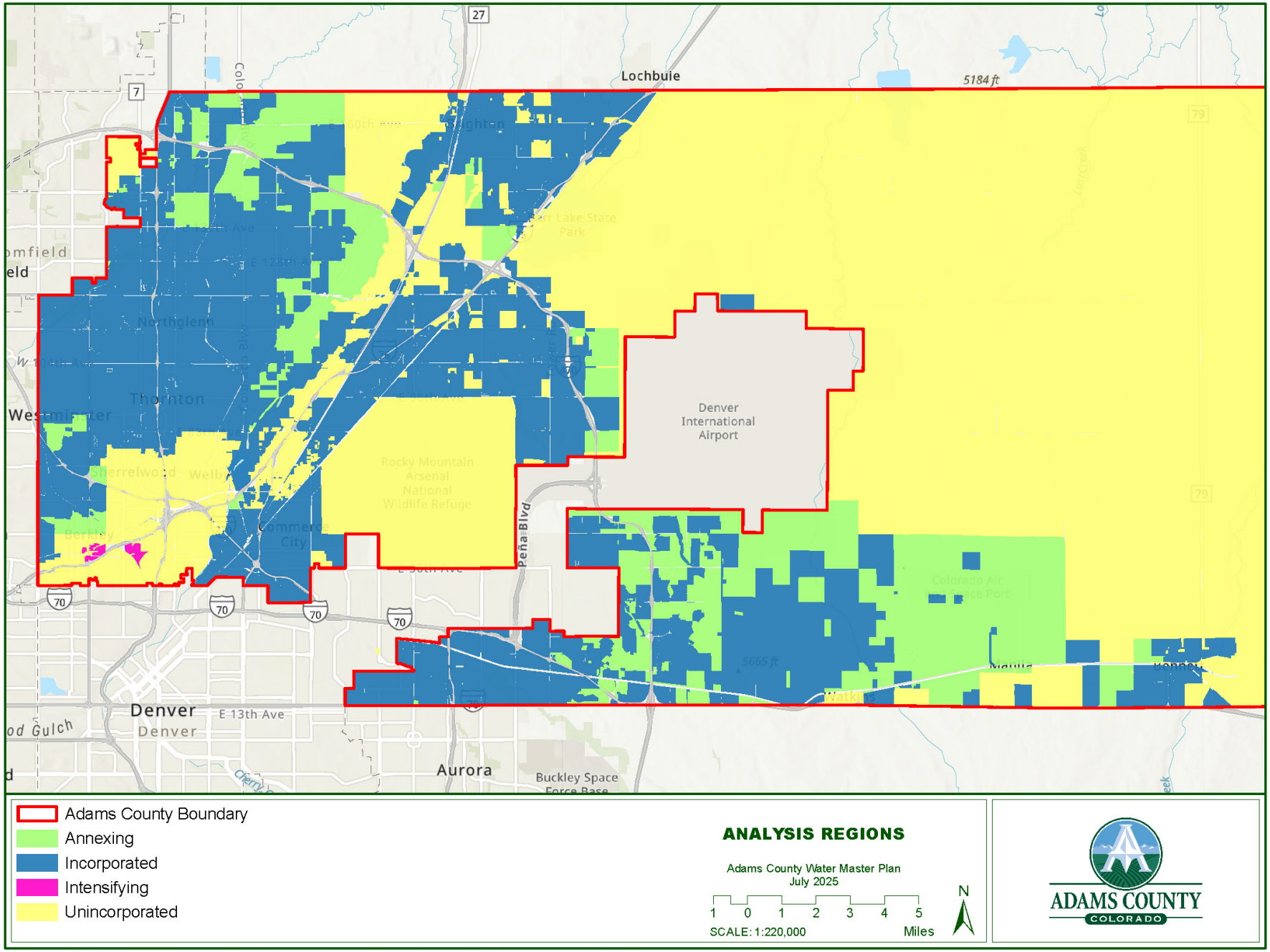


Figure 16. Water Demand Analysis Regions

3.2 CURRENT LAND USE IN ADAMS COUNTY

Based on 2025 Adams County Assessor data, current land use in Adams County reflects a broad mix of urban, suburban, rural, and agricultural uses, influenced by proximity to the Denver metropolitan area and historical patterns of settlement and development (Figure 17).

Municipalities and urban centers along the western side of Adams County — such as Westminster, Thornton, and Commerce City — contain high concentrations of residential, commercial, and industrial uses supported by established infrastructure and services.

Moving eastward, land use transitions into lower-density residential development interspersed with agricultural operations and large-lot rural housing. Agricultural lands, particularly in eastern Adams County, include irrigated croplands, pasture, and open fields, many of which are zoned for large-scale agricultural use that is unlikely to be developed. In 2022, according to the USDA's Census of Agriculture, Adams County had 877 farms, totaling roughly 638,000 acres, of which 74% were used to produce crops, and the remaining 26% to produce livestock, poultry, and other products. The estimated market value of agricultural products sold in 2022 totaled $94.4M, making it the 18th most agriculturally profitable county out of the 64 total counties in Colorado. The vast majority of this farmland operates under dryland farming—an agricultural practice that relies on natural rainfall rather than irrigation in semi-arid regions. The Colorado Water Conservation Board's CDSS database reported just over 20,000 acres of irrigated farmland in 2020, suggesting that roughly 97% of the County's cropland is either dryland farmed or otherwise not actively irrigated.

Adams County also includes significant open space and recreational land, along with transportation corridors and public facilities, which shape overall land use distribution and influence water demand. Figure 18 summarizes the various land use types present in Adams County (by acreage and region), as identified in the analysis of Adams County's 2025 Assessor data. The data suggest that 91% of Adams County is comprised of agricultural (77%) and low-density residential (14%) land uses.3 For more details on the land use analysis, see the Water Demand Analysis Appendix.

[3] *The analysis approach leveraged parcel level property assessment and building type characteristics to determine the current land use. Because there is no mixed-use property assessment category, nor a mixed-use building type, current land use was characterized as mixed-use only when there was a combination of commercial and residential characteristics described for a given parcel.*

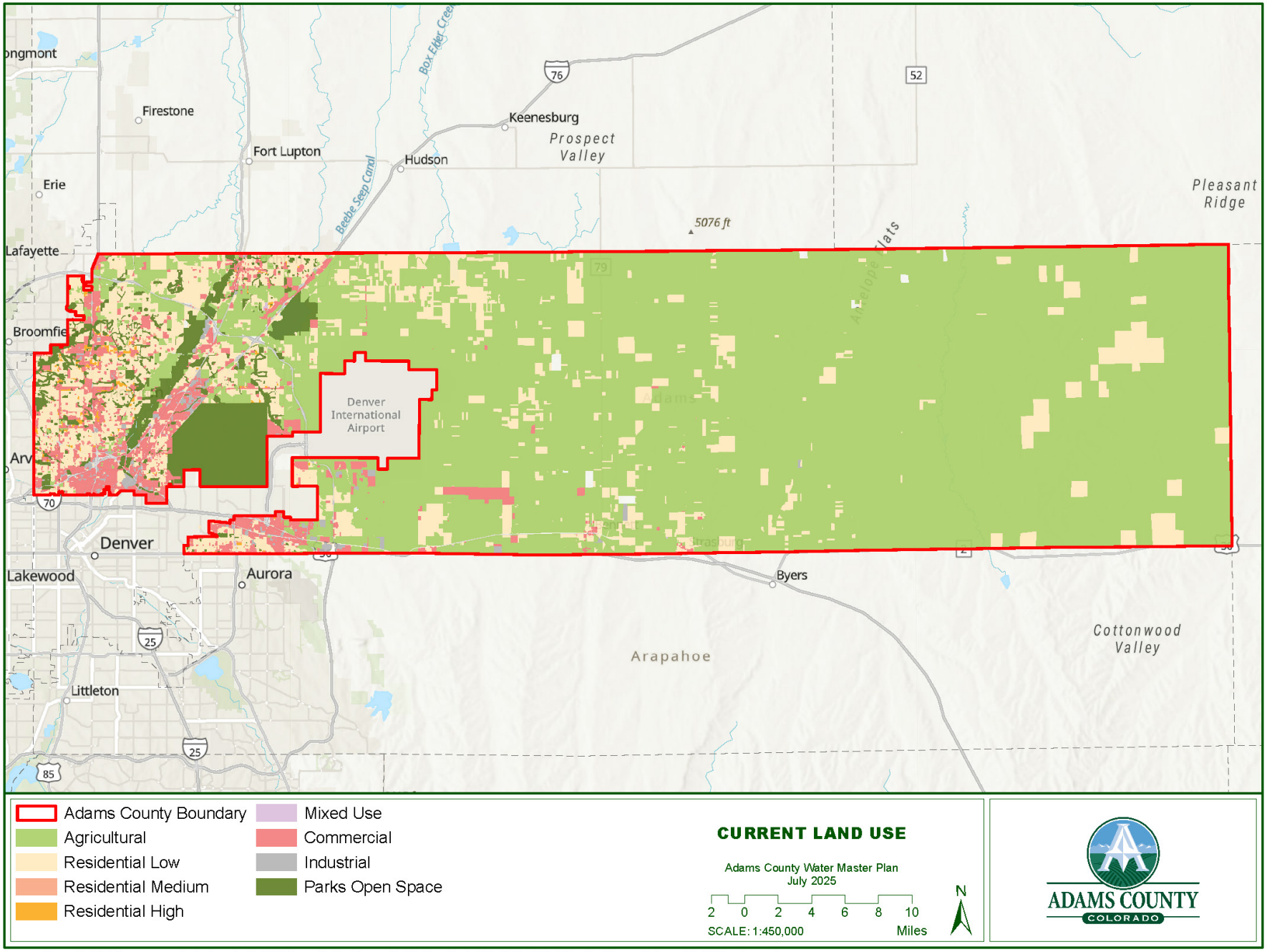


Figure 17. Adams County Current Land Use Map

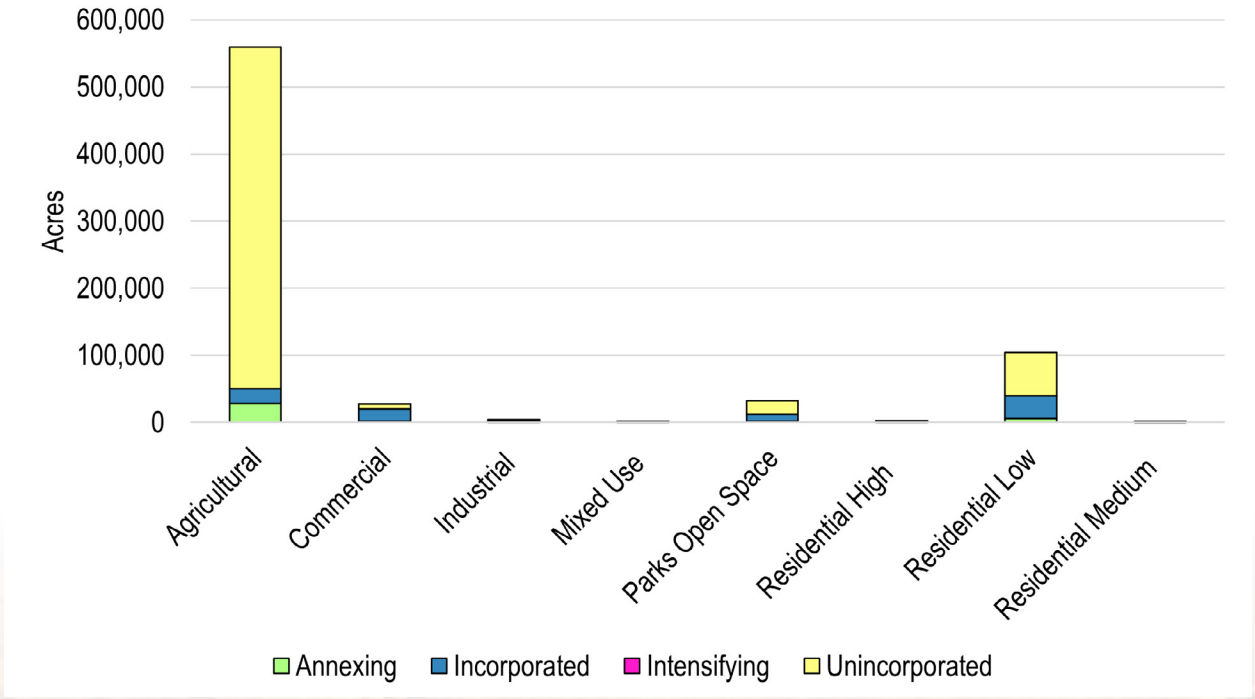


Figure 18. Current Land Use Composition by Region

3.3 BASELINE WATER DEMANDS

The following section outlines the approach used to estimate baseline water demands. Agricultural demands were calculated using a StateCU model, while domestic and non-residential demands were estimated using local land use data, building characteristics, and water provider benchmarks (see Current Land Use in Adams County). **Baseline demands total approximately 104,700 acre-feet/year Countywide, with domestic and non-residential uses accounting for 72,050 acre-feet/year and agriculture contributing 32,650 acre-feet/year.**

BASELINE AGRICULTURAL WATER DEMANDS

Baseline agricultural water demands were modeled using the StateCU tool developed by the Colorado Division of Water Resources and the Colorado Water Conservation Board. StateCU is widely used to estimate consumptive use by incorporating data on historical diversions, climate conditions, crop types, and irrigation system characteristics. Using this tool, a baseline scenario was modeled for the period 2018–2023, indicating an **average agricultural water demand of 32,650 acre-feet/year across Adams County**. **Most of this demand is concentrated in unincorporated areas, where irrigated agriculture remains most prevalent (Table 7).** Importantly, when comparing land use and water demand data, not all areas zones for agricultural use will be actively irrigated, resulting in differences between total area zoned for agricultural uses compared to total irrigated area included in the analysis (e.g., ~550,000 acres in Figure 18 vs. ~21,000 acres in Table 7). A detailed description of the StateCU model methodology is provided in the Water Demand Analysis Appendix.

Consumptive Use

Consumptive use refers to the portion of water that is diverted from a source and not returned to the original system because it is consumed through processes such as evaporation, plant uptake (transpiration), incorporation into products, or human use. In water rights and resource planning, consumptive use is critical because it represents water that is permanently removed from the stream or aquifer and is unavailable for reuse by downstream users.

Table 7. Baseline StateCU Model Results

Category	Baseline Irrigated Area (acres)	Baseline Consumptive Use (acre-feet/year)
Incorporated	2,400	4,130
Unincorporated	16,720	25,750
Annexing	1,610	2,770
Total	**20,730**	**32,650**

BASELINE DOMESTIC AND NON-RESIDENTIAL

Domestic and non-residential water demands include residential, non-residential (e.g., commercial, industrial, and institutional — or CII), and outdoor irrigation for parks, rights-of-way, and other landscaped areas. A land use-based modeling approach served as the basis to estimate municipal and industrial water demands, assigning unit water demand estimates (e.g., acre-feet per structure or per acre) to each land use category based on a combination of local data sources and studies. A detailed summary of the modeling methodology is provided in the Water Demand Analysis Appendix.

Table 8 summarizes the baseline domestic and non-residential water demand results alongside the agricultural demands presented in the Baseline Agricultural Water Demands section. These results are further summarized by water use type in Figure 19, and mapped spatially in Figure 20.

Table 8. Baseline Domestic and Non-Residential Demand Results

Region	Domestic and Non-residential Demands		Agricultural Demand (acre-feet/year)		Total Demand (acre-feet/year)
	acre-feet/year	Percent of total	acre-feet/year	Percent of total	
Incorporated	55,790	53%	4,130	4%	59,920
Unincorporated	12,680	12%	25,750	25%	38,430
Intensifying	10	<1%	0	<1%	10
Annexing	3,570	3%	2,770	3%	6,340
TOTAL	**72,050**	**69%**	**32,650**	**31%**	**104,700**



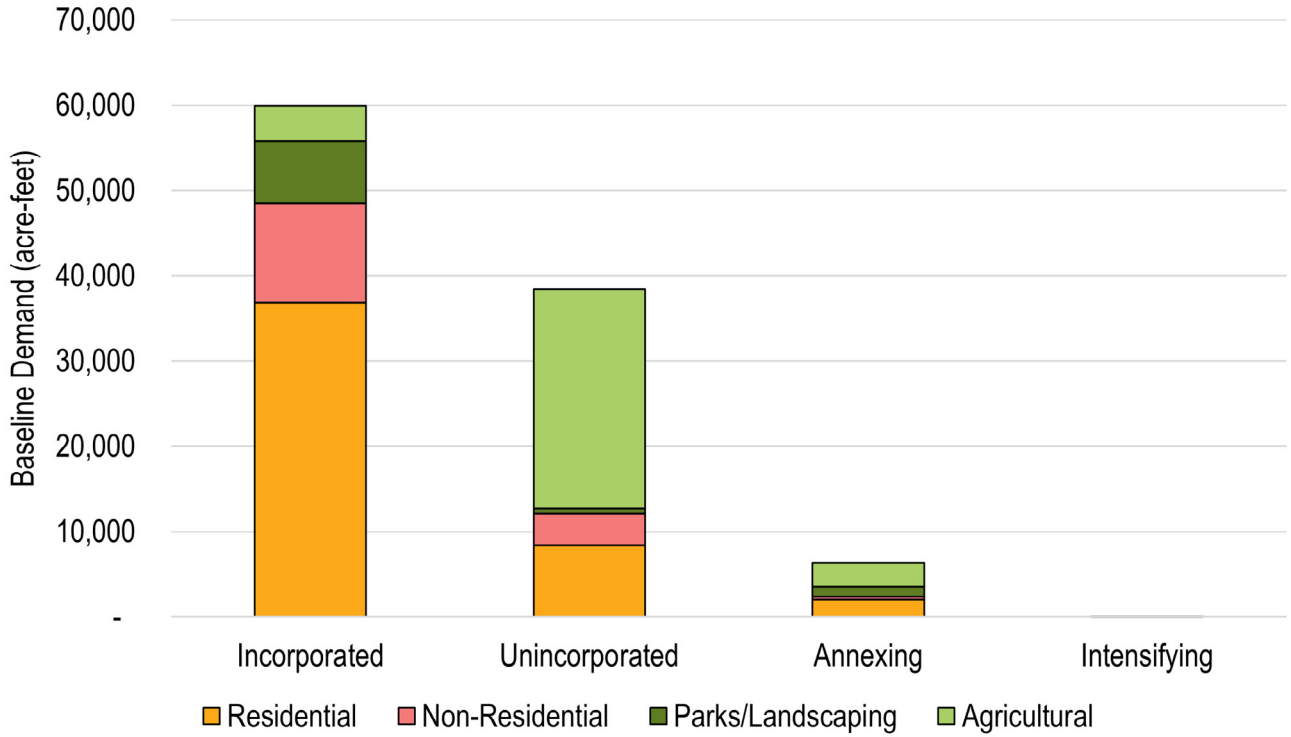


Figure 19. Baseline Water Demand by Region and Water Use Type

BASELINE DEMAND ESTIMATES

Baseline water demand in Adams County total approximately 104,700 acre-feet/year, with the majority (57%) originating from incorporated areas. Demands in incorporated areas are driven primarily by domestic and non-residential uses (62% residential, 19% non-residential, and 12% parks/landscaping) whereas demands in unincorporated areas are driven primarily by agriculture (67%) followed by residential (22%). Given that water demand in unincorporated Adams County is driven by irrigated agriculture, land use decisions should consider the value of agriculture against the desire to accommodate growth.



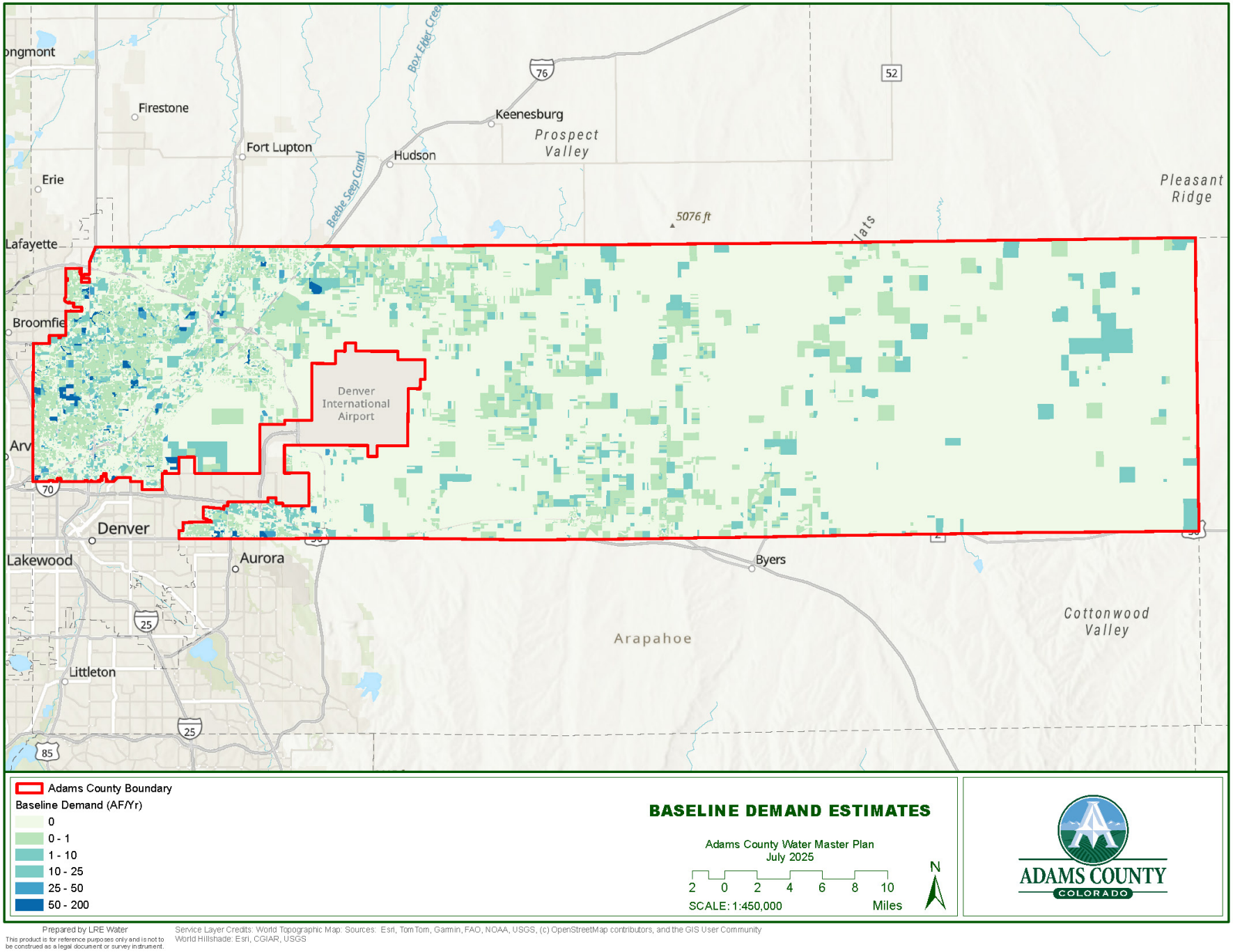


Figure 20. Baseline Demand Estimates

3.4 FUTURE LAND USE AND GROWTH ASSUMPTIONS

To estimate future water demands, the consulting team integrated the Advancing Adams Future Land Use Map (FLUM) with future land use maps from municipalities in Adams County (where available) and established standard future land use categories. Next, the consulting team conducted sub-area plan reviews and held conversations with municipal planners to identify parcels likely to annex by 2040.

This consolidated Future Land Use Map closely aligns with the Advancing Adams "Scenario B" which accommodates growth through many small mixed-use "town centers" throughout Adams County in areas along transit lines and where community services already exist today (Figure 21). Town centers support a blend of commercial, retail, light industrial, office space, and higher density residential development such as condos or apartment complexes. As such, Adams County will likely experience growth and development concentrated in municipal planning areas, around where community services already exist or can easily be extended. Much of this development will be residential, commercial or industrial uses at varying intensities. Additionally, **Adams County is likely to see conversion of agricultural land to other uses, especially near municipalities.**



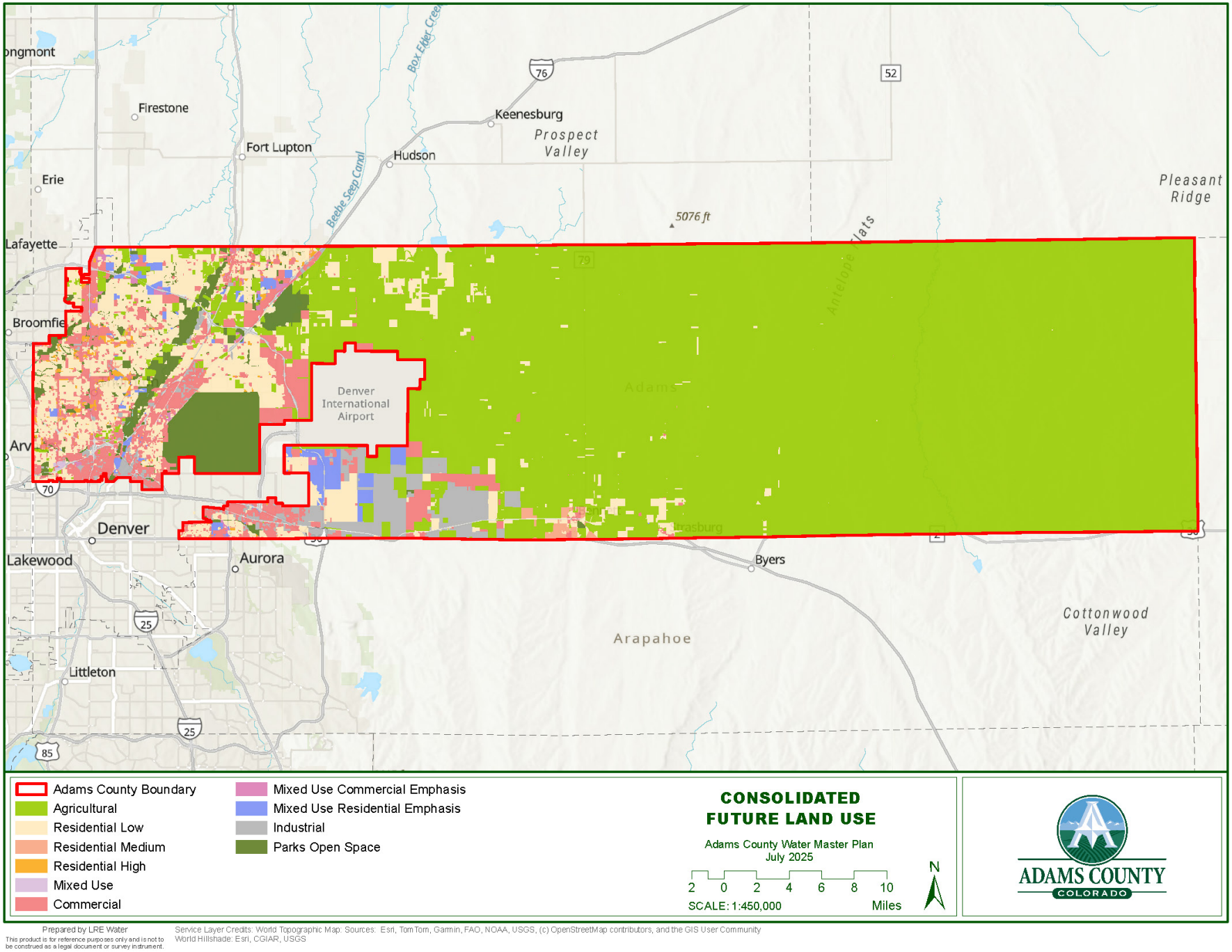


Figure 21. Adams County Consolidated Future Land Use Map

Figure 22 presents a comparison of current and future land use by region and suggests a reduction in agricultural land uses across annexing and incorporated areas and an increase in mixed land uses in intensifying portions of unincorporated Adams County. It should be noted that mixed use lands were not characterized explicitly in the baseline analysis but are included under the commercial and residential categories.

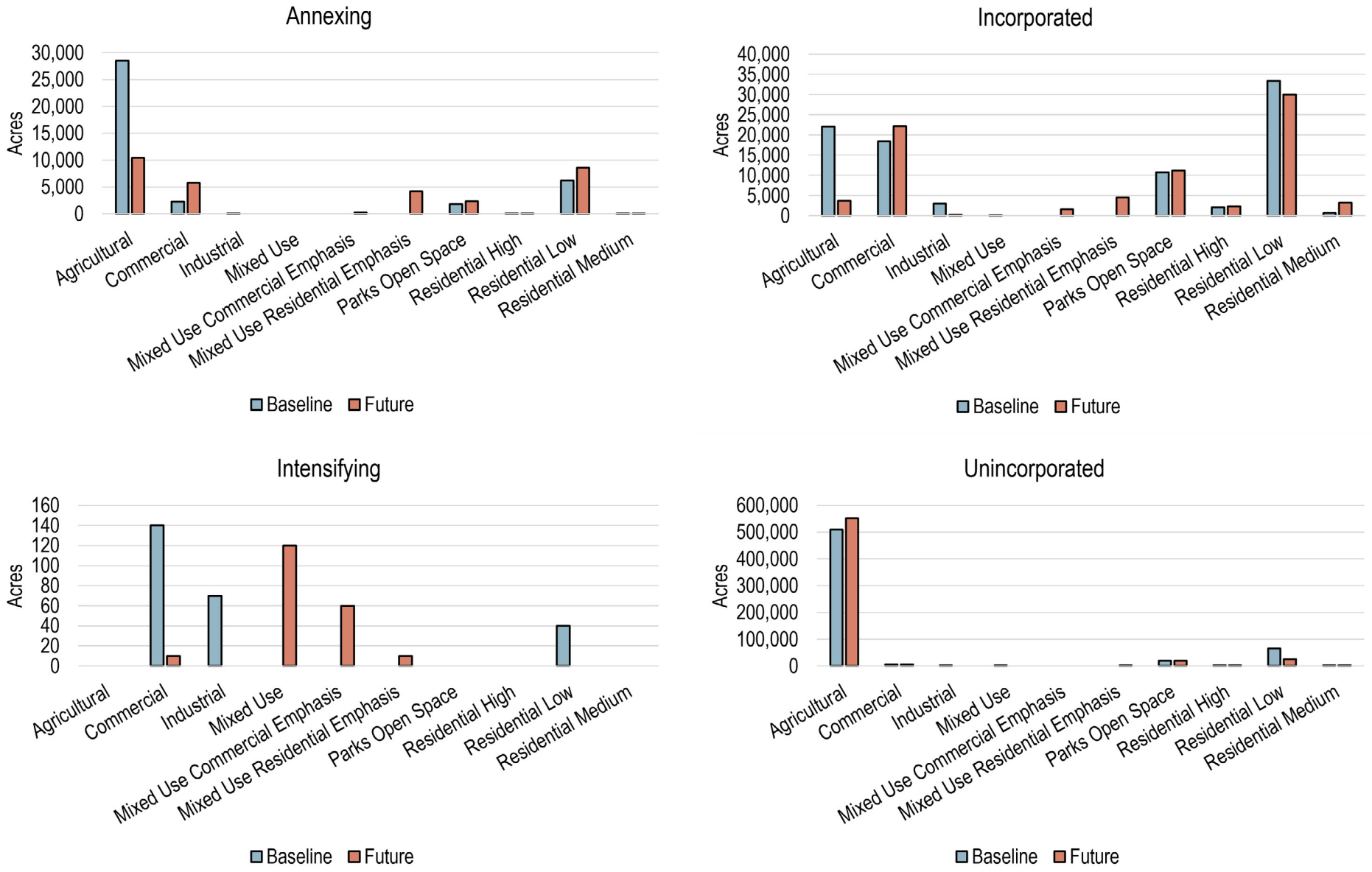


Figure 22. Comparison of Baseline and Future Land Use by Region

3.5 FUTURE DEMAND PROJECTIONS

A land-use approach was applied to estimate future water demands across Adams County, similar to what is described in the Baseline Water Demands section, with adjustments made to reflect unique sectoral trends based on the findings described in the Future Land Use and Growth Assumptions section. This included taking a modified approach for estimating agricultural demand that accounted for historical land use conversion and the fact that certain agricultural areas are more susceptible to development pressure. Additionally, for the residential and non-residential sectors, analysis focused on "areas of change", or portions of unincorporated Adams County anticipated to undergo development or intensification within the 15-year planning horizon (e.g., "Intensifying" region). A detailed summary of the modeling methodology is provided in the Water Demand Analysis Appendix.



FUTURE AGRICULTURAL WATER DEMANDS

Continued development across the Front Range, coupled with increasing scarcity of new water supplies, places pressure on irrigated agricultural land within Adams County. This pressure leads to land and water rights being transferred from agricultural to municipal uses; the transfer of agricultural water is commonly referred to as "buy and dry." According to the Baseline Report, the percentage of irrigated lands in Adams County decreased by 52% between 1987 and 2020. Recent trends between 2015 and 2020 suggest as much as a 20% decline in irrigated lands. Much of this change has occurred on the west side of Adams County, where urbanized areas and municipalities are located.

For the analysis of future agricultural demands, active farmland was first characterized as "stable" or "strained" (Figure 23). The project team designated all acreage within the Adams County's "A-3" zone district as "stable" as this zone district supports large-lot agriculture and is predominantly located in eastern Adams County where development pressures are lower. Agricultural areas designated as stable were assumed to maintain their baseline consumptive use. In contrast, farmland in all other land use categories were classified as "strained," reflecting greater susceptibility to development pressures due to redevelopment potential and proximity to growth corridors (e.g., "buy and dry"). Based on historical land use conversion trends, **strained areas are projected to experience a 40% reduction in irrigated acreage by 2040.** This **reduction is expected to result in a total decrease of about 2,600 acres of irrigated land** and a corresponding **decrease in consumptive use of about 4,300 acre-feet/year** (Table 9). While this reflects a decrease in demand for the agricultural sector, in practice, such reductions in agricultural use often coincide with increased domestic and non-residential demands reflecting the transition of farmland to urban uses.

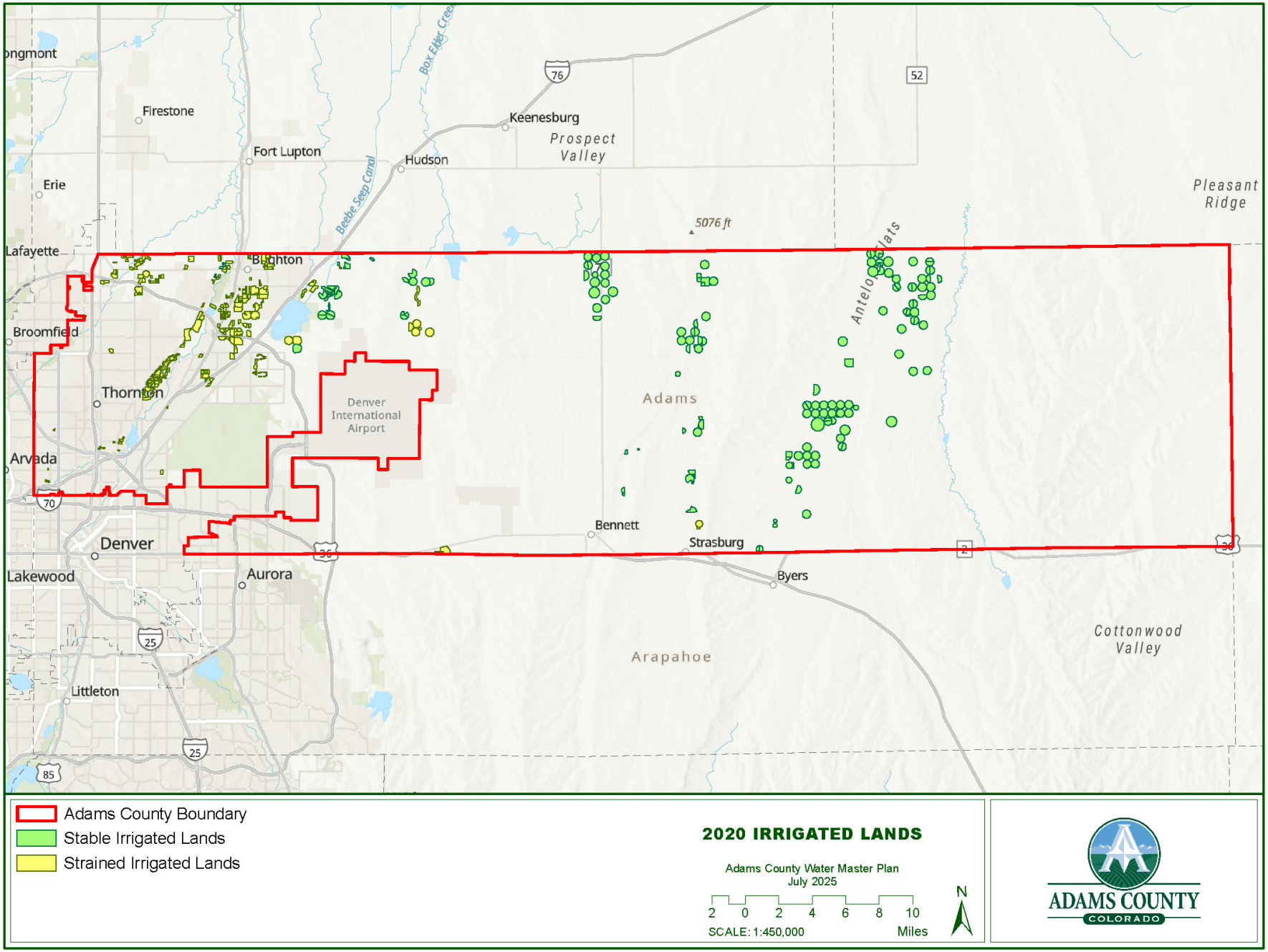


Figure 23. Adams County 2020 Irrigated Lands

Table 9. Future StateCU Model Results

		Baseline Irrigated Area (acres)	Future Irrigated Area (acres)	Percent Change	Baseline CU (acre-feet/year)	Future CU (acre-feet/year)	Percent Change
Stable	**Annexing**	0	0	0%	0	0	0%
	Incorporated	0	0	0%	0	0	0%
	Unincorporated	14,280	14,280	0%	21,990	21,990	0%
	Total	**14,280**	**14,280**	**0%**	**21,990**	**21,990**	**0%**
Strained	**Annexing**	1,610	970	-40%	2,770	1,660	-40%
	Incorporated	2,400	1,440	-40%	4,130	2,480	-40%
	Unincorporated	2,440	1,460	-40%	3,760	2,260	-40%
	Total	**6,450**	**3,870**	**-40%**	**10,660**	**6,400**	**-40%**
	TOTAL	**20,730**	**18,150**	**-12%**	**32,650**	**28,390**	**-13%**

FUTURE DOMESTIC AND NON-RESIDENTIAL WATER DEMANDS

The 2040 domestic and non-residential demand projections were developed using a similar land use-based approach to the baseline analysis with a focus on unincorporated areas expected to experience change within annexing and intensifying regions (Figure 24). The analysis assumes major water providers already account for future water demands in their long-term planning. Thus, incorporated areas were not included as part of this analysis.

To identify areas of change, vacant parcels identified as suitable for development were assigned future land uses based on Adams County's Consolidated Future Land Use Map (see discussion in Future Land Use and Growth Assumptions). Figure 24 shows the areas of change used in the analysis and Figure 25 provides total acreages for these areas by land use type.



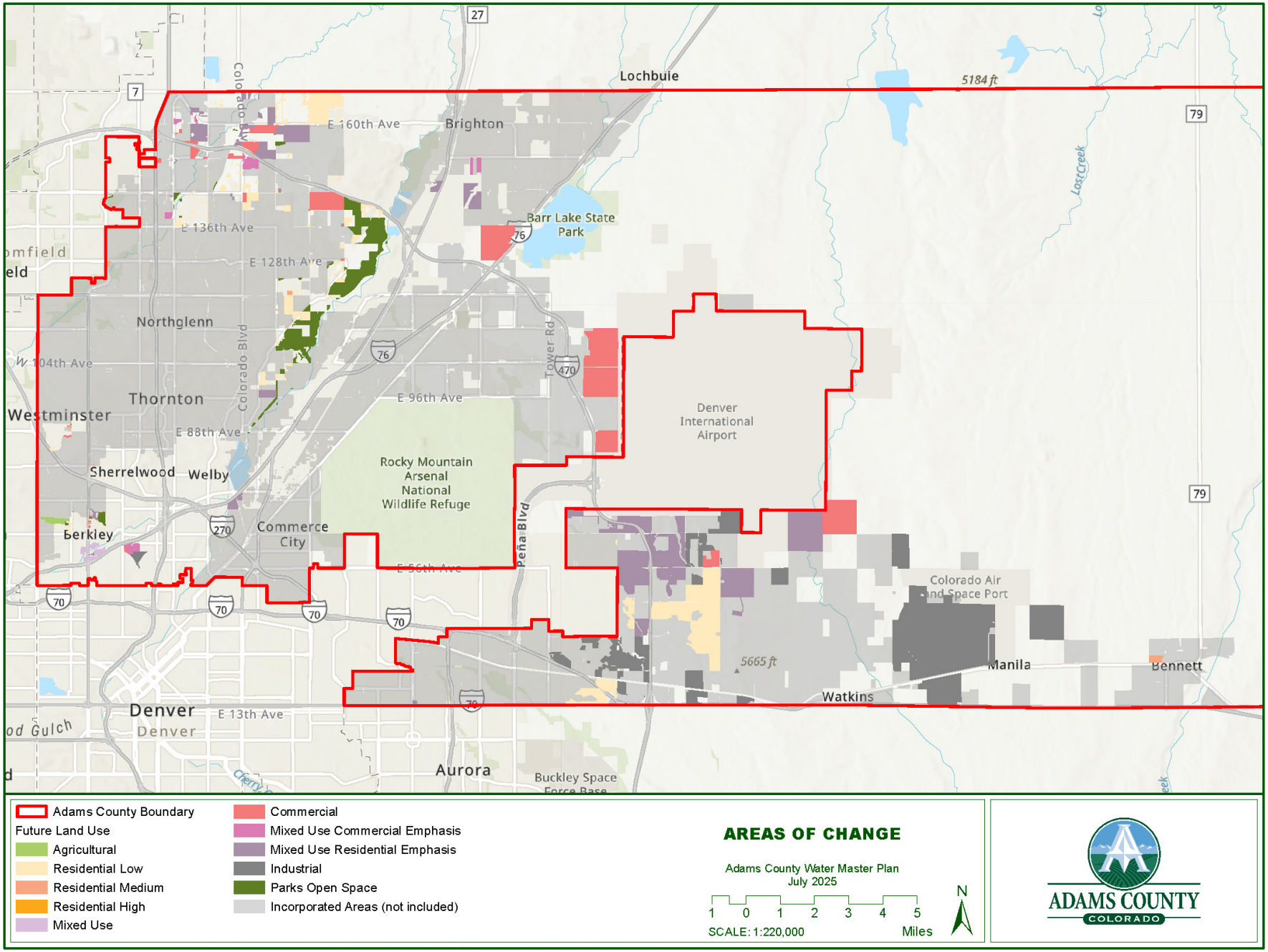


Figure 24. Areas of Change

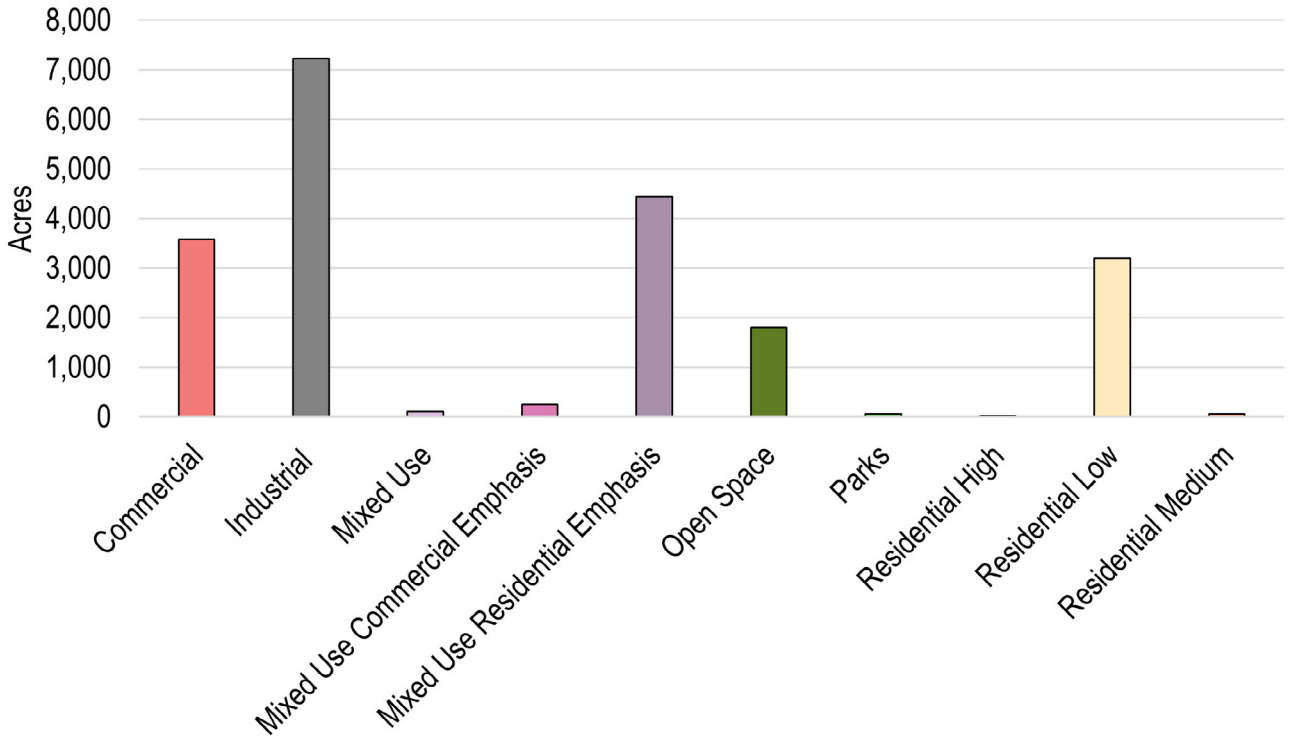


Figure 25. Areas of Change Summarized by Future Land Use Type

To reflect the inherent uncertainty in estimating future demands, two growth scenarios were modeled. One reflects **expected growth** based on Adams County's Consolidated Future Land Use Map and feedback gathered during conversations with municipal planning staff, while the second reflects a **slow growth** trajectory or 70% of the growth expected to occur by 2040. These scenarios were chosen based on feedback that they are the two most likely scenarios for Adams County, from a population growth perspective. Additionally, each future water demand scenario was further adjusted for climate change and water conservation using the assumptions outlined in Table 10. These adjustments reflect potential future conditions under moderate climate stress and active conservation practices based on information in Colorado's Water Plan. A detailed summary of the modeling methodology is provided in the Water Demand Analysis Appendix.

Table 10. Future Domestic and Non-Residential Demand Assumptions

Water Demand Scenario	Growth Assumption	Climate Change Assumption	Water Conservation Assumption
Expected Growth	Areas of change fully built out by 2040	No change	No change
Slow Growth	Areas of change 70% built out by 2040	No change	No change
Expected Growth under Climate Change	Areas of change fully built out by 2040	15% increase in demand	No change
Slow Growth Under Climate Change	Areas of change 70% built out by 2040	15% increase in demand	No change
Expected Growth with Water Conservation	Areas of change fully built out by 2040	No change	15% decrease in demand
Slow Growth with Water Conservation	Areas of change 70% built out by 2040	No change	15% decrease in demand



Projected new water demands for areas of change in unincorporated Adams County range between 16,000-26,000 acre-feet/year depending on growth, and the degree to which water conservation and climate change drive demands over the next 15 years. The largest increases in demand are driven primarily by new commercial, industrial, and mixed-use (MU) development. **Notable areas include continued commercial and industrial growth along the Interstate 70 corridor in Aurora's planning area, continued residential and commercial development along the E-470 corridor in Commerce City's planning area, and continued buildout within Thornton's growth boundary.**

Table 12 provides a comparison of baseline and total future demand projections for the Expected Growth scenario. As expected, water demands are projected to increase significantly in areas of Adams County expected to undergo annexation (a threefold increase) and intensification (a forty-three-fold increase) (Figure 26). In contrast, the rest of unincorporated Adams County may experience stagnant or slightly declining demands over time due to reductions in irrigated agricultural land.

For all demands presented in this section, actual results may be higher or lower depending on factors like actual development patterns and weather conditions. While the water demand scenarios presented in the Future Demand Projections section try to account for some of this variability, in all cases demands will be higher if Adams County develops at a faster rate than projected or the weather is hotter or dryer than expected. In contrast, if Adams County develops slower than expected, water conservation has a greater impact than expected, or weather patterns decrease irrigation needs water demands may be lower.



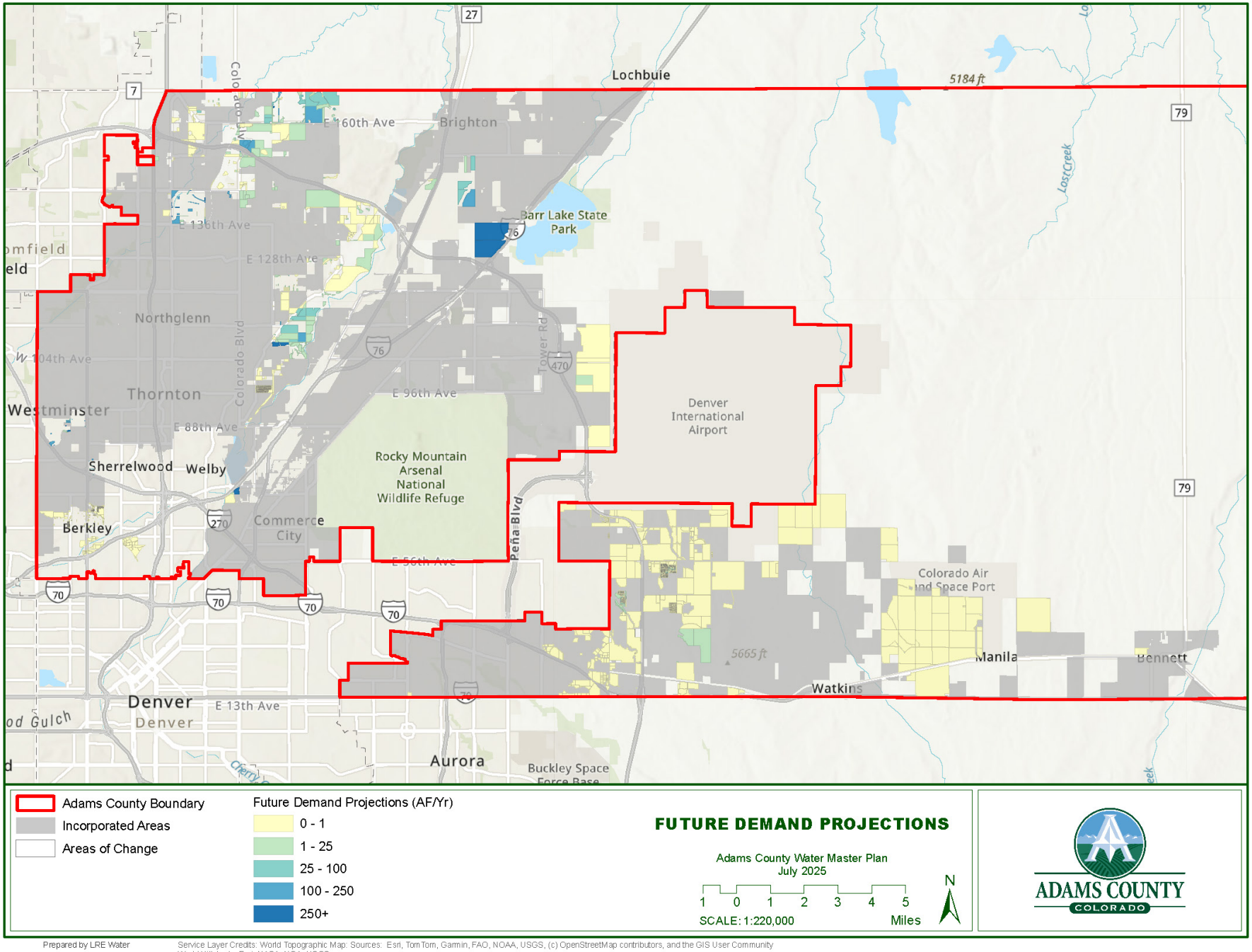


Figure 26. Future Demand Projections

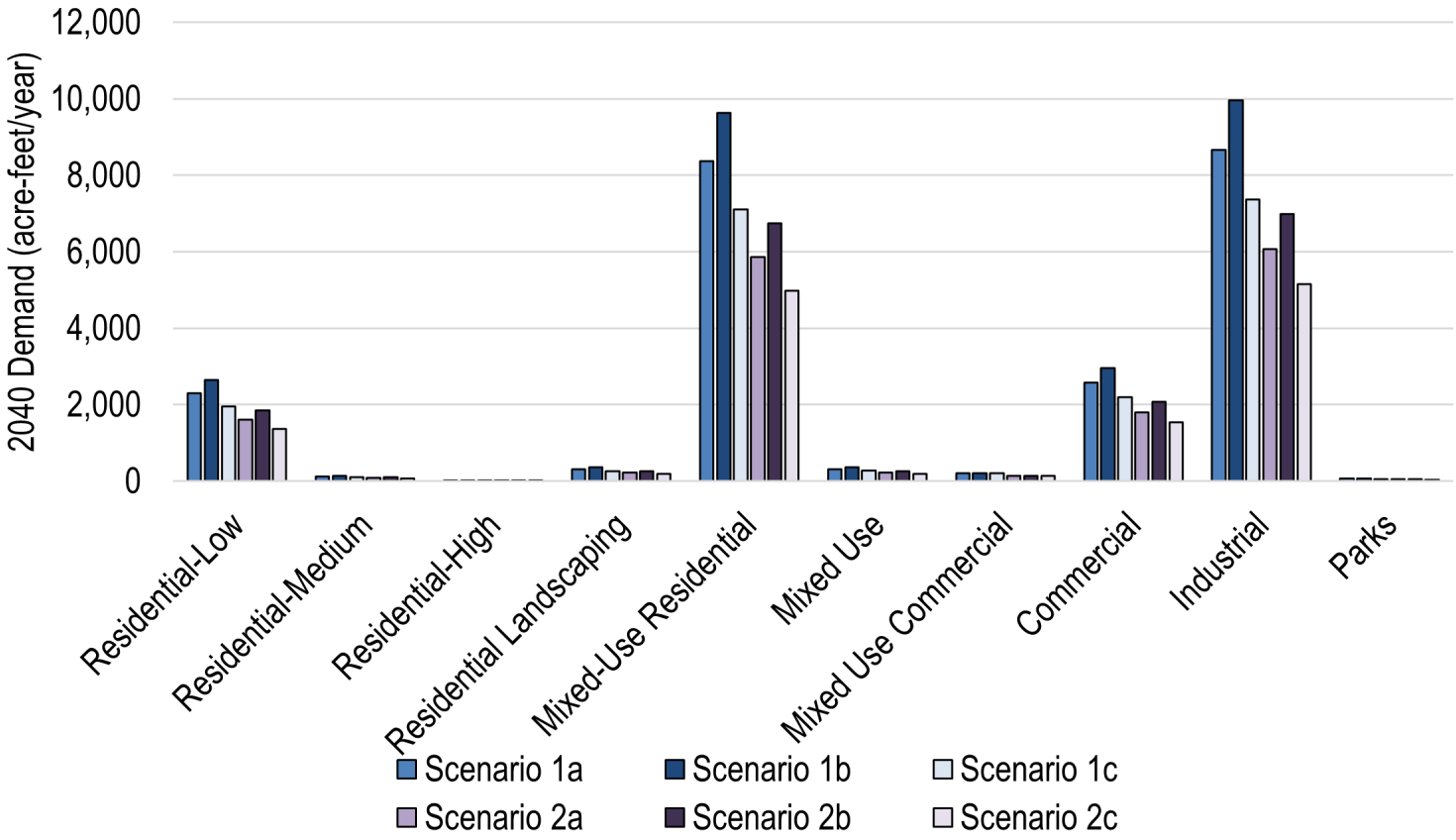


Figure 27. Scenario Water Demand Projections for Areas of Change

Table 11. Scenario Water Demand Projections for Areas of Change by Region

		Projected New Demand by 2040 (acre-feet/year)					
	Baseline	Expected Growth	Expected Growth under Climate Change	Expected Growth with Water Conservation	Slow Growth	Slow Growth under Climate Change	Slow Growth with Water Conservation
Intensifying	10	440	500	380	310	350	270
Annexing	3,570	22,490	25,840	19,140	15,740	18,090	13,400
Total	**3,580**	**22,930**	**26,340**	**19,520**	**16,050**	**18,440**	**16,670**

Table 12. Comparison of Baseline Demands and Future Demand Projections

Region	Baseline Demand (acre-feet/year)	Future Demand (acre-feet/year)[4]	Percent Change
Incorporated	59,920	59,920[5]	0%
Unincorporated	38,430	36,930	-4%
Intensifying	10	440	4,300%
Annexing	6,340	24,150	281%
TOTAL	**104,700**	**121,440**	**16%**

[4] Future demand estimates based on "Expected Growth" scenario (Table 10).

[5] Given the focus on unincorporated areas of the County, changes in domestic and non-residential demands across incorporated areas were not modeled as part of the analysis.





Chapter 4

WATER AVAILABILITY

Chapter Contents

4.1 Denver Basin Aquifer Groundwater Analysis

4.2 Water Availability Assessment

An assessment of water availability was completed leveraging the results of the water demand analysis and an in-depth analysis of Adams County's groundwater supplies. The water availability assessment focused on groundwater resources within the Denver Basin aquifers, specifically in unincorporated areas of Adams County where Adams County policies will most directly influence future development. As Adams County plans for continued growth, understanding the long-term availability of these non-renewable groundwater supplies is especially critical to support informed land use decisions.

For this assessment, it was assumed that incorporated areas of Adams County served by a water provider have sufficient water supplies to support planned growth. This assumption is supported by conversations with water providers, as well as information gathered during the water provider survey. While Adams County is not responsible for ensuring adequate supplies in these areas, it plays a supportive role through regional coordination, planning guidance, and alignment of water and land use policies where appropriate. As a result, and while not the focus of the water availability assessment, opportunities to support water providers to ensure adequate and reliable supply are included in the Adams County Water Management Strategies chapter of this plan.

Chapter 4: Key Takeaways

Overall Adams County is estimated to have adequate supplies to meet future 2040 water demands.





Based on an analysis of available groundwater in the Denver Basin aquifer beneath Adams County, unincorporated areas are projected to have sufficient supplies to meet current and 2040 demand levels for up to 300 years, in line with Adams County's long-term planning standard. However, continued development of these resources will lead to rising production and treatment costs, along with a decline in the long-term reliability of the Denver Basin aquifer.

4.1 DENVER BASIN AQUIFER GROUNDWATER ANALYSIS

As discussed in previous chapters, groundwater in Adams County includes both renewable and non-renewable sources. This study did not quantify renewable (alluvial) groundwater resources, as many of these supplies are already fully appropriated or require an augmentation plan (typically involving the change of senior water rights) to be considered a reliable source of new supply to support future growth.

Adams County's non-renewable supplies are sourced from the Denver Basin aquifer system. The Denver Basin aquifer consists of a sequence of bowl-shaped sedimentary aquifers. The aquifers recognized by the State are the Dawson, Denver, Arapahoe, and Laramie Fox-Hills, with some designations of an upper and lower portion separated by a geologic confining unit such as shale or clay (Figure 8). Although the Denver Basin aquifer system is considered a non-renewable water source, it remains critical to the region as it serves as the primary water source for areas of Adams County that lack access to renewable surface water supplies.

The State of Colorado regulates groundwater withdrawals and well permitting within the Denver Basin aquifers through the Denver Basin Rules and the Statewide Nontributary Ground Water Rules, both of which became effective in 1986 following the passage of Colorado Senate Bill 5 (SB5, 1985). Under this legislation and its associated rules, the amount of water legally available to a landowner is determined by the aquifer boundaries below their property. Aquifer boundaries are determined based on aquifer thickness and a defined specific yield (or storage coefficient) for each aquifer. These parameters were established by the State groundwater hydrogeologist using the best data available at the time. The resulting maps are used by the State Engineer's Office to define the amount of water legally available for a given parcel.

To understand current water availability within the basin in Adams County, modeling was completed to evaluate water supplies in each aquifer using an expanded and more current set of geophysical log data. This model used PETRA geological software and was developed by identifying key geologic elevations from an extensive set of borehole geophysical logs. This process is like the one used by the Colorado Division of Water Resources to develop the SB5 dataset that defines legally available groundwater. Both analyses use the same formula to estimate available groundwater volume based on net sand, area of interest, and specific yield, and apply identical values for specific yield and area, however the Plan's analysis includes a slightly different data set and assumptions. Results were compared to the State's SB5 estimates, which reflect legally available water rights, to assess legal entitlements against another estimate of physically available supply. A comprehensive summary of the PETRA methodology is provided in the Groundwater Analysis Appendix.

Geophysical Logs

Geophysical logs are continuous recordings of the physical properties of subsurface rocks and fluids, collected by instruments lowered into boreholes (or narrow, deep holes drilled into the ground). These logs provide critical insights into geological formations, fluid content, and groundwater production potential. One of the oldest, most widely used, and valuable tools in hydrogeology is the resistivity log, which helps distinguish between hydraulically confining layers and water-bearing units such as sandstone.

GROUNDWATER AREAS AND TECHNICAL CONSIDERATIONS

For the purposes of this study, Adams County was broken up into three distinct groundwater areas, each of which vary in terms of groundwater availability (Figure 28). Area 2 was the focus of this study since it is comprised primarily of unincorporated land where the main developable water resource is Denver Basin groundwater. The extent of Area 2 generally matches the Unincorporated Region defined in the Water Demands chapter, allowing for a direct comparison of supply and demand across this portion of Adams County. In Area 1, Denver Basin groundwater is less accessible to Adams County in general, because many water providers currently have legal rights to these supplies. Area 3 has little to no access to Denver Basin groundwater resources due to the aquifer extents.



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The following items were closely considered in the analysis of available groundwater in Area 2. More information on each can be found in the Water Supplies and Providers chapter of the plan.

- **Designated Basins** are geologically distinct alluvial groundwater basins that were created by the Colorado Ground Water Commission. Any well permitted (including deeper Denver Basin wells) within these basins is subject to additional laws outlined by the Commission. The two Designated Basins within Adams County are the Kiowa Bijou and Lost Creek Designated Basins (Figure 8).
- **Tributary, Non-Tributary, Not-Non-Tributary (Actual, and 4%) Groundwater Designations**. A detailed description of each can be found in the Groundwater Analysis Appendix.
- **Pre-213 Water Rights** that were administered by the State prior to the passage of Senate Bill 213 in 1973, which outlines regulations of groundwater withdrawals and defined tributary vs non-tributary groundwater rights. These water rights are legally separate from the SB5 water rights and need to be accounted for by removing their spatial acreage from the PETRA analysis.
- **Small capacity and exempt wells** that are permitted for domestic or similar uses throughout Area 2. See the details of this calculation in the Groundwater Analysis Appendix.

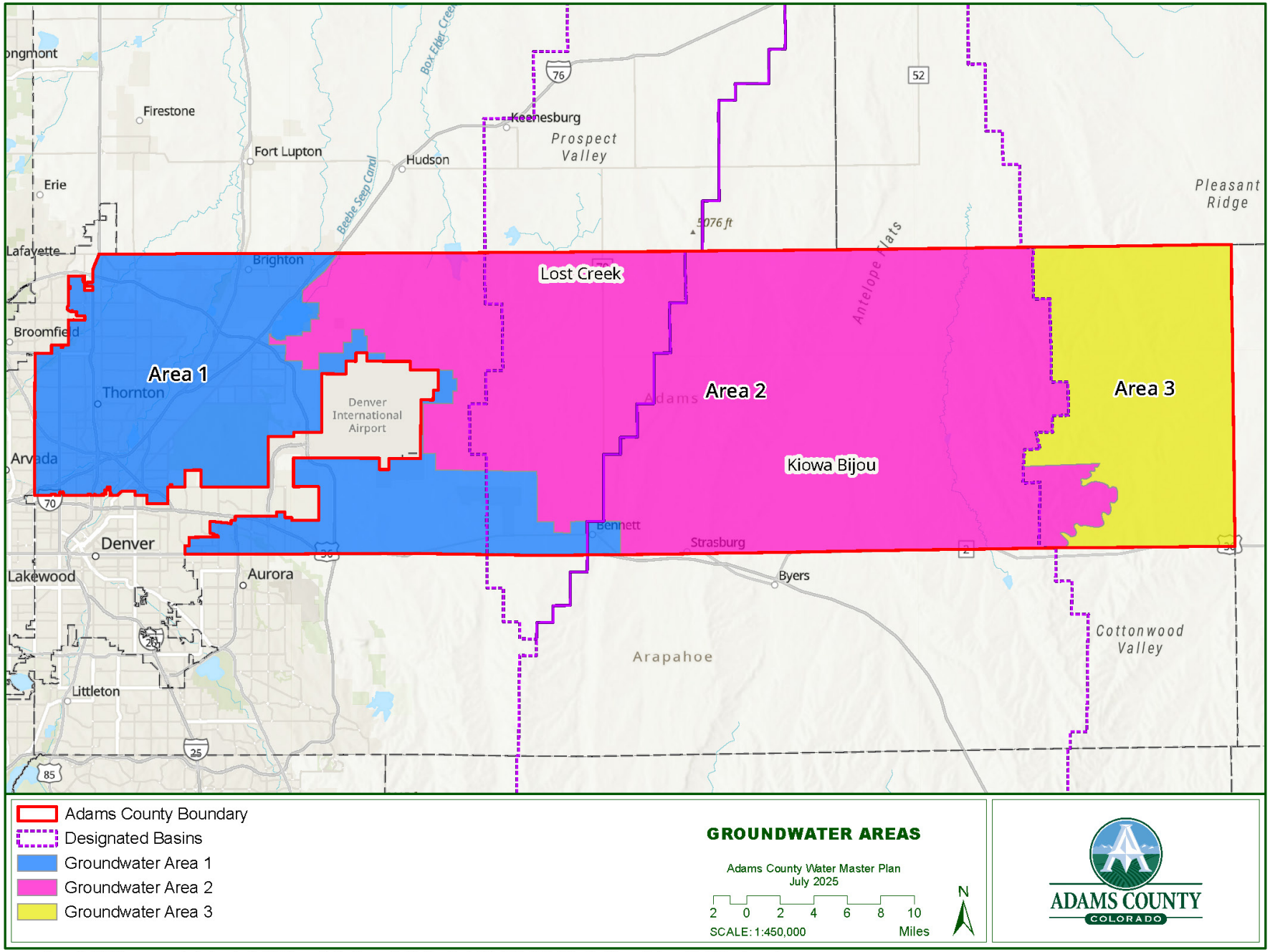


Figure 28. Adams County Groundwater Regions, April 2025

GROUNDWATER ANALYSIS AREA 2 RESULTS

Based on the PETRA groundwater analysis, the total physically available groundwater from the Denver Basin in Area 2 is estimated at approximately **99,000 acre-feet per year over a 100-year planning horizon** (2025-2125). **When applying Adams County's more conservative 300-year planning rule** (Adams County – Subdivision Design, Improvements, and Dedication Ch. 5), **this estimate is reduced to about 33,000 acre-feet per year (over 2025-2325).** Approximately 11% of this water within the Denver and Arapahoe aquifers would require an augmentation or replacement plan prior to development. Additionally, while the estimates in Table 13 reflect the total volume of physically available water, **a portion of this supply may be economically infeasible due to the cost of developing supply and water quality considerations**.

The volumes presented in Table 13 reflect groundwater considered reasonably accessible, meaning it could be developed without requiring an augmentation plan to permit a well.[6] This physically available supply represents only 41% of the legally available groundwater defined under the State's SB5 groundwater rules. The primary difference in results stems from a lower total net sand compared to SB5.[7] While the PETRA analysis approach provides a robust estimate of physically available groundwater, it remains a planning-level assessment, and actual groundwater volumes may vary from those presented in this Plan. Importantly, these findings do not undermine the validity of the SB5 dataset or the State's regulatory process, which remains a sound and defensible legal framework for groundwater management. However, the PETRA results suggest the SB5 framework may overestimate long-term water availability in some areas. This underscores the importance of regularly updating groundwater availability estimates using new and higher-resolution geophysical data, particularly in areas near aquifer boundaries or heavily developed subdivisions where the risk of localized depletion is greater.

[6] *Each aquifer was assessed individually, with the Laramie-Fox Hills Aquifer identified as the largest contributor, making up over 56% of Adams County's physically available supply. The Denver, Upper Arapahoe, and Lower Arapahoe aquifers contribute approximately 16%, 22%, and 6%, respectively, based on the PETRA analysis. However, it is important to recognize that the cost of extracting and treating groundwater increases significantly with depth.*

[7] *For the analysis, net sand was estimated using resistivity measurements to distinguish sandy aquifer material from low-permeability layers like clay. While both approaches employ similar techniques, the analysis for the Adams County Water Master Plan incorporates a larger number of geophysical logs, improving spatial resolution across Adams County. The analysis also applied a 12 Ohm-m cutoff to define sand (a common industry standard). Colorado Division of Water Resources may have used a slightly different cutoff or interpretive method.*

Table 13. Comparison of Petra Computation of Physically Available Groundwater versus Denver Basin Rule Groundwater Computations (SB5) in Area 2

Name	Petra Groundwater Calculations (acre-ft/year)	Denver Basin Rule Computations (SB5 Groundwater Rule) (acre-ft/year)	% Physically Available vs Denver Basin Rules (acre-ft/year)
Denver Aquifer	15,700	19,900	79%
Upper Arapahoe Aquifer	21,200	40,000	53%
Lower Arapahoe Aquifer	6,200	21,500	29%
Laramie-Fox Hills Aquifer	55,800	157,200	36%
Total	**98,900**	**238,600**	**41%**

Note: All calculations in this table are based on the annual appropriation for the State defined 100-year aquifer life rule to compare SB5 quantities side by side. Estimates for a 300-year planning horizon are calculated as one-third of the 100-year values (e.g., total available supply is reduced from 98,900 to 33,000 acre-ft per year).



4.2 WATER AVAILABILITY ASSESSMENT

As discussed above, the Denver Basin aquifer is considered a non-renewable source. Since widespread development began in the 1970s and 1980s, water levels in the Denver Basin aquifers have steadily declined. Site-specific aquifer properties and regional pumping patterns strongly influence the severity of decline. Some areas may show minimal change, while others (particularly those near aquifer boundaries or heavily developed subdivisions) could face significant drops. Studies by the USGS have documented regional declines of 0 to 20 feet per year. Data in the Groundwater Analysis Appendix reflect this range, though not all areas display consistent long-term trends. As such, reliance on this groundwater source carries inherent long-term sustainability risks.

In unincorporated Adams County, the estimated baseline water demand is approximately 38,430 acre-feet per year, with projected 2040 demand slightly lower at around 36,930 acre-feet per year (Table 12, Table 10). **Based on these estimates, Adams County appears to have sufficient groundwater reserves to sustain current and projected pumping levels for close to 300 years.** However, **as development continues and Adams County approaches full utilization of its available groundwater supply, key challenges must be carefully considered.** Key challenges to consider include changing aquifer conditions, declining well yields, increasing infrastructure costs, and the need for diversified water sources.

As water levels have declined in the Denver Basin, especially in the Denver Aquifer, **changing conditions have necessitated the drilling of deeper wells**. This **increases the cost of water production and reduces well reliability.** Further developing these resources will only exacerbate these challenges. Additionally, water quality issues vary widely depending on a number of site-specific conditions and are generally difficult to predict until a well is drilled and sampled. **Most contaminants of concern are from geologic sources and include manganese, radon, arsenic, selenium, and uranium**. The presence of these constituents increases treatment complexity and cost, often requiring advanced processes such as reverse osmosis, ion exchange, or specialized filtration to remove contaminants and ensure regulatory compliance, placing additional financial and operational burdens on water providers. As a result, **development that depends on these supplies should be carefully evaluated to ensure both adequate and high-quality reliable water is available.**

Groundwater production in the Denver Basin varies not only by location but also significantly between aquifers. The Denver aquifer, which has the smallest footprint in Adams County, is shallow making it easier and cheaper to access but generally requires an augmentation plan and can be limited in production due to isolated sand deposits and unconfined conditions in some areas. The Arapahoe aquifer is divided into Upper and Lower sections in the western part of the county and remains undifferentiated in the east, requiring careful consideration in permitting and design due to varying access costs and legal requirements. The Lower Arapahoe aquifer generally has the least available water and lower, more variable production rates, attributed to its heterogeneous makeup with more shale beds and less connected sandstone units. The Laramie-Fox Hills aquifer, though the deepest and most expensive to access, has the largest water supply and footprint in the county, with generally good production potential from the Fox-Hills sandstone, despite some geological variability similar to the Lower Arapahoe. **Regardless of which Denver Basin aquifer is being considered, a site-specific investigation is strongly recommended to identify the most suitable location for groundwater production.**



Chapter 5

WATER MANAGEMENT CHALLENGES AND STRATEGIES

Chapter Contents

5.1 Water Management Challenges

5.2 Water Management Strategies

While Adams County has sufficient water supply to meet demands, there are certain geographic areas of Adams County that are at greater risk to specific water availability and reliability challenges. These are likely to be exacerbated under conditions such as drought and population growth. Additionally, while Adams County is not a water provider, it recognizes that it has an important role in mitigating water management challenges, especially in unincorporated areas. This chapter summarizes the top water management challenges Adams County is likely to face now and into the future, as well as the top strategies Adams County can pursue to address risks associated with each challenge.

Chapter 5: Key Takeaways

10 Challenges

This planning process identified Adams County's top 10 water management challenges.

13 in 5 Years

This plan identifies 13 county-led strategies to initiate over the next five years to address these challenges.

Adams County has a particularly important role to play in unincorporated areas of the County served by non-renewable groundwater supplies that are at greater risk of having localized water availability and reliability challenges and where Adams County has direct land use authority.



5.1 ADAMS COUNTY WATER MANAGEMENT CHALLENGES

To identify the top water management challenges in Adams County, the project team performed a risk and vulnerability assessment that leveraged the Water Demands and Water Availability results, as well as feedback gathered from water providers, the Technical Advisory Committee, and Adams County staff. The effort led to the identification of 10 water management challenges that synthesize over 40 identified risks. Together, the challenges aim to capture the primary water issues facing Adams County in terms of water supply, demand, and availability. More details about the risk and vulnerability assessment and challenge identification can be found in the Water Management Challenges and Strategies Appendix.



Risk

A specific condition, event, or factor that has the potential to negatively impact water systems, infrastructure, or communities. Risks represent vulnerabilities or threats that, if not addressed, could lead to service disruptions, environmental harm, public health issues, or economic losses.

Challenge

A broader systemic issue that encompasses a group of related or interconnected risks. Challenges present more complex problems that reflect higher-level concerns identified through the aggregation and analysis of individual risks.

ADAMS COUNTY WATER MANAGEMENT CHALLENGES

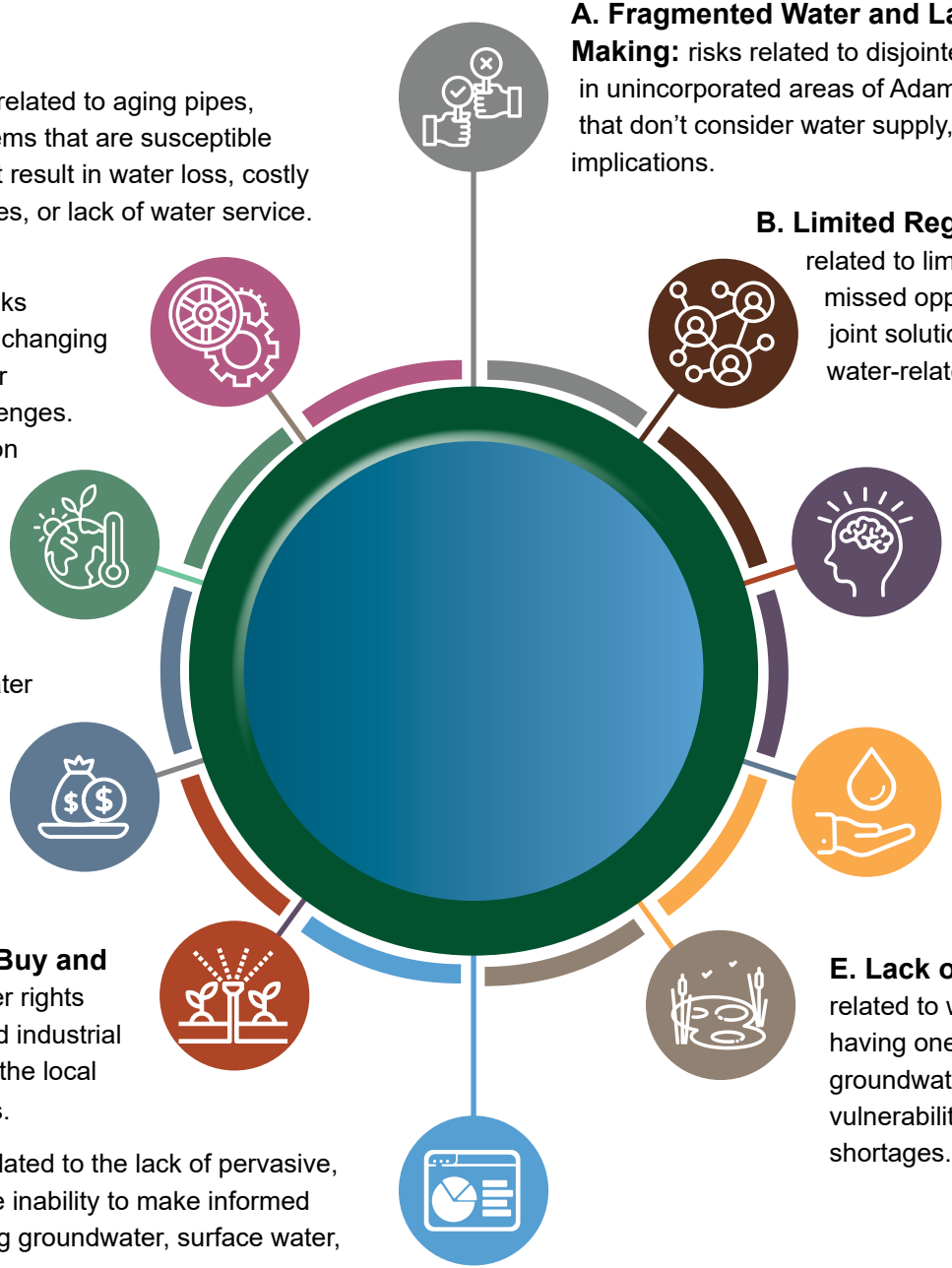
Aging Water Infrastructure: risks related to aging pipes, treatment plants, and distribution systems that are susceptible to leaks, breaks, and inefficiencies that result in water loss, costly infrastructure repair, water quality issues, or lack of water service.

Drought and Climate Change: risks related to hotter, drier conditions, with changing precipitation patterns resulting in water availability, reliability, and quality challenges. This challenge has a multiplier effect on all other challenges.

H. Water Provider Funding and Capacity Needs: risks related to water providers lacking sufficient funding to implement necessary infrastructure upgrades, threatening providers' ability to maintain water quality, adequate water supply, or reliability of water service.

G. Agricultural Water Transfer ("Buy and Dry"): risks related to the sale of water rights from agricultural lands to municipal and industrial uses that result in negative impacts to the local economy, food supply and ecosystems.

F. Water Data Availability: risks related to the lack of pervasive, high quality water data, resulting in the inability to make informed decisions for baselining and monitoring groundwater, surface water, and water quality.



A. Fragmented Water and Land Use Planning and Decision-Making: risks related to disjointed water and land use planning, especially in unincorporated areas of Adams County, that result in land use decisions that don't consider water supply, water demand, and water availability implications.

B. Limited Regional Coordination on Water: risks related to limited regional coordination resulting in missed opportunities to share resources, identify joint solutions, and create efficiencies in planning or water-related programming.

C. Limited Water Knowledge and Expertise: risks related to Adams County's public, staff, or leadership lacking sufficient knowledge to make informed decisions or recommendations that pertain to water management issues.

D. Water Quality Impacts: risks related to local and watershed scale water quality impacts (e.g., wildfire, groundwater contamination) that threaten water supply.

E. Lack of Water Supply Diversity: risks related to water providers or self-supplied users only having one source of supply (e.g., non-renewable groundwater, wholesale water) resulting in increased vulnerability to drought, contamination, or water shortages.

5.2 ADAMS COUNTY WATER MANAGEMENT STRATEGIES

Each of the 10 water management challenges can be addressed in multiple ways. To identify strategies to address each challenge, the project team leveraged results from the Water Demands and Water Availability, as well as gathered input from water providers, the Technical Advisory Committee, Adams County staff, and the public, with an eye towards strategies that Adams County can lead. Specifically, strategies focused on Adams County's potential role as:



Administrator: Adams County has regulatory authority over land use and zoning, public health and safety, certain infrastructure (e.g., roads), and more. In the context of this plan, Adams County's regulatory land use authority in unincorporated areas is particularly important, especially in areas reliant on non-renewable groundwater and in coordination with municipalities who are expected to see substantial growth in the coming decades. Additionally, Adams County has an opportunity to be a program administrator to advance water efficiency and conservation across the region.



Convener: Adams County has tremendous convening power and can bring together water providers, municipalities, and other stakeholders to discuss and address challenges.



Funder: Adams County can help secure or provide funding to regional projects that cross jurisdictional boundaries.



Partner: Adams County can partner directly with water providers and engage in formal agreements or strategies with municipalities and other organizations to advance water projects, plans, and policies across the region.



Supporter: Adams County can support water strategies that may be funded, managed, or implemented by different organizations through means such as sharing information, attending meetings, and contributing expertise and resources.

> **Strategy**
>
> A **strategy** is an implementable action that addresses one or more of the identified water challenges. Strategies can take many forms but can include programs, partnerships, plans, projects, or policies.

Through the engagement process, over 45 potential strategies were identified to address the ten challenges. These strategies were prioritized into 13 priority strategies and six additional opportunities, which focus Adams County's staff time and financial resources on the top issues facing Adams County.

- **Priority Strategy:** The most important strategies to initiate over the next five years (by 2030). These strategies include foundational and time-sensitive actions that are essential for Adams County to achieve, or start addressing, to mitigate the risks associated with the top water challenges in Adams County.
- **Additional Opportunity:** The additional strategy ideas proposed and vetted by Adams County staff and leadership, water providers, and the public. Additional opportunities include lower priory strategies and strategies that may require additional political will, funding, or technological advancements. As Adams County's context and conditions change, the list of additional opportunities can serve as a starting point for evaluating viable strategies to address the top ten challenges.

As part of the strategy prioritization process, not all challenges have priority strategies and/or additional opportunities. This is a byproduct of focusing on the top strategies given available resources and is not intended to diminish the importance of any one challenge. For the priority strategies, each was aligned with related Advancing Adams County Comprehesnive Plan goals.

Table 14 and the following sections summarize the priority strategies to initiate over the next five years, organized by water management challenge. Additional implementation details for each priority strategy are provided in the Implementation Plan Appendix.

Table 14. Adams County Water Challenges and Priority Strategies

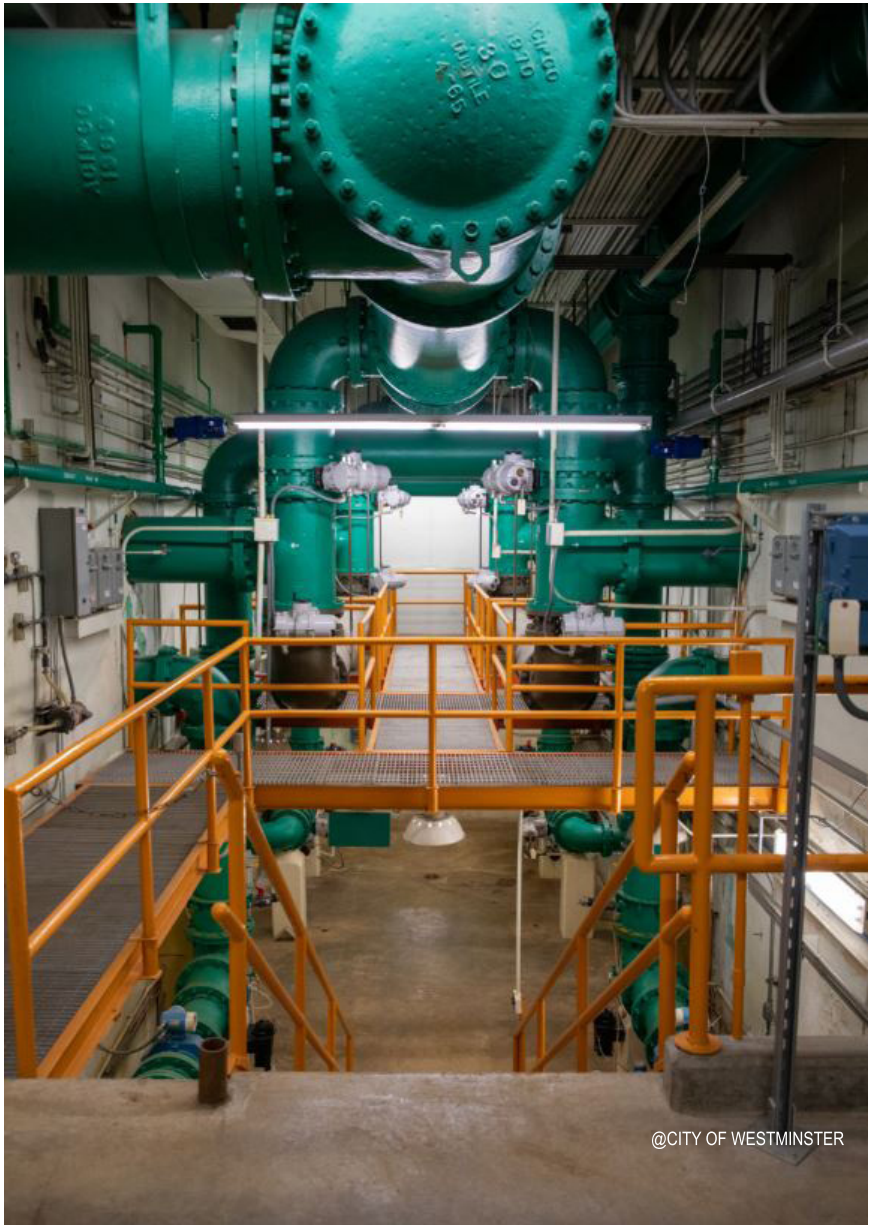
Challenge	Priority Strategy
A. Fragmented Water and Land Use Planning and Decision-Making	A1. Update water adequacy requirements/demand standards and improve related Adams County review processes A2. Continue to work with water providers on land use planning and forecasting A3. Update development codes to promote water efficiency in new development and redevelopment A4. Create a groundwater overlay district to support sustainable development in areas with non-renewable groundwater supply
B. Limited Regional Coordination on Water	B1. Expand participation in regional water management groups and planning processes B2. Establish an Adams County-led water efficiency program in partnership with water providers
C. Limited Water Knowledge and Expertise	C1. Dedicate Adams County staff to lead water efforts across Adams County C2. Pursue water training and education for Adams County staff and leadership
D. Water Quality Impacts	D1. Guide property owners to repair/replace septic systems and/or connect to local sewer systems
E. Lack of Water Supply Diversity	E1. Support and/or partner with providers to apply for grant funds for storage, reuse, and renewable supply development
F. Water Data Availability	F1. Require observation wells or participation in a shared groundwater monitoring program for developments using Denver Basin or designated basin groundwater
G. Agricultural Water Transfer ("Buy and Dry")	G1. Leverage innovative land use and water management tools to retain valuable agricultural land and businesses
H. Water Provider Funding and Capacity Needs	H1. Explore revitalization authorities to support water-related reinvestment

WATER MANAGEMENT STRATEGIES BY CHALLENGE

Drought and climate change are universal challenges that compound all other risks throughout Adams County. Between 1990 and 2024, the average temperature in Adams County increased by 2.4°F. Rising temperatures contribute to longer growing seasons and higher evapotranspiration demands, both of which increase irrigation water demands and, in turn, the strain non-renewable groundwater supplies. Higher temperatures also result in a higher proportion of precipitation falling as rain instead of snow, which reduces the duration of the runoff season and impacts surface water supply. Compared to temperature patterns, precipitation totals in Adams County have been more variable, without a distinct increase or decrease in annual precipitation totals over the past 30 years. This is consistent with State modeling, which shows unclear projections for precipitation patterns and totals. Despite this variability in precipitation totals, models show that even moderate increases in precipitation are not enough to overcome the impacts from increased temperatures.

Like all of Colorado, Adams County will be impacted by these changes. Water demand analysis shows an estimated 15% increase in unincorporated Adams County demands in a hotter, dryer future climate (Table 12). As a result, drought and climate change will likely act as a multiplier to the effects of every other challenge identified in this plan. For example, drought and climate change have the potential to compound the need for more coordinated decision making and regional collaboration on water issues; increase the likelihood of water quality impacts on water supply; put additional pressures on agricultural lands; and elevates the importance of diversifying supplies and repairing aging infrastructure.

Due to the cross-cutting nature of drought and climate change, these issues are addressed within each challenge area rather than through standalone strategies, with a focus on promoting water efficiency, more resilient supply, and regional coordination. More detail on all strategies and challenges presented in this chapter are provided in the Implementation Plan Appendix.



A. FRAGMENTED WATER AND LAND USE PLANNING AND DECISION-MAKING

Fragmented water and land use planning poses a significant challenge in Adams County, which has ten incorporated communities, over 80 individual water providers, and roughly 300 self-supplied users on domestic wells. While Adams County does not have land use authority in incorporated areas, it coordinates with municipalities on development and annexation matters in municipal planning areas. However, coordinated planning and forecasting on development potential and land use capacity often happen on an ad-hoc basis, and these analyses are not routinely maintained. Furthermore, water provider boundaries often differ from municipal boundaries, compounding the challenges of coordinating water and land use planning activities.

In unincorporated Adams County – where Adams County has land use authority – some areas are poised for development and intensification. Future unincorporated demands are estimated to be around 27,000 acre-feet per year and many of these areas are likely to depend on non-renewable groundwater supplies (Table 12, Table 10). Based on the Water Availability, it is expected that these non-renewable supplies can last about 300 years; however some of these wells will face water quality issues and water availability varies geographically within the aquifer (Figure 8; Table 9).

While the State of Colorado's Division of Water Resources is responsible for issuing well permits, legally available groundwater is defined as the total volume of water that can be appropriated over a 100-year period, not 300-year years. After a recent Supreme Court ruling, local jurisdictions have the option to extend this to 300 years (known as a "300-year rule"), however they are responsible to review to the higher standard. Adams County is one of a handful of counties across Colorado that has elected to include a 300-year rule as part of their water adequacy requirements – other counties include El Paso, Arapahoe, and Elbert. Adams County also has water adequacy standards for specific developments, requiring a certain volume of water depending on the type of development.

Electing a 300-year rule, as opposed to the standard 100-year rule, encourages municipalities, subdivisions, and water providers to pursue renewable water sources, creating more robust and sustainable long-term supplies. However, it can also create challenges. A 300-year rule reduces flexibility in water supply planning and requires staff to have the expertise to review water adequacy documentation against the more rigorous standard. For developers, it can pose a barrier by making it more difficult to demonstrate sufficient long-term water availability to support new housing or commercial development. Additionally, some developers currently use non-renewable Denver Basin groundwater to support early development, with the plan to gradually transition to renewable sources as funding becomes available.

While analyses from this plan support keeping Adams County's more rigorous requirements, there are opportunities to ensure staff has the appropriate resources and knowledge to review projects according to the higher standards. Additionally, ensuring the water adequacy requirements reflect Adams County demand will help make these requirements more meaningful and impactful. Additionally, updating development and building codes to ensure developments are "water smart from the start" can increase development efficiency, while also minimizing impacts on non-renewable groundwater supplies. Finally, continuing to work with providers to understand how actual development is impacting supplies will be a key for Adams County, to make informed decisions at the intersection of water and land use.

5-04-05-06-04 PROOF OF ADEQUATE SUPPLY*

Prior to platting, the subdivider shall demonstrate that:

1. The water rights associated with the property are sufficient to serve the proposed subdivision based on the following standards:
   - 0.3 acre-feet per year per residence;
   - 0.05 acre-feet per year per 1,000 square feet of irrigated lawn, garden, or golf course;
   - 0.01 acre-feet per year per horse or similar livestock equivalent unit; and
   - Sufficient available water to supply the proposed non-residential uses based on the estimate from the subdivider of the proposed usage and analysis by Adams County.
2. The subject land is served by a groundwater supply which is sufficient based on its priority date within the Colorado System of Water Rights Administration, the required volume can be extracted from this water right, the capacity of the water supply is sufficient to ensure no water supply shortages will occur due to variations in the hydrologic cycle, the delivery of the water supply to the development is adequate, and the water supply is dependable in quantity and quality based on a minimum useful life of three-hundred (300) years. A minimum 300-year useful life means the water supply from both a static and dynamic basis will be viable for a minimum 300-year period. The static analysis shall include evaluation of the volume of water that is appropriable for the proposed subdivision. The dynamic analysis shall evaluate whether the appropriable water supply is sustainable for three-hundred (300) years, giving consideration to the location and extent of the aquifer, as well as impacts caused by both current and future pumping by others from the aquifer. This requirement applies to individual wells and special district service plans.

*Adams County Development Standards and Regulations (June 2025)

STRATEGY A1. UPDATE WATER ADEQUACY REQUIREMENTS/DEMAND STANDARDS AND IMPROVE RELATED ADAMS COUNTY REVIEW PROCESSES

At the time of this plan's development, Adams County's water adequacy requirements include specific water demand requirements for certain types of development (e.g., residential, irrigated area), as well as a 300-year water supply rule for development dependent on groundwater supplies. While having water adequacy requirements is best practice, the structure of Adams County's requirements make it difficult for staff to review and enforce as the State does not review for 300 years of supply and therefore the responsibility falls Adams County staff. Updating the standards to include more specificity (e.g., specific non-residential requirements, multi-family requirements), in alignment with the Water Master Plan's water demand analysis, will increase the accuracy of the requirements. Additionally, while the results of this Plan's analysis point towards keeping the 300-year requirement, adding more specificity around what should be included to prove 300 years of supply will ensure staff has the appropriate information to evaluate the development application. Updates to Adam County's water adequacy requirements should happen in close coordination with outcomes of Strategy A4 and Strategy F1.

ADAMS COUNTY ROLE



Administrator

Convener

Funder

Partner

Supporter

RELATED ADVANCING ADAMS COMPREHENSIVE PLAN GOALS

- Goal NRE 2: Preserve and enhance surface and groundwater quality and ensure the long-term viability of groundwater supplies.
- Goal NRE 3: Proactively plan to adapt to climate change while mitigating its extent. Reduce vulnerability to, and protect people, property, and the environment from natural hazards.
- Goal NRE 4: Foster responsible resource use, from cradle to grave, including extraction, production, recycling, adaptive reuse, and disposal.
- Goal BEC 1: Support existing communities and accommodate growth and development that coordinates with local plans, is fiscally and environmentally responsible, and enhances the overall well-being of the community.
- Goal BEC 3: A built environment that meets the needs of the community while mitigating adverse impacts, recognizes known and unknown hazardous conditions, and responds to the increasing resource constraints going forward.
- Goal ED 3: Guide growth and development to targeted areas and provide compatible transitions between land uses.

STRATEGY A2.
CONTINUE TO WORK WITH WATER PROVIDERS ON LAND USE PLANNING AND FORECASTING

Throughout the creation of this plan, 14 water providers that serve over 90% of Adams County's population and all of Adams County municipalities were engaged. A common theme amongst both providers and municipalities is the need for continued coordinated land use planning and forecasting to better understand current and future water demands as development continues throughout Adams County and annexations take place. This is especially true for the water providers that are serving unincorporated parts of Adams County and are likely to experience change in the next 15 years (Figure 24). Sharing modeling results from this plan with water providers who do not have future water demand estimates, as well as serving as a convener for future conversations around land use and its connections to water demands, will help all of Adams County better connect land use to water planning. This may include sharing information such as population forecasts, future land use maps, water data, and more.

ADAMS COUNTY ROLE

Administrator

Convener

Funder

Partner

Supporter

RELATED ADVANCING ADAMS COMPREHENSIVE PLAN GOALS

- Goal NRE 2: Preserve and enhance surface and groundwater quality and ensure the long-term viability of groundwater supplies.
- Goal NRE 3: Proactively plan to adapt to climate change while mitigating its extent. Reduce vulnerability to, and protect people, property, and the environment from natural hazards.
- Goal NRE 4: Foster responsible resource use, from cradle to grave, including extraction, production, recycling, adaptive reuse, and disposal.
- Goal BEC 1: Support existing communities and accommodate growth and development that coordinates with local plans, is fiscally and environmentally responsible, and enhances the overall well-being of the community.
- Goal BEC 3: A built environment that meets the needs of the community while mitigating adverse impacts, recognizes known and unknown hazardous conditions, and responds to the increasing resource constraints going forward.
- Goal ED 3: Guide growth and development to targeted areas and provide compatible transitions between land uses.

STRATEGY A3. UPDATE DEVELOPMENT CODES TO PROMOTE WATER EFFICIENCY IN NEW DEVELOPMENT AND REDEVELOPMENT

Updating development codes to promote water-efficient development from the start is essential to sustainable water management. Code updates may take the form of updating requirements to promote water-wise landscapes or updating building codes to ensure installation of efficient plumbing fixtures. Prioritizing these changes as part of the current 2025 land use code update, and updating codes in the future as new best practices and technologies are identified, will ensure that developments are water efficient, resulting in lower water demand and less reliance on non-renewable groundwater supplies in unincorporated areas. Promoting water efficiency in new development was also identified as a key strategy in the Advancing Adams Comprehensive Plan (NRE 2.1.03 and NRE 2.1.04).

ADAMS COUNTY ROLE

Administrator

Convener

Funder

Partner

Supporter

RELATED ADVANCING ADAMS COMPREHENSIVE PLAN GOALS

- Goal NRE 2: Preserve and enhance surface and groundwater quality and ensure the long-term viability of groundwater supplies.
- Goal NRE 3: Proactively plan to adapt to climate change while mitigating its extent. Reduce vulnerability to, and protect people, property, and the environment from natural hazards.
- Goal NRE 4: Foster responsible resource use, from cradle to grave, including extraction, production, recycling, adaptive reuse, and disposal.
- Goal BEC 3: A built environment that meets the needs of the community while mitigating adverse impacts, recognizes known and unknown hazardous conditions, and responds to the increasing resource constraints going forward.

STRATEGY A4. CREATE A GROUNDWATER OVERLAY DISTRICT TO SUPPORT SUSTAINABLE DEVELOPMENT IN AREAS WITH NON-RENEWABLE GROUNDWATER SUPPLY

Overall, Adams County has adequate water supply to meet demands, yet certain areas of Adams County may see significant declines in well yields and are at greater risk of having limited access to high-quality water in the future. Groundwater overlay districts can help protect and preserve non-renewable groundwater resources by establishing area-specific development standards, regardless of the underlying zoning. Groundwater overlay districts allow for more specific requirements where they are needed most, providing greater discretion to restrict development in areas without sustainable water supply. Additional requirements associated with a groundwater overlay district may include well monitoring or testing prior to development, more rigorous water demand standards, and additional or more specific documentation to prove adequate and reliable supply. Informed by this Plan's analysis, Adams County can determine the boundaries of the groundwater overlay, as well as which types of requirements are most suitable, to ensure adequate supply for developments that are dependent on non-renewable Denver Basin groundwater. Development of an overlay district should happen in close coordination with the outcomes of Strategy A1.

ADAMS COUNTY ROLE

Administrator

Convener

Funder

Partner

Supporter

RELATED ADVANCING ADAMS COMPREHENSIVE PLAN GOALS

- Goal NRE 2: Preserve and enhance surface and groundwater quality and ensure the long-term viability of groundwater supplies.
- Goal NRE 3: Proactively plan to adapt to climate change while mitigating its extent. Reduce vulnerability to, and protect people, property, and the environment from natural hazards.
- Goal NRE 4: Foster responsible resource use, from cradle to grave, including extraction, production, recycling, adaptive reuse, and disposal.
- Goal BEC 1: Support existing communities and accommodate growth and development that coordinates with local plans, is fiscally and environmentally responsible, and enhances the overall well-being of the community.
- Goal BEC 3: A built environment that meets the needs of the community while mitigating adverse impacts, recognizes known and unknown hazardous conditions, and responds to the increasing resource constraints going forward.
- Goal ED 3: Guide growth and development to targeted areas and provide compatible transitions between land uses.

ADDITIONAL OPPORTUNITIES

No additional opportunities were prioritized for this strategy.

B. LIMITED REGIONAL COORDINATION ON WATER

Adams County is Colorado's fifth largest county by land area with a population of more than 500,000 residents. With Denver suburbs, as well as a robust agricultural economy, Adams County has a blend of urban and rural characteristics that make coordination, especially on topics like water, uniquely challenging. Adams County has over 80 different water providers – the sixth greatest number of water providers for any county in Colorado. The largest 15 of these serve most of Adams County's population, with the remaining providers serving an average population of just 530 people per system. While all the water providers face increasing challenges related to aging infrastructure, increasing regulatory standards, and costs of service delivery, many of the smallest providers lack resources to comprehensively address these challenges, and therefore stand to benefit from regional collaboration and problem-solving. Finding ways to improve efficiency and effectiveness of planning, water-related programming, infrastructure development and maintenance, and service delivery across jurisdictions and water providers can unlock opportunities to increase sustainable water management across Adams County. Longer-term, exploring opportunities for formal partnerships and potentially consolidated service delivery for interested entities could help water providers with limited resources remain viable into the future.



STRATEGY B1.
EXPAND PARTICIPATION IN REGIONAL WATER MANAGEMENT GROUPS AND PLANNING PROCESSES

There are several groups that conduct regional water management pertinent to Adams County. For instance, the South Platte Basin Roundtable and the Metro Basin Roundtable convene regularly to facilitate regional discussions on water management issues and encourage locally driven, collaborative solutions. Currently, the Board of County Commissioners (BoCC) is tasked with participating in the Basin Roundtables. This strategy recommends broader, more intentional participation from Adams County, including from Adams County leadership (BoCC) and Adams County staff (both Community and Economic Development and Public Works). Active participation in these groups will help ensure Adams County-specific water management perspectives and needs are represented in regional discussions. Additionally, expanding participation across a variety of Adams County positions will increase the knowledge and expertise of relevant staff members and decision-makers, supporting Strategy C2. In addition to the basin roundtables, organizations like the Mile High Flood District conduct regional watershed planning and are important partners in addressing Countywide watershed issues, like stormwater management and water quality.

ADAMS COUNTY ROLE



Administrator

Convener

Funder



Partner



Supporter r

RELATED ADVANCING ADAMS COMPREHENSIVE PLAN GOALS

- Goal NRE 1: Facilitate the protection and restoration of natural areas and ecosystems to improve habitat connectivity, sensitive lands, and natural habitats while enhancing the quality of life and shaping urban areas.
- Goal NRE 2: Preserve and enhance surface and groundwater quality and ensure the long-term viability of groundwater supplies.
- Goal NRE 3: Proactively plan to adapt to climate change while mitigating its extent. Reduce vulnerability to, and protect people, property, and the environment from natural hazards.
- Goal NRE 4: Foster responsible resource use, from cradle to grave, including extraction, production, recycling, adaptive reuse, and disposal.
- Goal BEC 1: Support existing communities and accommodate growth and development that coordinates with local plans, is fiscally and environmentally responsible, and enhances the overall well-being of the community.
- Goal BEC 3: A built environment that meets the needs of the community while mitigating adverse impacts, recognizes known and unknown hazardous conditions, and responds to the increasing resource constraints going forward.
- Goal ED 3: Guide growth and development to targeted areas and provide compatible transitions between land uses.

STRATEGY B2. ESTABLISH AN ADAMS COUNTY-LED WATER EFFICIENCY PROGRAM IN PARTNERSHIP WITH WATER PROVIDERS

Many larger water providers offer water efficiency programming to their customers. However, many Adams County community members, such as those served by smaller providers or those who receive water from a well, do not have access to water efficiency programs. Of Adams County's providers, over 80% do not have water efficiency programming, mostly due to resource limitations. This strategy focuses on exploring partnerships, funding mechanisms, and program structures to increase access to water efficiency programs across Adams County. Programming could be geared toward residential customers, commercial customers, or both. Additionally, programming could be targeted at market rate customers, income-qualified customers, or both. Examples of programming include, but are not limited to, water audits, irrigation assessments, high-efficiency toilet rebates, or turf replacement rebates.

ADAMS COUNTY ROLE



Administrator

Convener



Funder



Partner

Supporter

RELATED ADVANCING ADAMS COMPREHENSIVE PLAN GOALS

- Goal NRE 2: Preserve and enhance surface and groundwater quality and ensure the long-term viability of groundwater supplies.
- Goal NRE 3: Proactively plan to adapt to climate change while mitigating its extent. Reduce vulnerability to, and protect people, property, and the environment from natural hazards.
- Goal NRE 4: Foster responsible resource use, from cradle to grave, including extraction, production, recycling, adaptive reuse, and disposal.

ADDITIONAL OPPORTUNITIES

- Explore opportunities to support under-resourced water providers, such as through partnerships, joint projects, and/or consolidation of districts, services and/or infrastructure when applicable

C. LIMITED WATER KNOWLEDGE AND EXPERTISE

Having the necessary information and expertise is critical to making informed decisions about water policy, programming, investments, and more. In Adams County, there are opportunities to enhance technical knowledge at all levels, including the public, Adams County staff, and community leaders. Feedback from water providers and the public point to an opportunity to enhance connections between water management and land use planning decisions. Increased knowledge will also mitigate impacts from other challenges, particularly those described in Fragmented Water and Land Use Planning and Decision-Making.

STRATEGY C1.
DEDICATE ADAMS COUNTY STAFF TO LEAD WATER EFFORTS ACROSS ADAMS COUNTY

There are several priority strategies in this plan that necessitate additional staff time and expertise. This strategy recommends dedicating staff resources (estimated to be at least one full-time equivalent (FTE) employee) to provide direct support of all strategies included in this plan.

Additional staff time and expertise may be met through the creation of a new position, reallocation of responsibilities and time for existing position(s), and/or consulting support. Leading Adams County's water efforts will require staff with the appropriate skill sets and expertise to accomplish the scope of work of these core strategies. However, additional staff resource(s) could also provide as-needed supplemental support for other strategies in this plan. The staff resource(s) could help to coordinate implementation efforts across the plan, providing a centralized infrastructure for implementation and plan monitoring and reporting.

Dedicating staff resources is not intended to be a replacement for comprehensive staff and leadership training and education (see Strategy C2)

ADAMS COUNTY ROLE

Administrator

Convener

Funder

Partner

Supporter

RELATED ADVANCING ADAMS COMPREHENSIVE PLAN GOALS

- Goal NRE 2: Preserve and enhance surface and groundwater quality and ensure the long-term viability of groundwater supplies.
- Goal NRE 3: Proactively plan to adapt to climate change while mitigating its extent. Reduce vulnerability to, and protect people, property, and the environment from natural hazards.
- Goal NRE 4: Foster responsible resource use, from cradle to grave, including extraction, production, recycling, adaptive reuse, and disposal.

STRATEGY C2.
PURSUE WATER TRAINING AND EDUCATION FOR ADAMS COUNTY STAFF AND LEADERSHIP

To make better informed decisions about water and land use planning, Adams County staff and leadership can build in-house expertise by pursuing water management training for Adams County staff and leadership (e.g., BoCC and Planning Commission). Developing expertise across departments and at all levels — from frontline staff to decision-makers — will help elevate water literacy across the organization. It also strengthens organizational resilience by ensuring that knowledge and leadership don't rest with just one person or team. Training and education should focus on developing a standard baseline of knowledge of water management contexts and challenges for the State and Adams County and the nexus between land use planning and water management. Additional technical training may be useful for individual staff members, departments, and/or decision-making bodies that interface with communities served by non-renewable groundwater supplies.

ADAMS COUNTY ROLE



Administrator

Convener

Funder

Partner

Supporter

RELATED ADVANCING ADAMS COMPREHENSIVE PLAN GOALS

- Goal NRE 2: Preserve and enhance surface and groundwater quality and ensure the long-term viability of groundwater supplies.
- Goal NRE 3: Proactively plan to adapt to climate change while mitigating its extent. Reduce vulnerability to, and protect people, property, and the environment from natural hazards.
- Goal NRE 4: Foster responsible resource use, from cradle to grave, including extraction, production, recycling, adaptive reuse, and disposal.

ADDITIONAL OPPORTUNITIES

No additional opportunities were prioritized for this strategy.

D. WATER QUALITY IMPACTS

Water quality issues present a growing challenge to water supply, both at the local level and across broader watersheds. In Adams County, oil and gas activities, landfills, industrial pollution, and stormwater runoff present potential sources of local groundwater and surface water contamination. More broadly, watershed threats such as wildfire impacts and the spread of invasive species can further degrade water sources, complicating treatment processes and straining already limited supplies. As Adams County continues to grow and groundwater levels decline, some water providers and self-supplied users may have to access deeper aquifers, like the Laramie Fox Hills Aquifer, that is estimated to make up 56% of Adams County's physical available supply. However, water quality tends to degrade in these deeper Denver Basin aquifers, due to increased mineralization and prolonged rock interactions over time. Lower water quality in basins will require increased treatment complexity, resulting in increasing future treatment costs. Strategies that maintain Adams County's water quality, across all sources of water supply, will ensure that available supplies can be safely used. This includes Strategy B1, E1, and F1.



@CITY OF WESTMINSTER

STRATEGY D1.
GUIDE PROPERTY OWNERS TO REPAIR/REPLACE SEPTIC SYSTEMS AND/ OR CONNECT TO LOCAL SEWER SYSTEMS

Septic systems are onsite wastewater treatment systems installed on properties that are not served by a wastewater utility. Aging septic systems that are not properly maintained pose a significant risk to local environmental health. Failing and malfunctioning systems can release contaminants into the soil and groundwater table, which can pose a significant risk to the long-term health of groundwater sources that are utilized across Adams County. Properly designed conventional septic systems need relatively little maintenance to continue functioning properly, but septic systems with advanced treatment components usually require more intensive maintenance to continue to remove contaminants as intended.

Adams County Health Department has regulatory authority over the septic system permitting process for new septic systems and septic system repairs. Adams County Health Department also currently requires septic system use permits for property sales, changes of ownership, changes in property use (i.e., a residence to a business), addition of bedrooms, additions of separate "modular" homes, and other reasons deemed necessary by the Department. To obtain a use permit, the property owner must have their septic system inspected, and any significant deficiencies in the system must be repaired. In addition to this, Adams County Health Department also requires regular inspections and maintenance of most septic systems with advanced treatment components to ensure these systems are functioning as designed. Records related to septic system permitting, including inspection reports, can be found on the Health Department website.

While Adams County Health Department actively provides information about septic system maintenance and repair to homeowners, expanding the outreach efforts to property owners could help reduce the risk of groundwater contamination by a lack of maintenance. For example, regular septic tank pumping is essential to prevent premature system failure. Although this maintenance is expensive, it is typically far less expensive than repairing a septic system. Many homeowners may not be aware that this upkeep is necessary and therefore may neglect it. Informing homeowners that regular pumping can extend the life of their system, and save money over time, may encourage more consistent maintenance and reduce the risk of groundwater contamination from failing septic systems.

Adams County can also play an elevated role during the review of development projects, encouraging connections to local wastewater services, even when not required. Furthermore, Adams County could coordinate with wastewater service providers and reach out to nearby property owners when service line expansions are in the planning stages, to encourage service connections and construction coordination. Strategy H1 may also be able to provide financial support to cover the costs of homeowners connecting to public water systems, when feasible.

ADAMS COUNTY ROLE

Administrator

Convener

Funder

Partner

Supporter

RELATED ADVANCING ADAMS COMPREHENSIVE PLAN GOALS

- Goal NRE 2: Preserve and enhance surface and groundwater quality and ensure the long-term viability of groundwater supplies.
- Goal NRE 4: Foster responsible resource use, from cradle to grave, including extraction, production, recycling, adaptive reuse, and disposal.
- Goal BEC 3: A built environment that meets the needs of the community while mitigating adverse impacts, recognizes known and unknown hazardous conditions, and responds to the increasing resource constraints going forward.

ADDITIONAL OPPORTUNITIES

No additional opportunities were prioritized for this strategy.

E. LACK OF WATER SUPPLY DIVERSITY

Within Adams County, over 60% of water providers depend on groundwater resources and a sizable number receive water from a wholesale provider (Figure 12). Additionally, almost all self-supplied users are wholly dependent on groundwater. These water providers and users are particularly vulnerable to drought, changes in water administration rulings, contamination, and/or water shortages. For example, given current pumping rates, some areas of Adams County are already experiencing declining water levels of 30 to 100 feet per decade, bringing into question the long-term viability of the source of supply. Additionally, while the modeling results of this Plan point towards Adams County having adequate non-renewable groundwater supplies to meet demands, this is limited to 300 years of supply and will likely require drilling deeper wells into aquifers with poorer water quality. Strategic diversification of non-renewable supplies will increase Adams County's overall resilience. Additional strategies to support providers without diverse water supply include improving communication in times of shortage and preserving non-renewable supplies for areas that do not have alternative supply options.



STRATEGY E1. SUPPORT AND/OR PARTNER WITH PROVIDERS TO APPLY FOR GRANT FUNDS FOR STORAGE, REUSE, AND RENEWABLE SUPPLY DEVELOPMENT

As development in Adams County continues, and water supplies become more constrained, new and innovative solutions will be required to diversify water supplies and to use current supplies more efficiently. Solutions like storage and reuse can improve the resilience of some systems. For example, one promising strategy for prolonging the usefulness of the Denver Basin aquifers is the adoption of aquifer storage and recovery (ASR). ASR is a water management technique that involves storing water in an underground aquifer during times of surplus (e.g., wet seasons) and recovering it for use during times of need (e.g., droughts or peak demand periods). Encouraging or incentivizing the retrofitting of existing wells with ASR capabilities could help recharge depleted aquifers, improve system resilience, and maintain groundwater availability for future generations.

That said, while new strategies like ASR improve overall resilience, new water resilient infrastructure and projects are expensive. Many providers face financial barriers including the need to invest in aging infrastructure and the need to comply with new State and federal regulations. Grant funding can provide support for programs and projects focused on diversifying water supplies and water efficiency. While Adams County may not be a financial backer for these projects, Adams County could support providers by partnering on grant applications, with the level of support ranging from providing a letter of support to co-sponsoring a grant application. This could be especially beneficial for smaller systems with limited staff and capacity and/or for single projects that support multiple providers.

ADAMS COUNTY ROLE

Administrator

Convener

Funder

Partner


Supporter

RELATED ADVANCING ADAMS COMPREHENSIVE PLAN GOALS

- Goal NRE 2: Preserve and enhance surface and groundwater quality and ensure the long-term viability of groundwater supplies.
- Goal NRE 3: Proactively plan to adapt to climate change while mitigating its extent. Reduce vulnerability to, and protect people, property, and the environment from natural hazards.
- Goal NRE 4: Foster responsible resource use, from cradle to grave, including extraction, production, recycling, adaptive reuse, and disposal.

ADDITIONAL OPPORTUNITIES

- Support providers in identifying additional supplies, with a focus on renewable supplies, reuse, and large regional projects that reduce competition for native supplies
- Support water shortage/drought response plans and emergency water connections for water providers across Adams County

F. WATER DATA AVAILABILITY

A lack of accessible, high-quality water data presents a substantial challenge for accurately baselining and monitoring both water supply and quality - including groundwater and surface water. This challenge is particularly impactful for communities and water providers reliant on non-renewable groundwater, as it makes it difficult to monitor and regulate unsustainable groundwater pumping. Site-specific aquifer properties and regional pumping patterns strongly influence the severity of aquifer decline. Over time, some areas of Adams County could show minimal change to aquifer levels while others may experience sharp drops. While the groundwater analysis performed for this Plan can serve as a starting point, developing a long-term, consistent groundwater monitoring program is essential to inform planning decisions. Access to high-quality groundwater quality and quantity data would also support the implementation of Adams County's 300-year rule. Finally, widespread access to this data would benefit smaller providers who lack the resources to monitor groundwater on their own.



STRATEGY F1.
REQUIRE OBSERVATION WELLS OR PARTICIPATION IN A SHARED GROUNDWATER MONITORING PROGRAM FOR DEVELOPMENTS USING DENVER BASIN OR DESIGNATED BASIN GROUNDWATER

Currently, Adams County does not require new developments to install groundwater observation wells, nor is there a regional groundwater monitoring program in place. As Adams County continues to grow, new developments reliant on non-renewable groundwater will increase the strain on groundwater resources.

Aquifer decline varies across Adams County, highlighting the need for a robust, long-term groundwater monitoring program. This could include retrofitting and regularly measuring existing wells, requiring monitoring wells for new developments that rely on Denver Basin groundwater, and publishing Adams County-led groundwater reports. Better data would help identify areas at risk of depletion, support smaller providers in demonstrating supply viability, and inform decisions like enforcing the 300-year rule. Updates to any requirements associated with this strategy should happen in close coordination with the outcomes of Strategy A4.

ADAMS COUNTY ROLE



Administrator

Convener

Funder

Partner



Supporter

RELATED ADVANCING ADAMS COMPREHENSIVE PLAN GOALS

- Goal NRE 2: Preserve and enhance surface and groundwater quality and ensure the long-term viability of groundwater supplies.
- Goal NRE 3: Proactively plan to adapt to climate change while mitigating its extent. Reduce vulnerability to, and protect people, property, and the environment from natural hazards.
- Goal NRE 4: Foster responsible resource use, from cradle to grave, including extraction, production, recycling, adaptive reuse, and disposal.

ADDITIONAL OPPORTUNITIES

No additional opportunities were prioritized for this strategy.

G. AGRICULTURAL WATER TRANSFER ("BUY AND DRY")

The sale of water from agricultural lands to support municipal growth can negatively impact the agriculture economy, availability of local food supply, and ecosystem health, especially when residual agricultural land is not revegetated. Continued growth and development across the Front Range and scarcity of new water supplies is putting pressure on all irrigated agricultural land, both in and outside of Adams County (Figure 23). These pressures lead to water rights transfers from agricultural to municipal uses, which is commonly referred to as "buy and dry." According to the Baseline Report, the percentage of irrigated land in Adams County declined by 52% between 1987 and 2020. Based on this plan's analysis strained agricultural areas are projected to experience a 40% reduction in irrigated acreage by 2040 (Table 9). With continued growth and increased water availability concerns, pressure for agricultural water transfers will continue, which could lead to declines in land used for agricultural purposes both in Adams County and surrounding areas.



STRATEGY G1. LEVERAGE INNOVATIVE LAND USE AND WATER MANAGEMENT TOOLS TO RETAIN VALUABLE AGRICULTURAL LAND AND BUSINESSES

Adams County's zoning map defines three agricultural zone districts (A-1, A-2, and A-3) and the associated standards define the purpose, permitted uses, and development standards for each agricultural zone district. These zone districts support limited rural development and agricultural operations, but more can be done to proactively strengthen and conserve the viability of Adams County's prime/productive agricultural lands, especially irrigated agriculture in areas with adequate water resources. This strategy begins with identifying prime, productive, and historic agricultural areas within Adams County. Next, it involves evaluating land use tools such as conservation easements, overlay zoning, and/or a transfer of development rights (TDR) program to redirect future growth and development away from vital agricultural areas so that they can be conserved for agricultural uses long-term.

It also focuses on updating Adams County's Development Standards and coordinating with municipalities on land use regulations to expand market pathways for agricultural producers, making it easier for producers to access farm stands and markets and engage in agritourism activities. Updates to Adams County's Development Standards could also simplify pathways for renewable energy production on agricultural lands, such as agrivoltaics developments, providing agricultural producers with opportunities for diversified income. Finally, the process of identifying prime and historical agricultural areas, may also help unearth opportunities to explore Cooperative Water Sharing Agreements (CWSAs) and connect different water users.

Importantly, Adams County has already done some of this work. Through a partnership between Adams County and City of Brighton, the Historic Splendid Valley is an area focused on preserving farmland and creating closer connections between people, farming, and nature. Through the District Plan, the partners are working to preserve agricultural land and heritage, encourage local food production, and promote agritourism. The District Plan identifies land use tools such as cluster development standards, TDR program development, conservation easements, zoning overlays, design guidelines, and historic preservation as ways to support the area's agricultural heritage and goals.

ADAMS COUNTY ROLE

Administrator

Convener

Funder

Partner

Supporter

RELATED ADVANCING ADAMS COMPREHENSIVE PLAN GOALS

- Goal NRE 1: Facilitate the protection and restoration of natural areas and ecosystems to improve habitat connectivity, sensitive lands, and natural habitats while enhancing the quality of life and shaping urban areas.
- Goal NRE 4: Foster responsible resource use, from cradle to grave, including extraction, production, recycling, adaptive reuse, and disposal.
- Goal BEC 1: Support existing communities and accommodate growth and development that coordinates with local plans, is fiscally and environmentally responsible, and enhances the overall well-being of the community.
- Goal ED 3: Guide growth and development to targeted areas and provide compatible transitions between land uses.
- Goal CH 1: Ensure agriculture is supported with adequate allocation of area for future land uses and zoning, preservation practices, economic development, access and distribution, and technological innovations.

ADDITIONAL OPPORTUNITIES

No additional opportunities were prioritized for this strategy.

H. WATER PROVIDER FUNDING AND CAPACITY NEEDS

Water providers are increasingly strained by major challenges such as aging infrastructure, the need to comply with new and complex regulations (e.g., Lead and Copper Rule Improvements, Maximum Contaminant Levels for PFOA and PFOS), and the need to deliver programming (e.g., education, water efficiency studies) with limited resources. In some cases, these needs are outpacing the capacity and funding available to water providers, putting pressure on their ability to maintain high-quality and reliable water services. Of the providers surveyed, many expressed that Adams County could assist providers through technical support and implementation of financial assistance programs (see the Engagement Summary Appendix). A majority of the surveyed providers voted that an expansion of the Low Income Energy Assistance Program (LEAP) to include water affordability assistance would benefit providers and members of the community (see Strategy B2). Others indicated that securing additional funding for water projects would be beneficial (see Strategy E1).

STRATEGY H1. EXPLORE REVITALIZATION AUTHORITIES TO SUPPORT WATER-RELATED REINVESTMENT

In 2024, Colorado approved House Bill 24-1172, which allows counties to establish revitalization authorities. These authorities provide the opportunity to use tax increment financing (TIF), along with private financing, to support county revitalization projects. Revitalization authorities and TIF are tools that have been successfully used in municipalities in Colorado – expanding them for county use provides a new opportunity for Adams County to coordinate with water providers and other jurisdictions and special districts to create Adams County revitalization plan(s) to drive reinvestment, especially in unincorporated areas. This could include upgrading aging water treatment and distribution infrastructure, supporting transitions away from individual wells and/or septic systems, and even supporting water efficiency for agricultural and other large water users.

ADAMS COUNTY ROLE



Administrator



Convener

Funder

Partner

Supporter

RELATED ADVANCING ADAMS COMPREHENSIVE PLAN GOALS

- Goal BEC 1: Support existing communities and accommodate growth and development that coordinates with local plans, is fiscally and environmentally responsible, and enhances the overall well-being of the community.

ADDITIONAL OPPORTUNITIES

- When data are available, support water providers to encourage conservation-oriented tap fees for new development.

I. AGING WATER INFRASTRUCTURE

Aging infrastructure presents a challenge to most water providers, and can lead to water loss, costly infrastructure failures, and water quality issues. When surveyed, 68% of Adams County water providers that responded indicated that aging infrastructure was one of their top risks, with the impacts of the risk compounded by rising costs for infrastructure replacement and development (see the Engagement Summary Appendix). Mobile home communities, manufactured home communities, and smaller water providers are particularly susceptible to this challenge. Smaller systems have significant financial constraints and require efficient planning for long-term infrastructure improvement costs. Smaller water providers also have limited staff capacity and often do not have the resources to develop long-term planning documents like a capital improvement or emergency preparedness plan. As financial and infrastructure challenges continue, supporting these smaller providers will be particularly important for sustainable water management in the future.

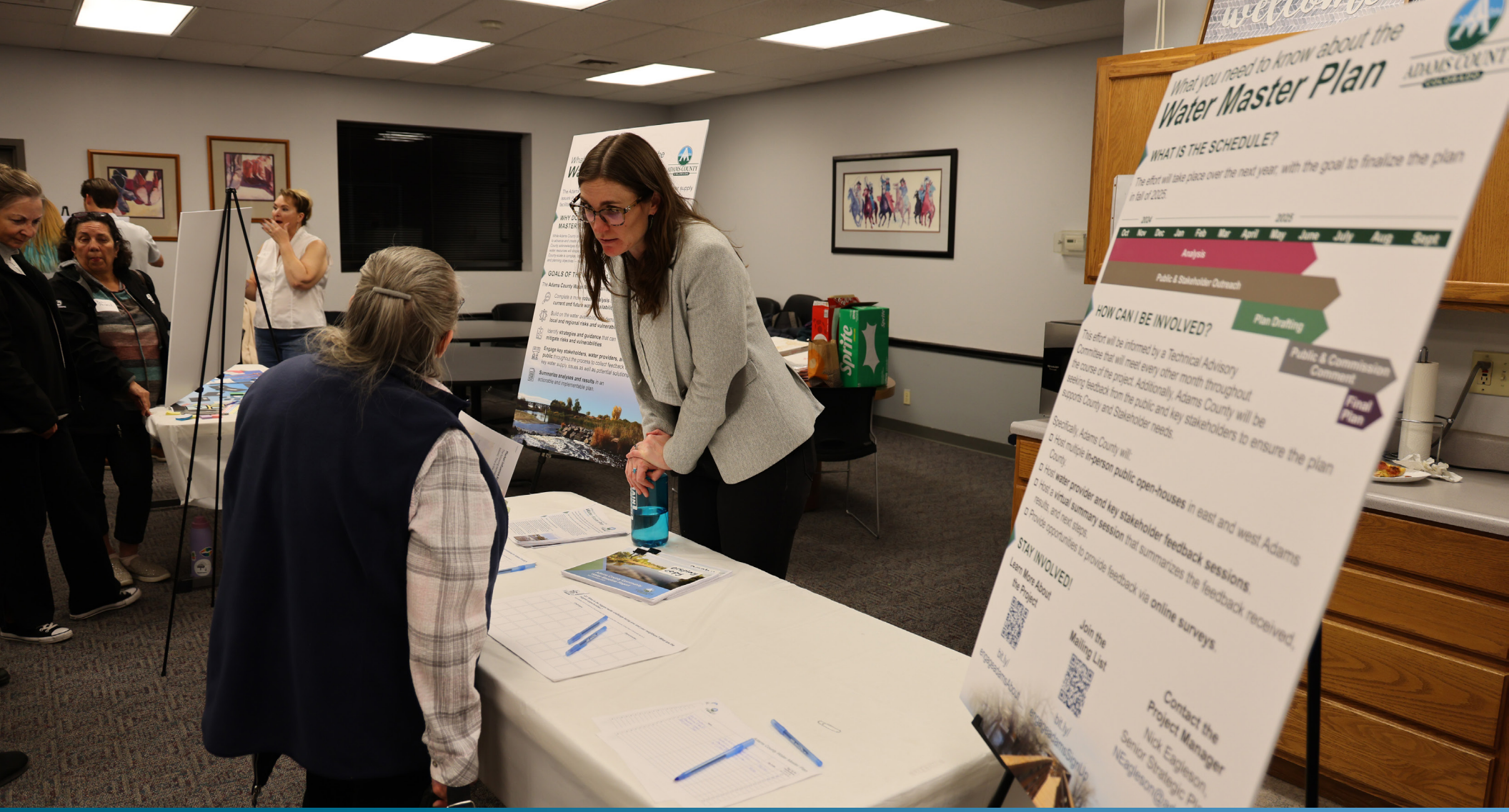
While Adams County recognizes the importance of this challenge, no priority strategies were identified; however, the related Strategy H1 could provide funding for projects aimed at replacing aging infrastructure and supporting smaller providers.

ADDITIONAL OPPORTUNITIES

- Enhance/improve coordination processes to align water infrastructure improvements with Adams County capital improvements
- Explore opportunities for Adams County to coordinate water emergency preparedness and response planning and activities (e.g., cybersecurity, terrorism, emergency water shutoffs/water distribution programs, etc.)



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Chapter 6

IMPLEMENTATION NEXT STEPS

Chapter Contents

6.1 Resources to Support Plan Implementation

6.2 Keeping the Water Master Plan Up to Date

6.3 Tracking and Reporting

6.4 Living Plan

The Adams County Water Master Plan identifies 13 priority strategies to be initiated over the next five years. The table outlines strategies identified for initiation in Year 1, emphasizing the importance of getting them underway based on factors highlighted in Table 11. Strategies are listed in the order they appear in the plan, not by implementation priority, which may shift over time as needs evolve. Implementation details can be found in the Implementation Plan Appendix.



6.1 RESOURCES TO SUPPORT PLAN IMPLEMENTATION

Adams County has a critical role to play in bringing the Water Master Plan to life by committing internal resources and aligning institutional priorities to support implementation. Adams County can harness its own resources to support implementation in several ways, including:

- Reallocating staff time and responsibilities to prioritize water strategy implementation across departments.
- Aligning water strategy priorities with annual Adams County budget and Capital Improvement Plan cycles.
- Hiring or procuring the necessary expertise to support plan implementation.
- Reviewing and updating Capital Improvement Plan (CIP) criteria to reflect water-related goals.

Table 15 Legend

Table 15 provides a high-level estimate of staffing requirements, upfront investment, and ongoing investment necessary to support each strategy.

Staffing Requirement: identifies how much staff time a strategy may require. Staff time may be met between some combination of reallocating responsibilities of existing staff, procuring consulting services, or hiring additional employees..

- Low: Would require 0-0.25 FTE
- Medium: Would require .25-1 FTE
- High: Would require >1.0 FTE

Upfront Investment: identifies how much initial investment a strategy may require (e.g., capital improvement, procurement of supplies.

- None: no expected ongoing annual cost
- Low: Some upfront investment, less than $10,000
- Medium: Upfront investment between $10,000-$50,000
- High: Upfront investment greater than $50,000

Ongoing (Annual) Cost: identifies any ongoing annual costs beyond the upfront investment cost (e.g., annual program funding requirements).

- None: No expected ongoing annual cost
- Low: Some ongoing cost, less than $10,000
- Medium: Ongoing cost between $10,000-$50,000
- High: Ongoing cost greater than $50,000



Table 15. Resource Requirements by Strategy

Strategy	Year 1 Priority	Staff Requirement	Upfront Investment	Ongoing Annual Cost
Strategy A1. Update water adequacy requirements/demand standards and improve related Adams County review processes	Y	👤👤👤	$$	-
Strategy A2. Continue to work with water providers on land use planning and forecasting	Y	👤👤	-	-
Strategy A3. Update development codes to promote water efficiency in new development and redevelopment	Y	👤👤	$$	-
Strategy A4. Create a groundwater overlay district to support sustainable development in areas with non-renewable groundwater supply	N	👤👤👤	$$	-
Strategy B1. Expand participation in regional water management groups and planning processes	N	👤	-	-
Strategy B2. Establish an Adams County-led water efficiency program in partnership with water providers	N	👤👤👤	$$$	⚙$ ⚙$ ⚙$
Strategy C1. Dedicate Adams County staff to lead water efforts across Adams County	Y	👤👤👤	-	-
Strategy C2. Pursue water training and education for Adams County staff and leadership	Y	👤	$	⚙$
Strategy D1. Guide property owners to repair/replace septic systems and/or connect to local sewer systems	N	👤	$	⚙$
Strategy E1. Support and/or partner with providers to apply for grant funds for storage, reuse, and renewable supply development	Y	👤	-	-
Strategy F1. Require observation wells or participation in a shared groundwater monitoring program for developments using Denver Basin or designated basin groundwater	N	👤	$$	⚙$
Strategy G1. Leverage innovative land use and water management tools to retain valuable agricultural land and businesses	N	👤👤👤	$$$	⚙$ ⚙$
Strategy H1. Explore revitalization authorities to support water-related reinvestment	Y	👤👤👤	$$$	⚙$

6.2 KEEPING THE WATER MASTER PLAN UP TO DATE

Maintaining an up-to-date Water Master Plan is essential to ensure this Plan will remain relevant, actionable, and aligned with the latest data, community priorities, and funding opportunities. It is recommended that the analysis for this Plan, and a comprehensive review of strategies and implementation progress, is revisited every five years[8], with a more detailed review occurring every 10 years, ideally in alignment with comprehensive plan updates.

6.3 TRACKING AND REPORTING

Additionally, it is recommended that Adams County staff prepare an annual update to the Board of County Commissioners and Planning Commission to report on implementation progress and key outcomes from the year prior. Updates should include a summary of:

1. Priority strategies in focus for the previous year
2. Key implementation steps taken to advance priority strategies
3. Any major "wins" or lessons learned
4. Priority strategies in focus for the upcoming year
5. Any additional opportunities to consider elevating to priority strategy for the upcoming year

Major implementation wins and success stories can also be reported to the public through the Sustainability Plan Annual Report, the Adams County Annual Report, or via the Adams County website.



8 SB24-174 legislation requires the analysis associated with water elements of comprehensive plans be reviewed every five years.

6.4 LIVING PLAN

In addition to periodic, holistic updates, this plan can be viewed as a living document, with the ability to adapt priority strategies and strategy details as implementation unfolds. For instance, some of the **additional opportunities** identified within each challenge may be elevated to "priority" status over the next five years to take advantage of new funding opportunities, changes in regional or Adams County priorities, or other contextual factors. The **strategy implementation action plans** outlined in the Implementation Plan Appendix are also designed with flexibility in mind. Each priority strategy has a detailed implementation plan that provides examples of the desired outcome for the strategy and a high-level roadmap for implementing the strategy. However, there are many ways to implement priority strategies in this Plan, and lead implementers are encouraged to adapt the implementation details as needed.





APPENDICES

GLOSSARY OF KEY TERMS

Alluvial Groundwater

Water stored in permeable materials such as sand and gravel adjacent to rivers. This groundwater is hydrologically connected to surface flows, meaning streamflow directly contributes to aquifer recharge and, conversely, groundwater pumping can deplete nearby surface water. See also: tributary groundwater.

Augmentation Plans

In an over appropriated system, a court-approved augmentation plan is required to get a well permit for withdrawal of tributary (stream-connected) groundwater or to obtain a new surface diversion. Augmentation plans allow for out-of-priority diversions by providing replacement water in terms of time, place, quantity, and quality (Kurath, 2015; Colorado State University, 2023).

Beneficial Use

As defined by the 1969 Water Right Determination and Administration Act - *Beneficial use is the use of that amount of water that is reasonable and appropriate under reasonably efficient practices to accomplish without waste the purpose for which the appropriation is lawfully made (C.R.S. 37-92-101 et seq.).* This definition is purposely flexible to allow for a variety of uses. Common beneficial uses include (Colorado State University , 2023):

- Augmentation
- Fish and Wildlife Culture
- Power Generation
- Colorado Water Conservation Board Instream Flows and Natural Lake Levels
- Flood Control
- Recreation on Reservoirs
- Commercial
- Industrial
- Recreational In-Channel Diversions
- Domestic
- Irrigation
- Release from Storage for Boating and Fishing
- Dust Suppression
- Mined Land Reclamation
- Snowmaking
- Evaporation from a Gravel Pit
- Municipal
- Stock Watering
- Fire Protection
- Oil and Gas Production
- Water Storage



Buy and Dry

The sale of water rights from agricultural uses to other, most often municipal, uses that results in the "dry up" of agricultural lands.

Colorado Ground Water Commission (CGWC)

Regulatory and adjudicatory body authorized by the General Assembly to manage and control groundwater within the eight Designated Groundwater basins in eastern Colorado. Under Title 37, Article 90 of the Colorado Revised Statues the CGWC has authority to adjudicate water rights and issue large capacity well permits. The CGWC also has authority to create Ground Water Management Districts within predetermined designated groundwater basins. The CGWC has delegated most of its functions to the State Engineer. However it has not delegated determination of designated groundwater basins, creation of management districts, adoption of policy, or approval of variances from rules (Colorado Division of Water Resources, 2023).

Conditional Water Right

A water right appropriation that has started but has not been finalized. The owner has the right to use the water as outlined in the decree but has not actually put the water to beneficial use. To make conditional water right absolute, water must be put to a beneficial use. Proof of use must be provided to the Colorado Water Court (Kurath, 2015).

Conjunctive Use

The coordinated management of surface water and groundwater supplies to optimize water availability, reliability, and long-term sustainability. For example, a water provider may utilize surface water supplies when available (e.g., during spring runoff) while relying on groundwater during dry periods, droughts, or when surface water supplies are limited.

Consumptive Use

The portion of water that is diverted from a source and not returned to the original system because it is fully consumed through processes such as evaporation, plant uptake (transpiration), incorporation into products, or human use.

Designated Groundwater Basin

Designated Groundwater Basins (Designated Basins) are areas in the eastern plains of Colorado with very little surface water where users rely primarily on groundwater as their source of water supply. Designated groundwater rights are administered separately from water rights outside of the Designated Basins (DWR, 2023).

Small capacity wells within the Designated Basins, consisting of those domestic, livestock watering, commercial, monitoring and observation, and firefighting wells that qualify under section C.R.S. 37-90-105 are permitted and administered by the State Engineer (DWR, 2023).

Direct Potable Reuse (DPR)

Reclaimed water treated with advanced treatment processes to drinking standards, allowing it to be directly integrated into the potable water supply without an environmental buffer.

Domestic and Non-Residential Demands

Water used for residential, commercial, industrial, and institutional purposes.

Domestic Wells

Wells permitted for household use with limited outdoor irrigation.

Exempt Wells

Small-capacity wells used for domestic, stock-watering and low-intensity commercial uses in locations where other supplies are not available.

Firm Yield/Water Source

The maximum consistent flow rate or amount of water that can be reliably provided from a water source regardless of drought or other conditions.

Fully Consumable

Water that is allowed to be reused for irrigation, augmentation, or municipal purposes.

Geologic Confining Unit

A layer of impermeable material that prevents movement of groundwater, acting as a barrier between aquifers.

Geophysical logs

Continuous recordings of the physical properties of subsurface rocks and fluids, collected by instruments lowered into boreholes.

Ground Water Management Districts

Local districts with additional administrative authority that manage water in designated groundwater basins. Ground Water Management Districts are created by the Colorado Ground Water Commission (Colorado State University, 2023).

Incorporated Areas

City or town that has its own local government.

Indirect Potable Reuse (IPR)

A water reuse process in which treated wastewater is returned to the natural water cycle — such as through groundwater recharge or surface water augmentation — before being withdrawn, treated again, and used as drinking water. This method involves an environmental buffer between the wastewater treatment and potable use, providing additional natural filtration and time for monitoring.

Junior and Senior Water Rights

A water right's priority is determined by the date of appropriation, or the date on which that water right was first put to a beneficial use. The earlier the date, the more senior the water right.

Native flow

A term used to describe the water that flows down a river.

Net Sand

total thickness of water-bearing sand layers within each recognized aquifer.

Non-potable Reuse

Treated wastewater repurposed for uses not involving human consumption, such as landscape irrigation, industrial processes, and agricultural applications.

Non-Renewable Water Supply

Water that is not replenished naturally through the hydrologic cycle on human time scales.

Non-tributary Groundwater

Water outside of a designated groundwater basin, the pump of which will not materially impact a surface stream in 100 years at a rate greater than 0.1 percent of the annual rate of withdrawal. Non-tributary groundwater is allocated and administered as non-tributary of Denver Basin groundwater (Water Education Colorado, 2021).

Not Non-Tributary Groundwater

The legal classification of the water as either non-tributary or not non-tributary determines whether pumping must be augmented to protect senior surface water rights. Not non-tributary groundwater (such as the Dawson Aquifer in parts of western Adams County) does require augmentation to offset impacts on nearby surface streams.

Public Water Systems

As defined by the Colorado Department of Health and the Environment (CDPHE), any system that provides water for human consumption through pipes or other constructed conveyances has at least 15 connections, or regularly serves at least 25 individuals daily for at least 60 days of the year.

Pre-213 Water Rights

Rights that were administered by the state prior to the passage of Senate Bill 213 in 1973, which outlines regulations of groundwater withdrawals and defined Tributary vs Non-Tributary groundwater rights.

Prior Appropriation Doctrine

Legal principle that governs Colorado's water rights systems. Within the doctrine more senior water rights have priority to divert and use water before users with more junior water rights. A water right's priority is determined by the date of appropriation, or the date on which that water right was first put to a beneficial use. The earlier the date, the more senior the water right.

Return Flows

The portion of water that, after being diverted for use (such as irrigation or municipal supply), is not consumed and returns to the surface water or groundwater system. This water can re-enter streams, rivers, or aquifers and may be reused by other water users downstream. Return flows are a critical part of Colorado's water supply and water rights system.

Specific Yield

Ratio of the volume of water that drains from a saturated soil compared to the total volume of the material.

Sustainable Water Management

Managing water supply and demand while jointly considering water availability and reliability in a way that meets current needs without compromising the ability to meet future demands. It considers the entire water cycle, including supply, use, treatment, and return flows.

Tributary Groundwater

Groundwater that is connected to a natural stream either through surface or underground flows and is recharged from precipitation, including seasonal runoff from snowmelt and irrigation return flows. All groundwater in Colorado is assumed to be tributary unless shown to be non-tributary to a surface stream. Colorado's prior appropriation system regulates tributary groundwater (Water Education Colorado, 2021).

Renewable Water Supply

Water resources that naturally replenish through the hydrologic cycle or run off (e.g., rain, snowmelt, etc).

Replacement Plan

Replacement plans are like augmentation plans. Within Designated Ground Water Basins, replacement plans are approved by the Ground Water Commission to protect existing water rights by replacing water that is depleted by any new well activity (Colorado Division of Water Resources, 2020).

Return Flow

Water that returns to surface or groundwater after human use (Texas A&M, 2023)

River Basins

An area of land that drains all the streams and rainfall to a common **outlet (Water Science School, 2018).**

Self-Supplied Users

Users that rely on privately held groundwater wells rather than municipal water systems.

Transbasin Water

Imported water diverted from one river basin to another to meet the demands of areas with limited local water resources. Transmountain diversions are a specific type of transbasin that crosses a mountain range – in Colorado this is most commonly the Continental divide.

Unincorporated Areas

Areas that are not apart of a City or Town. Usually governed by the county.

Water Adequacy

The ability to reliably meet water demands over a certain time frame.

Water Availability

The consideration of if high-quality water is feasibly available and accessible for beneficial use.

Water Divisions

The Colorado Division of Water Resources Division Offices are located in the seven major river basins throughout the state. Adams County is in the South Platte River Basin or Division 1.Division Offices employ Water Commissioners to ensure that the water rights priority system is followed, enforcing the decrees and water laws of the State of Colorado. Other Division Office staff manage use and measurement rules to ensure that Colorado remains in compliance with interstate and interbasin agreements. Hydrographers in these offices measure streamflow and reservoir levels and manage the statewide satellite monitoring system. Hydrogeologists analyze well logs and measure well levels to determine aquifer characteristics, while Dam safety engineers verify the safety of Colorado's dams and inspect dam construction projects. (Colorado Division of Water Resources, 2023)

Water District

To help with administration and enforcement, within each Water Division in Colorado are water district. For example, with in the South Platte Water Division there are 15 different water district.

Water Reliability

The consideration of if water is consistently physically and legally available for beneficial use.

Wholesale Water

Water that is contracted or purchased from large regional suppliers, such as water conservancy districts or major utilities.

100- year Aquifer Life Rule

A permitting requirement that limits property owners to withdraw a specified volume of groundwater over a 100-year period, based on the saturated thickness of the aquifer beneath their land



I. WATER DEMAND ANALYSIS (CONFIDENTIAL FOR STAFF)

II. GROUNDWATER ANALYSIS (CONFIDENTIAL FOR STAFF)

See next page for additional Appendices

III. WATER MANAGEMENT CHALLENGES AND STRATEGIES

Detailed summary of the Risk and Vulnerability assessment that led to the development of the 10 water related challenges, as well as the process for identifying the 13 priority strategies included in the plan.



III. WATER MANAGEMENT CHALLENGES AND STRATEGIES

This appendix includes an overview of the process used to develop the list of risks and vulnerabilities for Adams County. It also documents how these risks and vulnerabilities were simplified into key challenge areas, and how strategies to address these challenges were identified (Figure 1).



Figure 1. General Process Flow

Water Management Challenges

This section outlines the development process for the risks and vulnerabilities and how they were converted to key challenge areas.

Risk and Vulnerability Assessment

As part of this project, a comprehensive Risk and Vulnerability Assessment was conducted to identify, categorize, rank, and prioritize risks affecting Adams County. First, risks and vulnerabilities were drafted and categorized by the Technical Advisory Committee (TAC), Adams County Project Team, and Consultant Team. These risks were then each given scores in three categories to help determine relative impact and importance and aid in the top challenge identification, described in greater detail below.

Risk and Vulnerability Identification

To help organize the process, the consultant team identified seven overarching risk categories (Figure 2).

Demand Risks	Risks related to changes in required volumes, timing and quality of water that will need to be delivered to meet customer demand.
Climatic and Hydrologic Risk	Risks related to climatic variability and other hydrologic factors that affect sources of supply.
Watershed Risks	Risks related to physical watershed conditions that impact yields.
Operational and Infrastructure Risks	Risks related to how providers deliver physically and legally available water to customers (includes storage, treatment, and distribution).
Administrative and Legal Risks	Risks related to conditions, regulations, cost, or polices that could impact legal allocation or availability of water supplies.
Economic Risks	Risks that reduce the economic viability of Adams County due to water and wastewater cost.
Health and Social Risks	Risks that reduce a community's access to safe, clean, and affordable drinking water.

Figure 2. Risk and Vulnerability Categories

The identified risk categories were presented to the Technical Advisory Committee (TAC), which was tasked with brainstorming specific risks within each risk category. For the analysis, risks were defined as a specific condition, event,

or factor that has the potential to negatively impact water systems, infrastructure, or communities. Risks represent vulnerabilities or threats that if not addressed could lead to service disruptions, environmental harm, public health issues, or economic losses.

This process resulted in the identification of 34 unique risks, each potentially associated with multiple risk categories. Using this list, the Adams County Project and consultant team further refined and added the risk list through a review of existing County and regional plans, as well as Adams County's own experiences. After this process, the list expanded to 45 risks.

Riks and Vulnerability Prioritization

To assess and prioritize the risks, each risk was evaluated across three categories (likelihood, impact, and County's ability to respond) using a scale of 1 to 4, with higher scores indicating greater priority. The goal of this effort was to both identify which risks will have the largest impact on Adams County businesses, residents, and water providers, as well as identifying the risks Adams County is most capable of addressing.

- **Likelihood to occur between now and 2040**

  1: **Unlikely**, The risk has a very low probability of occurring based on historical data, trends, and projections. Little to no significant contributing factors exist.

  2: **Possible**, The risk has been observed occasionally in the past and could happen again, but it is not highly probable. Some contributing factors may increase its likelihood.

  3: **Likely**, The risk has occurred multiple times in the past and current trends indicate an increasing probability. Several factors contribute to the risk.

  4: **Almost Certain**, The risk is expected to occur based on strong evidence, trends, and expert projections. There are clear and present contributing factors.

- **Impact to Adams County residents, businesses and/or water providers**

  1: **Minimal Impact**, The event would cause minor disruptions with little to no lasting effects. Local infrastructure, economy, public health, and water supply would remain stable with minor adjustments needed. Health impacts would be negligible, with no significant risk to drinking water safety or sanitation.

  2: **Noticeable Impact**, The event would cause moderate disruptions, affecting some water users, infrastructure, or economic sectors. Recovery would be needed, but existing policies and resources can manage the issue. Public health could be affected by localized water quality issues, minor increases in waterborne illnesses, or temporary advisories (e.g., boil water notices). Vulnerable populations (e.g., elderly, immunocompromised) may face short-term risks.

  3: **Significant Impact**, The event would cause major disruptions to water supply, infrastructure, or economic activities. The County would need substantial intervention (e.g., policy changes, emergency response, infrastructure repairs). Health impacts could include widespread waterborne illness outbreaks, increased respiratory issues from environmental changes (e.g., wildfire-related air and water

contamination), and long-term health concerns due to emerging contaminants (e.g., PFAS, heavy metals).

4: **Catastrophic Impact**, The event would cause widespread disruption and long-term damage to water resources, infrastructure, and the local economy. Recovery would take years or decades, and some areas may experience permanent changes (e.g., water scarcity forcing land use changes, economic decline). Health consequences could be severe, including mass exposure to toxic contaminants, long-term chronic disease risks (e.g., heavy metal poisoning, cancer clusters), or loss of reliable access to clean water for entire communities. Emergency medical response and public health interventions would be overwhelmed. Recovery would take months to years.

- **Adams County's Ability to Respond**

  1: **Outside County Authority**, The County has little to no jurisdiction or ability to address risk effectively. Responsibility falls to state, federal, municipal, or private entities

  2: **Limited Influence**, The County may have some role, such as advocacy or coordination, but direct action is constrained by funding, policy, or jurisdictional limitations.

  3: **Moderate Control**, The County has some authority and resources to mitigate the risk, either through planning, regulation, or partnerships, but full resolution may require collaboration with other entities.

  4: **Full Authority & Responsibility**, The County has clear jurisdiction, resources, and policy mechanisms to directly address and mitigate the risk. Action is feasible and within its core responsibilities.

Through a facilitated process with the consultant team, Adams County Project Team, and TAC this scoring rubric was applied to each risk. Each received a composite score that is the Likelihood*Impact*County Ability to the respond. The higher the composite score the greater impact of the risk and the more likely Adams County will be able to mitigate the impact in some capacity. Risks and associated scores are in Table 1. The maximum score a single risk could have is 64 – indicating highest risk, highest likelihood, and greater ability for Adams County to respond.

Table 1. Final Risk and Vulnerabilities and Associated Scores

Risk	Likelihood to occur between now and 2040	Impact to County residents, businesses, water providers, etc.	County Government Ability to Respond	Composite Score
Administrative and Legal				
Revision and implementation of interstate water rights agreements (e.g., Colorado River Compact) negatively impact availability of supply in Colorado	3	2	1	6
More stringent regulation of PFAS for drinking water and wastewater requiring increased treatment and monitoring	3	3	3	27
Lack of technical knowledge/skills for land use planners to assess water adequacy for new development	4	3	4	48

Risk	Likelihood to occur between now and 2040	Impact to County residents, businesses, water providers, etc.	County Government Ability to Respond	Composite Score
Uncertainty of hydrogeologic models used to determine the quantity of water that will be available in the future	4	2	3	24
State legislation requiring density increases beyond local ability to provide water	3	2	4	24
Water rights administration requirements limiting ability to acquire additional supplies (e.g., augmentation plans)	4	2	1	8
Lack of continuous monitoring and reporting of key aquifer water levels (e.g., Surface Water Levels).	4	2	2	16
Large number of providers/decentralized water planning and implementation decreases efficiency and quality of water services.	4	2	2	16
Policymakers' misunderstanding of water issues can lead to flawed decision-making	4	3	4	48
Regional competition for limited supplies	4	2	3	24
State of CO staff capacity for water reviews/processes (e.g., augmentation plans, well permits, etc.)	4	2	2	16
Watershed				
Increasing prevalence of new land uses that have an elevated risk of water supply contamination (e.g., heavy industry)	2	3	3	18
Groundwater supply contamination from aging landfills	1	1	3	3
Surface water supply contamination from closed/historic landfills	2	2	3	12
Groundwater supply contamination from Class VI injection wells	1	2	3	6
Local watershed point source pollution (industrial discharges)	4	2	2	16
Local watershed point source pollution (stormwater)	4	2	3	24
Wildfires negatively impact water supply (e.g., quality, availability)	4	2	1	8
Contamination risks due to lack of reverse osmosis disposal support	4	2	2	16
Buy and dry without revegetation plans can have negative impacts on local ecosystems	4	2	2	16
Invasive species (e.g., Zebra mussels and New Zealand mud snail) negatively impact water supply (e.g., water quality) and/or infrastructure (pipe clogging)	4	2	2	16

Risk	Likelihood to occur between now and 2040	Impact to County residents, businesses, water providers, etc.	County Government Ability to Respond	Composite Score
Demand				
Overconsumption of limited non-renewable groundwater supplies (i.e., Denver Basin)	4	4	3	48
Residential and commercial development and population growth outpace Advancing Adams County estimates of 1.7% annually	2	2	3	12
Addition of new facilities that use a significant amount of water for special purposes (e.g., data centers, grow operations, water intense industrial applications)	2	3	3	18
Lack of public knowledge around water topics (e.g., HOAs, what to do if/when wells run dry, etc.)	4	1	3	12
Firming of supplies limiting ability to respond to shortages	4	3	1	12
Climate and Hydrologic				
Lack of diverse water supply sources (e.g., limited to one source of supply, groundwater or one source of surface water, Colorado River Basin, wholesale water providers)	4	4	2	32
Extended droughts/aridification decreasing water supply and increasing irrigation demands	4	3	2	24
Climate changes that negatively impact the availability and timing of water supply (e.g., shifts in precipitation, earlier runoff, flooding/extreme events)	4	3	1	12
Economic				
Inability to provide affordable water/sewer services for customers due to rising costs of infrastructure and operations.	4	3	2	24
Uncertainty/Lack of funding for water supply infrastructure projects (e.g., storage, distribution) or plans that can improve resilience of supply, reduce water loss, etc.	4	3	2	24
Loss of agricultural water rights that results in the loss of productive agricultural lands	4	2	4	32
Economic infeasibility of piping water from location of water right to where it's needed.	3	2	1	6

Risk	Likelihood to occur between now and 2040	Impact to County residents, businesses, water providers, etc.	County Government Ability to Respond	Composite Score
Water reuse, and specifically graywater administrative and cost hurdles and complications	4	1	1	4
Operational and Infrastructure				
Power shutoffs/blackouts impacting water and wastewater treatment plants and pumping	3	2	3	18
Water quality and distribution issues (e.g., leaks) for older mobile home communities	4	2	2	16
Inability to serve customers based on inability to complete identified projects	3	3	1	9
Cybersecurity attacks	4	3	3	36
Terrorism/attempts to intentionally poison the drinking water	2	2	3	12
Inadequate alternative methods of water treatment during emergencies, e.g. boil water advisories, natural disasters	3	2	3	18
Risk of infrastructure failure due to aging infrastructure	4	3	2	24
Lack of coordination between County street improvements over aging infrastructure	4	1	4	16
Lack of backup/redundant supplies, interconnections	4	3	2	24
Risk of under/over allocating water rights due to inability to accurately measure water resources (e.g., manual measurement of water resources, groundwater resource limitations)	2	2	3	12
Delayed water infrastructure improvements due to legal and permitting challenges	3	2	3	18

Moving from Risks to Challenges

Many risks are related and can be mitigated by similar strategies. As a result, risks were grouped into Challenge areas that represent broader systemic issues that Adams County may address through related strategies. These Challenges present more complex problems that reflect higher-level concerns identified through the aggregation and analysis of individual risks. Table 2 shows the challenge category assigned to each risk. There were several cases where more than one challenge area was related to the risk – in these cases, the project team assigned the risk to the most relevant challenge area.

Table 2. Challenge area by risk

Challenge	Risk Description
A. Fragmented Water and Land Use Planning and Decision-Making	Overconsumption of limited non-renewable groundwater supplies (i.e., Denver Basin)
	State legislative requiring density increases beyond local ability to provide water
	Addition of new facilities that use a significant amount of water for special purposes (e.g., data centers, grow operations, water-intense industrial applications)
	Residential and commercial development and population growth out pace Advancing Adams County estimates of 1.7% annually
B. Limited Regional Coordination on Water	Cybersecurity attacks
	Large number of providers/decentralized water planning and implementation decreases efficiency and quality of water services.
	Power shutoffs/blackouts impacting water and wastewater treatment plants and pumping
	Lack coordination of County street improvements over aging infrastructure
	Terrorism/attempts to intentionally poison the drinking water
C. Limited Water Knowledge and Expertise	Lack of technical knowledge/skills for land use planners to assess water adequacy for new development
	Policy makers' misunderstanding of water issues can lead to flawed decision-making
	Lack of public knowledge around water topics (e.g., HOAs, what to do if/when wells run dry, etc.)

Challenge	Risk Description
D. Water Quality Impacts	Local watershed point source pollution (stormwater)
	Local watershed point source pollution (industrial discharges)
	Contamination risks due to lack of reverse osmosis disposal support
	Invasive species (e.g., Zebra mussels and New Zealand mud snail) negatively impact water supply (e.g., water quality) and/or infrastructure (pipe clogging)
	Wildfires negatively impact water supply (e.g., quality, availability)
	Increasing prevalence of new land uses that have an elevated risk of water supply contamination (e.g., heavy industry)
	Surface water supply contamination from CLOSED/historic landfills
	Groundwater supply contamination from class VI injection wells
	Groundwater supply contamination from aging landfills
E. Lack of Water Supply Diversity	Lack of diverse water supply sources (e.g., limited to one source of supply, groundwater or one source of surface water, Colorado River Basin, wholesale water providers)
	Firming of supplies limiting ability to respond to shortages
	Lack of backup/redundant supplies, interconnections
	Regional competition for limited supplies
	Water rights administration requirements limiting the ability to acquire additional supplies (e.g., augmentation plans)
	Revision and implementation of interstate water rights agreements (e.g., Colorado River Compact) negatively impact availability of supply in Colorado
	Inadequate alternative methods of water treatment during emergencies, e.g. boil water advisories, natural disasters
F. Water Data Availability	Uncertainty of hydrogeologic models used to determine the quantity of water that will be available in the future
	Lack of continuous monitoring and reporting of key aquifer water levels (e.g., Surface Water Levels).
	Risk of under/over allocating water rights due to inability to accurately measure water resources (e.g., manual measurement of water resources, groundwater resource limitations)

Challenge	Risk Description
G. Agricultural Water Transfer ("Buy and Dry")	Loss of agricultural water rights that results in the loss of productive agricultural lands
	Buy and dry without revegetation plans can have negative impacts on local ecosystems
H. Water Provider Funding and Capacity Needs	Inability to provide affordable water/sewer services for customers due to rising costs of infrastructure and operations.
	Uncertainty/Lack of funding for water supply infrastructure projects (e.g., storage, distribution) or plans that can improve resilience of supply, reduce water loss, etc.
	More stringent regulation of PFAS for drinking water and wastewater requiring increased treatment and monitoring
	Inability to serve customers based on inability to complete identified projects
	State of CO staff capacity for water reviews/processes (e.g., augmentation plans, well permits, etc.)
	Economic infeasibility of piping water from location of water right to where it's needed.
	Water reuse, and specifically graywater administrative and cost hurdles and complications
	Delayed water infrastructure improvements due to legal and permitting challenges
Aging Water Infrastructure	Risk of infrastructure failure due to aging infrastructure
	Water quality and distribution issues (e.g., leaks) for older mobile home communities
Drought and Climate Change	Extended Droughts/Aridification decreasing water supply and increasing irrigation demands
	Climate changes that negatively impact the availability and timing of water supply (e.g., shifts in precipitation, earlier runoff, flooding/extreme events)

Water Management Strategies

Once the project team identified the ten challenges, we reviewed and refined the strategies brainstormed by risk and vulnerability to ensure alignment with the challenge area. The project team reviewed this draft list of 45 strategies with water providers via a two-hour strategy feedback session. At this session, there were 15 water providers present, including representation from some of the largest providers in the County and multiple smaller providers in the County. Water providers voted on their top "two" priorities within each challenge area, then the project team facilitated a full group discussion about the results. The general findings from this session were that:

1) Providers are interested in the County playing a role as a convener (e.g., bringing providers together to discuss the benefits of regionalization) and funder
2) Providers see value in the County prioritizing strategies that address fragmented water and land use planning, including improving coordination between the County and water providers
3) Providers do not want the County to take a top-down or regulatory role related to water services (e.g., regionalizing water provider services).
4) There are some strategies that might benefit most providers (e.g., establishing a County-led program to provide low-income water saving programming).
5) Some strategies were better suited for some providers more than others e.g., some providers were open to regionalization, while some were starkly against it).

Next, the project team presented the strategies at two open house groups, where 7 members of the public provided feedback, by voting on their priority strategies. The attendees also marked what the County's role should be when implementing each strategy (Lead, Support, None). It should be noted that more members of the public attended the open house in Eastern Adams County compared to the open house in Western Adams County. The general findings from this session were:

1) Attendees indicated that of the management challenges presented, increased water demands and fragmented planning and decision making were the most important to address in the Water Master Plan.
2) Zoning and planning decisions should more actively consider water availability and future demand. Long-term planning efforts should evaluate the impacts of new developments on current residents reliant on non-renewable groundwater sources.
3) County staff and planners should be encouraged to attend water education programs. More water knowledge could help with the development of County plans that are more water conscious.
4) Water planning decisions should consider smaller providers and well owners. Strategies outlined in the plan should not only address issues for the County's largest water providers.

The project team reviewed the feedback from the water providers and public with County staff to narrow down the list of recommended strategies. Based on the survey results and comments, priority strategies were selected which are presented in Table 3.

Survey results from both the water providers and public can be found in the IV. Engagement Summary Appendix.

Table 3. Adams County Water Challenges and Priority Strategies

Challenge	Priority Strategy
A. Fragmented Water and Land Use Planning and Decision-Making	A1. Update water adequacy requirements/demand standards and improve related Adams County review processes
A. Fragmented Water and Land Use Planning and Decision-Making	A2. Continue to work with water providers on land use planning and forecasting
A. Fragmented Water and Land Use Planning and Decision-Making	A3. Update development codes to promote water efficiency in new development and redevelopment
A. Fragmented Water and Land Use Planning and Decision-Making	A4. Create a groundwater overlay district to support sustainable development in areas with non-renewable groundwater supply
B. Limited Regional Coordination on Water	B1. Expand participation in regional water management groups and planning processes
B. Limited Regional Coordination on Water	B2. Establish an Adams County-led water efficiency program in partnership with water providers
C. Limited Water Knowledge and Expertise	C1. Dedicate Adams County staff to lead water efforts across Adams County
C. Limited Water Knowledge and Expertise	C2. Pursue water training and education for Adams County staff and leadership
D. Water Quality Impacts	D1. Guide property owners to repair/replace septic systems and/or connect to local sewer systems
E. Lack of Water Supply Diversity	E1. Support and/or partner with providers to apply for grant funds for storage, reuse, and renewable supply development
F. Water Data Availability	F1. Require observation wells or participation in a shared groundwater monitoring program for developments using Denver Basin or designated basin groundwater
G. Agricultural Water Transfer (“Buy and Dry”)	G1. Leverage innovative land use and water management tools to retain valuable agricultural land and businesses
H. Water Provider Funding and Capacity Needs	H1. Explore revitalization authorities to support water-related reinvestment

IV. ENGAGEMENT SUMMARY

Detail summary of all engagement events that informed all aspects of the plan.





IV. ENGAGEMENT SUMMARY

Stakeholder engagement was essential in developing a plan that addresses the unique challenges and opportunities in Adams County. Through the Plan's informational website and 16 events, there were over 1,000 unique engagement touchpoints over the course of the project. Specifically, the plan was informed by both external and internal stakeholders including:

- Project and Staff Team
- Technical Advisory Committee
- Water Providers and Key Stakeholders
- Public
- Board and Commissions

The following sections summarize each of these different groups and how they were engaged during the process.

Project and Staff Team

The objective of the Project and Staff Team Meetings was to ensure continued alignment from both parties on project goals, timelines, deliverables, and responsibilities. Comprised of representatives from Planning, Public Works, Parks, and Community and Economic Development, these meetings allowed both parties to address changes in scope, challenges, and progress, while providing time for collaboration. Meetings were held roughly every month throughout the duration of the project, with fewer meeting towards the end of the project. Members of the core project team included:

- Nick Eagleson, Senior Strategic Planner
- Byron Fanning, Director of Parks, Open Space, & Cultural Affairs
- Brian Staley, Public Works Director
- Katie Keefe, Environmental Programs Manager
- John C. Stoll, Principal Long Range Planner
- Matthew Emmens, Community & Economic Development Services Senior Engineer
- Jen Rutter, Planning and Development Manager
- Bill Aiken, Community and Economic Development Director

Technical Advisory Committee

To guide the development of this plan, Adams County convened a Technical Advisory Committee (TAC) composed of subject matter experts in water resources, infrastructure, agriculture, community planning, and other related fields to provide technical guidance throughout the project. The TAC advised the planning process and provided specialized input to achieve the overarching goals and objectives of the Water Master Plan, including informing the analyses, strategies, and recommendations developed for the plan. Specifically, the TAC included:

- Juliana Archuleta, Stormwater Administrator, Adams County Public Works
- Greg Fischer, Maintenance District Manager, Adams County Public Works
- Bao Chongtoua, Development Services Director, Mile High Flood District
- Cameron Bertron, Owner, Enviro Finance Group

- Drew Beckwith, Senior Water Resource Analyst, City of Westminster
- Matthew Stockton, Senior Water Resource Administrator, City of Thornton
- Daniel Kelshaw, Water Resource Engineer, South Adams County Water and Sanitation District
- Tricia Williams, (formerly) Water Resource Engineer, South Adams County Water and Sanitation District
- Daniel Pershing, Director of Utilities and Capital Improvements, Town of Bennett
- Don Summers, General Manager, Todd Creek Village
- Kian McIntosh, Senior Water Quality Specialist, Adams County Health Department
- Alex Davis, Assistant General Manager, Aurora Water

Four meetings were conducted with the TAC. The TAC also reviewed a draft version of the plan before being released for public comment. The purpose of each meeting and key takeaways are outlined in Table 1.

Table 1. Dates of meetings, purpose, key takeaways

Date of Meeting	Purpose	Key Takeaways
11/20/2024	• Welcome and introductions • Project overview • Initial feedback on water master plan approach • Analysis overview and technical perspectives • Next steps	• Identified how Adams County can assist organizations with meeting goals relating to water availability • Identified what information would be helpful for organizations in the Water Master Plan • Identified what regional projects or efforts would be most helpful for organizations
02/19/2025	• Project updates • Analysis deep dive • Risk and vulnerability brainstorm • Next steps	• Established alignment and feedback from organizations on analysis progress • Gathered organizational feedback and extra context on survey results • Solicited risk and vulnerability ideas
04/04/2025	• Project progress update • Analysis update • Review and refine risks and risk evaluation • Next steps	• Aligned on progress and timeline • Voted and finalized scoring of risks and vulnerabilities
7/16/2025	• Plan finalization and processes • strategy implementation planning • Next steps	• Review of plan structure and key takeaways • Beneficial to add financial strategy to the plan

Date of Meeting	Purpose	Key Takeaways
		• Brainstorming on implementation details for strategies included in the plan

Water Provider and Key Stakeholder Engagement

Beyond County staff, water providers and land use planners within Adams County are some of the most crucial to the development and eventual implementation of Adams County's Water Master Plan. Water providers and planners have vital data including current and future demand projections, infrastructure limitations, and local requirements as well as direct knowledge of the local water systems. To engage with water providers and planners, a survey was sent to all county water providers, and several work sessions/meetings were hosted to solicit feedback.

Water Provider Engagement

A total of 33 providers were engaged throughout the process, either via the survey, water provider work session, or 1:1 follow-ups (Table 2).

Survey

The objective of the water provider survey was to gain a representative sample of data on providers in the County on topics of current and future water supply and demands, risk and vulnerabilities to supplies, and general feedback on the plan. All water providers on the Colorado Department of Public Health's Public Water System database were contacted by County staff to participate in the survey. This list includes 79 local water providers ranging from municipalities and water and sanitation districts to smaller providers such as businesses, parks departments, and HOAs or metro districts serving individual subdivisions. The survey included questions on:

- Current and future water supply (i.e., sources of supply, volume of supply)
- Current and future water demands (i.e., water demands by different sectors)
- Risk and vulnerabilities to supplies
- General feedback on the Plan

All providers were contacted via email with instructions to participate in the survey. Larger "high-priority" providers, who serve the largest percentage of Adams County, also received targeted follow-ups (and in certain cases, one-on-one meetings) to help facilitate participation.

A total of 22 providers responded to the survey, including 12 of the large, high-priority water providers (Table 2). Collectively, the responding providers serve approximately 85% of the County's population, offering valuable insight into water supply and demand trends across most of the County's residents.

Water Provider Work Session

To provide an update of the Plan's results, as well as receive feedback on the Strategies to include in the plan, a Water Provider work session was held in spring of 2025. At this session, 15 different water providers attended representing both small and larger providers across eastern and western Adams County (Table 2).

Table 2. Water Provider Working Session Attendees

Organization	Water Provider Contact	Survey Participation	Work Session(s)
Anthem West Metropolitan District	Alex Stelzer, Member of Board of Directors, P.E	No	Yes
Aurora Water	Alexandra Davis, Assistant General Manager	Yes	Yes
BBA Water Consultants	Paul Bruss, P.E.	No	Yes
Bennett	Not listed	Yes	No
City of Brighton	Austin Creswell, Water Resource Engineer	Yes	Yes
City of Thortnon	Matt Stockton, Water Resources Administrator	Yes	Yes
City of Westminster	Drew Beckwith, Sr. Water Resource Analyst	Yes	Yes
Colorado Department of Agriculture	Robert Sakata, Agricultural Water Policy Advisor		Yes
Crestview Water and Sanitation District	Clarice O'Hanlon, District Engineer	Yes	Yes
Crestview Water and Sanitation District	Mitch Terry, District Manager	Yes	Yes
Denver Water	Austin Krcmarik, Water Efficiency Lead	No	Yes
Denver Water	Kela Naso, Engineering Specialist	No	Yes
Eastern Adams County Metropolitan District	Ryan Stachelski, District Manager	Yes	No
Estates at Bromley	Not listed	Yes	No
Federal Heights	Don Stahurski, Public Works Director	Yes	No

Organization	Water Provider Contact	Survey Participation	Work Session(s)
Greatrock North WSD	Chris Sanchez, Water resource consultant, BBA Water Consultants	Yes	No
Hideaway Steakhouse	Steve Woodward, Owner	Yes	No
High Plains Water	John Wiser	No	Yes
Hope Ditch Company	Jeanette Gutierrez, Bookkeeper/Board Member	Yes	No
North Pecos WSD	Tony Cocozzella, District Manager	Yes	No
North Washington Street WSD	Adam Misztal, Operations Manager	Yes	Yes
Northglenn	Silas Adams, Water Resources Administrator	Yes	No
PaulsCorp	Rebecca Taladay, Associate Manager	No	Yes
Petrocco Farms	Cynthia DeNardo, Director of Food Safety	Yes	No
Prairie View POA	John Richard Olson, Water Operator	Yes	No
Riverdale Peaks II MD	Not listed	Yes	No
South Adams County WSD	Joey Caruso, Water Resources Specialist	Yes	No
Sunmart 525	Daniel Miller, Director, Petroleum Wholesale L.P.	Yes	No
Thornton	Matt Stockton, Water Resources Administrator	Yes	No
Todd Creek Village Metropolitan District	Don Summers, General Manager	Yes	Yes
Tucson WC	David Grandlienard, ORC	Yes	No

Organization	Water Provider Contact	Survey Participation	Work Session(s)
Westminster	Drew Beckwith, Sr. Water Resources Analyst	Yes	No
Not Listed	Mike Manek	No	Yes

Water Provider Work Session Results

As part of the master plan development process, nine primary water challenges were identified for the County. For each challenge, providers were asked to vote for the solutions they thought the County should adopt. The tables and figures below summarize the survey data for each of the nine challenges.

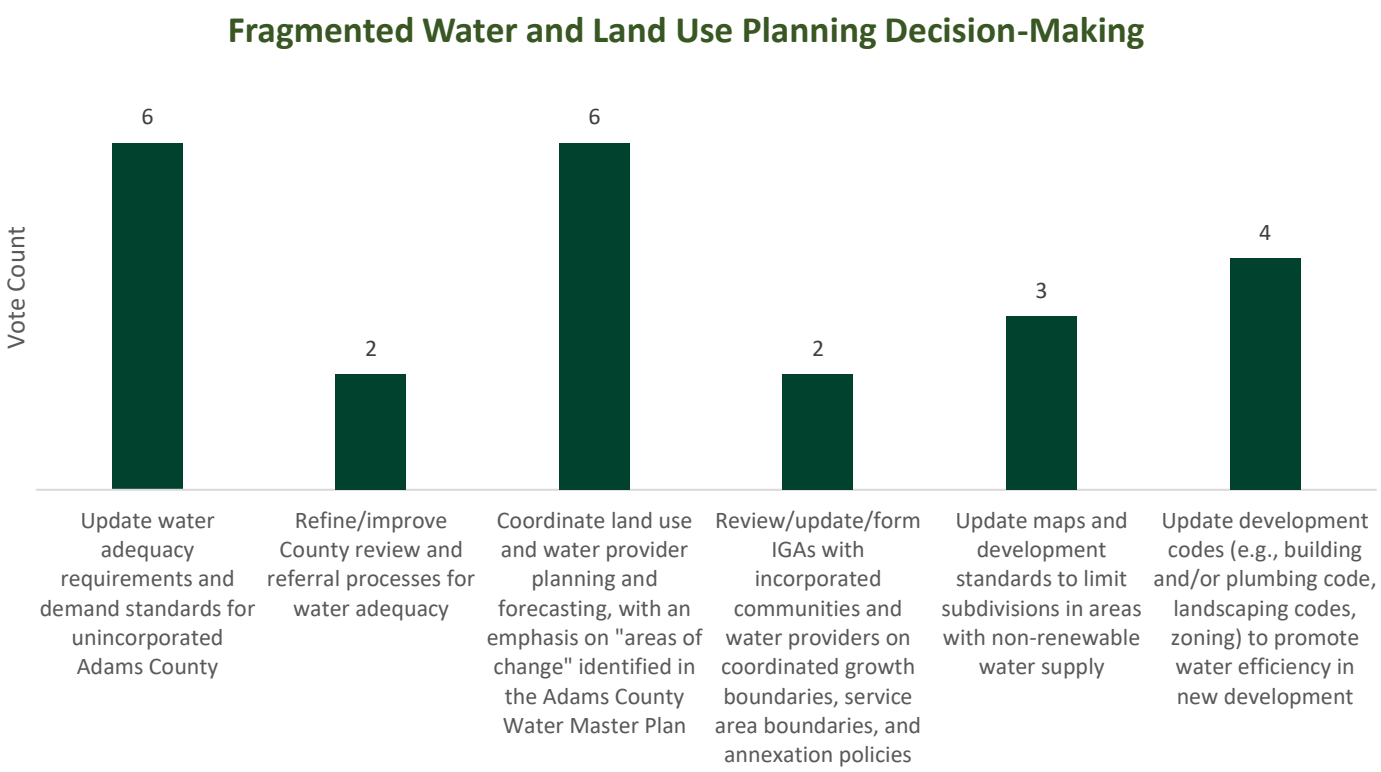
Challenge A. Fragmented Water and Land Use Planning Decision Making

Risks related to disjointed water and land use planning, especially in unincorporated areas of Adams County, which result in land use decisions that don't consider water supply, water demand, and water availability implications.

Table 3. Provider Survey Results: Fragmented Water and Land Use Potential Strategies

Strategy	Vote Count	Percent
Update water adequacy requirements and demand standards for unincorporated Adams County	6	26%
Refine/improve County review and referral processes for water adequacy	2	9%
Coordinate land use and water provider planning and forecasting, with an emphasis on "areas of change" identified in the Adams County Water Master Plan	6	26%
Review/update/form IGAs with incorporated communities and water providers on coordinated growth boundaries, service area boundaries, and annexation policies	2	9%
Update maps and development standards to limit subdivisions in areas with non-renewable water supply	3	13%
Update development codes (e.g., building and/or plumbing code, landscaping codes, zoning) to promote water efficiency in new development	4	17%

Figure 1. Provider Survey Results: Fragmented Water and Land Use Planning Decision Making Potential Strategies Voting Summary



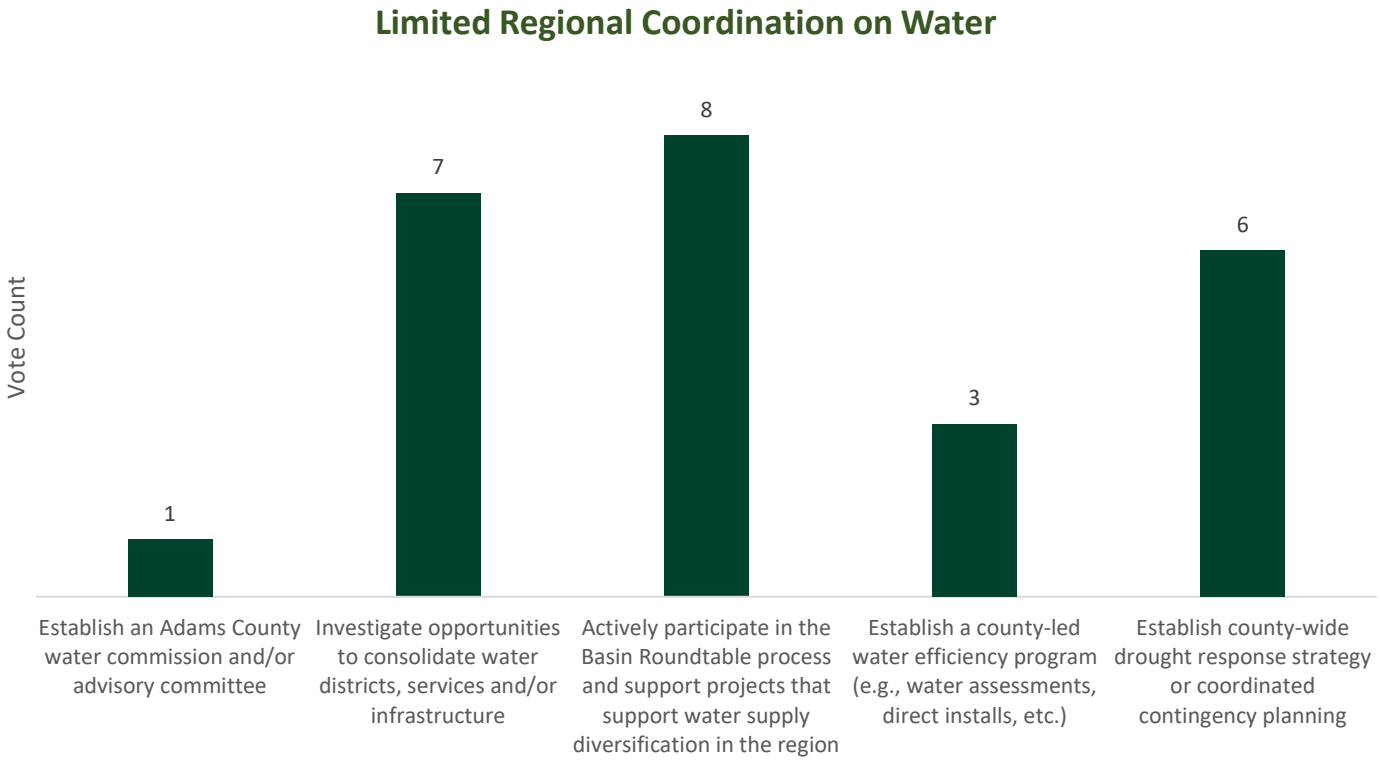
Challenge B. Limited Regional Coordination on Water

Risks related to limited regional coordination resulting in missed opportunities to share resources, identify joint solutions, and create efficiencies in planning or water-related programming.

Table 4. Provider Survey Results: Limited Regional Coordination Potential Strategies

Strategy	**Vote Count**	**Percent**
Establish an Adams County water commission and/or advisory committee	1	4%
Investigate opportunities to consolidate water districts, services and/or infrastructure	7	28%
Actively participate in the Basin Roundtable process and support projects that support water supply diversification in the region	8	32%
Establish a county-led water efficiency program (e.g., water assessments, direct installs, etc.)	3	12%
Establish county-wide drought response strategy or coordinated contingency planning	6	24%

Figure 2. Provider Survey Results: Limited Regional Coordination on Water Potential Strategies Voting Summary



Challenge C. Limited Water Knowledge and Expertise

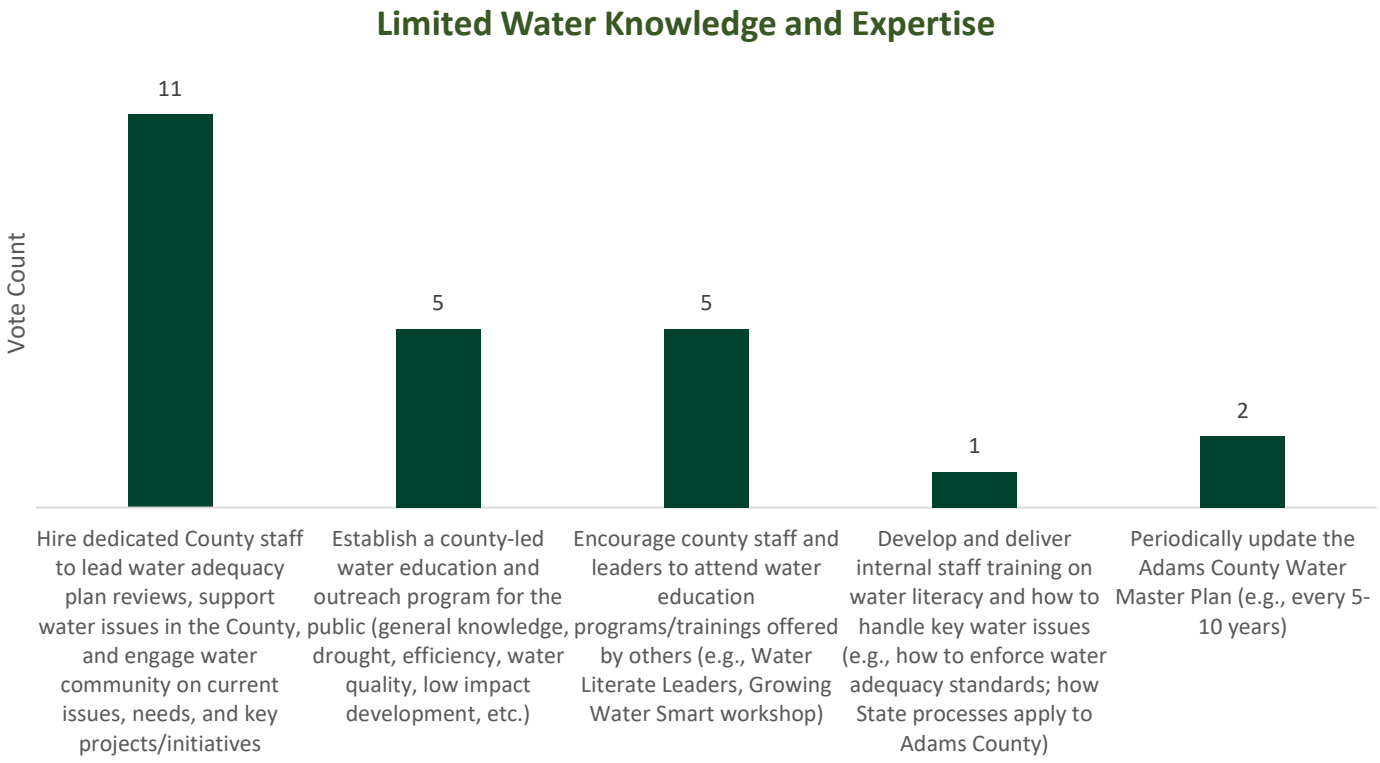
Risks related to Adams County's public, staff, or leadership lacking sufficient knowledge to make informed decisions or recommendations that pertain to water management issues.

Table 5. Provider Survey Results: Limited Water Knowledge and Expertise Potential Strategies

Strategy	**Vote Count**	**Percent**
Hire dedicated County staff to lead water adequacy plan reviews, support water issues in the County, and engage water community on current issues, needs, and key projects/initiatives	11	46%
Establish a county-led water education and outreach program for the public (general knowledge, drought, efficiency, water quality, low impact development, etc.)	5	21%
Encourage County staff and leaders to attend water education programs/trainings offered by others (e.g., Water Literate Leaders, Growing Water Smart workshop)	5	21%
Develop and deliver internal staff training on water literacy and how to handle key water issues (e.g., how to enforce water adequacy standards; how State processes apply to Adams County)	1	4%

Periodically update the Adams County Water Master Plan (e.g., every 5-10 years)	2	8%

Figure 3. Provider Survey Results: Limited Water Knowledge and Expertise Potential Strategies Voting Summary



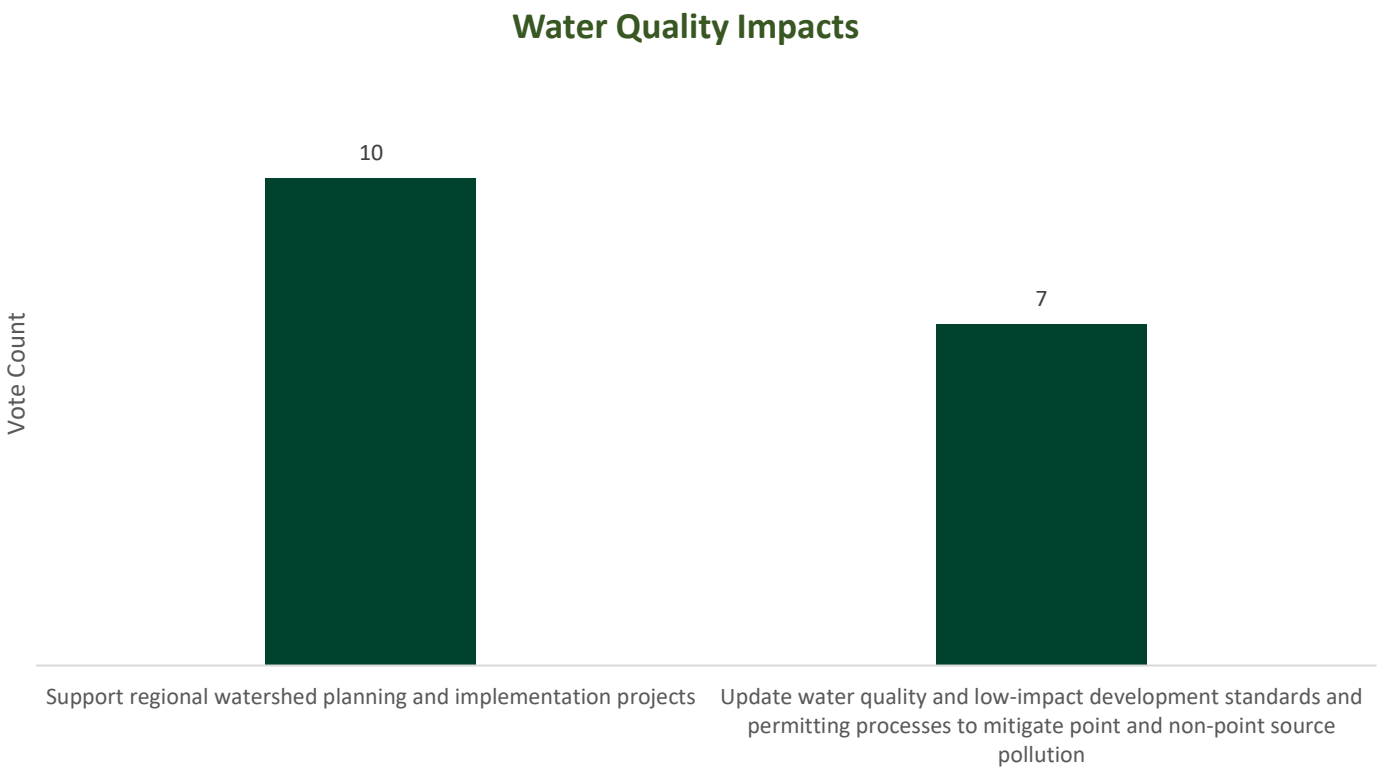
Challenge D. Water Quality Impacts

Risks related to local and watershed-scale water quality impacts (e.g., wildfire, groundwater contamination) that threaten the water supply.

Table 6. Provider Survey Results: Water Quality Impacts Potential Strategies

Strategy	**Vote Count**	**Percent**
Support regional watershed planning and implementation projects	10	59%
Update water quality and low-impact development standards and permitting processes to mitigate point and non-point source pollution	7	41%

Figure 4. Provider Survey Results: Water Quality Impacts Potential Strategies Voting Summary



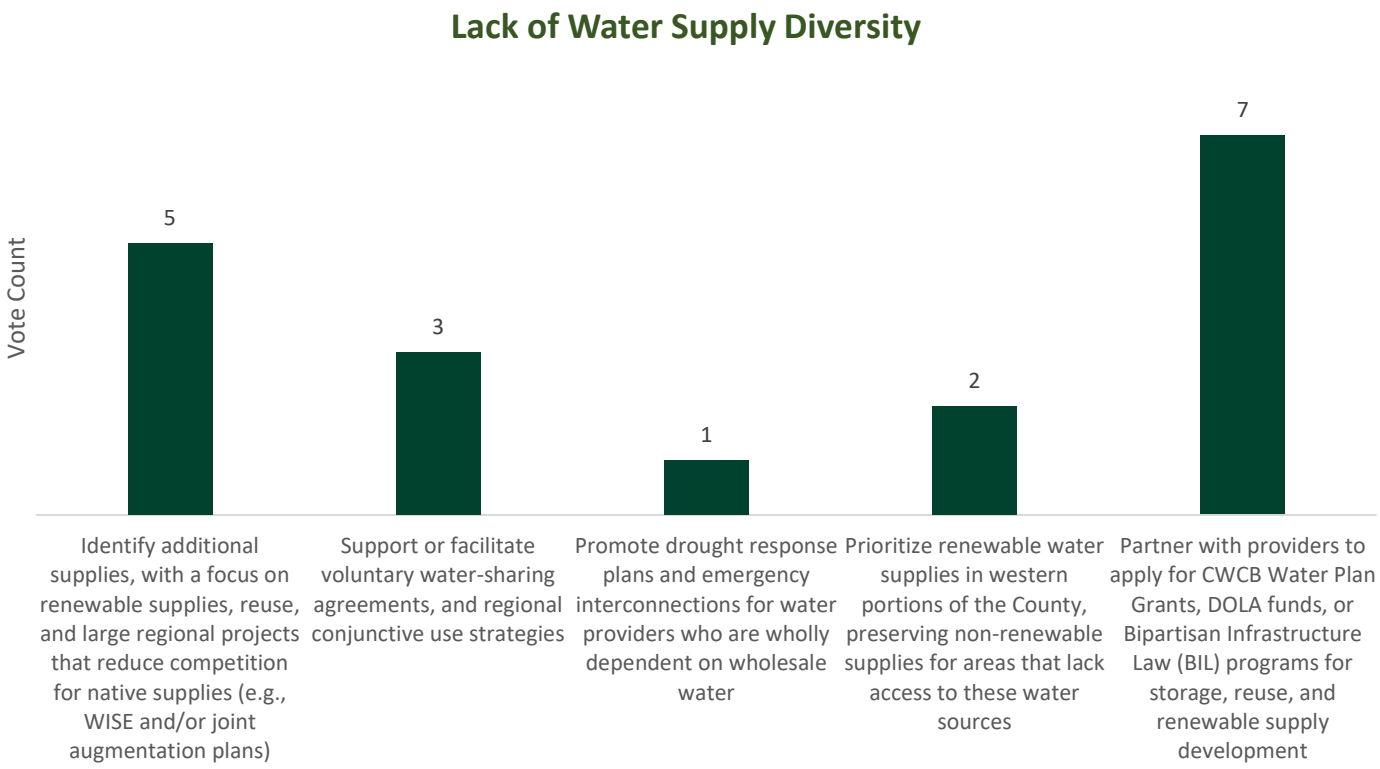
Challenge E. Lack of Water Supply Diversity

Risks related to water providers or self-supplied users only having one source of supply (e.g., non-renewable groundwater, wholesale water) resulting in increased vulnerability to drought, contamination, or water shortages.

Table 7. Provider Survey Results: Water Supply Diversity Potential Strategies

Strategy	**Vote Count**	**Percent**
Identify additional supplies, with a focus on renewable supplies, reuse, and large regional projects that reduce competition for native supplies (e.g., WISE and/or joint augmentation plans)	5	28%
Support or facilitate voluntary water-sharing agreements, and regional conjunctive use strategies	3	17%
Promote drought response plans and emergency interconnections for water providers who are wholly dependent on wholesale water	1	6%
Prioritize renewable water supplies in western portions of the County, preserving non-renewable supplies for areas that lack access to these water sources	2	11%
Partner with providers to apply for CWCB Water Plan Grants, DOLA funds, or Bipartisan Infrastructure Law (BIL) programs for storage, reuse, and renewable supply development	7	39%

Figure 5. Provider Survey Results: Lack of Water Supply Diversity Potential Strategies Voting Summary



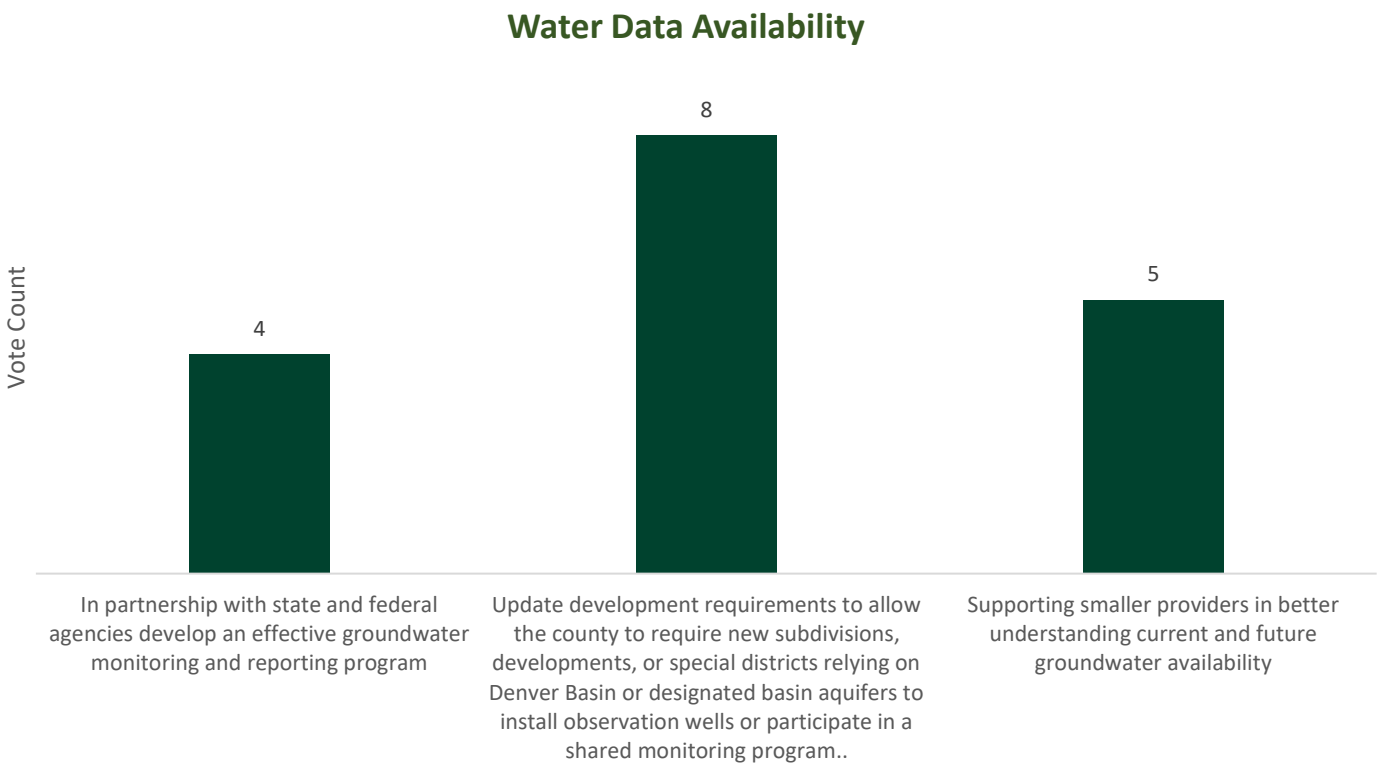
Challenge F. Water Data Availability

Risks related to the lack of pervasive, high-quality water data, resulting in the inability to make informed decisions for baselining and monitoring groundwater, surface water, and water quality.

Table 8. Provider Survey Results: Water Data Availability Potential Strategies

Strategy	**Vote Count**	**Percent**
In partnership with state and federal agencies develop an effective groundwater monitoring and reporting program	4	24%
Update development requirements to allow the county to require new subdivisions, developments, or special districts relying on Denver Basin or designated basin aquifers to install observation wells or participate in a shared monitoring program	8	47%
Supporting smaller providers in better understanding current and future groundwater availability	5	29%

Figure 6. Provider Survey Results: Water Data Availability Potential Strategies Voting Summary



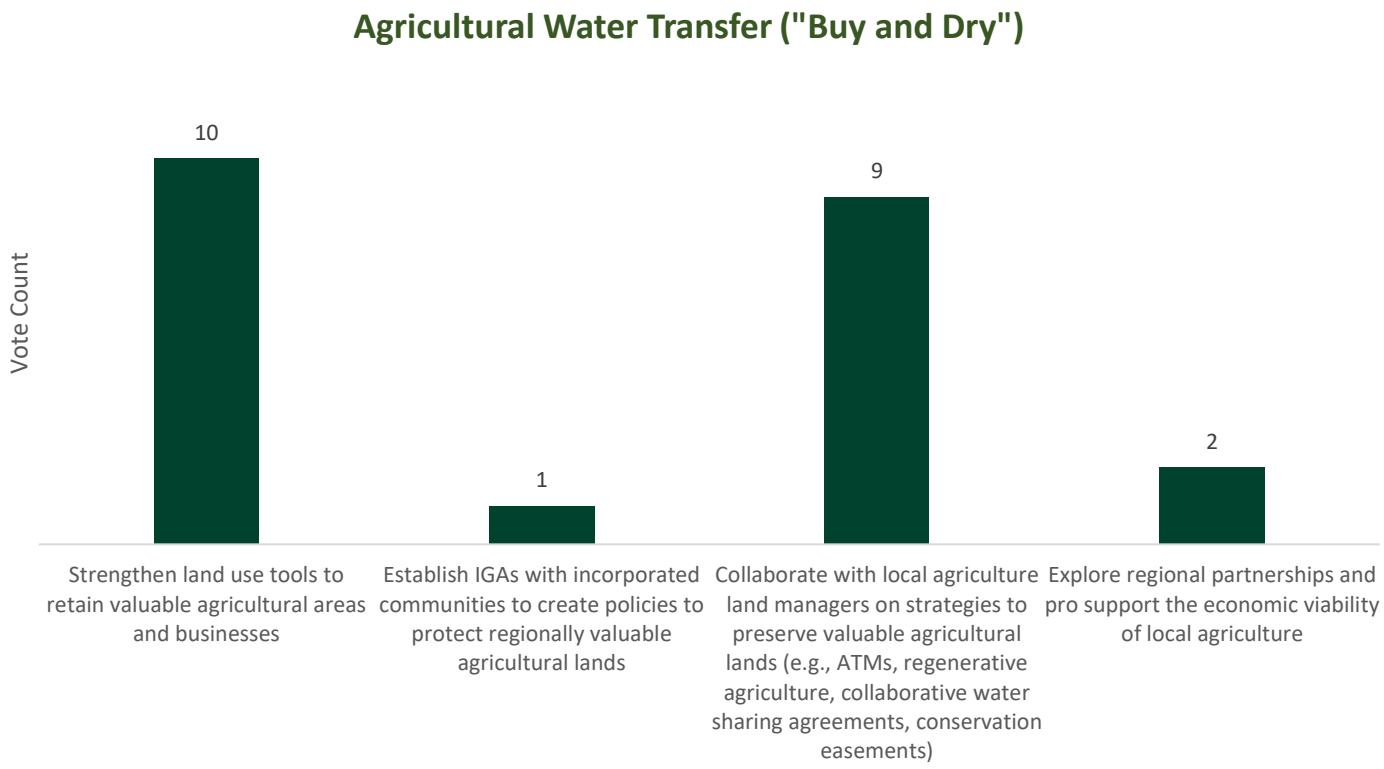
Challenge G. Agricultural Water Transfer ("Buy and Dry")

Risks related to the sale of water rights from agricultural lands to municipal and industrial uses that result in negative impacts to the local economy, food supply and ecosystems.

Table 9. Provider Survey Results: Agricultural Water Transfer ("Buy and Dry") Potential Strategies

Strategy	**Vote Count**	**Percent**
Strengthen land use tools to retain valuable agricultural areas and businesses	10	45%
Establish IGAs with incorporated communities to create policies to protect regionally valuable agricultural lands	1	5%
Collaborate with local agriculture land managers on strategies to preserve valuable agricultural lands (e.g., ATMs, regenerative agriculture, collaborative water sharing agreements, conservation easements)	9	41%
Explore regional partnerships and programs to support the economic viability of local agriculture	2	9%

Figure 7. Agricultural Water Transfer ("Buy and Dry") Potential Strategies Voting Summary



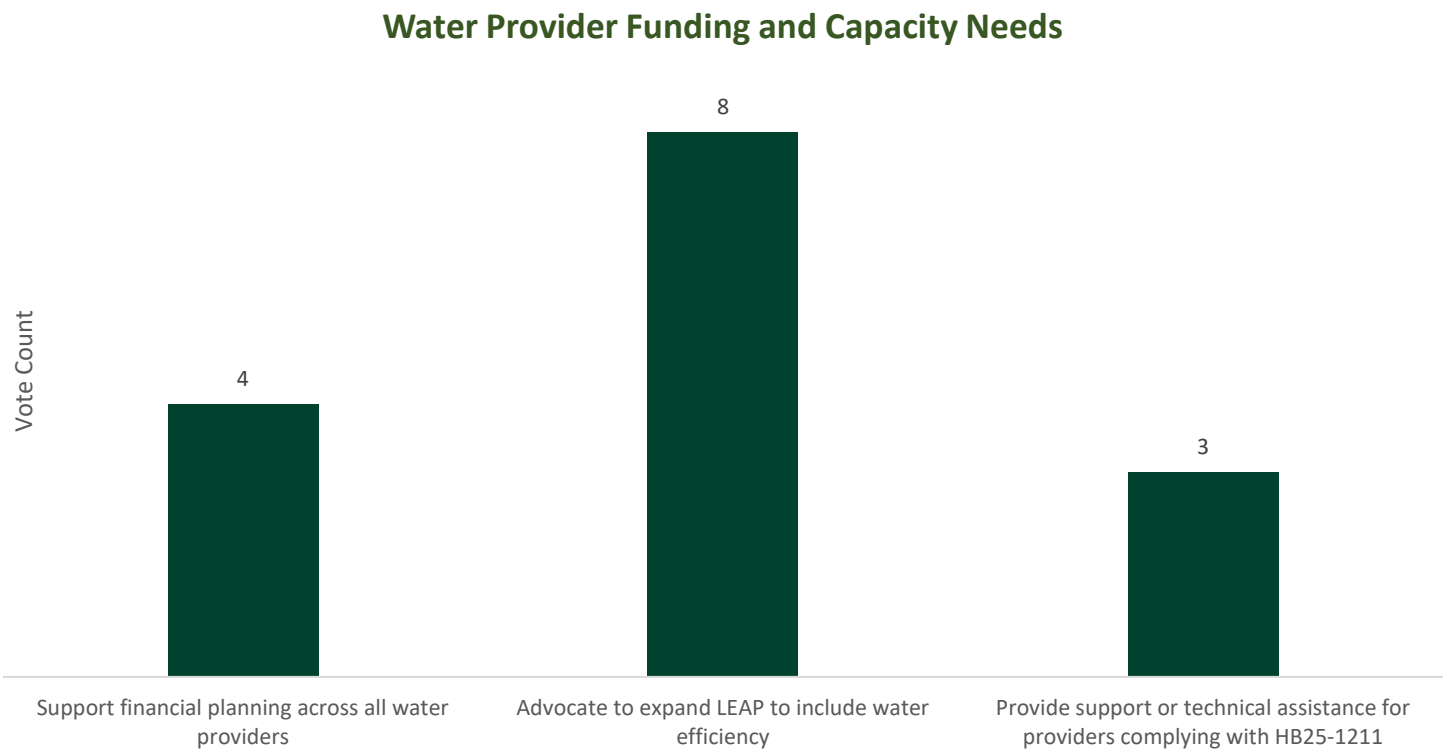
Challenge H. Water Provider Funding and Capacity Needs

Risks related to water providers lacking sufficient funding to implement necessary infrastructure upgrades, threatening providers' ability to maintain water quality, adequate water supply, or reliability of water service.

Table 10. Provider Survey Results: Water Provider Funding and Capacity Needs Potential Strategies

Strategy	**Vote Count**	**Percent**
Support financial planning across all water providers	4	27%
Advocate to expand LEAP to include water efficiency	8	53%
Provide support or technical assistance for providers complying with HB25-1211	3	20%

Figure 8. Provider Survey Results: Water Provider Funding Capacity Needs Potential Strategies Voting Summary



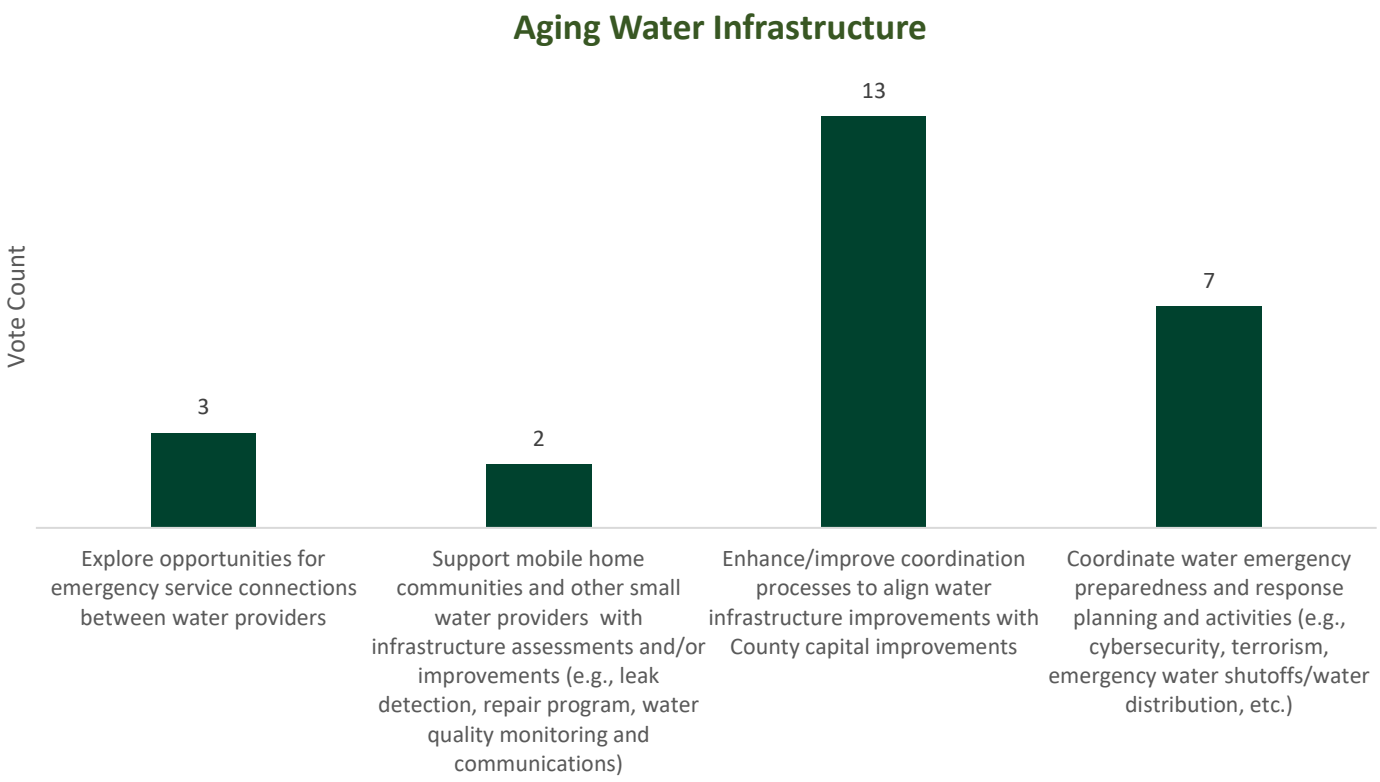
Overarching Challenge. Aging Water Infrastructure

Risks related to aging pipes, treatment plants, and distribution systems that are susceptible to leaks, breaks, and inefficiencies that result in water loss, costly infrastructure repair, water quality issues, or lack of water service.

Table 11. Provider Survey Results: Aging Water Infrastructure Potential Strategies

Strategy	**Vote Count**	**Percent**
Explore opportunities for emergency service connections between water providers	3	12%
Support mobile home communities and other small water providers with infrastructure assessments and/or improvements (e.g., leak detection, repair program, water quality monitoring and communications)	2	8%
Enhance/improve coordination processes to align water infrastructure improvements with County capital improvements	13	52%
Coordinate water emergency preparedness and response planning and activities (e.g., cybersecurity, terrorism, emergency water shutoffs/water distribution, etc.)	7	28%

Figure 9. Provider Survey Results: Aging Water Infrastructure Potential Strategies Voting Summary



Municipal Planner Engagement

The objective of the future land use meetings with various community planners was to understand the community's future land use updates and how they might tie to the Water Master Plan. This included understanding where areas of buildout are and any key water-related considerations, as well as acquiring GIS data on planned growth/annexations/infill. Table 12 lists attendees of a series of different meetings with various communities. Each community attended a separate meeting.

Table 12. Municipal Planner Engagement Attendee List

Organization	Community Contacts
City of Commerce City	Libby Tart, Senior Environmental Planner
City of Commerce City	Heather Vidlock, Planning Manager
City of Northglenn	Becky Smith, Planning Manager
City of Northglenn	Brook Svoboda, Director of Planning and Development
City of Northglenn	Tami Moone, Environmental Manager
City of Northglenn	Collete Cook, Planner

Organization	Community Contacts
City of Aurora	Marisa Noble, GIS Planner
City of Aurora	Daniel Krzyzanowski, Planning Supervisor
City of Aurora	Nina Khanzadeh, Project Engineer
City of Aurora	James DeHerrera, Professional Engineer
City of Aurora	Kevin Brenninkmeijer, GIS/CMMS Supervisor
City of Westminster	Andrew Spurgin, Principal Planner
City of Westminster	Drew Beckwith, Sr. Water Resources Analyst
City of Thornton	Jessica Whitney, Senior Assistant City Attorney
City of Thornton	Martin Postma, Long Range Principal Planner
City of Thornton	Zach Noyes, Long Range Planner
City of Thornton	Matt Stockton, Water Resources Administrator
City of Thornton	Warren Rivera, Planner II
City of Thornton	Ellie Hassan, Senior Planner
City of Thornton	Michael Flannagan, P.E.
City of Thornton	Maddie Bass, Long Range planning Intern III
City of Thornton	Kimberly Gonzales, P.E.
City of Thornton	Erinn Rogowski, P.E.
City of Thornton	Mike Garrot, Planning Director
City of Thornton	Cassie Free, Development Engineering Manager
City of Brighton	Shannon McDowell, Assistant Director of Community Development
Town of Bennett	Steven Hoese, Planning Manager

Public Engagement

Throughout the course of the project there were just over 1,000 touch points via public events and website interaction (Figure 10). At each event the primary goal was to inform the public of the effort and listen to any concerns about the future of water in the County. Overall themes from these events included:

- Need to balance growth with water priorities
- Concerns about high costs
- Desire to protect water resources, especially in the Denver Basin Area
- Increase water education and awareness across the Adams County organization

Additionally, two open houses were held where community members were surveyed about their knowledge of water issues in the County, any concerns they had, and what strategies should be implemented to more sustainably manage water resources in the County (see Open House Engagement Results).

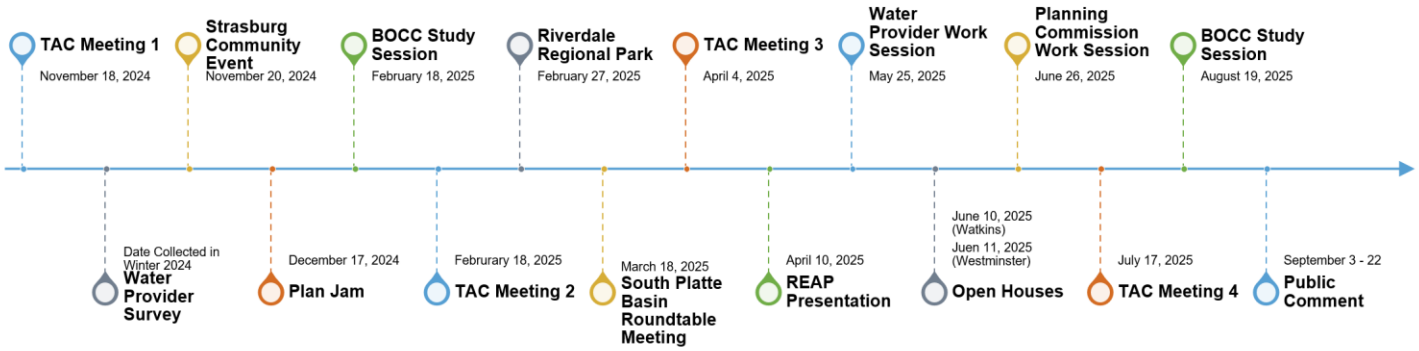


Figure 10. Summary of all engagement events

Open House Engagement Results

At each open house, members of the public wrote down or responded to questions about their water services and what they see as some of the greatest water challenges that the County currently faces. Members of the public also participated in a "dot exercise," by marking strategies to water challenges in the County that they agreed with or thought would be most effective. For each strategy, participants were asked to choose if the County should, lead, support, or not assist with the implementation of the strategy. Participants then marked the strategies that they believed would be most effective for resolving each of the water challenges identified for the County. The figures and tables below summarize the survey data that was collected at the open house in Eastern Adams County (held in Watkins) and Western Adams County (held in Westminster). It should be noted that participation was higher for the Eastern Adams County open house.

Figure 11. Public Engagement Survey Question #1 Survey Results

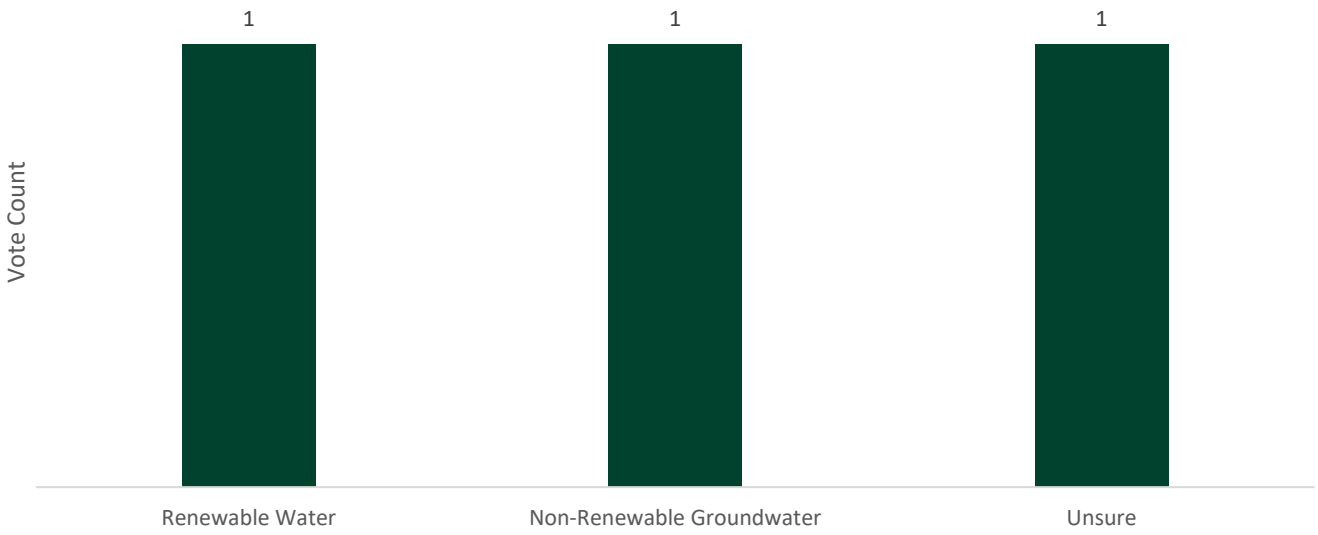

Do you Receive water from a renewable or non-renewable source?
Vote Count
1
1
1
Renewable Water
Non-Renewable Groundwater
Unsure

Table 13. Public Engagement Survey Question #2 Survey Results

Q: What is the biggest water challenge facing you and your neighbors? What are the biggest opportunities?		
Event	Biggest Challenge	Biggest Opportunity
Watkins	Clean renewable water	Wise decisions for future generations
Watkins	Engaging various communities in their water future	Nobody worries about water until the well runs dry- now is the time
Watkins	Properly projecting water demands. How do you properly project land use and populations with high, medium, and low estimates. Also incorporating climate change and considering future precipitation patterns	Engaging with youth educators
Watkins		Consider climate change in projections. Use zoning in a way that encourages water efficient landscaping. Opportunities to overcome barriers to water efficient tech.
Westminster	Cost	Increased tree canopy to help cool the surface and mitigate evaporation
Westminster		Enhanced measuring to mitigate the urban heat island effect

Figure 12. Public Engagement Survey Question #3

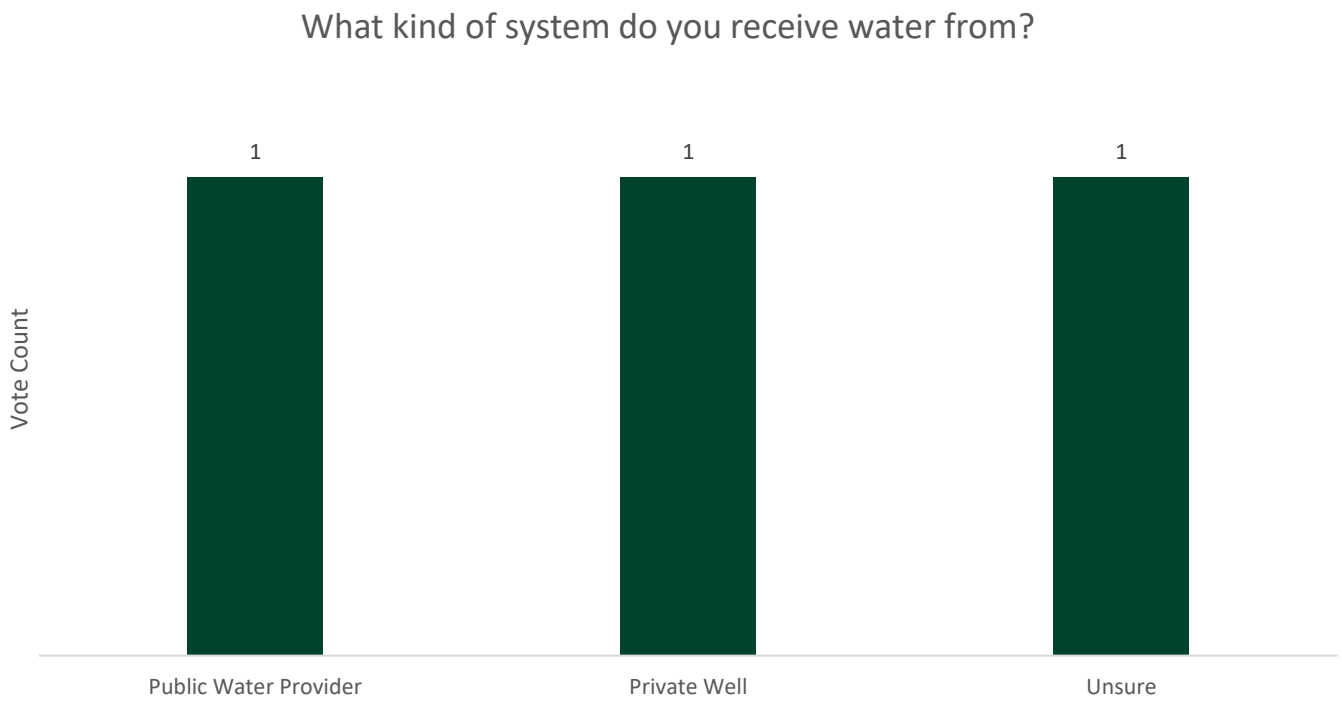
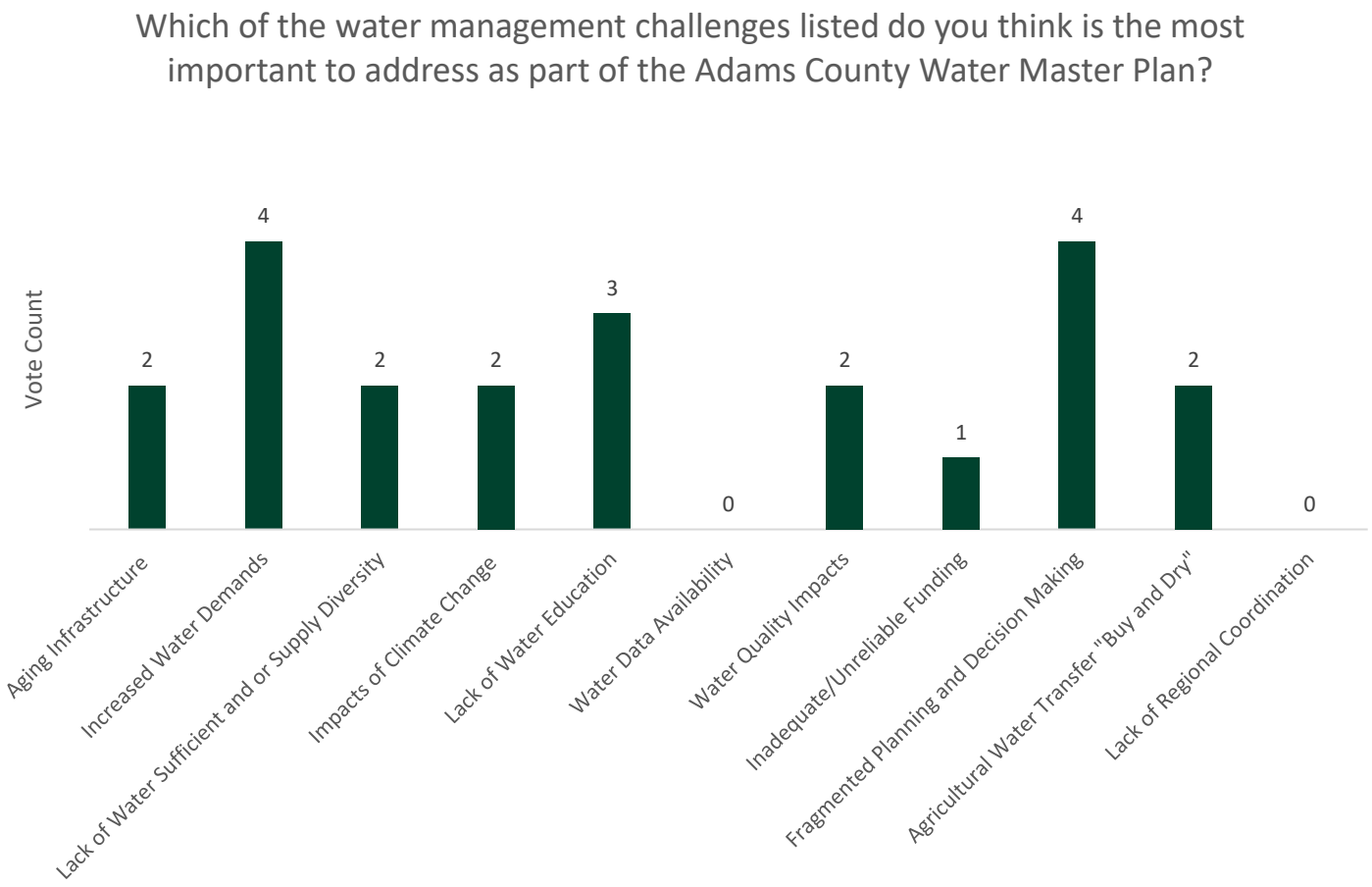


Table 14. Public Engagement Question #4

Q: What is most important when you think about Adams County's water future?	
Event	**Response**
Watkins	Where are we going to get water for all the developments
Watkins	Aging infrastructure
Watkins	Leadership and decision makers need to become engaged and educated
Watkins	Joining land use and water supply planning
Watkins	Explore regional solutions
Westminster	More public education on the importance of water conservation
Westminster	Stronger local building and development codes which will result in reduced water demand

Figure 13. Public Engagement Question #5



Challenge A. Fragmented Planning and Decision Making

Risks related to disjointed water and land use planning, especially in unincorporated areas of Adams County, which result in land use decisions that don't consider water supply, water demand, and water availability implications.

Figure 14. County Role Public Engagement Survey Results: Fragmented Planning and Decision Making

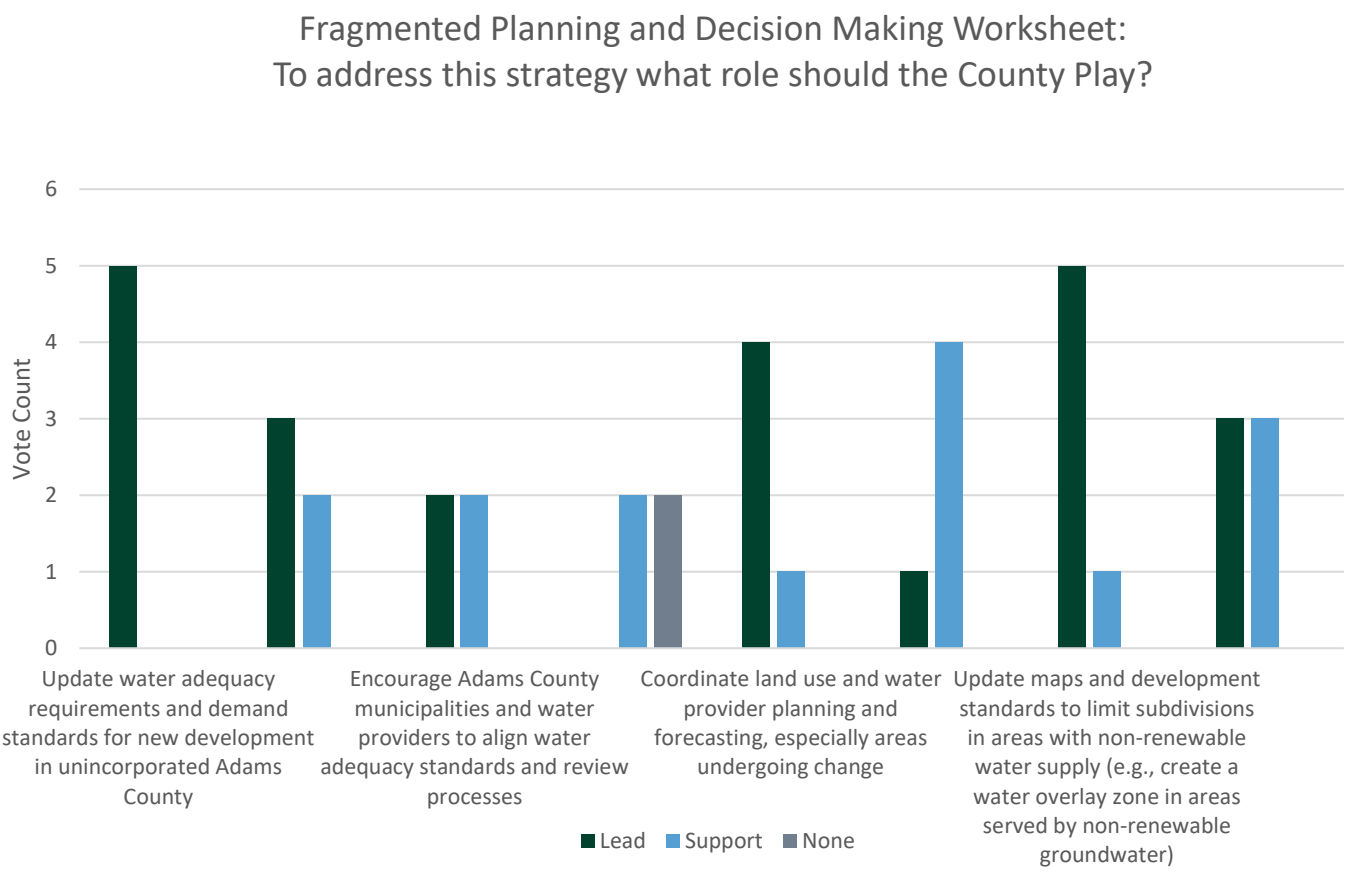
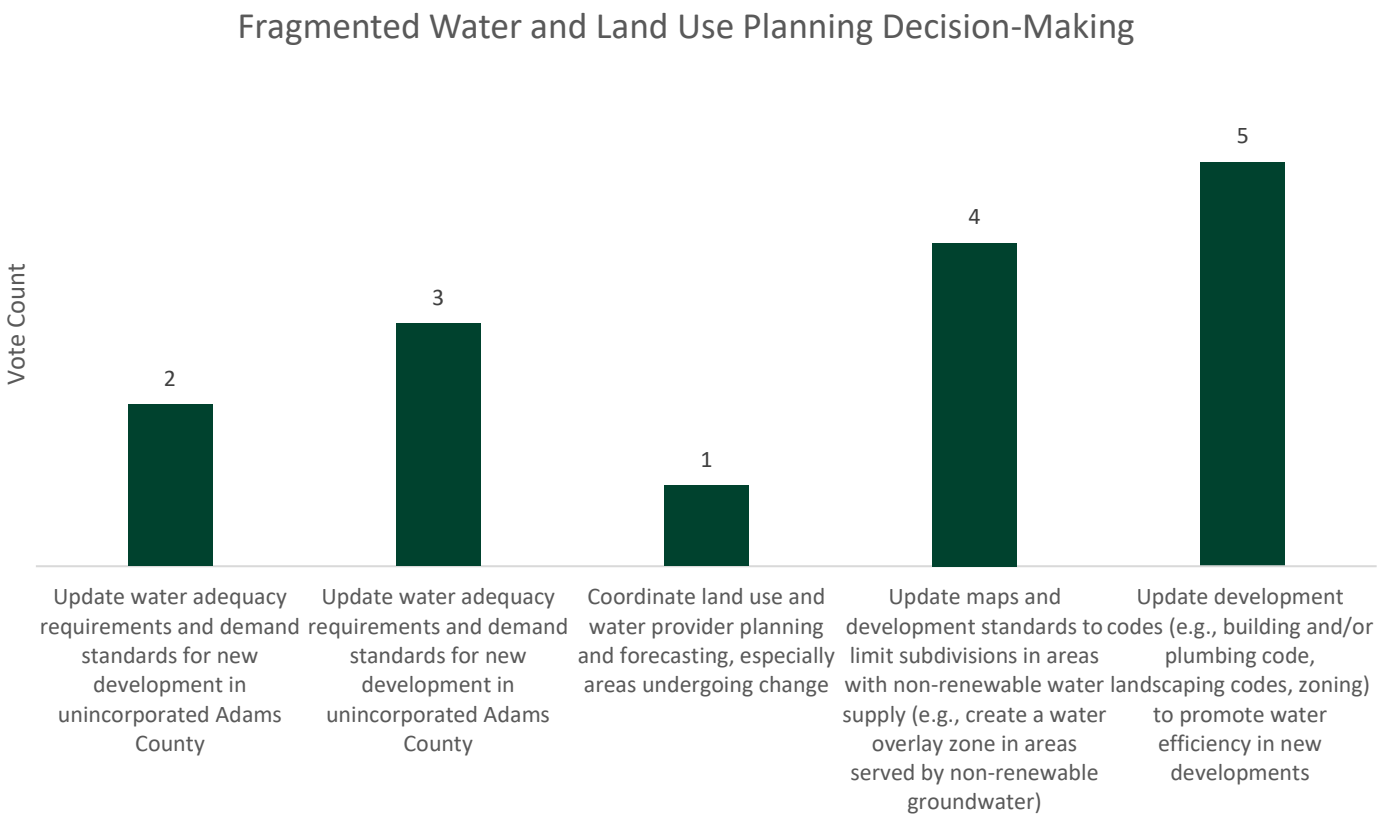


Figure 15. Public Engagement Strategy Survey Results: Fragmented Water and Land Use Planning Decision Making



Challenge B. Limited Regional Coordination on Water

Risks related to limited regional coordination resulting in missed opportunities to share resources, identify joint solutions, and create efficiencies in planning or water-related programming.

Figure 16. County Role Public Engagement Survey Results: Limited Regional Coordination

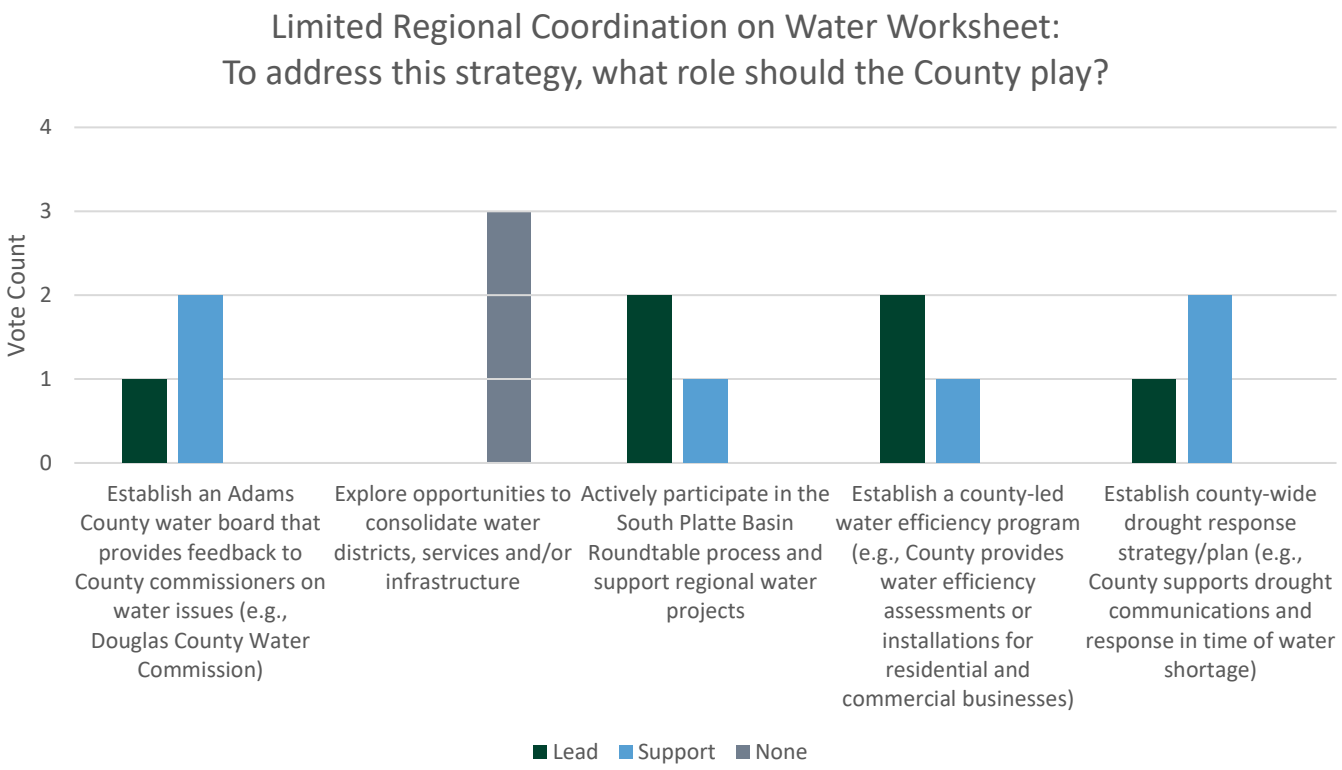
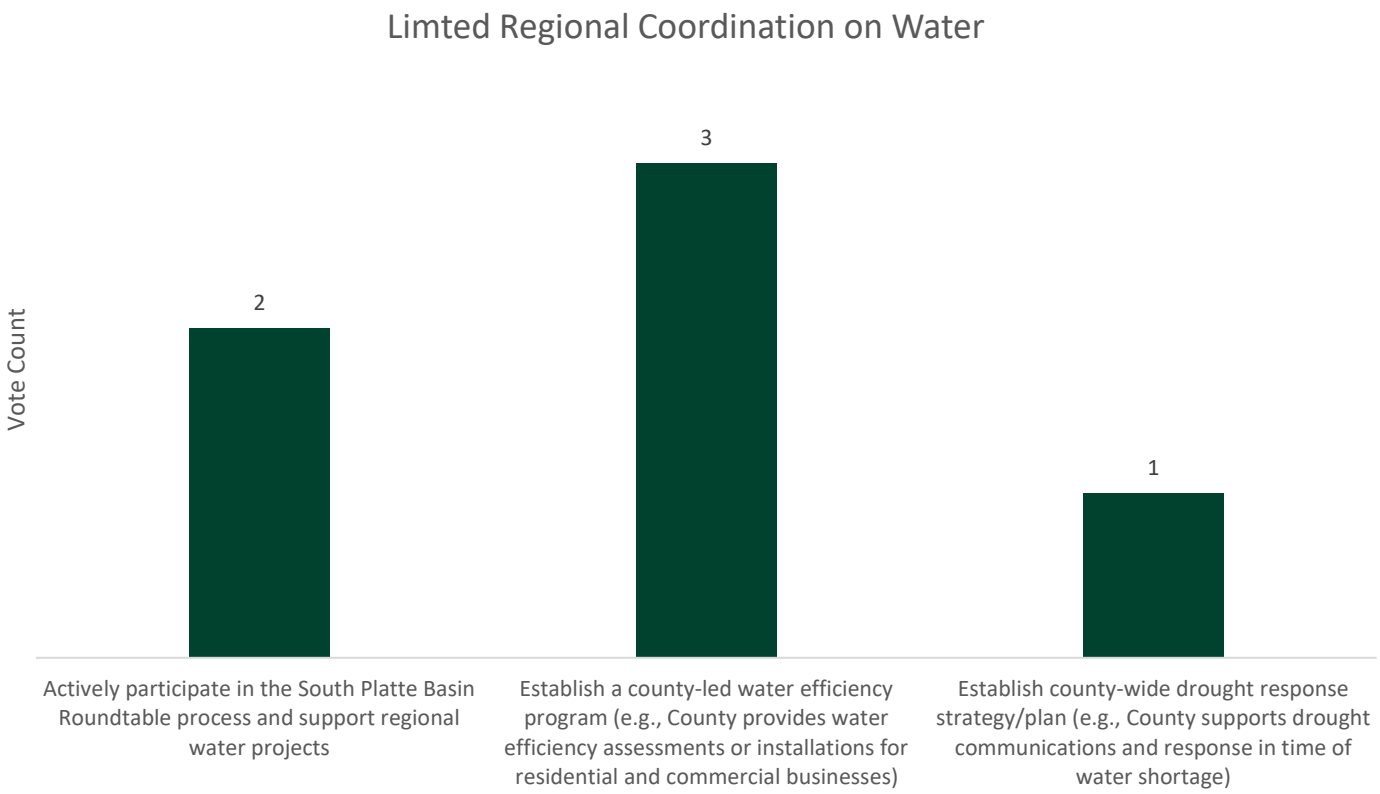


Figure 17. County Role Public Engagement Survey Results: Limited Regional Coordination on Water



Challenge C. Limited Water Knowledge and Expertise

Risks related to Adams County's public, staff, or leadership lacking sufficient knowledge to make informed decisions or recommendations that pertain to water management issues.

Figure 18. County Role Public Engagement Survey Results: Limited Water Knowledge and Expertise

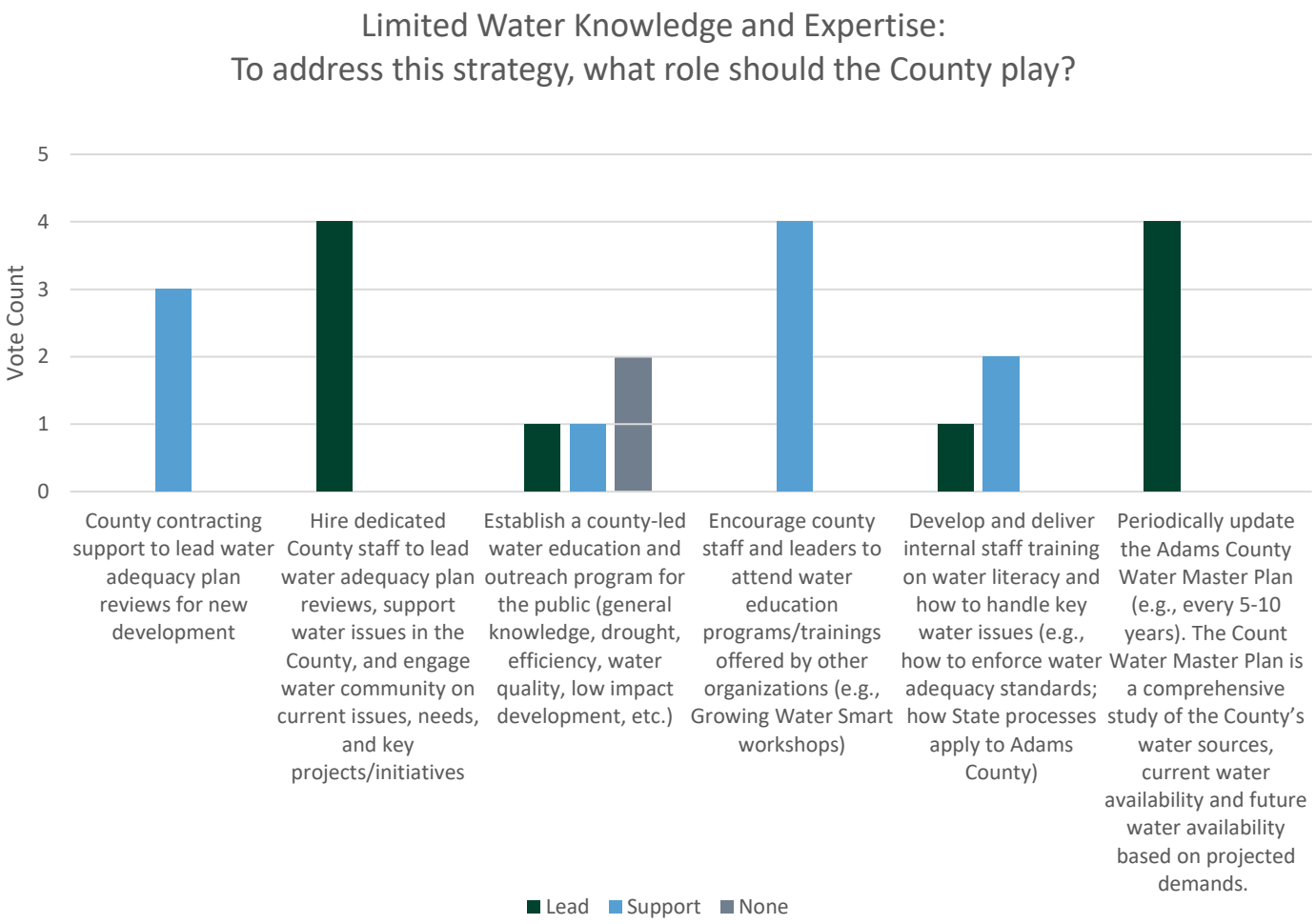
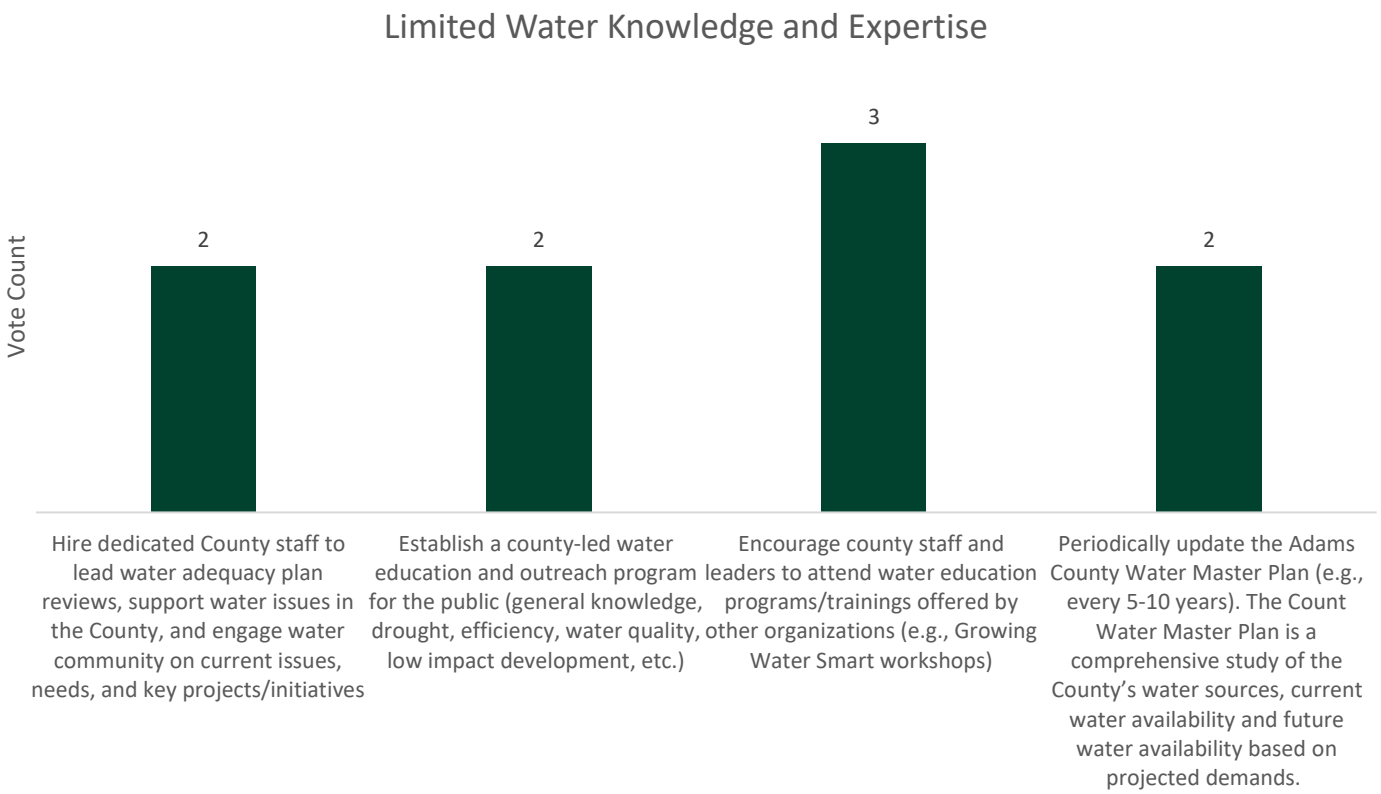


Figure 19. Public Engagement Strategy Survey Results: Limited Water Knowledge and Expertise



Challenge D. Water Quality Impacts

Risks related to local and watershed-scale water quality impacts (e.g., wildfire, groundwater contamination) that threaten the water supply.

Figure 20. County Role Public Engagement Survey Results: Water Quality Impacts

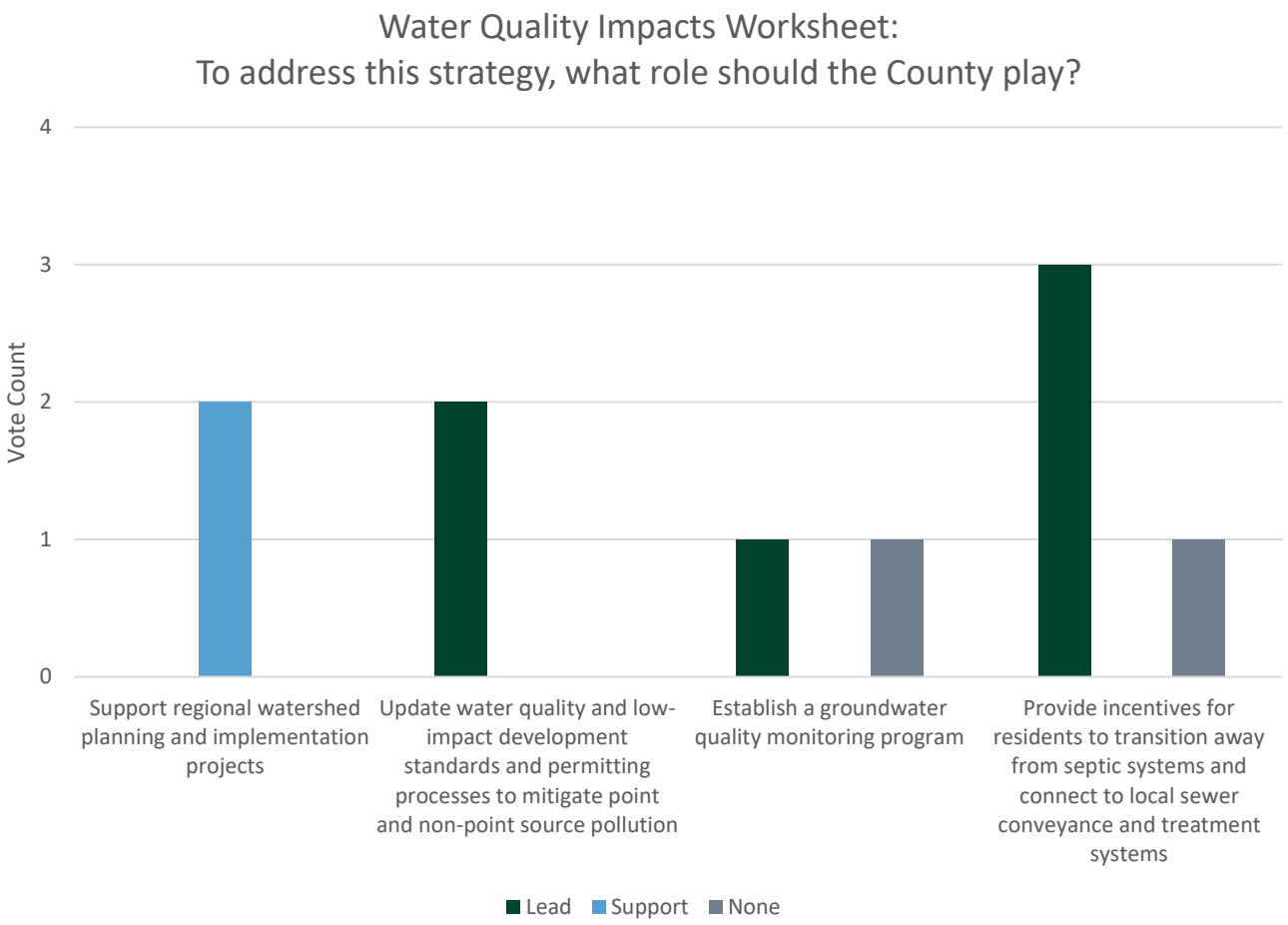
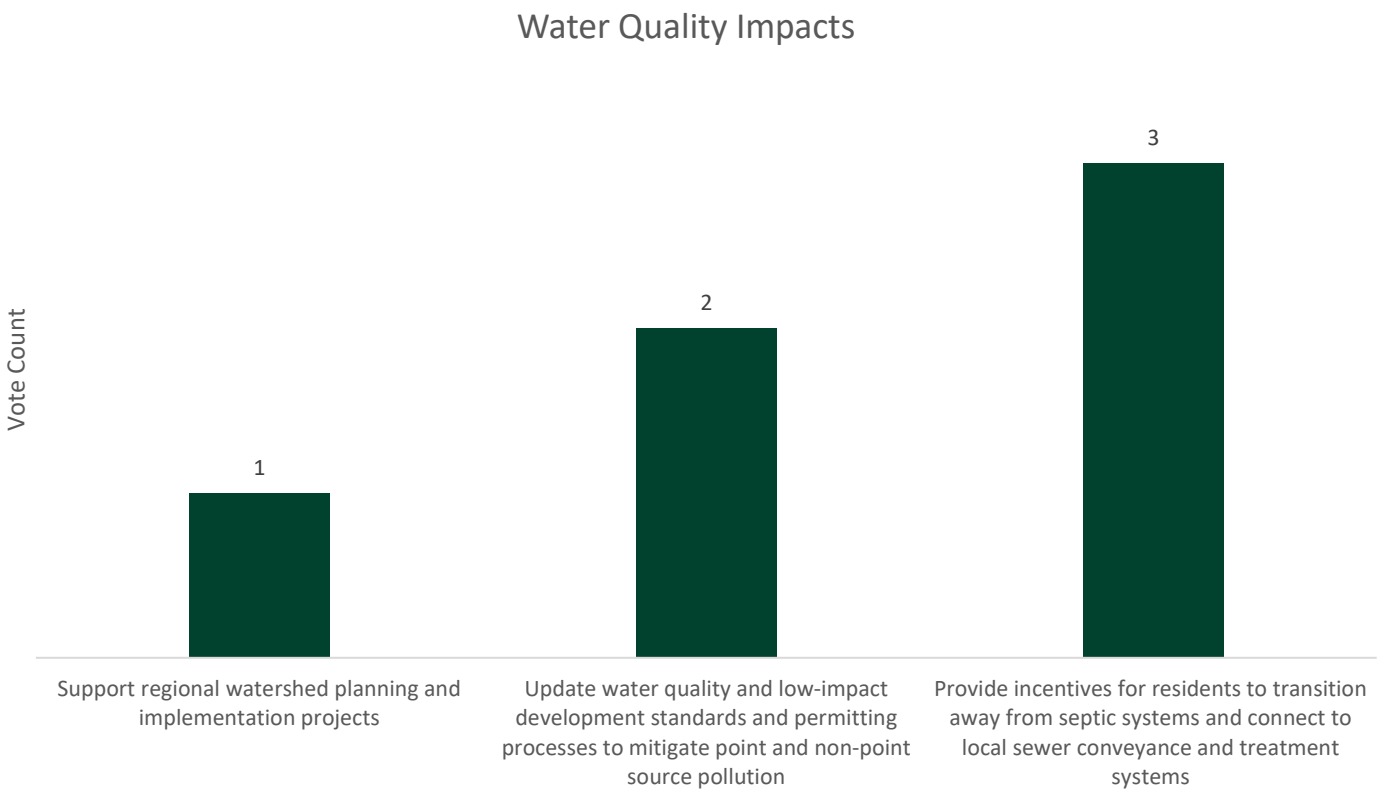


Figure 21. County Role Public Engagement Survey Results: Water Quality Impacts



Challenge E. Lack of Water Supply Diversity

Risks related to water providers or self-supplied users only having one source of supply (e.g., non-renewable groundwater, wholesale water) resulting in increased vulnerability to drought, contamination, or water shortages.

Figure 22. County Role Public Engagement Survey Results: Lack of Water Supply Diversity

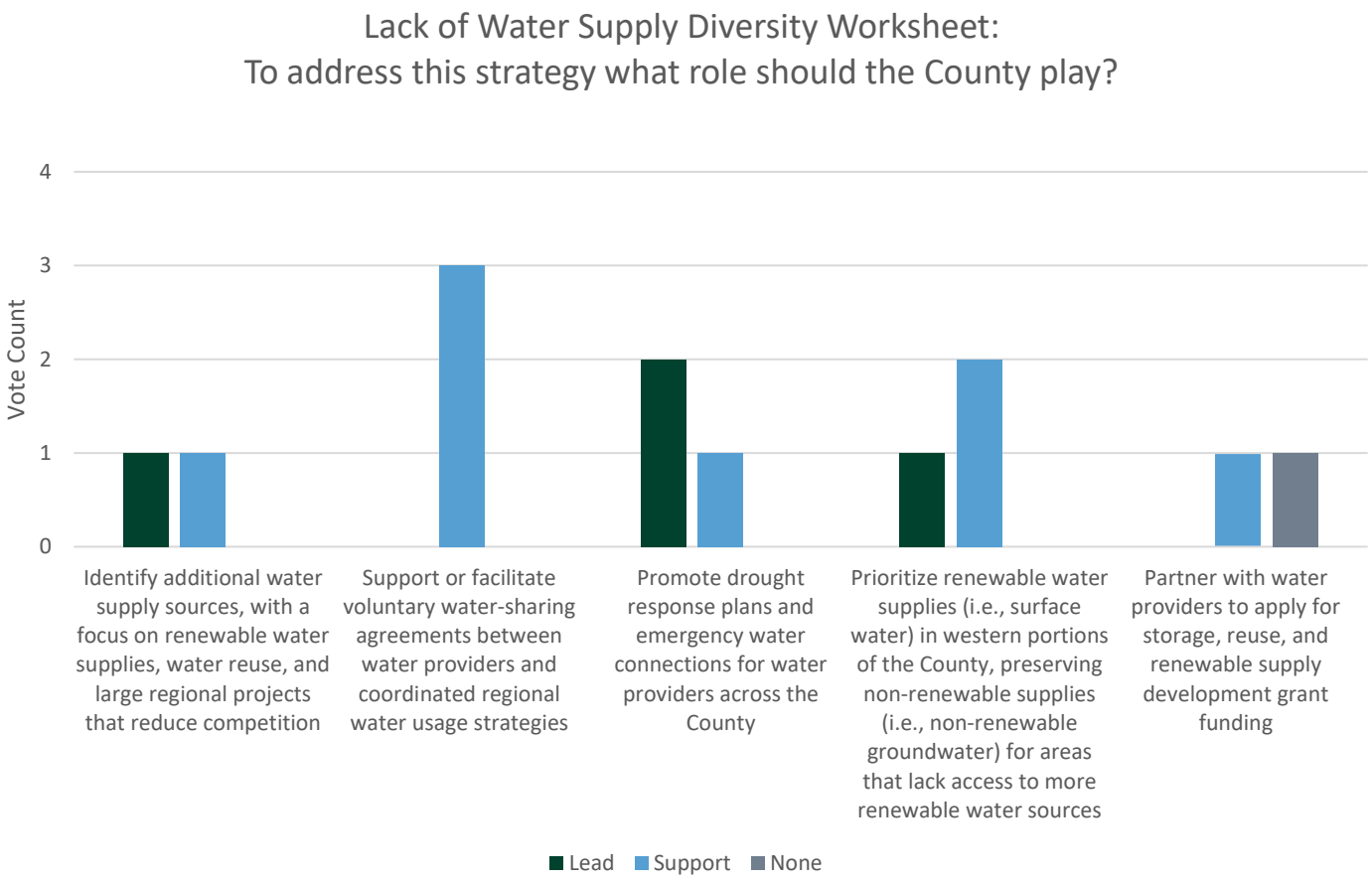
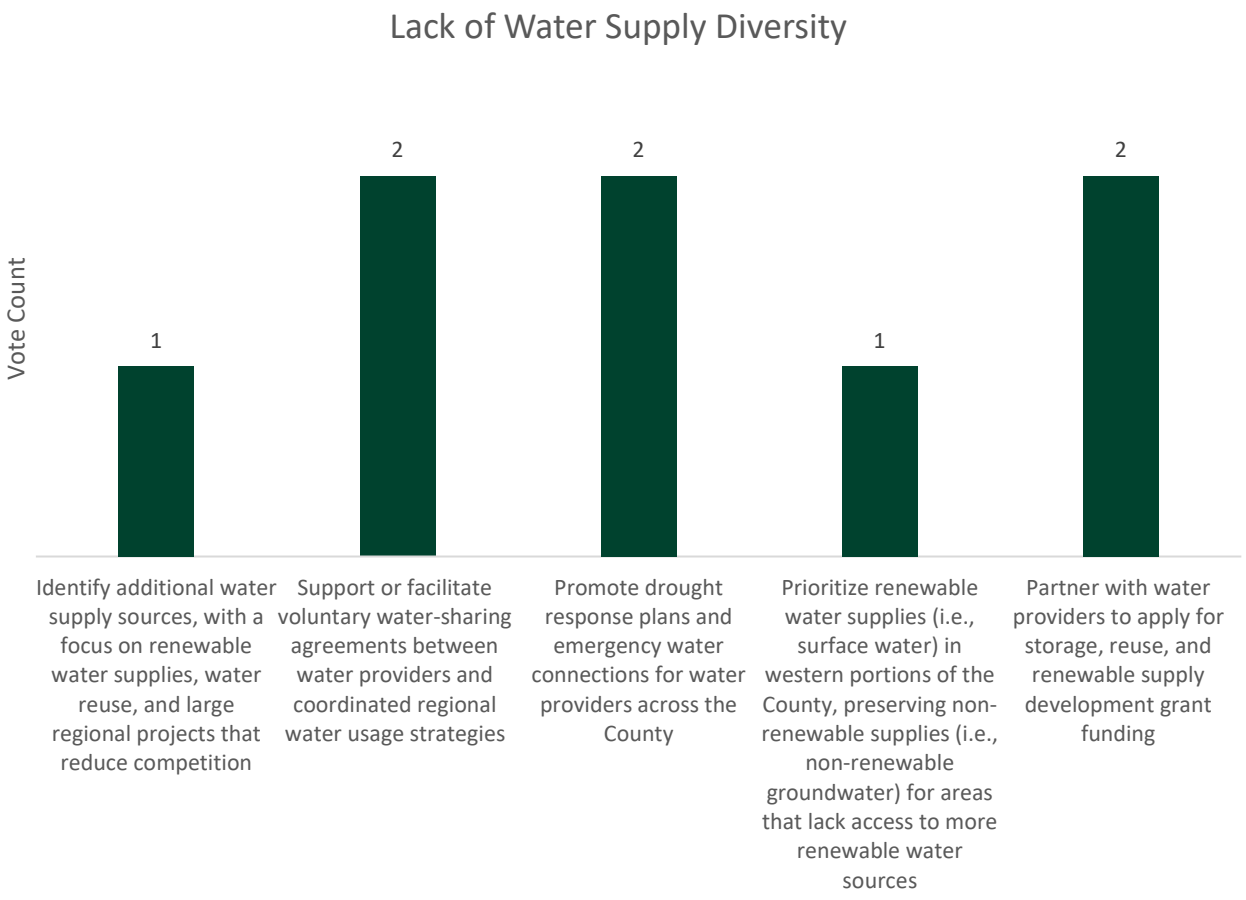


Figure 23. Public Engagement Strategy Survey Results: Lack of Water Supply Diversity



Challenge F. Water Data Availability

Risks related to the lack of pervasive, high-quality water data, resulting in the inability to make informed decisions for baselining and monitoring groundwater, surface water, and water quality.

Figure 24. County Role Public Engagement Survey Results: Water Data Availability

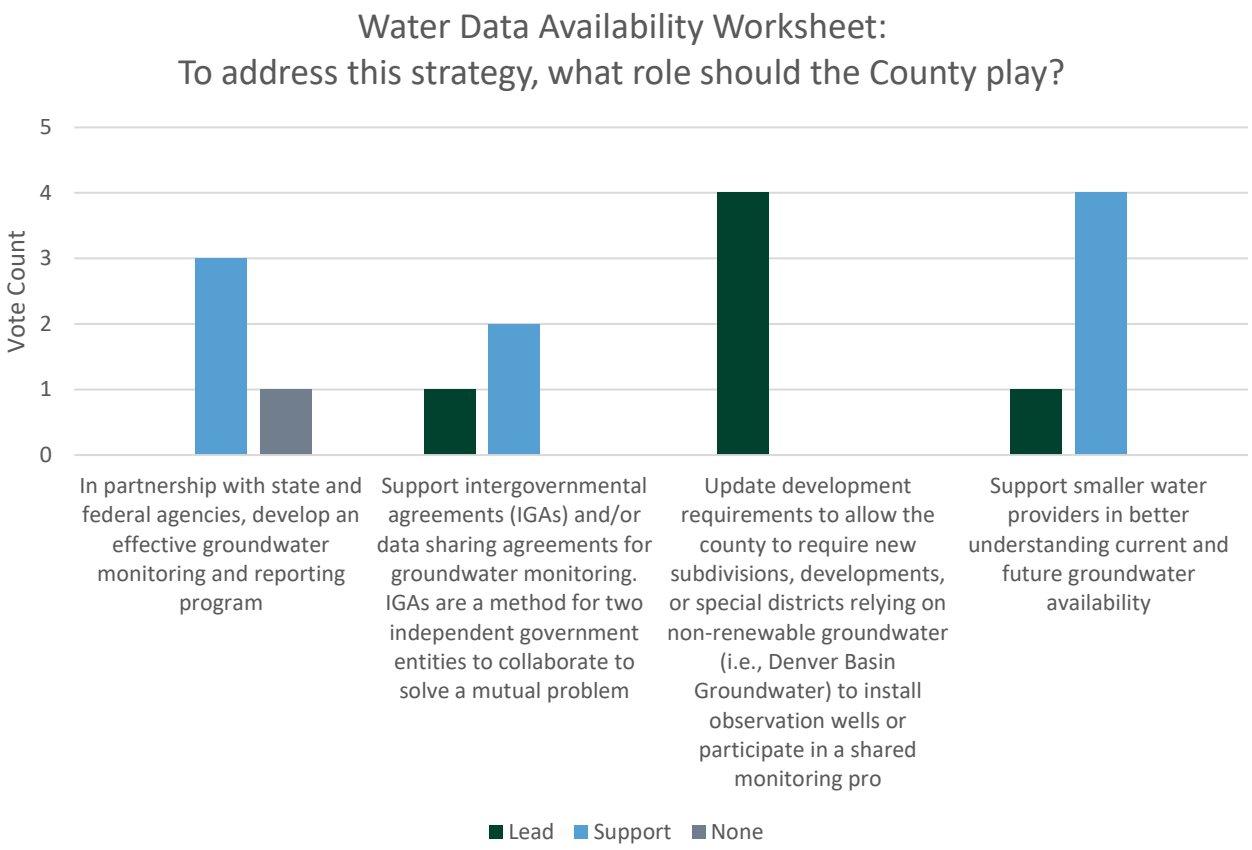
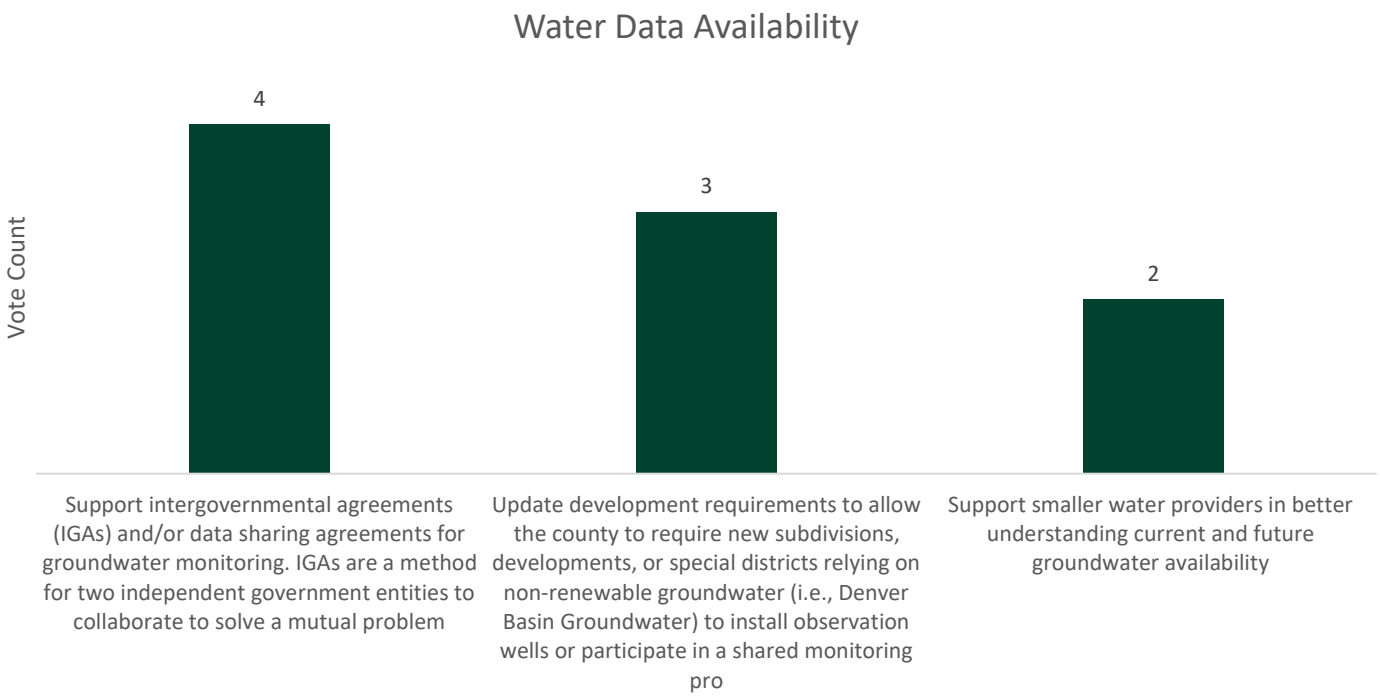


Figure 25. Public Engagement Strategy Survey Results: Water Data Availability



Challenge G. Agricultural Water Transfer (“Buy and Dry”)

Risks related to the sale of water rights from agricultural lands to municipal and industrial uses that result in negative impacts to the local economy, food supply and ecosystems.

Figure 26. County Role Public Engagement Survey Results: Agricultural Water Transfer (“Buy and Dry”)

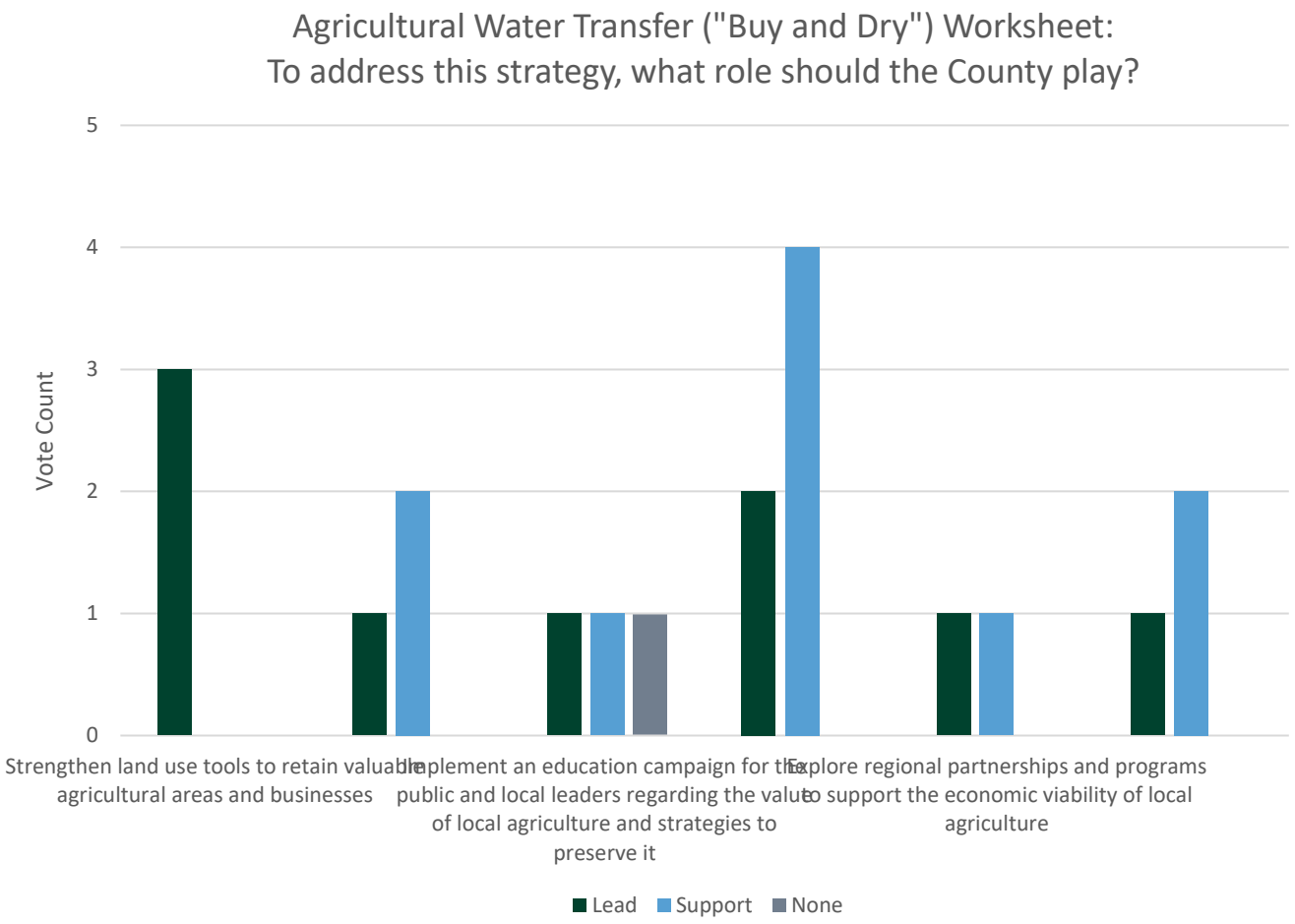
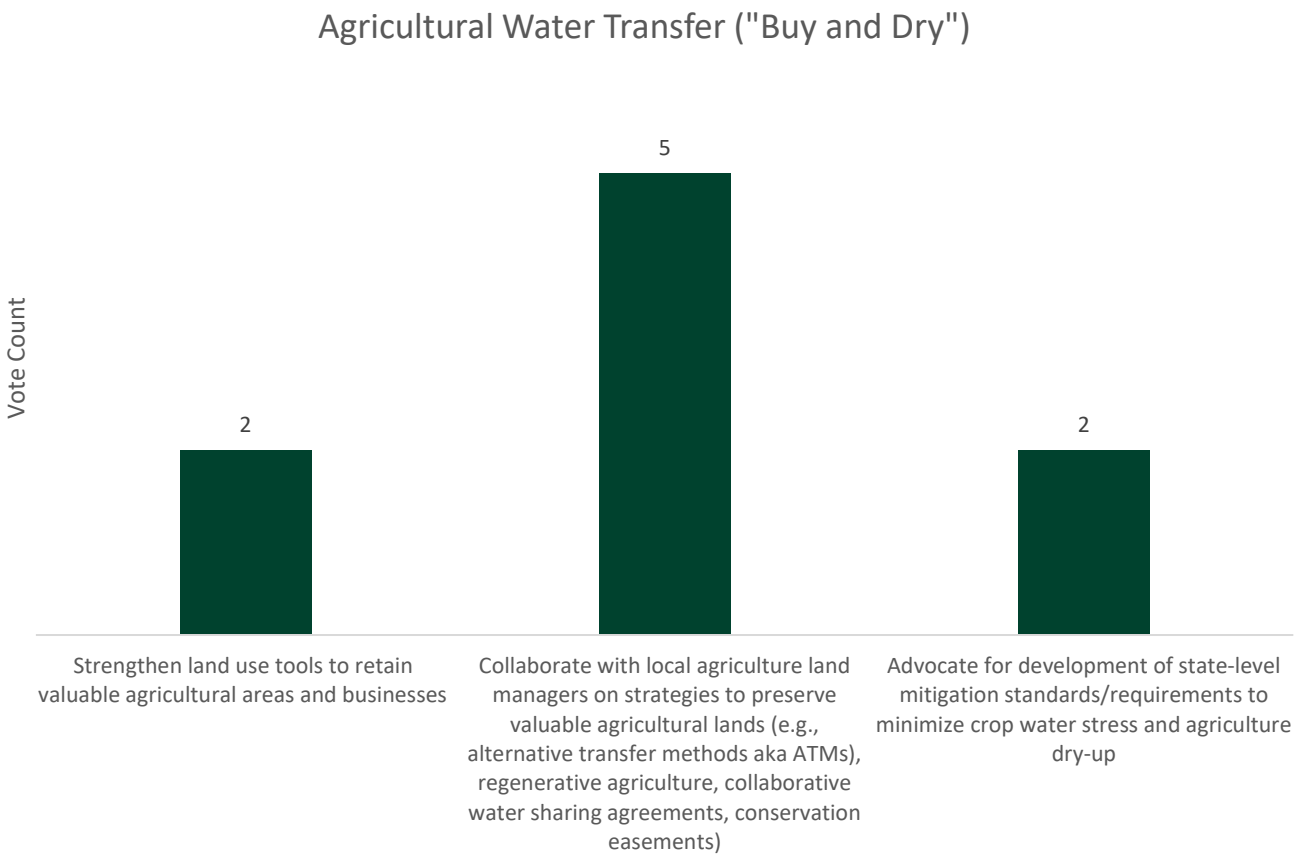


Figure 27. County Role Public Engagement Survey Results: Agricultural Water Transfer ("Buy and Dry")



Challenge H. Water Provider Funding and Capacity Needs

Risks related to water providers lacking sufficient funding to implement necessary infrastructure upgrades, threatening provider's ability to maintain water quality, adequate water supply, or reliability of water service.

Figure 28. County Role Public Engagement Survey Results: Water Funding and Capacity Needs

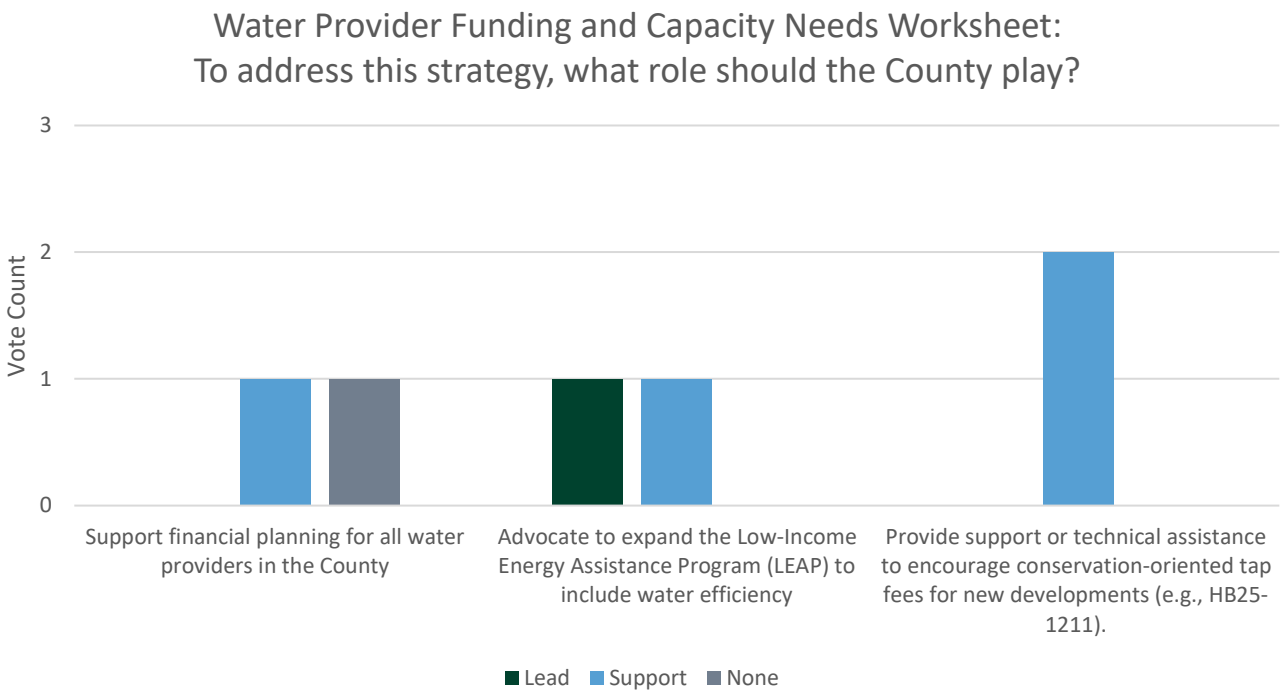
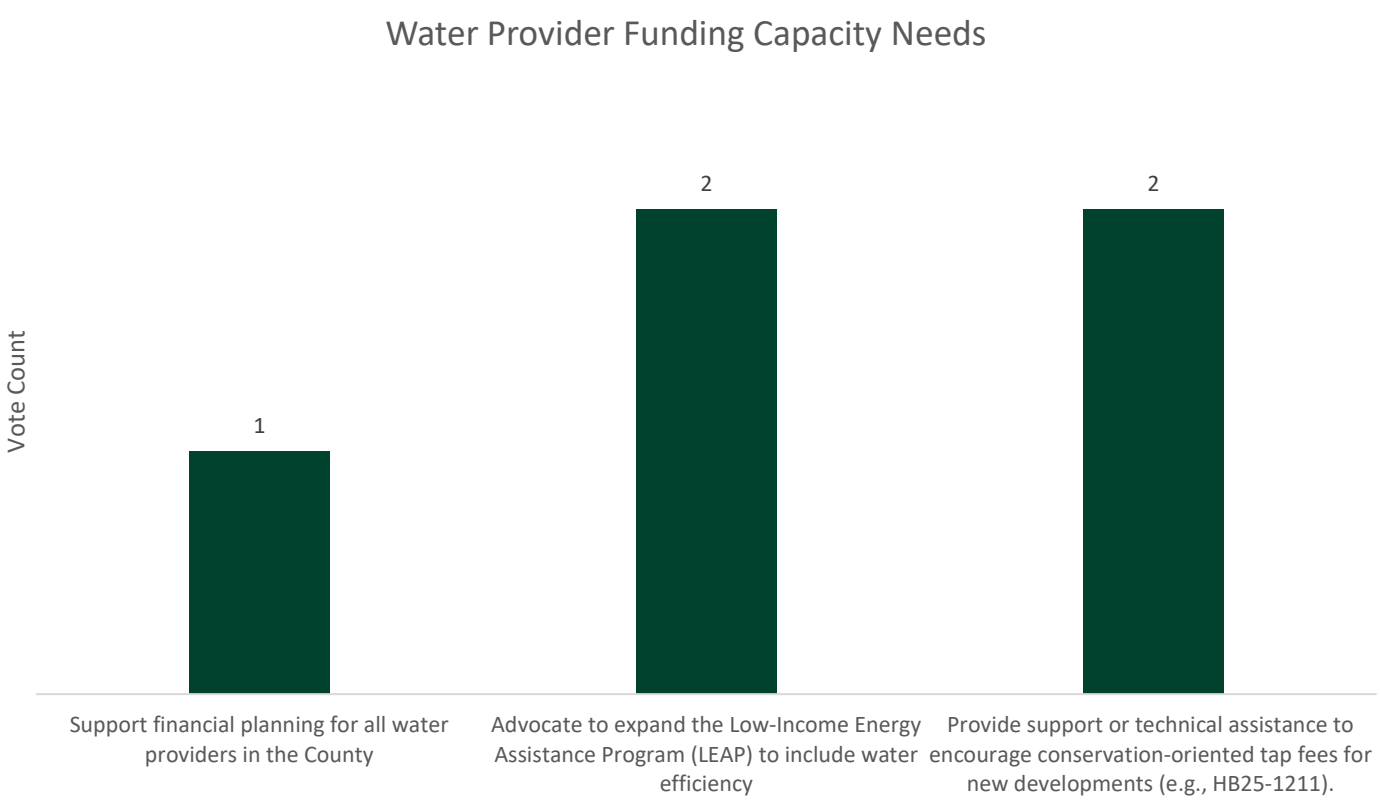

Water Provider Funding and Capacity Needs Worksheet:
To address this strategy, what role should the County play?
Vote Count
3
2
1
0
Support financial planning for all water providers in the County
Advocate to expand the Low-Income Energy Assistance Program (LEAP) to include water efficiency
Provide support or technical assistance to encourage conservation-oriented tap fees for new developments (e.g., HB25-1211).
Lead
Support
None

Figure 29. County Role Public Engagement Survey Results: Water Provider Funding and Capacity Needs



Overarching Challenge. Aging Water Infrastructure

Risks related to aging pipes, treatment plants, and distribution systems that are susceptible to leaks, breaks, and inefficiencies that result in water loss, costly infrastructure repair, water quality issues, or lack of water service.

Figure 30. County Role Public Engagement Survey Results: Aging Water Infrastructure

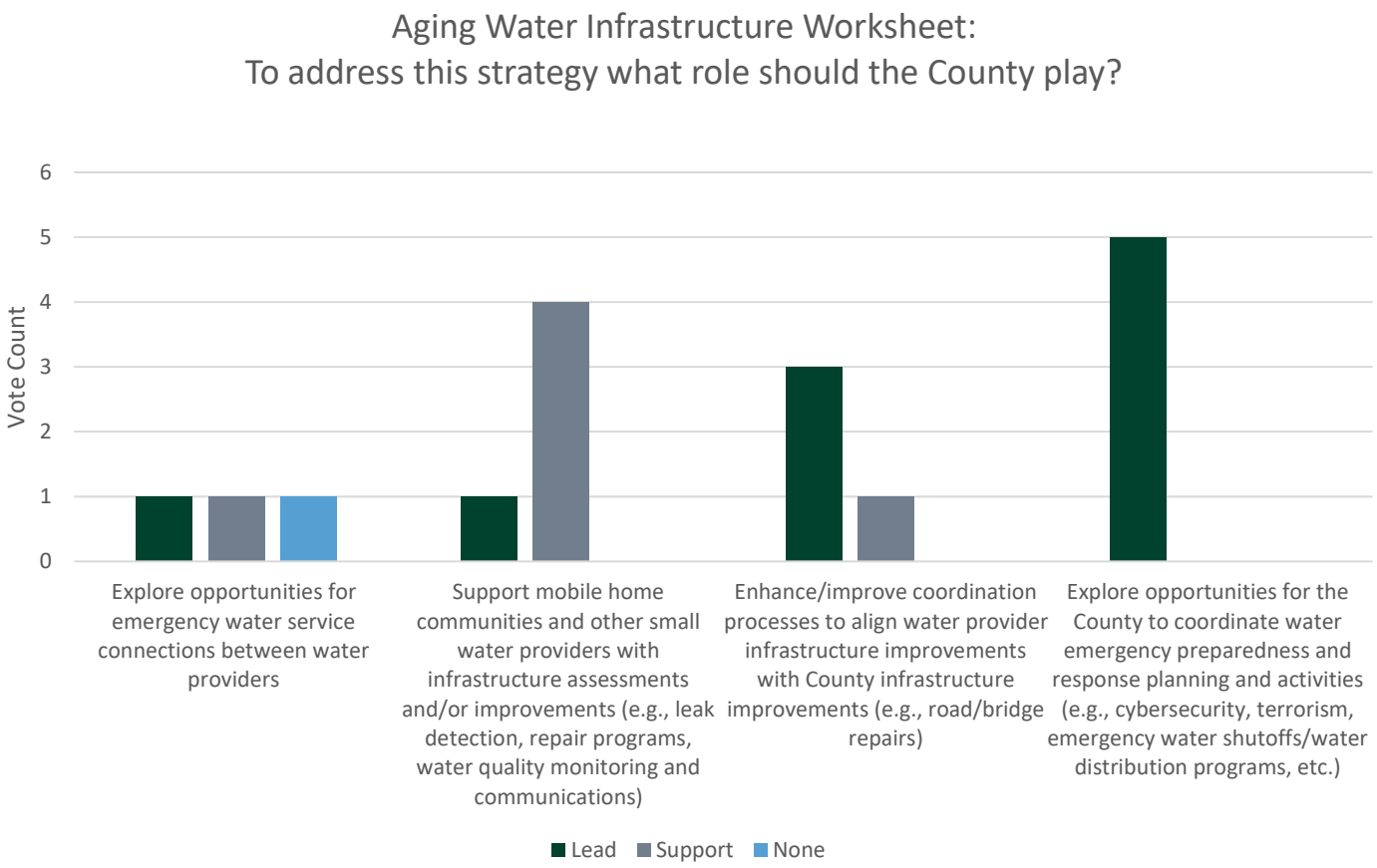
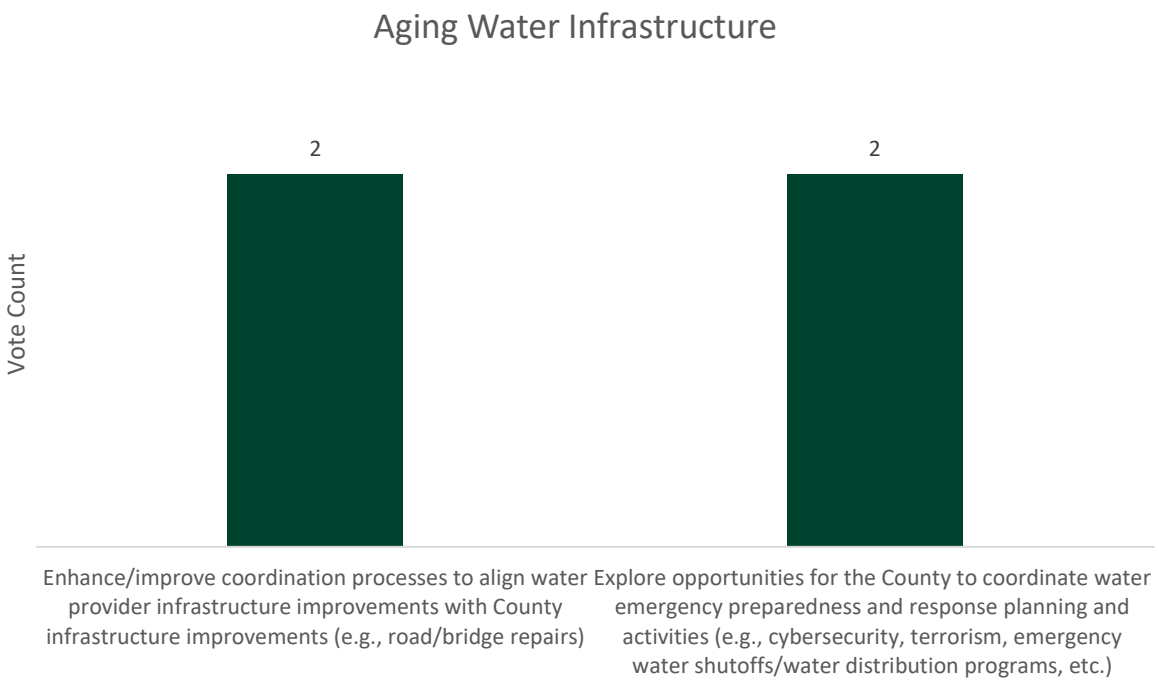


Figure 31. Public Engagement Strategy Survey Results: Aging Water Infrastructure



Public Comment Period

To gather feedback on the draft plan, a public comment period was held from September 3 – 22, 2025. The public comment period, and associated survey, was advertised to anyone who participated or registered for an engagement event related to the plan, the TAC, all Adams County providers and municipalities, as well as advertised on Adams County website and social media platforms. Seven responses were received, 5 responding to the public comment survey and two submitting letters. The main themes of the feedback were:

- Prioritize agriculture and clarify the laws and policies referenced in the draft
- Ensure Adams County considers unintended consequences to other regions by emphasizing a switch from non-renewable to renewable supplies
- Leverage opportunities to collaborate with providers on alternatives to "buy and dry"

The two letters that were received are included at the end of this appendix. Survey answers are included below.

Question 1: What feedback do you have on the introduction chapter of the plan?
Answered: 0
Skipped: 5

Question 2: What feedback do you have on the water supplies and providers chapter of the plan?
Answered: 0
Skipped: 5

Question 3: What feedback do you have on the water demands chapter of the plan?
Answered: 0
Skipped: 5

Question 4: Do you have any questions on the demand results or analysis?
Answered: 0
Skipped: 5

Question 5: Do you have any questions on the water availability chapter of the plan?
Answered: 0
Skipped: 5

Question 6: Do you have any questions on the water management challenges and strategies chapter of the plan?
Answered: 0
Skipped: 5

Question 7: Select the two strategies from the report that you think are most important for addressing water management challenges in Adams County.

Answer Choices	**Responses**	
Update water adequacy requirements/demand standards and improve related County review processes.	60%	3
Continue to work with water providers on land use planning and forecasting.	100%	5

Answer Choices	Responses	
Update development codes to promote water efficiency in new development and redevelopment.	0%	0
Create a groundwater overlay district to support sustainable development in areas with non-renewable groundwater supply.	0%	0
Expand participation in regional water management groups and planning processes.	20%	1
Establish a County-led water efficiency program in partnership with water providers.	20%	1
Dedicate County staff to lead water efforts across the County.	0%	0
Pursue water training and education for Adams County staff and leadership.	0%	0
Advocate for residents to repair/replace septic systems and/or connect to local sewer systems.	0%	0
Support and/or partner with providers to apply for grant funds for storage, reuse, and renewable supply development.	0%	0
Require observation wells or participation in shared groundwater monitoring programs for developments using Denver Basin or designated basin groundwater.	0%	0
Leverage innovative land use and water management tools to retain valuable agricultural land and businesses.	0%	0
	Answered	5
	Skipped	0

Question 8: Do you have any concerns about the strategies that were recommended to address the identified challenges?
Answered: 0
Skipped: 5

Question 9: Do you broadly agree with the conclusions and strategies listed in the Master Plan?
Answered: 0
Skipped: 5

Question 10: Do you have any other comments about this draft of the Master Plan?
Answered: 0
Skipped: 5

Board and Commission Engagement

The Planning Commission and Board of County Commissioners (BOCC) were engaged throughout the process. Specifically, Staff received feedback from the Planning Commission and BOCC on:

- BOCC Study Session, February 18, 2025
- Planning Commission Study Session, June 26, 2025
- BOCC Study Session, March 18, 2026

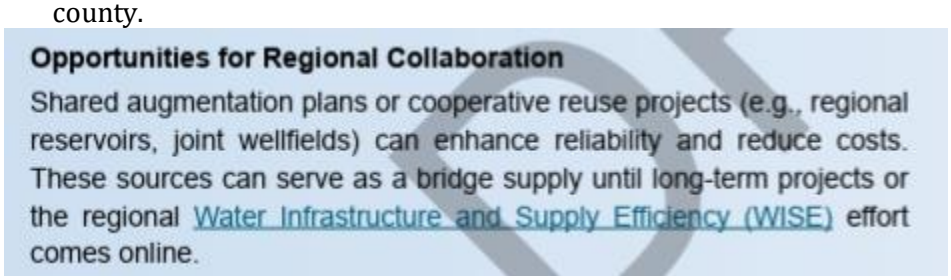
- Planning Commission Study Session, May 14, 2026
- Planning Commission Public Hearing, Planned for October 18, 2026 (date may adjust depending on Planning Commission schedule)
- BOCC Final Adoption, Planned for November 10, 2026 (date may adjust depending on BOCC schedule)

From: Jewell, Dawn <dmjewell@auroragov.org>
Sent: Thursday, October 2, 2025 10:37 AM
To: Nick Eagleson <NEagleson@adamscountyco.gov>; DeHerrera, James <jldeherr@auroragov.org>
Cc: Abbye Neel <aneel@brendlegroup.com>; Davis, Alexandra <aldavis@auroragov.org>
Subject: RE: Adams County Water Master Plan: Public Comment Information

Nick,
I have some very last-minute comments for you if you are still accepting any. I'm sorry for the delay.

PDF page 32

- "These sources can serve as a bridge supply until long-term projects or the regional Water Infrastructure and Supply Efficiency (WISE) effort comes online."
    - WISE does not provide water to Adams County. I don't believe it should be referenced as an opportunity associated with non-renewable water supplies for the county.


Opportunities for Regional Collaboration

Shared augmentation plans or cooperative reuse projects (e.g., regional reservoirs, joint wellfields) can enhance reliability and reduce costs. These sources can serve as a bridge supply until long-term projects or the regional Water Infrastructure and Supply Efficiency (WISE) effort comes online.

    - Used as a good example of partnership and regional cooperation on PDF page 45.
    - Page 113 also references WISE. While it is an amazing example of water sharing, it may be misleading as WISE cannot deliver water to Adams County.

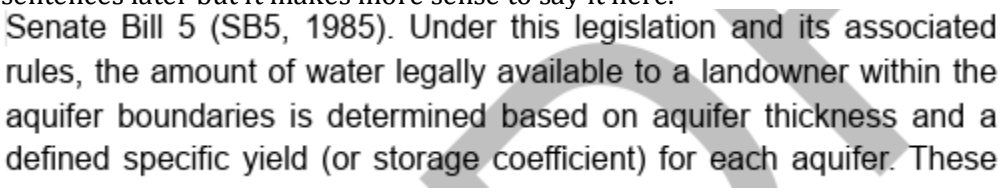
PDF Page 66

- This seems to indicate that there is no dry land agriculture in Adams County. Can they indicate the % irrigated vs non-irrigated agricultural lands? Dry land farming may be an ideal alternative to meeting many of the counties goals.


Moving eastward, land use transitions into lower-density residential development interspersed with agricultural operations and large-lot rural housing. Agricultural lands, particularly in eastern Adams County, include irrigated croplands, pasture, and open fields, many of which are zoned for large-scale agricultural use that is unlikely to be developed. In 2022, according to the USDA's Census of Agriculture, Adams County had 877 active farms, of which

PDF Page 86

- It may be helpful to note in the definition of Senate Bill 5 that it is also tied to the land boundary. Suggestion: "the amount of water legally available to a landowner is determined by the aquifer boundaries below their property and is determined…" This is inferred a few sentences later but it makes more sense to say it here.


Senate Bill 5 (SB5, 1985). Under this legislation and its associated rules, the amount of water legally available to a landowner within the aquifer boundaries is determined based on aquifer thickness and a defined specific yield (or storage coefficient) for each aquifer. These

PDF Page 116/117

- Aurora is also looking at alternatives to the traditional "buy and dry" and would appreciate working with Adams County on their planning in this regard.

Dawn M. Jewell
South Platte Basin Water Resources Manager
Water Supply and Demand Division | City of Aurora
Address: 26791 E. Quincy Ave., Aurora, CO 80016
Office Hours: Monday–Friday, 8 a.m.–5:30 p.m., off every other Friday
Phone: 303.739.7145
Cell: 720.219.6294

From: Nick Eagleson <NEagleson@adamscountyco.gov>
Sent: Wednesday, September 17, 2025 3:55 PM
To: DeHerrera, James <jldeherr@auroragov.org>
Cc: Jewell, Dawn <dmjewell@auroragov.org>; Abbye Neel <aneel@brendlegroup.com>
Subject: RE: Adams County Water Master Plan: Public Comment Information

Northern Water
Northern Colorado Water Conservancy District
220 Water Avenue • Berthoud, Colorado 80513
800-369-7246 • www.northernwater.org

September 17, 2025

Mr. Nick Eagleson
Senior Strategic Planner
Adams County Government
4430 South Adams County Parkway
Brighton, CO 80601
(Comments submitted via e-mail to neagleson@adamscountyco.gov)

RE: Northern Water comments on the Adams County Water Master Plan

Dear Mr. Eagleson:

This letter transmits comments on the *Draft Adams County Water Master Plan* (Plan) on behalf of the Northern Colorado Water Conservancy District (Northern Water). Northern Water is responsible for the operation and maintenance of the Colorado-Big Thompson (C-BT) Project, in coordination with the U.S. Bureau of Reclamation. The C-BT Project collects water from the upper Colorado River basin in Grand County and delivers a supplemental supply within its District Boundaries to roughly 615,000 irrigable acres and over 30 municipal and industrial water allottees that collectively serve more than one million people in eight counties in Northeastern Colorado.

Northern Water appreciates efforts by Adams County to better understand the impact of growth and how water resources will shape future land uses in one of the fastest growing counties in the State of Colorado. The comments that are submitted as Attachment 1 to this letter are intended to: 1) offer general feedback on the Plan; 2) communicate concerns that Northern Water has about essential native water supplies departing from within its District Boundaries to distant suburbs in the Denver Metropolitan Area; and 3) open lines of communication with Adams County and its water providers about the sustainable development and use of water in light of growing water challenges that both of our regions face.

The Plan identifies climate change, declines in the long-term reliability of Denver Basin aquifers, a lack of water supply diversity, increasing difficulties developing additional transmountain water supplies, and rapidly growing population as some of the many water-related challenges facing Adams County and its water providers. Northern Water is concerned that these challenges put the target squarely on Northeastern Colorado as a source of supply to solve water availability issues that exist in Adams County and surrounding areas of the Denver Metro Area, particularly in the annexing and intensifying land use classifications described in the Plan.

For over 170 years, the citizens of Northeastern Colorado have gone to extraordinary lengths to develop a safe, reliable supply of water. Water supply that is delivered through the C-BT Project is intended to supplement, or be complimentary to, the water resources that are native to Northeastern Colorado and derived from the South Platte River and its tributaries which include the Cache La Poudre River, Big Thompson River, and St. Vrain Creek, to name a few. At the same time, Northeastern Colorado

is making significant investments in projects like the Northern Integrated Supply Project (NISP) which will rely on relatively junior native water rights to provide a reliable and resilient supply of water to communities along the Northern Front Range for decades to come.

Northern Water is concerned that highly productive land and senior water rights are being targeted for acquisition by water providers who serve rapidly growing communities in the southern and eastern portions of the Denver Metropolitan Area, including Adams County. Primarily, water is being permanently transferred for use outside of our region to Adams County through permanent transfers from agricultural to municipal purposes (primarily in the form of agricultural "buy & dry" practices) which can have devastating effects to local communities, our current and future economies, and the environment. Agricultural water acquired by the City of Thornton in the mid-1980s in Larimer and Weld Counties will likely start moving to Adams County by the end of the decade through "buy & dry" practices. In addition, Aurora has completed multiple transactions in recent years to acquire relatively senior water rights, including a recent acquisition that will take water from a ditch system that historically irrigated lands that are now located within the Town of Windsor in Weld County.

When water departs from Northeastern Colorado to communities to our south, building blocks that are foundational to our economy, region, well-being, and sense of place are forever lost. For these and other reasons, Northern Water opposes the export of native water supplies that have historically been used in Northeastern Colorado to areas outside of our District Boundaries. In circumstances where water rights are acquired, changed, and transferred to other uses outside of Northern Water District Boundaries, appropriate mitigation is necessary to offset the associated economic, environmental, and social impacts to Northeastern Colorado.

Although Adams County has a limited role in acquiring water resources, it does have regulatory authority over land use and zoning and tremendous convening power and influence in bringing together water providers, municipalities, and other stakeholders to educate, discuss, and address existing and future water challenges. We appreciate the County's willingness to identify water challenges in your Plan, most notably fragmented water and land use planning and decision-making, regional coordination on water, and limited water knowledge and expertise. We encourage the County to not just think about how water-related strategies to address these challenges may affect citizens and entities that reside within Adams County, but also how those actions affect the area of origin from where current or future water supplies are obtained.

Thank you for the opportunity to provide comments on the Plan on behalf of Northern Water. Please do not hesitate to contact me at (970) 622-2340 or via e-mail at pwells@northernwater.org if you have any questions regarding these comments or would like to discuss water issues further.
Regards,

Sincerely,

M. Patrick Wells

M. Patrick Wells, P.E.
Water Strategy Specialist
Northern Water

Attachment 1. Northern Water Comments on Adams County Water Master Plan
September 17, 2025

General Comment. The Plan refers to imported (transbasin) water supplies frequently throughout the document. The County may want to distinguish between water derived from west of the Continental Divide (e.g., transmountain water supplies derived from the Colorado River Basin) and water derived from the South Platte River and its tributaries from areas outside of Adams County (e.g., water derived from remote watersheds like the Cache La Poudre River).

General Comment. While the Plan rightfully focuses on water related issues in Adams County, many of the priority strategies could adversely impact areas outside of the County if not properly implemented. As an example, Strategy E1 involving renewable supply development could adversely affect Northeastern Colorado, particularly without mitigation to offset social, environmental, and economic impacts to local communities in the area of origin.

Table 9, Page 38 (and elsewhere). Consider modifying the second table heading to read "Local/County Role" to reflect that the Colorado General Assembly enacted measures in House Bill 74-1041 to further define the authority of state and local governments in making planning decisions. As a result, local governments including counties (including Adams and Larimer Counties) have the authority to identify, designate, and regulate areas and activities of statewide interest through a local permitting process which includes the ability to review and approve land use and infrastructure proposals and issue 1041 permits for major water projects.

Table 9, Page 38. Under the column titled, *Water Provider's Role*, please note that water users in Adams County are located outside of Northern Water's District Boundaries and are therefore ineligible to hold or use Colorado-Big Thompson Project units, either through outright ownership or by direct or indirect contract. In addition, use of any return flows from the initial use of Colorado-Big Thompson water and any subsequent use is likewise geographically constrained for exclusive use within Northern Water District Boundaries.

Page 21, Opportunities Associated with Non-Renewable Water Supplies. The Plan states that, *"Alluvial groundwater can be paired with augmentation water from reusable water supplies. This expands firm yield options without requiring new surface diversions or "buy-and-dry" transactions."* This statement conflicts with statements made elsewhere in the Plan (see Pages 19 and 20) where it is acknowledged that changes of senior water rights (including the change of irrigation water rights) may be necessary to provide a source of augmentation water. Northern Water is concerned that senior agricultural water rights within its District Boundaries are being acquired and changed for augmentation uses to replace out-of-priority diversions, creating another less obvious, but still impactful form of "buy & dry" transfers from agricultural to municipal purposes. Northern Water supports strategies that augment out-of-priority depletions through reuse of fully consumable return flows generated by the first use of other sources, such as transmountain water or nontributary groundwater.

Pages 31 and 35. Northern Water recommends removing references to the Fryingpan-Arkansas Project in the Water Master Plan. Adams County water users are located outside the boundaries of the Southeastern Colorado Water Conservancy District and are therefore ineligible to receive an allocation of Fryingpan-Arkansas Project water. Northern Water understands that Aurora Water currently conveys a limited volume of water from changed agricultural rights through the Fryingpan-Arkansas facilities to the Otero Pump Station and Pipeline for subsequent export to the South Platte River Basin, but is not entitled to receive Project water that could be used to serve Adams County and surrounding areas.

Page 40, Thornton Water Project Case Study. The Thornton Water Project Case Study highlights the challenges associated with acquiring water rights and planning, permitting, and constructing infrastructure to export water from distant areas of origin to Adams County and surrounding areas. Northern Water believes it is appropriate for the Plan to emphasize that it will become increasingly difficult, controversial, and expensive to plan, permit, and construct transbasin water projects (whether water is sourced from west of the Continental Divide or from areas within the South Platte Basin like Northeastern Colorado) to provide renewable water supply to Adams County. The Plan may also want to mention that project proponents may be required or elect to provide mitigation of economic, social, and environmental impacts resulting from the transfer of water historically used in the area of origin to new uses in Adams County and the surrounding Metro area.

Page 105, Agricultural Water Transfer ("Buy and Dry"). The Plan should recognize that the sale of water from agricultural lands to support municipal growth can negatively impact **any** location of historic use, when water is transferred to a new use, including those areas outside of Adams County. Given the relatively limited amount of remaining irrigated agriculture in Adams County (e.g., the Plan states that a 40% reduction in irrigated acreage in Adams County by 2040 would only reduce irrigated lands by 2,600 acres), Northern Water is concerned that areas within its District Boundaries like Weld County could be adversely impacted by "buy and dry" practices that would result in water being exported to Adams County and surrounding areas to meet future municipal water needs.

V. IMPLEMENTATION PLAN

Implementation details including timeline, resources needs, action plans, relevant examples from other communities, and staffing details to support the implementation of the priority strategies identified in the plan.



Appendix V: Implementation Guide

August 2026

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IMPLEMENTATION GUIDE OVERVIEW

This implementation guide is a companion document to the Adams County Water Master Plan (i.e., Plan) and is intended to support advancement of the Plan's 13 priority strategies. While the Water Master Plan identifies recommended actions and desired outcomes, this appendix provides additional implementation guidance for staff including suggested action steps, departmental responsibilities, funding opportunities, examples from other communities, resource considerations, and connections to related planning efforts. For each strategy, the details outlined in the document are meant to support effort initiation; however, staff may update and adjust as new information and resources become available.

How Implementation Will Occur

Implementation will require coordination across multiple Adams County departments and external partners including municipalities, water providers, special districts, state agencies, and community organizations. Each strategy identifies a lead department responsible for coordinating implementation and supporting departments that may contribute specialized expertise, data, outreach, permitting, infrastructure planning, or funding assistance. If staff are hired to support these priority actions (see Strategy C1) some of the primary responsibilities may shift; however, the same departments should be engaged or consulted.

Implementation should be integrated into existing County processes whenever possible, including annual budgeting, capital improvement planning, development review, comprehensive planning efforts, code updates, infrastructure planning, sustainability initiatives, and departmental work planning. Progress should be reviewed annually to evaluate accomplishments, identify barriers, update priorities, pursue funding opportunities, and coordinate future work across departments.

How to Use This Document

This appendix is organized into three primary sections:

1. **Implementation Details by Challenge and Strategy**: provides recommended implementation guidance for each priority strategy, including responsibilities, timelines, action plans, resource needs, and equity considerations. This section serves as a high-level road map to support staff in implementing each strategy.
2. **Funding and Resource Opportunities**: summarizes grants, technical assistance programs, and other resources that may support implementation for each of the 13 strategies. This section serves as a reference for staff for additional funding and resource opportunities that may support implementation of strategies.
3. **Related Plan Connections**: identifies how Water Master Plan strategies support and advance goals, policies, and initiatives included in other County, regional, and statewide planning efforts. This section serves as a reference for staff for how each strategy connects to other plans and policies.

Staff do not need to implement strategies exactly as described. Rather, all sections are intended to serve as a starting point for implementation and can be adapted as conditions, priorities, and opportunities evolve.

Annual Review Process

To maintain momentum and accountability, Adams County should conduct an annual implementation review. If additional staffing resources are not identified, the review should be coordinated by the lead department(s) responsible for water-related initiatives and include representatives from departments identified throughout this appendix. If additional staffing resources are identified, it is recommended that one of their primary duties is to act as the primary point of contact to review and coordinate across departments for each strategy.

At a minimum, the annual review process should:

- Document accomplishments and implementation activities completed during the previous year. Ideally this is in a centralized location that can be easily accessed by all staff working or being consulted on implementation.
- Reassess strategy priorities and implementation timelines.
- Identify any new funding opportunities or implementation resources.
- Confirm or revise departmental responsibilities.
- Identify any additional budget requests, staffing needs, and partnership opportunities for the upcoming year.

Following each annual review, staff should save an updated version of this implementation guide if any details have changed, maintain a record of prior versions, and store the document in a centrally accessible location to support institutional knowledge and long-term implementation.

Suggested Initial Implementation Schedule

Table 1 summarizes recommended implementation priorities during the first several years following adoption of the Water Master Plan. During the first year, emphasis should be placed on foundational activities including staff coordination, integration into ongoing code and planning updates, development of implementation partnerships, and advancement of high-priority strategies that are already aligned with active County initiatives. Subsequent years should focus on expanding implementation efforts, pursuing external funding opportunities, tracking progress, and refining strategies based on lessons learned.

Table 1. Implementation Timeline

Activity	Q1 2027	Q2 2027	Q3 2027	Q4 2027	Q1 2028	Q2 2028	Q3 2028	Q4 2028	2029+
Plan Maintenance	Maintain	Maintain	Maintain	Annual Review & Update	Maintain	Maintain	Maintain	Annual Review & Update	Maintain
Strategy A1 Water Adequacy Requirements	Monitor	Effective Date, Train Staff	Train Leaders	Implement	Implement	Implement	Implement	Implement	Implement
Strategy A2[1] Coordinate with Water Providers	Monitor	First Annual Meeting	Continue to Coordinate	Continue to Coordinate	Annual Meeting	Continue to Coordinate	Continue to Coordinate	Continue to Coordinate	Annual Meeting
Strategy A3[1] Update Development Codes	Effective Date, Train Staff	Train Leaders	Implement	Implement	Implement	Implement	Implement	Implement	Implement
Strategy A4[1] Groundwater Overlay	Monitor	Monitor	Scope and explore consultant support	Begin Process	Draft	Draft	Vet	Vet	Adopt
Strategy B1[1] Participate in Regional Water Groups	Research Options	Assign & Align	Attend & Share	Annual Review	Attend & Share	Attend & Share	Attend & Share	Annual Review	Attend & Share
Strategy B2 County Water-	Monitor	Monitor	Monitor	Monitor	Begin Research	Program Design	Program Design	Program Design	Launch Pilot

[1] Year 1 implementation priority

Activity	Q1 2027	Q2 2027	Q3 2027	Q4 2027	Q1 2028	Q2 2028	Q3 2028	Q4 2028	2029+
Efficiency Program									
Strategy C1 Dedicate Adams County Staff	Confirm Details & Recruit	Onboard	Integrate	Annual Review	Monitor	Monitor	Monitor	Monitor	Monitor
Strategy C2[1] Water Management Training for Leadership	Identify Gaps & Interests	Research Options	Engage & Share	Annual Review	Engage & Share	Engage & Share	Engage & Share	Annual Review	Engage & Share
Strategy D1 Septic Systems	Monitor	Monitor	Monitor	Monitor	Inventory & Research	Evaluate	Program Design	Program Design	Launch Pilot
Strategy E1[1] Support Efforts to Pursue Funds	Share Vision & Discuss Needs at Annual Meeting	Continue to Coordinate & Support	Continue to Coordinate & Support	Continue to Coordinate & Support	Annual Meeting	Continue to Coordinate & Support	Continue to Coordinate & Support	Continue to Coordinate & Support	Annual Meeting
Strategy F1 Observation Wells	Monitor	Monitor	Monitor	Monitor	Begin Research	Research Options	Draft Approach	Finalize Approach	Launch Approach
Strategy G1 Agricultural Strategies	Monitor	Monitor	Monitor	Monitor	Begin Research	Research Options	Draft Approach	Finalize Approach	Launch Approach
Strategy H1 Revitalization Authorities	Monitor	Monitor	Monitor	Monitor	Begin Research	Research Options	Draft Plan	Finalize Plan	Launch

IMPLEMENTATION DETAILS BY CHALLENGE AND STRATEGY

Implementation details are organized by challenge, with strategies that address each challenge listed underneath. Each strategy includes details on the timeline, examples from other communities, responsibilities, resources needed, an action plan and equity and engagement considerations. Presented information is meant to serve as a starting point. Staff should update and/or incorporate new information if additional resources or opportunities become available.

CHALLENGE A. FRAGMENTED WATER AND LAND USE PLANNING AND DECISION-MAKING

This challenge relates to risks due to disjointed water and land use planning, especially in unincorporated areas of Adams County, which result in land use decisions that don't consider water supply, water demand, and water availability implications. Strategies to address this risk include:

- A1. Update water adequacy requirements/demand standards and improve related Adams County review processes
- A2. Continue to work with water providers on land use planning and forecasting
- A3. Update development codes to promote water efficiency in new development and redevelopment
- A4. Create a groundwater overlay district to support sustainable development in areas with non-renewable groundwater supply

Strategy A1. Update water adequacy requirements/demand standards and improve related County review processes

At the time of this plan's development, Adams County's water adequacy requirements include specific water demand requirements for certain types of development (e.g., residential, irrigated area), as well as a 300-year water supply rule for development dependent on groundwater supplies. While having water adequacy requirements is best practice, the structure of Adams County's requirements make it difficult for staff to review and enforce as the State does not review for 300 years of supply and therefore the responsibility falls to Adams County staff. Updating the standards to include more specificity (e.g., specific non-residential requirements, multi-family requirements), in alignment with the Water Master Plan's water demand analysis, will increase the accuracy of the requirements. Additionally, while the results of this Plan's analysis point towards keeping the 300-year requirement, adding more specificity around what should be included to prove 300 years of supply will ensure staff has the appropriate information to evaluate the development application. Updates to Adam County's water adequacy requirements should happen in close coordination with outcomes of Strategy A4 and Strategy F1.

Timeline

Year 1 Initiation Priority	Yes
Notes	As part of the Adams County Water Master Plan Implementation Support, a review of the ongoing Development Standards Overhaul (DSO) was completed. This review focused on water adequacy requirements and landscape code adjustments in alignment with the strategy recommendation. Implementation of this strategy will continue to evolve

with the different phases of the DSO effort, in coordination with Strategy A3 and Strategy C1, as well as with training staff to successfully implement any proposed changes.

Examples

- La Plata County: example of use-type specific water adequacy requirements.
- El Paso County: example of water supply report requirements, demand calculations methodologies, and 300-year supply requirements.
- City of Fort Collins Water Adequacy Determination Application: example of a water adequacy will serve/determination letter.
- Growing Water Smart Guidebook: includes guidance for developing clear adequate and sustainable water supply requirements.
- Best Practices for Implementing Water Conservation and Demand Management Through Land Use Planning Efforts includes guidance on right sizing water dedication matched to the actual demands of development.
- Northwest Colorado Council of Governments Water Savings Resources Guide and Model Provisions for the Colorado Headwaters Region: While tailored to the Western slope, this guide includes sample water adequacy language, detailed requirements for wells, and sample code language.

Responsibilities

Strategy Champion

- Community and Economic Development: Planning and Development

Strategy Support

- Adams County Planning Commission
- Adams County Board of County Commissioners

Action Plan

- Step 1: Review Existing Regulations
  - Review existing Adams County regulations and take stock of location and extend of existing regulations
  - Review example standards from other county examples (e.g., Douglas County, La Plata County, Gunnison County, DOLA Code Templates)
- Step 2: Identify and Engage Relevant Stakeholders
  - Coordinate with local municipalities and water providers where/when relevant (e.g., alignment with local and water provider water adequacy requirements, especially in areas that may annex)
- Step 3: Assess Current Water Supply Standards
  - Review in the context of the Water Master Plan (e.g., alignment with demand analysis and water availability assessment from Water Master Plan, water provider alignment when applicable)
  - Review in the context of other County examples
- Step 4: Update Water Supply Standards and Criteria
  - Based on earlier tasks, update water supply criteria and any processes associated with the 300-year rule

- Step 5: Develop Documentation Template(s)
    - Ensure staff has appropriate information to evaluate standards, including development of materials to support developers in their application process (e.g., checklist, will serve letters)
- Step 6: Review and Adoption
    - Get feedback from relevant stakeholders and the public on the new standards
    - Adopt new standards via Adams County's standard adoption process (opportunity to align with 2025 code update process)
- Step 7: Training and Implementation
    - Provide training to both staff and/or decision makers (e.g., Planning Commission, BoCC)
    - Educate water providers and developers about the process

Resources Needed

- **Staffing Requirement**: Medium, would require 0.25 – 1 FTE
- **Upfront Investment**: Medium, upfront investment between $10,000 - $50,000
- **Ongoing (Annual) Cost**: None, no expected ongoing annual cost

Equity and Engagement Considerations

- Throughout the engagement process, be sure to engage small water providers and developers to understand the impacts any updated requirements may have on either group.
- Adopting and enforcing more robust water adequacy standards may lead to more limited development in areas that don't have adequate supply. While this may have some perceived negative impacts (e.g., limits to economic development, limits to residential development), it may also yield several positive benefits (e.g., avoiding placing new development in areas without sufficient water quantity or quality, protecting existing water supply for existing households).

Strategy A2. Continue to work with water providers on land use planning and forecasting

Throughout the creation of this plan, 14 water providers that serve over 90% of Adams County's population and all of Adams County municipalities were engaged. A common theme amongst both providers and municipalities is the need for continued coordinated land use planning and forecasting to better understand current and future water demands as development continues throughout Adams County and annexations take place. This is especially true for the water providers that are serving unincorporated parts of Adams County and are likely to experience change in the next 15 years (see plan Figure 24). Sharing modeling results from this plan with water providers who do not have future water demand estimates, as well as serving as a convener for future conversations around land use and its connections to water demands, will help all of Adams County better connect land use to water planning. This may include sharing information such as population forecasts, future land use maps, water data, and more.

Timeline

Year 1 Initiation Priority	Yes
Notes	Coordination between water providers and land use planners is the first step toward better water management across the county. Taking small initial steps, like setting up regular coordination meetings or annual forums is recommended to begin immediately.

Examples

- Water, Infrastructure, and Supply Efficiency (WISE): While not located in Adams County, the WISE project is an example project of regional coordination across 13 different entities.
- Sterling Ranch: Sterling Ranch is a master planned community in Douglas County that is at the forefront of incorporating water efficiency into land use planning, using about half as much water as other municipalities in the Denver Metro and Douglas County areas. The community was developed in close coordination with the County, as well as other regional water providers and the State.
- Denver One Water Program: The Denver One Water Program is a formalized program between the City and County of Denver, Denver Water, Mile High Flood District, Metro Water Recovery, the Greenway Foundation, and the Colorado Water Conservation Board. Together the program aims to break down silos, to implement resilient management strategies across Denver.

Responsibilities

Strategy Champion

- Adams County Community and Economic Development: Planning and Development

Strategy Support

- Water providers
- Adams County municipalities

Action Plans

Coordinate at Existing Meetings

- Step 1: Implement a standing agenda item for coordination at existing public works meetings with water providers
    - Establish a standing agenda item related to water and land use planning/forecasting for public works meetings

Establish Annual Coordination Meetings

- Step 1: Identify participants
    - Include representatives from the County (e.g., planning staff, public works), municipalities (e.g., long-range and short-range planning staff), and water providers. The intent of these meetings is to include a larger group than those who attend the existing public works coordination meetings.

- Step 2: Schedule annual meetings
    - Hold meetings annually. Quarterly meetings could be added, as necessary for high-growth areas.
- Step 3: Establish a standing agenda to guide meetings which could include:
    - Updates from the County (recent land use changes, updates to forecasts, regulatory changes, upcoming planning initiatives, CIP highlights).
    - Updates from local municipalities (recent land use changes, updates to forecasts, regulatory changes, upcoming planning initiatives, CIP highlights).
    - Updates from water providers (water demand trends and projects; planning infrastructure improvements/service area changes; service challenges; regulatory updates).
    - Data sharing and forecasting coordination (to the extent practical and helpful, share updates to population forecasts, water demand models, and development projections and identify opportunities for alignment across the region.
    - Upcoming projects requiring coordination (development proposals, planned rezonings or annexation cases, major infrastructure investments, interjurisdictional opportunities).
    - Joint initiatives and collaboration opportunities (grant opportunities, joint studies or projects, joint training sessions or community outreach events).

Conduct Additional Water Provider Coordination

- Step 1: Identify other coordination opportunities between the County and Water Providers.
    - Outside of the coordination meetings, identify other opportunities for additional collaboration. Examples may include, but are not limited to:
        - Additional coordination processes when the County is considering a rezoning.
        - Standardization of information or processes for will serve letters (possibility for alignment with Strategy A3).
        - Alignment on water adequacy requirements and reviews (see Strategy A1).
- Step 2: Implement selected ideas.
- Step 3: Incorporate a review or revision process to assess any select ideas
    - County could utilize tools like the Colorado State University, Polaris Land Use and Water planning Tool, which helps analyze regional water demands based on land use patterns.

Resources Needed

- **Staffing Requirement**: Medium, would require between 0.25 – 1 FTE
- **Upfront Investment**: None, no expected upfront investment
- **Ongoing (Annual) Cost**: None, no expected ongoing cost

Equity and Engagement Considerations

- Smaller or more rural water providers may have limited capacity to fully participate in coordination efforts and could find new data-sharing processes more burdensome than beneficial. As a result, the communities they serve—often those most in need of support—risk being overlooked or left out of the planning process. To address this, the county should explore ways to minimize the time and resource demands of participation while maximizing the

value of engagement. This could include streamlining coordination meeting formats and developing data-sharing protocols and agreements that are tailored to be practical and beneficial for small providers without placing undue burdens on them.

Strategy A3. Update development codes to promote water efficiency in new development and redevelopment

Updating development codes to promote water-efficient development from the start is essential to sustainable water management. Code updates may take the form of updating requirements to promote water-wise landscapes or updating building codes to ensure installation of efficient plumbing fixtures. Prioritizing these changes as part of the current 2025 land use code update, and updating codes in the future as new best practices and technologies are identified, will ensure that developments are water efficient, resulting in lower water demand and less reliance on non-renewable groundwater supplies in unincorporated areas. Promoting water efficiency in new development was also identified as a key strategy in the Advancing Adams Comprehensive Plan (NRE 2.1.03 and NRE 2.1.04).

Timeline

Year 1 Initiation Priority	Yes
Notes	As part of the Adams County Water Master Plan Implementation Support, a review of the ongoing Development Standards Overhaul (DSO) was completed. This review focused on water adequacy requirements and landscape code adjustments in alignment with the strategy recommendation. Implementation of this strategy will continue to evolve with the different phases of the DSO effort, in coordination with Strategy A1 and Strategy C1, as well as with training staff to successfully implement any proposed changes.

Examples

- The following are resources for water-wise development regulations:
  - Alliance for Water Efficiency Landscape, Irrigation, and Outdoor Water Use Resources
  - City and County of Broomfield Water Wise Landscape Requirements
  - Colorado Department of Local Affairs Code Templates
  - CSU Colorado Native Plant Guides
  - SB24-005 Prohibition on nonfunctional turf, nonfunctional artificial turf, and invasive plant species key considerations guide
- The following are resources for water-wise building regulations:
  - Uniform Plumbing Code
  - Water Efficiency and Sanitation Standard for the Built Environment:
  - Alliance for Water Efficiency Green Building Resources:
  - EPA WaterSense Homes
  - U.S. Green Building Council LEED rating system

Responsibilities

Strategy Champion

- Community and Economic Development: Planning and Development

Strategy Support

- Adams County Planning Commission
- Adams County Board of County Commissioners

Action Plan

Update Development Codes

- Step 1: Review of water efficiency goals already included in Advancing Adams County Comprehensive Plan
    - Establish additional co-benefit goals from water conservation code changes (e.g., energy savings, wildfire resilience, increased pollinator habitat)
- Step 2: Evaluate best practices to meet identified goals
    - Research what code changes will achieve the greatest water savings (e.g., plumbing code vs landscape code)
    - Review example standards from other County's (e.g., Douglas County, La Plata County, Gunnison County, DOLA Code Templates)
- Step 3: Inventory existing code
    - Review relevant sections of existing code and any new draft code standards, building on research conducted in Step 1 and 2 (e.g., building and plumbing standards, landscaping standards, street standards, open space standards.)
    - Via the process identify what code changes may be updated, ensue alignment with any code changes being recommended from Strategy A1.
- Step 4: Draft new code language
    - Utilize best practice documentation, technical assistance, and/or consulting services
    - Draft language to address water savings and co-benefits
    - Consider process changes that may be needed to review new development based on updated code language
    - Ensure all changes align with any code changes being recommended from Strategy A1.
- Step 5: Review and Adoption
    - Get feedback from relevant stakeholders and the public on the new standards
    - Adopt new standards via Adams County's standard adoption process (opportunity to align with 2025 code update process)
- Step 6: Training and Implementation
    - Provide training to both staff and/or decision makers (e.g., Planning Commission, BoCC)
    - Educate water providers and developers about the process

Resources Needed

- **Staffing Requirement**: Medium, would require 0.25 – 1 FTE
- **Upfront Investment**: Medium, upfront investment between $10,000 - $50,000
- **Ongoing (Annual) Cost**: None, no expected ongoing annual cost

Equity and Engagement Considerations

- Engagement should be conducted in alignment with the Development Standards Overhaul; however, examples of who should be engaged include the development community, staff responsible for reviewing development proposals/plans, and staff responsible for inspecting new construction.
- This strategy will only benefit community members in new construction and redevelopment; households in existing developments will not benefit from this strategy.
- This strategy may have negative cost implications for developers due to increased construction and landscaping costs associated with code changes. These costs could be passed to the homebuyer. In updating codes, the County should consider cost implications for both developers, as well as any associated costs that may be passed on to the homebuyer. Depending on the structure, Strategy B2. Establish a County-led water efficiency program, could address some of these concerns.

Strategy A4. Create a groundwater overlay district to support sustainable development in areas with non-renewable groundwater supply

Overall, Adams County has adequate water supply to meet demands, yet certain areas of Adams County may see significant declines in well yields and are at greater risk of having limited access to high-quality water in the future. Groundwater overlay districts can help protect and preserve non-renewable groundwater resources by establishing area-specific development standards, regardless of the underlying zoning. Groundwater overlay districts allow for more specific requirements where they are needed most, providing greater discretion to restrict development in areas without sustainable water supply. Additional requirements associated with a groundwater overlay district may include well monitoring or testing prior to development, more rigorous water demand standards, and additional or more specific documentation to prove adequate and reliable supply. Informed by this Plan's analysis, Adams County can determine the boundaries of the groundwater overlay, as well as which types of requirements are most suitable, to ensure adequate supply for developments that are dependent on non-renewable Denver Basin groundwater. Development of an overlay district should happen in close coordination with the outcomes of Strategy A1.

Timeline

Year 1 Initiation Priority	Yes
Notes	This strategy is one of the most direct and effective tools within the county's control to address the critical challenge of overpumping non-renewable groundwater supply. The County should use the boundaries developed in the Master Plan Analysis to start developing an overlay district in year one. Ideally this will occur after DSO changes have been updated and implemented.

Examples

- Douglas County Water Supply Overlay District: Regulatory overlay district that sets the standards for establishing water demands, documenting supply, and development approval.
- Arapahoe County is in the process of exploring a groundwater overlay district.

Responsibilities

Strategy Champion

- Community and Economic Development: Planning and Development

Strategy Support

- Adams County Planning Commission
- Adams County Board of County Commissioners

Action Plan

Create Groundwater Overlay District

- Step 1: Research other groundwater overlay districts
    - Potentially in alignment with Strategy A1 and A3, review examples from other counties (e.g., Douglas County, La Plata County)
    - If possible, consider interviewing staff at organizations with Groundwater Overlay Districts to understand their review processes, staff involvement, etc.
- Step 2: Develop groundwater overlay district boundaries
    - Utilize analysis completed for this plan to develop potential GIS boundaries
    - As part of this process, consider the goals/objectives of the overlay district and how that may influence how the boundaries are drawn (e.g., water conservation, water quality protection, etc.)
- Step 3: Develop standards for the district
    - Draft standards that may include, but are not limited to:
        - Well monitoring and/or testing prior to development
        - Limiting or prohibiting certain land uses, especially those with higher water-intensive uses.
        - More stringent water demand standards compared to those developed under Strategy A1
        - More stringent water adequacy documentation requirements compared to those developed under Strategy A1
        - Review standards with appropriate bodies (e.g., planning commission, public)
- Step 4: Get feedback on potential boundaries and standards
    - Form a working group to gather feedback on potential boundaries and standards. Potential members may include planning staff, municipalities and water providers that fall within proposed boundaries, and representatives from groundwater management districts.
    - Ideally, some feedback should occur concurrently with Steps 2 and 3 to create
- Step 5: Review and Adoption
    - Get feedback from relevant stakeholders and the public on the new standards
    - Adopt new standards via Adams County's standard adoption process (opportunity to align with 2025 code update process), not this may include updating zoning maps
- Step 6: Training and Implementation

- Provide training to both staff and/or decision makers (e.g., Planning Commission, BoCC)
- Educate water providers and developers about the process

Resources Needed

- **Staffing Requirement**: High, would require more than 1 FTE and/or technical assistance or consultant support
- **Upfront Investment**: Medium, would require investment between $10,000 and $50,000
- **Ongoing (Annual) Cost**: None, no expected ongoing annual cost

Equity and Engagement Considerations

- Consider engaging planning commission and development community throughout the entire process to help them understand the benefit and function of the overlay district.
- Though existing households may not be directly impacted by the overlay district, they may have unique perspectives, especially if they are new households or have recently gone through the development process, that could help inform the goals of the overlay district.
- Adopting and enforcing an overlay district may lead to more limited development in eastern Adams County. While this may have some perceived negative impacts (e.g., limits to economic development, limits to residential development), it may also yield several positive benefits (e.g., avoiding placing new development in areas without sufficient water quantity or quality, protecting existing water supply for existing households).

CHALLENGE B. LIMITED REGIONAL COORDINATION ON WATER

This challenge relates to risks due to limited regional coordination resulting in missed opportunities to share resources, identify joint solutions, and create efficiencies in planning or water-related programming. Strategies to address this risk include:

- B1. Expand participation in regional water management groups and planning processes
- B2. Establish an Adams County-led water efficiency program in partnership with water providers

Strategy B1. Expand participation in regional water management groups and planning processes

There are several existing larger regional groups that coordinate on water-related issues and management. For instance, the South Platte Basin Roundtable and the Metro Basin Roundtable convene regularly to facilitate regional discussions on water management issues and encourage locally driven collaborative solutions. Currently, the Board of County Commissioners is tasked with participating in the basin roundtables. This strategy recommends broader and intentional participation from the County, including from County leadership (BoCC) and County staff (both Community and Economic Development and Public Works). Active participation in these groups will help ensure Adams County-specific water management perspectives are adequately represented. Additionally, expanding participation to include multiple county perspectives will increase the expertise of relevant staff members and decision-makers (Strategy C2). In addition to the basin roundtables, groups like the Mile High Flood district conduct regional watershed planning and are important partners in addressing county-wide watershed issues, like stormwater management and water quality.

Timeline

Year 1 Initiation Priority	Yes
Notes	Adams County is already participating in regional groups and expanding and deepening participation should be an early priority to begin expanding a foundation of shared expertise and advocacy.

Examples

- Regional groups for Adams County to consider participating in:
  - South Platte Basin Roundtable
  - Metro Basin Roundtable
  - Colorado Water and Land Use Alliance

Responsibilities

Strategy Champion

- Community and Economic Development: Planning and Development

Strategy Support

- Adams County Board of County Commissioners
- Adams County Public Works: Infrastructure and Stormwater; Engineering and Capital Projects

Action Plan

Participate in Regional Water Management Groups

- Step 1: Research relevant regional groups and/or planning process to participate in
    - Consider coordinating across participating departments to identify opportunities that would advance and elevate Adams County's voice in alignment with this Water Master Plan
    - Some examples of regional water groups include the South Platte Basin Roundtable and the Metro Basin Roundtable
- Step 2: Identify appropriate staff and/or leadership liaisons to attend groups/planning processes
- Step 3: Establish a centralized system for maintaining a record of notes/key decisions
- Step 4: Develop a system for sharing learnings with both staff and leadership
    - Consider sharing out findings at regular staff meetings and/or having a regular update (e.g., quarterly) to BOCC and Planning Commission
- Step 5: Revisit opportunities periodically
    - Continue to identify staff/leadership with skills and interests related to regional planning and coordination to ensure the best use of time

Resources Needed

- **Staffing Requirement**: Low, would require 0 – 0.25 FTE
- **Upfront Investment**: None, no expected upfront investment
- **Ongoing (Annual) Cost**: None, no expected ongoing annual cost
    - **None: No expected ongoing annual cost**

Equity and Engagement Considerations

- Active participation in regional water management groups allows Adams County to ensure its communities are represented—especially voices that are often underrepresented, such as disproportionately impacted populations and the agricultural sector.

Strategy B2. Establish a County-led water efficiency program in partnership with water providers

Many larger water providers offer water conservation programming to their customers. Programming can be geared toward residential customers, commercial customers or both. Examples of programming include, but are not limited to, water audits, irrigation assessments, high-efficiency toilet rebates, or turf replacement rebates. However, many Adams County community members, such as those served by smaller providers or those who receive water from a well, do not have access to water conservation programs. This strategy focuses on exploring partnerships, funding mechanisms, and program structure to increase access to water conservation programs in Adams County.

Timeline

Year 1 Initiation Priority	No
Notes	It may be beneficial to pause water efficiency program implementation until it is determined whether an FTE would be hired to support this strategy. If a new FTE is hired, they could support program scoping/development.

Examples

- **Larimer County Water and Energy Program**: Larimer County offers free water and energy assessments to Larimer County households. The program serves as a workforce development opportunity via partnership with Larimer County Conservation Corps. Program is delivered in partnership with local utilities (City of Fort Collins and Loveland Water and Power). Other partners include Northern Water, and Larimer County Economic and Workforce Development.
- **Mile High Youth Corps:** Like the Larimer County program, Mile High Youth Corps provides energy and water assessment to install water efficient equipment in income qualifying households and non-profit facilities. Historically most of this work has been in and around the Denver Area.
- **City of Evans:** In partnership with Larimer County and Weld County, the City of Evans implemented a direct fixture installation program with support from WaterNow Alliance's project accelerator program. Via the program toilets, aerators, showerheads, LED lightbulbs, and smoke/carbon monoxide detectors are installed.

Responsibilities

Strategy Champion

- Community and Economic Development: Environmental Services

Strategy Support

- Community and Economic Development: Planning

Action Plan

Establish Water Efficiency Program

- Step 1: Conduct research
    - Connect with other County lead water and/or energy efficiency programs to understand program structure (e.g., operations, funding model), insights and lessons learned, recommendations, and opportunities for alignment/collaboration. This should include Adams County's Low Income Energy Assistance Program (LEAP).
- Step 2: Initiate program design
    - Based on research conducted in Step 1, develop program proposal/concept that outlines details like:
        - Program goals and objectives

        - Staffing requirements
        - Possible funding mechanisms
        - Program mechanics and logistics
    - Collect community feedback (optional)
        - To inform program design, reach out to community members (e.g., homeowner and business survey, focus group, and/or interviews) to understand what services are most interesting (e.g., assessments, advising, rebates, indoor vs outdoor, low-income vs market rate services)
- Step 3: Identify potential partners
    - Based on Step 2, reach out to potential partners (e.g., water providers, the youth corps, Colorado Low-Income Assistance program, Adams County Workforce and Development Center) who may be interested in collaborating
- Step 4: Propose program
    - As needed, navigate Adams County approval processes to approve pilot version of the program and establish necessary staffing or financial resources
- Step 5: Pilot program
    - Coordinate with relevant partners to draft and distribute program outreach materials to target audiences (e.g., utility bill flyers, door hangers, social media posts, newsletter articles, paid advertising)
    - Run the program (details TBD depending on program parameters)
- Step 6: Evaluate pilot success
    - Measure program participation and associated impacts (e.g., water savings, participation metrics)
    - Conduct interviews and/or a survey with program participants to identify insights and opportunities to maintain successes or adjust course
    - Share program successes and learnings with appropriate audiences (e.g., program administrators and partners, Adams County Board of County Commissioners, general public)
- Step 7: Revise and refine program
    - Use pilot findings to refine program structure
    - Secure additional resources, as needed

Resources Needed

- **Staffing Requirement**: High, would require more than 1 FTE and/or technical assistance or consulting support
- **Upfront Investment**: High, would require, greater than $50,000
- **Ongoing (Annual) Cost**: Medium to high, would require between $10,000 - $50,000 in annual costs depending on the size of the program

Equity and Engagement Considerations

- This strategy has the potential to fill service gaps present for customers of smaller providers, well users, and/or low-income households.
- Some larger providers in Adams County already offer water efficiency programming to customers – there is a risk that those customers will receive duplicative benefits if the program is not effectively designed and communicated. These risks could be mitigated by partnering with these providers.

- Adams County staff should work with partners to identify opportunities (e.g., program structure and program outreach) to maximize benefits for customers without access to existing water efficiency programs.

CHALLENGE C. LIMITED WATER KNOWLEDGE AND EXPERTISE

This challenge relates to risks due to Adams County's public, staff, or leadership lacking sufficient knowledge to make informed decisions or recommendations that pertain to water management issues. Strategies to address this risk include:

- C1. Dedicate Adams County staff to lead water efforts across Adams County
- C2. Pursue water training and education for Adams County staff and leadership

Strategy C1. Dedicate Adams County Staff to Lead Water Efforts Across Adams County

There are several priority strategies in this plan that necessitate additional staff time and expertise. This strategy recommends dedicating staff resources (estimated to be at least one full-time equivalent (FTE) employee) to provide direct support of all strategies included in this plan.

Additional staff time and expertise may be met through the creation of a new position, reallocation of responsibilities and time for existing position(s), and/or consulting support. Leading Adams County's water efforts will require staff with the appropriate skill sets and expertise to accomplish the scope of work of these core strategies. However, additional staff resource(s) could also provide as-needed supplemental support for other strategies in this plan. The staff resource(s) could help to coordinate implementation efforts across the plan, providing a centralized infrastructure for implementation and plan monitoring and reporting.

Dedicating staff resources is not intended to be a replacement for comprehensive staff and leadership training and education (see Strategy C2)

Timeline

Year 1 Initiation Priority	Yes
Notes	Reallocating staff time, procuring consulting services, and/or hiring full-time staff is a critical pathway in year one for advancing several other strategies in this plan.

Examples

- To support the adoption and implementation of the Larimer County Water Master Plan, Larimer County hired a temporary planner. That position has now shifted into a planner/development review.
- The Department of Local Affairs (DOLA) hired a dedicated water planner to support statewide integrated water and land use planning.
- Note as part of Brendle Group's implementation support position descriptions have been collected that could support this strategy.

Responsibilities

Strategy Champion

- Community and Economic Development: Planning and Development

Strategy Support

- Adams County Board of County Commissioners
- Community and Economic Development: Environmental Programs

Action Plan

Dedicate Staff to Water Efforts

- Step 1: Identify required expertise and skills
    - Develop a list of expertise/skills needed to advance the 13 priority strategies in the Master Plan. Note as part of Brendle Group's implementation support existing position descriptions have been gathered to support this step
- Step 2: Identify staff time and expertise gaps in relation to the thirteen priority strategies identified
    - Consider which gaps could be filled by reallocating existing staff time
    - Evaluate what training might be needed to equip existing staff to fill gaps
- Step 3: Develop job descriptions (optional)
    - Use the list of needed expertise/skills to draft one or more "job descriptions" based on Step 1 and 2
- Step 4: Make a recommendation to BoCC (optional)
    - Recommend procuring consulting services, hiring one or more FTE to fulfill expertise/skill gaps, and/or securing funding to training existing staff
- Step 5: Implement recommendations
    - Depending on the outcomes of earlier steps, pursue needed training and/or additional resources
    - Revisit roles, responsibilities, and implementation expectations annually during the Water Master Plan annual implementation review process and monitor needs and opportunities for evolution and/or refinements to initial approach

Resources Needed

- **Staffing Requirement**: High, would require greater than 1 FTE
- **Upfront Investment**: None, no expected upfront investment
- **Ongoing (Annual) Cost**: None, no expected ongoing annual costs

Equity and Engagement Considerations

- County staff from Community and Economic Development, Public Works, and the Health Department should be engaged to inform gaps.
- Directors from Community and Economic Development, Public Works, and the Health Department; the Board of County Commissioners; and Planning Commission should be engaged to determine which gaps can and should be filled internally versus through hiring FTE or consulting services.

- Elevating equity through implementation should be a key consideration in any decisions to re-assign staff, hire new staff, or hire consulting services.

Strategy C2. Pursue water management training and education for Adams County staff and leadership

To make better informed decisions about water and land use planning, Adams County staff and leadership can build in-house expertise by pursuing water management training for Adams County staff and leadership (e.g., BoCC and Planning Commission). Developing expertise across departments and at all levels — from frontline staff to decision-makers — will help elevate water literacy across the organization. It also strengthens organizational resilience by ensuring that knowledge and leadership don't rest with just one person or team. Training and education should focus on developing a standard baseline of knowledge of water management contexts and challenges for the State and Adams County and the nexus between land use planning and water management. Additional technical training may be useful for individual staff members, departments, and/or decision-making bodies that interface with communities served by non-renewable groundwater supplies.

Timeline

Year 1 Initiation Priority	Yes
Notes	Regardless of the outcome of Strategy C1, it is essential that Adams County staff and decision-makers are well educated on water management, and the nexus between water management and land use planning. Education and training should be ongoing and should start as soon as possible.

Examples

- Larimer County Water Education Series: four monthly sessions intended to engage community members about relevant water-related issues and initiatives in the region. Sessions included an overview of water systems in the county and where water comes from, and expert-led presentations on pressing water management issues like managing agricultural demands.
- Water Literate Leaders Program: While focused on issues in Northern Colorado, Water Literate Leaders provides participants a comprehensive overview of water issues across sectors.
- Water Education Colorado Water Leaders Program: A professional development course to provide water professionals with leadership skills.
- Water Education Colorado Water Fluency Program: A professional development course to gain a more in-depth understanding of Colorado water management and protection. Design for non-water professionals in roles that intersect with water.

Responsibilities

Strategy Champion

- Community and Economic Development: Environmental Programs

Strategy Support

- Adams County Board of County Commissioners

- Adams County Planning Commission
- Community and Economic Development: Planning and Development
- Public Works: All Divisions

Action Plan

Pursue water training and education

- Step 1: Identify knowledge gaps and interest
    - Potentially in alignment with Strategy C1, survey and/or discuss with staff and leadership to identify who are interested in receiving more training, what are the key knowledge gaps, and availability to attend training(s)
- Step 2: Identify list of possible trainings
    - Based on results from Step 1, research and identify possible trainings like Water Education Colorado
    - Align with any regional water management groups as identified in Strategy B1
- Step 3: Pursue and implement education opportunities
- Step 4: Establish a centralized system for maintaining a record of notes/key decisions
- Step 5: Develop a system for sharing learnings with both staff and leadership
    - Consider sharing out findings at regular staff meetings and/or having a regular update (e.g., quarterly) to BOCC and Planning Commission
- Step 6: Revisit education opportunities periodically
    - Continue to identify staff and offices that could benefit from training
    - Consider new education opportunities based on updated policies and codes
    - Review progress and new opportunities annually during the Water Master Plan annual implementation review process

Resources Needed

- **Staffing Requirement**: Low, would require 0 – 0.25 FTE
- **Upfront Investment**: Low, requires some upfront investment but less than $10,000
- **Ongoing (Annual) Cost**: Low, requires some ongoing costs but less than $10,000

Equity and Engagement Considerations

- The County should engage all stakeholders who may interface with water management via infrastructure projects, programming, budgeting, or land use decision-making.
- Consider seeking or developing curriculum to focus on the equity impacts and considerations associated with water management challenges (e.g., known municipalities in Adams County with water quantity or quality issues, well-based development with water quality issues).

CHALLENGE D. WATER QUALITY IMPACTS

This challenge relates to risks due to local and watershed-scale water quality impacts (e.g., wildfire, groundwater contamination) that threaten the water supply. The priority strategy to address these risks is:

- D1. Guide property owners to repair/replace septic systems and/or connect to local sewer systems

Strategy D1. Guide property owners to repair/replace septic systems and/or connect to local sewer systems

Septic systems are onsite wastewater treatment systems installed on properties that are not served by a wastewater utility. Aging septic systems that are not properly maintained pose a significant risk to local environmental health. Failing and malfunctioning systems can release contaminants into the soil and groundwater table, which can pose a significant risk to the long-term health of groundwater sources that are utilized across Adams County. Properly designed conventional septic systems need relatively little maintenance to continue functioning properly, but septic systems with advanced treatment components usually require more intensive maintenance to continue to remove contaminants as intended.

Adams County Health Department has regulatory authority over the septic system permitting process for new septic systems and septic system repairs. Adams County Health Department also currently requires septic system use permits for property sales, changes of ownership, changes in property use (i.e., a residence to a business), addition of bedrooms, additions of separate “modular” homes, and other reasons deemed necessary by the Department. To obtain a use permit, the property owner must have their septic system inspected, and any significant deficiencies in the system must be repaired. In addition to this, Adams County Health Department also requires regular inspections and maintenance of most septic systems with advanced treatment components to ensure these systems are functioning as designed. Records related to septic system permitting, including inspection reports, can be found on the Health Department website.

While Adams County Health Department actively provides information about septic system maintenance and repair to homeowners, expanding the outreach efforts to property owners could help reduce the risk of groundwater contamination by a lack of maintenance. For example, regular septic tank pumping is essential to prevent premature system failure. Although this maintenance is expensive, it is typically far less expensive than repairing a septic system. Many homeowners may not be aware that this upkeep is necessary and therefore may neglect it. Informing homeowners that regular pumping can extend the life of their system, and save money over time, may encourage more consistent maintenance and reduce the risk of groundwater contamination from failing septic systems.

Adams County can also play an elevated role during the review of development projects, encouraging connections to local wastewater services, even when not required. Furthermore, Adams County could coordinate with wastewater service providers and reach out to nearby property owners when service line expansions are in the planning stages, to encourage service connections and construction coordination. Strategy H1 may also be able to provide financial support to cover the costs of homeowners connecting to public water systems, when feasible.

Timeline

Year 1 Initiation Priority	No
Notes	Adams County is already involved in the permitting process for septic installation. However, connections need to be drawn between existing programs and policies to use current data on septic systems in the County and develop informational materials regarding septic repair and replacement. Development of a plan to inform the public about septic repair and partnering with utilities to connect home to wastewater conveyance system would take time to implement.

Examples

- Summit County Septic Systems Webpage: Summit County has developed a website with helpful tips and information regarding septic repair and replacement. Summit County has also conducted studies evaluating the feasibility of a sewer collection system for a community within the county.

Responsibilities

Strategy Champion

- Adams County Health Department

Strategy Support

- Adams County Public Works: Infrastructure and Stormwater; Engineering and Capital Projects

Action Plan

Guide property owners to repair/replace and/or update septic systems

- Step 1: Inventory septic systems in unincorporated Adams County
    - Research the number of active septic systems in the County
    - Assemble County permit data and performance history to identify rural areas high risk septic systems
    - Utilize wastewater utility boundaries and septic system data to identify rural areas with septic systems could be connected to wastewater conveyance systems
- Step 2: Evaluate current regulations
    - Identify relevant state and federal regulations that could influence strategy implementation
- Step 3: Identify stakeholders
    - Collaborate with wastewater utilities to design strategies to facilitate transitions from septic to wastewater conveyance systems in rural communities
    - Engage with rural communities to identify barriers limiting transitioning away from septic systems
- Step 4: Identify potential funding and financing mechanisms

    - Research funding mechanisms, outside of the County, that could help homeowners fund/finance connection to conveyance systems (see Strategy H1)
- Step 5: Design pilot program
    - Develop educational materials informing septic owners about best practices and maintenance cycles. This could include postcards, mailers, or educational flyers.
    - Finalize tools that will assist providers and property owners transition away from septic systems (e.g., instructional septic maintenance website, high risk septic system maps)
    - Finalize financial strategies
- Step 6: Implement and share materials for pilot program
    - Based on inventory collected in Step 1, implement the program.
- Step 7: Evaluate pilot success
    - Measure program participation and associated impacts
    - Conduct interviews and/or a survey with program participants to identify insights and opportunities to maintain successes or adjust course
    - Share program successes and learnings with appropriate audiences (e.g., program administrators and partners, Adams County Board of County Commissioners, public)
- Step 8: Revise and refine program
    - Use pilot findings to refine program structure
    - Secure additional resources, as needed

Resources Needed

- **Staffing Requirement**: Low, would require 0 – 0.25FTE
- **Upfront Investment**: Low, requires some upfront investment but less than $10,000
- **Ongoing (Annual) Cost**: Low, requires some ongoing costs but less than $10,000

Equity and Engagement Considerations

- This strategy stands to benefit small and rural communities and properties in Adams County that are reliant on groundwater. Replacing and properly maintaining septic systems would reduce the risk of contaminating water
- When developing strategies to incentivize households to transition away from septic systems, the County should consider the potential impact to lower-income disadvantaged households. Many lower income households are hesitant to connect to wastewater systems because of connection fees and monthly sewer rates that are not paid by households with a septic system. Many septic systems are old or in disrepair because septic system replacements are cost prohibitive. The County should avoid implementing punitive policies and focus on strategies that incentivize lower income households to transition away from septic systems.

CHALLENGE E. LACK OF WATER SUPPLY DIVERSITY

This challenge relates to risks due to water providers or self-supplied users only having one source of supply (e.g., non-renewable groundwater, wholesale water) resulting in increased vulnerability to drought, contamination, or water shortages.

The priority strategy to address these risks is:

- E1. Support and/or partner with providers to apply for grant funds for storage, reuse, and renewable development

Strategy E1. Support and/or partner with providers to apply for grant funds for storage, reuse, and renewable development

As development in Adams County continues, and water supplies become more constrained, new and innovative solutions will be required to diversify water supplies and to use current supplies more efficiently. Solutions like water storage and reuse can improve the resilience of some systems. For example, one promising strategy for prolonging the usefulness of the Denver Basin aquifers is the adoption of aquifer storage and recovery (ASR). ASR is a water management technique that involves storing water in an underground aquifer during times of surplus (e.g., wet seasons) and recovering it for use during times of need (e.g., droughts or peak demand periods). Encouraging or incentivizing the retrofitting of existing wells with ASR capabilities could help recharge depleted aquifers, improve system resilience, and maintain groundwater availability for future generations.

That said, while new strategies like ASR improve overall resilience, new water resilient infrastructure and projects are expensive. Many providers face financial barriers including the need to invest in aging infrastructure and the need to comply with new State and federal regulations. Grant funding can provide support for programs and projects focused on diversifying water supplies and water efficiency. While Adams County may not be a financial backer for these projects, Adams County could support providers by partnering on grant applications, with the level of support ranging from providing a letter of support to co-sponsoring a grant application. This could be especially beneficial for smaller systems with limited staff and capacity and/or for single projects that support multiple providers (e.g., Denver Water's WISE project).

- ☐ **Water Provider Funding and Capacity Needs**: risks related to water providers lacking sufficient funding to implement necessary infrastructure upgrades, threatening provider's ability to maintain water quality, adequate water supply, and/or reliability of water service.

Timeline

Year 1 Initiation Priority	Yes

Notes	Available water infrastructure money through the Bipartisan Infrastructure Law must be fully allocated by 2027. The County should prioritize partnering or supporting grant applications while funding levels for water infrastructure projects are still available.

Examples

- Mesa County Environmental and Climate Justice Community Change Grant: Mesa County partnered with Clifton Water District to repurpose a gravel pit into a groundwater-fed lake that could serve as a backup water source.

Responsibilities

Strategy Champion

- Community and Economic Development: Planning

Strategy Support

- Community and Economic Development: Environmental Services

Action Plan

Provide support and/or partner with providers to support renewable supply development

- Step 1: Act as a liaison to increase awareness of opportunities for providers
    - In alignment with Strategy A2, include partnership opportunities on agendas for regular coordination meetings.
    - In alignment with Strategy B1, include any partnership opportunities that may arise from participation in regional water management groups with water providers on agendas for regular coordination meetings.
- Step 2: Share water provider projects when applicable
    - In alignment with Strategy B1, share and/or draw connections when applicable, between water provider projects and regional water management groups
- Step 3: Provide support
    - When opportunities present themselves provide support to promote renewable water supply development. This may include, but is not limited to:
        - Provide letters of support for grant applications as needed
        - Partner with smaller utilities that need more assistance with grant applications including data and figures

Resources Needed

- **Staffing Requirement**: Low, would require between 0 – 0.25 FTE
- **Upfront Investment**: None, no expected upfront investment
- **Ongoing (Annual) Cost**: None, no expected ongoing annual cost

Equity and Engagement Considerations

- Smaller water systems can lack the technical or staffing capacity to develop grant applications. The County should prioritize providing information and support to smaller systems with limited grant writing/administration experience.
- Federal grants can come with additional requirements including cost sharing, environmental reviews, and compliance with federal regulations including BABA. The County should consider additional costs associated with grant funding when partnering with providers on grant applications.

CHALLENGE F. WATER DATA AVAILABILITY

This challenge relates to risks due to the lack of pervasive, high-quality water data, resulting in the inability to make informed decisions for baselining and monitoring groundwater, surface water, and water quality. The priority strategy to address these risks includes:

- Strategy F1. Require observation wells or participation in a shared groundwater modeling program for developments using Denver Basin or designated basin groundwater

Strategy F1. Require observation wells or participation in a shared groundwater modeling program for developments using Denver Basin or designated basin groundwater

Currently, Adams County does not require new developments to install groundwater observation wells, nor is there a regional groundwater monitoring program in place. As Adams County continues to grow, new developments reliant on non-renewable groundwater will increase the strain on groundwater resources.

Aquifer decline varies across Adams County, highlighting the need for a robust, long-term groundwater monitoring program. This could include retrofitting and regularly measuring existing wells, requiring monitoring wells for new developments that rely on Denver Basin groundwater, and publishing Adams County-led groundwater reports. Better monitoring data would help identify areas at risk of depletion, support smaller providers in demonstrating supply viability, and inform decisions like enforcing the 300-year rule. Updates to any requirements associated with this strategy should happen in close coordination with the outcomes of Strategy A4.

Timeline

Year 1 Initiation Priority	No
Notes	May be beneficial to develop an initial framework for the shared monitoring program including who will participate, what data will be shared, and the frequency of updates. Guidelines for observation wells should also be outlined to include details about who will maintain the well and collect the data once installed before new regulations are implemented.

Examples

- Elbert County Groundwater Network: Elbert County in partnership with the USGS developed a network of wells for long term groundwater level monitoring.

Responsibilities

Strategy Champion

- Adams County Office of Planning and Development

Strategy Support

- Adams County Health Department

Action Plan

Require observation wells or participation in a shared groundwater monitoring program

Note this strategy should be developed in close coordination with Strategy A4.

- Step 1: Review Existing Regulations
  - In alignment with Strategy A4, review example standards from other counties (e.g., Douglas County, La Plata County, Gunnison County, DOLA Development Code Template)
- Step 2: Identify and Engage Relevant Stakeholders
  - Coordinate with local water providers where/when relevant
  - Engage planning, public works, and other departments where/when relevant
  - Coordinate with local developers to understand impacts
  - Coordinate with Groundwater Management districts
  - Coordinate with federal agencies like the USGS
  - Coordinate with the Colorado Department of Water Resources on observation well requirements and opportunities
- Step 3: Design new standards and regulations
  - Draft new policy and development requirements
  - Develop technical specifications for wells and data collection requirements
  - Develop a platform for data sharing (ArcGIS Online, cloud storage, website, etc.) (optional)
- Step 5: Develop Documentation Template(s)
  - Ensure staff has appropriate information to evaluate standards, including development of materials to support developers in their application process (e.g., checklist, will serve letters)
- Step 6: Implement new regulations and data sharing methods
  - Get feedback from relevant stakeholders and the public on the new standards
  - Adopt new standards via Adams County's standard adoption process (opportunity to align with 2025 code update process)
- Step 7: Training and Implementation
  - Provide training to both staff and/or decision makers (e.g., Planning Commission, BoCC)
  - Educate water providers and developers about the process

Resources Needed

- **Staffing Requirement**: Low, would require 0 – 0.25 FTE
- **Upfront Investment**: None, no expected upfront investment
- **Ongoing (Annual) Cost**: None, no expected ongoing annual costs

Equity and Engagement Considerations

- This strategy may have negative cost implications for developers due to increased costs associated with requiring observation wells. These costs could be passed to the homebuyer. In updating requirements, the County should consider cost implications for both developers, as well as any associated costs that may be passed on to the homebuyer. Depending on the structure, Strategy B2. Establish a County-led water efficiency program, could address some of these concerns.
- The regional distribution of observation wells should also be considered. Eastern Adams County uses more groundwater when compared to the western portion of the County. The implementation of the plan should evaluate if it disproportionately impacts smaller, more rural portions of the County slated for growth.

CHALLENGE G. AGRICULTURAL WATER TRANSFER ("BUY AND DRY")

This challenge relates to risks due to the sale of water rights from agricultural lands to municipal and industrial uses that result in negative impacts to the local economy, food supply and ecosystems. The priority strategy to address these risks includes:

- Strategy G1. Leverage innovative land use and water management tools to retain valuable agricultural land and businesses

Strategy G1. Leverage innovative land use and water management tools to retain valuable agricultural land and businesses

Adams County's zoning map defines three agricultural zone districts (A-1, A-2, and A-3) and the associated standards define the purpose, permitted uses, and development standards for each agricultural zone district. These zone districts support limited rural development and agricultural operations, but more can be done to proactively strengthen and conserve the viability of Adams County's prime/productive agricultural lands, especially irrigated agriculture in areas with adequate water resources. This strategy begins with identifying prime, productive, and historic agricultural areas within Adams County. Next, it involves evaluating land use tools such as conservation easements, overlay zoning, and/or a transfer of development rights (TDR) program to redirect future growth and development away from vital agricultural areas so that they can be conserved for agricultural uses long-term.

It also focuses on updating Adams County's Development Standards and coordinating with municipalities on land use regulations to expand market pathways for agricultural producers, making it easier for producers to access farm stands and markets and engage in agritourism activities. Updates to Adams County's Development Standards could also simplify pathways for renewable energy production on agricultural lands, such as agrivoltaics developments, providing agricultural producers with opportunities for diversified income. Finally, the process of identifying prime and historical agricultural areas, may also help unearth opportunities to explore Cooperative Water Sharing Agreements (CWSAs) and connect different water users.

Importantly, Adams County has already done some of this work. Through a partnership between Adams County and City of Brighton, the Historic Splendid Valley is an area focused on preserving farmland and creating closer connections between people, farming, and nature. Through the District Plan, the partners are working to preserve agricultural land and heritage, encourage local food production, and promote agritourism. The District Plan identifies land use tools such as cluster development standards, TDR program development, conservation easements, zoning overlays, design guidelines, and historic preservation as ways to support the area's agricultural heritage and goals.

Timeline

Year 1 Initiation Priority	No

Notes	The planning process for this strategy can be started early. Using current agricultural zone districts, county staff can evaluate tools and strategies to identify prime farmland. Once prime farmland has been identified, the County can evaluate tools to conserve prime farmland and changes that are needed to current development standards.

Examples

- The Historic Splendid Valley is an example within Adams County of coordinated planning and land use tools to preserve agricultural land. There is an opportunity to expand this work and leverage lessons learned to other parts of eastern Adams County.
- The 10 Strategies to Protect Irrigated Agriculture supplement to the Colorado Water Plan provides many examples and ideas to inspire Adams County.
- Colorado Parks and Wildlife (CPW) offers various programs such as the Habitat Partnership Program and the Wildlife Habitat Program to help landowners protect important wildlife habitat areas.
- The Colorado Natural Heritage Program provides data tools and planning services to support conservation work in Colorado.
- Colorado Department of Agriculture (CDA) provides many conservation programs to help farmers, ranchers, and other landowners manage Colorado's natural resources effectively for sustained agriculture production and environmental health.
- Routt County, Colorado's Purchase of Development Rights (PDR) program has been in place since 1996 as a tool to conserve the area's agricultural lands and natural areas.

Responsibilities

Strategy Champion

- Adams County Community & Economic Development

Strategy Support

- Adams County Parks, Open Space & Cultural Areas
- Adams County Strategic Initiatives Team

Action Plan

Leverage land use and water management tools to retain valuable agricultural land and businesses

- Step 1: Identify vital agricultural areas
    - Building on the analysis from the plan, conduct GIS mapping to identify prime/productive/historic agricultural areas
    - Engage stakeholders to validate and further inform mapping
- Step 2: Explore threats and pressures for agricultural water transfer
    - Recent research recent water right sales
    - Engage property owners and water rights owners to better understand threats/pressures and what challenges/opportunities need to be addressed
- Step 3: Identify and evaluate land use and water management tools
    - Research potential tools and explore case studies/examples

    - Compare tools and assess suitability/applicability to Adams County and identified threats/pressures
    - Engage property owners, water rights owners, and other stakeholders to inform prioritization/selection/refinement of tool(s)
- Step 4: Develop and deploy tools
    - Coordinate on the tool development and implementation (e.g., code updates)
    - Develop an engagement and communications plan to keep stakeholders and the public informed about the tool development, deployment, and long-term implementation

Resources Needed

- **Staffing Requirement**: High, would require more than 1 FTE and/or technical assistance or consulting services
    - **High: Would require >1.0 FTE**
- **Upfront Investment**: High, upfront investment greater than $50,000
- **Ongoing (Annual) Cost**: Medium, ongoing costs between $10,000 and $50,000

Equity and Engagement Considerations

- This strategy stands to benefit smaller agricultural communities in the County. Competition between large water providers with more resources can result in power imbalances between large urban and rural communities. That said, throughout this process some large providers (e.g., Aurora Water) have expressed interest in partnering with the County on this strategy.
- When implementing policies to conserve prime farmland, the County should consider possible unintended consequences. Agricultural water transfers are a tool that some agricultural landowners may want to keep. Conservation easements can also be restrictive. Landowners should be informed of regulatory requirements and potential limitations on land use before agreements are made.

CHALLENGE H. WATER PROVIDER FUNDING AND CAPACITY NEEDS

This challenge includes risks due to water providers lacking sufficient funding to implement necessary infrastructure upgrades, threatening provider's ability to maintain water quality, adequate water supply, or reliability of water service. The priority strategy to address these risks includes:

- Strategy H1. Explore revitalization authorities to support water-related reinvestment

Strategy H1. Explore revitalization authorities to support water-related reinvestment

In 2024, Colorado approved House Bill 24-1172, which allows counties to establish revitalization authorities. These authorities provide the opportunity to use tax increment financing (TIF), along with private financing, to support county revitalization projects. Revitalization authorities and TIF are tools that have been successfully used in municipalities in Colorado – expanding them for county use provides a new opportunity for Adams County to coordinate with water providers and other jurisdictions and special districts to create Adams County revitalization plan(s) to drive reinvestment, especially in unincorporated areas. This could include upgrading aging water treatment and distribution infrastructure, supporting transitions away from individual wells and/or septic systems, and even supporting water efficiency for agricultural and other large water users.

Timeline

Year 1 Initiation Priority	No
Notes	The County should continue to communicate with water providers and discuss upcoming water infrastructure projects that may require funding. For large infrastructure projects where providers are looking for financial support, the County could evaluate the feasibility of implementing a revitalization authority and the use of TIF.

Examples

- Prior to the passage of HB 24-1172, Tax Increment Financing (TIF) was primarily used for development projects. The Denver Urban Renewal Authority (DURA) uses TIF to generate revenues from redevelopment projects to fill in project funding gaps. With the passage of HB 24-1172, counties can use TIF to provide some of the financing for revitalization projects.

Responsibilities

Strategy Champion

- Adams County Community and Economic Development Office

Strategy Support

- Adams County Planning and Development Office

Action Plan

Explore revitalization authority

- Step 1: Align with current efforts
  - Align with current Adams County efforts to become a revitalization authority
- Step 2: Research applicability to water projects
  - Review previous uses of Tax TIF and the process involved in financing implementation
  - Review rules and guidelines regarding HB24-1172 and how it may be able to support other Strategies identified in the Adams County Water Master Plan
  - Evaluate risks associated with using TIF funding for water projects
- Step 3: Engage with providers
  - In alignment with Strategy A1, communicate opportunities with local water providers
  - Identify providers that may be interested in participating
- Step 4: Develop a County Revitalization Plan
  - Develop a plan outlining the projects that will be funded with TIF

Resources Needed

- **Staffing Requirement**: High, more than 1 FTE and/or technical assistance or consulting services
- **Upfront Investment**: High, greater than $50,000 assuming technical assistance or consulting service support
- **Ongoing (Annual) Cost**: Low, less than $10,000 in ongoing annual costs

Equity and Engagement Considerations

- TIF would establish funding for designated households that fall within designated improvement areas. The County should carefully consider where TIF is utilized and who will benefit. The County should consider prioritizing disadvantaged areas of the County that would not be able to afford water infrastructure reinvestment without additional financing.
- Diversion of tax revenues could reduce revenues for other entities (schools, libraries, fire districts).

FUNDING AND RESOURCE OPPORTUNITIES

There are various federal, state and local resources that can support strategy implementation. Key funding and resource opportunities are summarized in Table 2. Table 3 outlines which funding programs could be used to support strategies included in the plan. Strategy H1. Explore revitalization authorities to support water-related reinvestment is included in Table 2 and excluded from Table 3 since it is its own source of funding.

Table 2. Summary of Funding Opportunities for Strategy Implementation (Winter 2025)

Funding Opportunity	Application Date(s)	Match Funding Requirements	Funding Available	Application Requirements or Other Notes
Colorado Water Plan Grant	July 1st and December 1st	50% for construction projects and 25% for plans and studies	$37M in 2025	Letter of support from a region roundtable and a pre-application meeting with the Regional Grant Administrator are strongly recommended but not required.
DOLA EIAF Grant	Past Cycles Feb. Open and April Close November Open and December Close	1:1 minimum match	Administrative Planning $25,000 Tier 1 and 2 funding limits announced based on funding availability	Eligible applicants include political subdivisions and regional councils of governments that serve areas that have been economically impacted by the development, processing, or energy conversion of minerals and mineral fuels. Funding can be used for planning and construction of public facilities and public services. Historically, eligibility under the program has been applied broadly, allowing a majority of applicants in some way impacted by mineral development and processing to be eligible for funding.
Sonoran Growing Water Smart Technical Assistance	Previous Deadline October 31st 2025	N/A	$10,000 per community and $20,000 for joint applications	Communities must participate in a Growing Water Smart workshop prior to applying. If approved, technical assistance must be provided by third party providers (i.e. non-profit organizations, consultants, or academic institutions).
U.S. Bureau of Reclamation Small-	Historically July and January	50%	$125,000 per project	Eligible projects have a total cost including materials and installation below $250,000. Applications do not require an

Scale Water Efficiency Projects				estimate of quantified water savings but projects will be prioritized that were developed through local planning efforts.
U.S. Bureau of Reclamation Water and Energy Efficiency Grants	Historically November	50%	$5M	Projects awarded $500k must be completed in 2 years and $2M to $5M projects must be completed in 3 years. Projects must create quantifiable water savings.
USDA Water and Waste Disposal Loan and Grant Program	Applications open year-round	N/A	Funding amounts vary annually	Applicants must serve rural towns with populations of 10,000 or less. This is primarily a low interest loan program to fund water and wastewater infrastructure projects.
WaterNow Project Accelerator	Biannually, Spring/Summer and Fall Winter	N/A	250 hours of pro bono technical assistance	Competitive projects should build community trust and provide development and leadership opportunities for utility staff. Applications are open biannually, but some application periods focus on specific regions of the state.
Revitalization Authority (Strategy H1)	-	-	-	In February of 2026, Adams County Board of Commissioners adopted a resolution initiating the process to form a County Revitalization Authority. Once established, the authority would provide the opportunity to use tax increment financing (TIF), along with private financing, to support county revitalization projects. This could include upgrading aging water treatment and distribution infrastructure, supporting transitions away from individual wells and/or septic systems, and even supporting water efficiency for agricultural and other large water users.

Table 3. Adams County Priority vs. Funding Opportunities Matrix

Priority Strategy	Colorado Water Plan Grant	DOLA EIAF Grants	Sonoran Growing Water Smart	Sonoran Growing Water Smart Metrics	United States Bureau of Reclamation WaterSMART	WaterNow Project Accelerator	USDA	Water Supply Reserve Fund	Water Education Colorado	Revitalization Authority
A1. Update water adequacy requirements/demand standards and improve related Adams County review processes			X			X				
A2. Continue to work with water providers on land use planning and forecasting			X	X						
A3. Update development codes to promote water efficiency in new development and redevelopment			X			X				
A4. Create a groundwater overlay district to support sustainable development in areas with non-renewable groundwater supply	X							X		
B1. Expand participation in regional water management groups and planning processes										
B2. Establish an Adams County-led water efficiency program in partnership with water providers	X					X				
C1. Dedicate Adams County staff to lead water efforts across Adams County										
C2. Pursue water training and education for Adams County staff and leadership	X								X	

D1. Guide property owners to repair/replace septic systems and/or connect to local sewer systems							X			X
E1. Support and/or partner with providers to apply for grant funds for storage, reuse, and renewable supply development		X			X					X
F1. Require observation wells or participation in a shared groundwater monitoring program for developments using Denver Basin or designated basin groundwater	X						X	X		X
G1. Leverage innovative land use and water management tools to retain valuable agricultural land and businesses	X									X

ADVANCING ADAMS COUNTY WATER RELATED GOALS, POLICIES, AND STRATEGIES

The chapters, goals, policies and strategies in the Advancing Adams Comprehensive Plan provide a solid foundation for water-related matters in the county. Related goals and policies are summarized by the tables below. Table 9 summarizes how Advancing Adams County strategies connect to the Adams County Water Master Plan strategies.

Natural Resources and the Environment

Table 4 summarizes the natural resource and environment (NRE) goals, policies, and strategies as they relate to Adams County Water Master Plan's strategies.

Table 4. Advancing Adams County Related NRE Goals, Policies, and Strategies

Goal	Policies	Advancing Adams County Strategies
Goal NRE 1: Facilitate the protection and restoration of natural areas and ecosystems to improve habitat connectivity, sensitive lands, and natural habitats while enhancing the quality of life and shaping urban areas.	Policy NRE 1.1: Adams County is committed to sustainability and livability and values its natural resources and habitat as assets that need to be preserved and protected for future generations.	• Strategy NRE 1.1.02: Encourage new development in a manner compatible with the preservation of open space. Promote development strategies, such as clustering, that mitigate impacts to important natural areas including wildlife and riparian habitat • Strategy NRE 1.1.04: Expand Natural Resource Conservation Overlay (NRCO) to encompass additional areas that provide habitat corridor connections and open space and strengthen protections for habitat, especially proximate to water bodies. • Strategy NRE 1.1.05: Consider habitat restoration efforts that provide multiple ecosystem services such as flood mitigation, water quality, aesthetics, shading, carbon sequestration, and air quality benefits. • Strategy NRE 1.1.07: Encourage conservation easements on private land to encourage the preservation of open space, water, and wildlife habitat. Continue to implement the Public Land Dedication (PLD) Fee and update the data used to calculate the fee on a regular basis to ensure equitable dedication (SP2030 Goal 10).

Goal	Policies	Advancing Adams County Strategies
Goal NRE 2: Preserve and enhance surface and groundwater quality and ensure the long-term viability of groundwater supplies.	Policy NRE 2.1: Adams County has a limited supply of water, which can impact both existing residents and future development; it is critical for the economic and environmental health of the county that a special focus is placed on water quality and quantity, its conservation, and protection.	• Strategy NRE 2.1.01: Develop a County Water Analysis that identifies the water supply resources, current and future demand, and methods for conservation. • Strategy NRE 2.1.02: Preserve the groundwater aquifers by continuing to limit subdivisions of land east of Denver International Airport (DEN) and north of the Colorado Air & Spaceport (CASP) subarea. • Strategy NRE 2.1.03: Consider the inclusion of water conservation in building and development codes, specifically within sustainable development menu options for new projects. Promote water use efficiency for new and redeveloped residential and commercial properties in unincorporated Adams County (SP2030 Goal 9). • Strategy NRE 2.1.04: Update the County's landscaping regulations to include incentives for xeriscaping and low-water plants. Consider different regulations for the eastern and western portions of the county, which have considerably different water resources and availability. • Strategy NRE 2.1.05: Minimize volume of untreated surface runoff by incorporating low-impact development practices that utilize native vegetation and xeriscaping. Encourage green infrastructure techniques, such as grass-lined drainage swales and reductions in impervious area. • Strategy NRE 2.1.06: Restrict development of permanent structures within designated floodplain areas and preserve associated aquatic ecosystems and the services they provide. Expanding flood protection areas will help to maintain good ecosystem health.

Goal	Policies	Advancing Adams County Strategies
Goal NRE 3: Proactively plan to adapt to climate change while mitigating its extent. Reduce vulnerability to, and protect people, property, and the environment from natural hazards.	Policy NRE 3.1: Adams County recognizes the need to plan for the future with the changing climate in mind.	• Strategy NRE 3.1.03: Use sustainable infrastructure to mitigate impacts of natural hazards (SP2030 Goal 11). ○ Implement the recommendations of the Mile High Flood Control District as set forth in its plans to preserve the current capacities of drainage basins and corridors located within Adams County. Work cooperatively with municipalities to coordinate the implementation of regional drainage plans. ○ Achieve a FEMA Community Rating Score of 7 or better. ○ Increase number and quality of flood control/detention facilities to mitigate flood risk. • Strategy NRE 3.1.04: Promote the use of sustainable building and site design techniques that encourage the use of renewable energy, support energy and water conservation, and provide other benefits to the environment and community. • Strategy NRE 3.1.05: Expand protections of and establish development restrictions within the Wildland Urban Interface, as delineated in the 2020 Hazard Mitigation Plan (HMP Figure 4-50). Reduce noxious weeds and heavy infestations of non-native weed species that contribute to wildfire fuel, water consumption, and decreased wildlife habitat. • Strategy NRE 3.1.06: Encourage and foster best practices in agriculture, such as regenerative agriculture, to strengthen the health and quality of soil.

Built Environment and Connections

Table 5 summarizes the built environment and connections (BEC) goals, policies, and strategies as they relate to Adams County Water Master Plan's strategies. The Adams County Comprehensive Plan defines the built environment as human constructed, physical aspects that contribute to a livable community.

Table 5. Adams County Water Master Plan Strategies and Advancing Adams County BEC Connections

Goal	Policies	Advancing Adams County Strategies
Goal BEC 1: Support existing communities and accommodate growth and development that coordinates with local plans, is fiscally and environmentally responsible, and enhances the overall well-being of the community.	• Policy BEC 1.1: Adams County's policy is to cooperate and coordinate with incorporated communities within the county on planning and land use decisions within Municipal Growth Areas (MGAs). • Policy BEC 1.2: Adams County's policy is to expect development to be fiscally and environmentally responsible.	• Strategy BEC 1.1.04: Areas with municipal water and sewer services are strongly encouraged to annex. • Strategy BEC 1.2.03: Encourage a diverse and compatible mix of land uses that support the housing, commercial, and industrial needs of the county that promotes a resilient economy and opportunities for a more livable community. Identify potential receiving areas for industrial uses that may undermine the return on public investments around existing locations. Explore criteria for siting new industrial uses to mitigate the social and environmental impacts and avoid worsening historical inequities. • Strategy BEC 1.2.04: Consider mapping private development plans, traffic studies, drainage reports, and other relevant development documents with existing and planned public improvements to support the CIP planning process. Consider establishing a CIP overlay to coordinate public and private improvements to realize opportunities for efficiencies and avoid redundant outcomes when feasible. • Strategy BEC 1.2.06: Continue to enforce provisions that require groundwater resources be demonstrated for 300 years to

Goal	Policies	Advancing Adams County Strategies
		ensure long-term viability of groundwater for development. Consider the development of a County Water Analysis to understand the capacity of existing water sources and sanitary resources (See also NRE 2.1.01). • Strategy BEC 1.2.07: Review and evaluate urban design and landscaping criteria in the development standards and update as necessary to support best practices, water conscious landscape selections and design, biodiversity and native plants, and pollinator friendly habitats.
Goal BEC 3: A built environment that meets the needs of the community while mitigating adverse impacts, recognizes known and unknown hazardous conditions, and responds to the increasing resource constraints going forward.	• Policy BEC 3.1: Adams County's policy is to support development that is cognizant of existing hazards and responds to the growing risks posed by climate change and continued encroachment into the natural interface.	• Strategy BEC 3.1.01: Growth should be focused in a way that minimizes adverse impacts on the natural environment, provides for energy efficiency and green building techniques, and protects residents from hazardous areas. • Strategy BEC 3.1.02: Discourage new developments located within the FEMA flood plain. Continue participation in the National Flood Insurance Program Community Rating System and maintain any related and applicable community certifications or designations. • Strategy BEC 3.1.03: Encourage private landowners to grant maintenance and flowage easements to entities such as the Mile High Flood District or Public Works to allow for proper management of floodplain areas. • Strategy BEC 3.1.05: Support preparedness strategies for areas at highest risk for a variety of manmade and natural disasters,

Goal	Policies	Advancing Adams County Strategies
		such as wildfire, chemical spills, and flooding. • Strategy BEC 3.1.05: Support preparedness strategies for areas at highest risk for a variety of manmade and natural disasters, such as wildfire, chemical spills, and flooding. • Strategy BEC 3.1.07: Evaluate mitigation, building, and maintenance tactics when hazardous conditions may potentially exist and coordinate with property owners to lower that risk, including through education. • Strategy BEC 3.1.11: Plan for a climate that is hotter, more prone to drought, and produces more extreme weather events. Support community amenities that consider refuge from heat events, such as cooling stations, water pads, and shade. Evaluate building and development codes to strengthen resilient and sustainable building design, energy efficiency, and environmental standards.

Economic Development

Table 6 summarizes the economic development (ED) goals, policies, and strategies as they relate to Adams County Water Master Plan's strategies.

Table 6. Adams County Water Master Plan Strategies and Advancing Adams County ED Connections

Goal	Policies	Advancing Adams County Strategies
Goal ED 3: Guide growth and development to targeted areas and provide compatible transitions between land uses.	Policy ED 3.1: Adams County's policy is to direct businesses and development to appropriate locations based on available public facilities and infrastructure, land capacity, adjacent uses, and environmental impact	Strategy ED 3.1.04: Discourage new development on agricultural lands that are productive or in cultivation.

Cultural Heritage

Table 7 summarizes the cultural heritage (CH) goals, policies, and strategies as they relate to Adams County Water Master Plan's strategies. The Adams County comprehensive plan evaluates cultural heritage strategies that consider cultural heritage and the unique geography of the County including urban, suburban, and rural populations.

Table 7. Adams County Water Master Plan Strategies and Advancing Adams County CH Connections

Goal	Policies	Advancing Adams County Strategies
Goal CH 1: Ensure agriculture is supported with adequate allocation of area for future land uses and zoning, preservation practices, economic development, access and distribution, and technological innovations.	• Policy CH 1.1: Support the preservation of historic agricultural land uses. • Policy CH 1.2: Explore and encourage innovative agricultural practices. • Policy CH 1.3: Assess food deserts and gaps in fresh, healthy foods throughout the County .	• Strategy CH 1.1.01: Support higher density development to infill areas and those within urban service boundaries, along with areas serviced by water and sewer to reduce development pressure on agricultural lands. • Strategy CH 1.2.02: Provide educational opportunities through regional partnerships to learn about best practices in sustainable agriculture to address a dwindling water supply. • Strategy CH 1.1.03: Work to preserve existing agricultural land, farms, and facilities that grow food for the local community and support the expansion of

		productive agricultural lands, farms, and facilities. • Strategy CH 1.2.04: Explore agrivoltaics and other renewable energy techniques applied to farms. • Strategy CH 1.3.03: Encourage strengthening of local food distribution channels and promote innovations in the industry to do so.

Strategic Corridors and Subareas

Adams County is expected to continue to grow and has developed specific planning efforts for 5 strategic corridors and subareas. Table 8 summarizes strategic corridors and subareas (CSP) goals, policies, and strategies as they relate to Adams County Water Master Plan's five strategic area planning strategies.

Table 8. Adams County Water Master Plan Strategies and Advancing Adams County CSP Connections

Goal	Policies	Advancing Adams County Strategies
Goal CSP 1: Enhance five strategic corridors in cooperation with multiple jurisdictions to provide improved connectivity that considers multiple modes and integrates with the parks and trails networks, orderly transitions across jurisdictional boundaries, infrastructure and uses, and corridors that provide opportunities for safe travel and vibrant communities.		• (Federal Boulevard) Strategy CSP 2.7: Continue to collaborate with Mile High Flood Control District regarding channelization and modification of the Clear Creek floodway. • (East 104th Ave) Strategy CSP 5.3: Coordinate with County departments to develop a variety of progressive stormwater facilities and restoration projects in this area, including a nature playground concept at the intersection of the South Platte River. • (East 120th Ave) Strategy CSP 6.5: Build resilience into the ecosystem through stormwater BMPs and restoration projects, which can be introduced at the crossing of the Platte River.

Advancing Adams County Connections

Table 9 summarizes the strategies listed in the Adams County Comprehensive Plan that align with strategies listed in the Adams County Water Master Plan. For more detailed descriptions of each county connection strategy, refer to the other tables in the Advancing Adams County Water Related Goals, Policies, and Strategies Section. Each table summarizes the goals, policies, and strategies from the Adams County Comprehensive Plan that are relevant to strategies outlined in the Master Plan.

Table 9. Adams County Water Master Plan Strategies and Advancing Adams County Connections

	Natural Resources and the Environment (NRE)	Built Environment and Connections (BEC)	Economic Development (ED)	Cultural Heritage (CH)	Strategic Corridors and Subareas (CSP)
A1. Update water adequacy requirements/demand standards and improve related Adams County review processes		BEC 1.2.06			
A2. Continue to work with water providers on land use planning and forecasting					
A3. Update development codes to promote water efficiency in new development and redevelopment	NRE 2.1.03 NRE 2.1.04				
A4. Create a groundwater overlay district to support sustainable development in areas with non-renewable groundwater supply	NRE 2.1.02				CSP 2.7
B1. Expand participation in regional water management groups and planning processes	NRE 4.1.07				CSP 2.7
B2. Establish an Adams County-led water efficiency program in partnership with water providers	NRE 2.1.04				
C1. Dedicate Adams County staff to lead water efforts across Adams County	NRE 2.1.02 NRE 2.1.03	BEC 1.2.06 BEC 1.2.07			

C2. Pursue water training and education for Adams County staff and leadership					
D1. Guide property owners to repair/replace septic systems and/or connect to local sewer systems	NRE 2.1.02	BEC 3.1.01 BEC 3.1.07			
E1. Support and/or partner with providers to apply for grant funds for storage, reuse, and renewable supply development	NRE 2.1.01: NRE 3.1.04				
F1. Require observation wells or participation in a shared groundwater monitoring program for developments using Denver Basin or designated basin groundwater	NRE 2.1.01	BEC 1.2.06			
G1. Leverage innovative land use and water management tools to retain valuable agricultural land and businesses	NRE 1.1.07 NRE 3.1.04 NRE 3.1.06 ED 3.1.04			CH 1.1.01 CH 1.2.02 CH 1.1.03 CH 1.2.04 CH 1.3.03	
H1. Explore revitalization authorities to support water-related reinvestment		BEC 1.1.06 BEC 1.2.01	ED 2.1.02 ED 2.1.05 ED 3.1.01 ED 4.1.04 ED 4.1.06 ED 5.1.04		

Regional Plan Connections

Table 10 summarizes the strategies listed in other regional and local plans that align with strategies listed in the Adams County Water Master Plan. A brief summary of each related plan is summarized below:

- 2023 Colorado Water Plan: This plan serves as a framework for helping Colorado meet its water management challenges through collaborative action around water development and water conservation.
- 2022 South Platte Basin Roundtable and Implementation Plan: The South Platte Basin Roundtable is a forum to facilitate discussion on water management issues in the South Platte Basin. The associated Basin Implementation Plan (BIP), developed by basin stakeholders, focuses on the current and future water needs in the South Platte and Republican River Basins, where Adams County is located.
- 2020 Adams County Hazard Mitigation Plan: The Adams County Hazard Mitigation Plan is a countywide planning effort that identifies natural hazards, evaluates community vulnerabilities, and establishes actions to reduce long-term risk to people, property, and critical infrastructure. The plan includes goals and strategies related to drought resilience, flood risk reduction, climate adaptation, and resource protection that align with several recommendations in the Water Master Plan.
- 2021 Sustainable Adams County 2030 Plan :This plan sets goals, targets, and strategies to advance sustainability across topics including energy efficiency and renewable energy, waste reduction, water quality and quantity, transportation options, food access, and sustainable neighborhoods. The plan includes both Countywide, community-focused goals and strategies and Adams County operations-focused goals and strategies.
- 2016 Historic Splendid Valley Plan: This plan, jointly adopted by Adams County and the City of Brighton, focuses on the Historic Splendid Valley, an agricultural area in south Brighton. The plan includes three overarching goals: preserve agricultural land, encourage local food production and consumption, and promote agritourism. It includes land use and water conservation recommendations and details about water requirements necessary to continue agricultural practices.
- Adams County Land Use Code Update: The Land Use Code guides how property is used and developed in unincorporated Adams County. It impacts housing, environment, sustainability, landscaping, commercial and industrial activities, process, governance, and more. The code update will make it easier for staff and the public to use, implement the Advancing Adams Comprehensive Plan (2022), and incorporate best practices and community feedback.

Table 10. Adams County Strategy and Regional Plan Connections

Priority Strategy	Colorado Water Plan	South Platte Basin Roundtable 2022	2021 Sustainable Adams County 2030 Plan	Adams County Hazard Mitigation Plan 2020	South Platte Regional Opportunities Water Group	Historic Splendid Valley Plan 2016	Adams County Land Use Code Update
A1. Update water adequacy requirements/demand standards and improve related Adams County review processes	X						
A2. Continue to work with water providers on land use planning and forecasting	X	X					
A3. Update development codes to promote water efficiency in new development and redevelopment	X	X	X	X			
A4. Create a groundwater overlay district to support sustainable development in areas with non-renewable groundwater supply	X						
B1. Expand participation in regional water management groups and planning processes	X			X	X		
B2. Establish an Adams County-led water efficiency program in partnership with water providers	X		X				
C1. Dedicate Adams County staff to lead water efforts across Adams County							

Priority Strategy	Colorado Water Plan	South Platte Basin Roundtable 2022	2021 Sustainable Adams County 2030 Plan	Adams County Hazard Mitigation Plan 2020	South Platte Regional Opportunities Water Group	Historic Splendid Valley Plan 2016	Adams County Land Use Code Update
C2. Pursue water training and education for Adams County staff and leadership							
D1. Guide property owners to repair/replace septic systems and/or connect to local sewer systems							
E1. Support and/or partner with providers to apply for grant funds for storage, reuse, and renewable supply development	X	X					
F1. Require observation wells or participation in a shared groundwater monitoring program for developments using Denver Basin or designated basin groundwater	X	X					
G1. Leverage innovative land use and water management tools to retain valuable agricultural land and businesses		X			X	X	X
H1. Explore revitalization authorities to support water-related reinvestment							X

