Vision 2050 Workgroup Memo

TO: Vision 2050 Workgroup

FROM: Staff and Project Team

DATE: June 4, 2025

RE: Water and Intensity Studies Follow-up

SUMMARY:
The purpose of this meeting is to continue the discussion from our May meeting in which preliminary economic, transportation and climate intensity studies were presented to the Workgroup. Per the recommendations of the CGAC and new state requirements, the staff have also been completing a water analysis report to understand the availability and reliability of the water supply in unincorporated Pitkin County. We will present a summary of the findings to date and facilitate a discussion with the Workgroup around the relationships between water, land use, rural/wild preservation and affordable housing.

This discussion will highlight the tradeoffs between our core community values of preventing sprawl and the development we do want (e.g., affordable housing). Together, we will explore the types of intensity we do want and the types of intensity that we want to reduce, manage and mitigate based on our community values.

BACKGROUND:
The Community Growth Advisory Committee Report identified the need to go fast on climate and evaluate the intensity that was happening in unincorporated Pitkin County. However, the CGAC also recognized that water use was a critical component of our community's values and recommended a better understanding of water availability and usage as a means for code changes for housing, development standards (i.e. landscaping), outdoor energy use and tiering options. In addition, recent changes in state law mandated water analysis as part of any updated Comprehensive Plan process. At the direction of both CGAC and State mandates, staff brought in the Brendle Group to complete a Water Availability and Reliability Analysis (Attachment A, *Pitkin County Vision 2050 Water Analysis Summary*). Additionally, the analysis provides enabling versus limiting considerations for water reliability in the context of infrastructure, services and affordable housing development within and outside of the UGBs.

MEETING FOCUS: Intensity, Land Use and Affordable Housing

The recommendations from the CGAC have served as the launching point to move the discussion forward. Based on recommendations from CGAC, Vision 2050 pursued additional analysis to incorporate a data-informed approach for key factors in intensity in unincorporated Pitkin County, including infrastructure, water resources, and services, and community housing development.

The May 7th Workgroup meeting focused on land use patterns and intensity that we do not want to see.

Key summary from the meeting last month includes:

- **Large Home/Intensity Correlation:** Large homes are not acting like homes but rather more like commercial hubs with workforce- and vehicle-trip-intensive micro-economies that are increasingly disconnected from our mass-transit system
    - Smaller homes (under 3,000 sf) are not intensive in the same way that larger homes are. Smaller homes are 'homes operating like homes' with higher occupancy rates, typical economic, transportation and climate impacts that follow state and national trends. Locating smaller homes in places adjacent to infrastructure/services/transportation may align with the goals of minimizing disproportionate intensity in Pitkin County, preserving rural areas and creating affordability opportunities.

- **Intensity Data Helps Inform Land Use Patterns Aligned with/ Community Values**
    - We do not want the intensity generated by large homes where it occurs in rural areas; this is inconsistent with community infrastructure, transportation/transit, and creates disproportionate impacts to our rural character
    - We do want to support & incentivize smaller homes, homes that act like homes, and housing in locations closer to services & infrastructure

- **Growth vs. Intensity:** Growth can be measured in standard metrics like population changes, building permits, new buildings, etc. Intensity is measured through the proxies established in the Intensity White Paper. The goal is to manage and solve for growth AND intensity in this Comprehensive Plan policy update. This means reducing the intensity that we do not want while promoting/incentivizing what we do want.

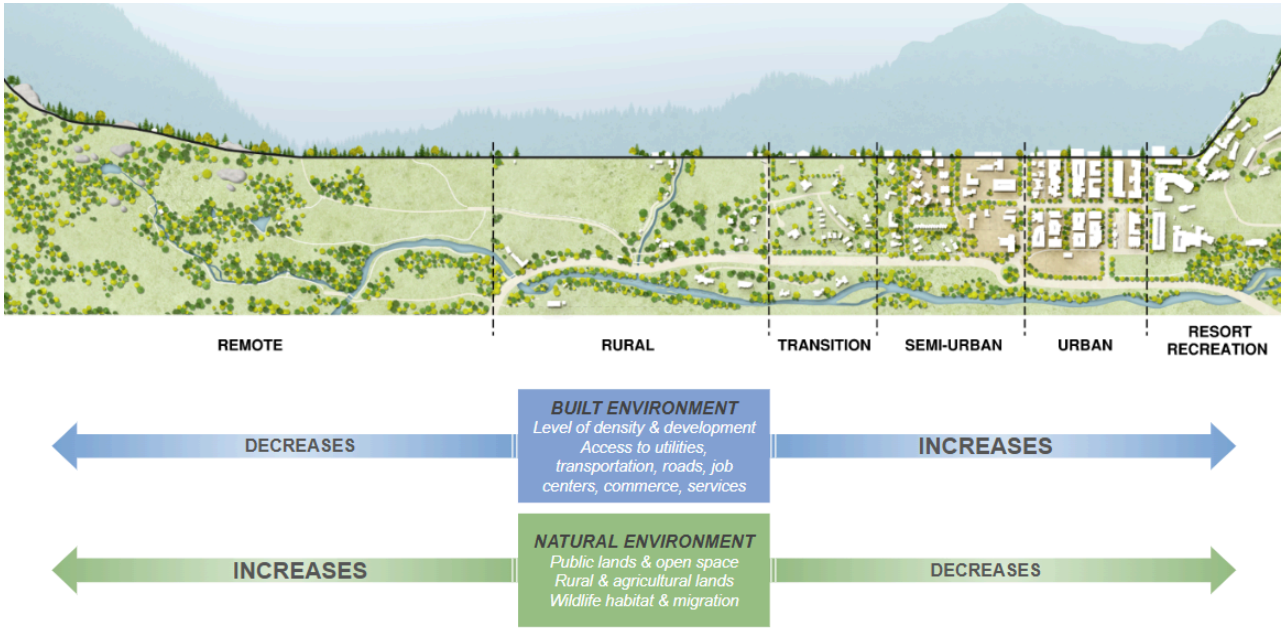
The water discussion will focus on land use patterns and intensities that may be appropriate and we do want to see in the context of our community values.

Data-Informed Analysis: Enabling vs. Limiting Factors

Pitkin County boasts one of the highest percentages of public land ownership compared to other counties in Colorado. Only about 15% of the total land area in Pitkin County is privately owned and is located along the valley floors and drainages. The private lands are physically constrained by our mountainous topography and by the terrain features of the surrounding public lands. Additionally, about a quarter of private lands are held in conservation easements, which place limitations on future development. Given the extensive presence of public lands, coupled with our community's commitment to protect our natural environment and the presence of natural hazards, the guiding policy and land use decisions for our limited "developable" lands are all the more crucial.

Through the work of the Comprehensive Plan Update, staff have been evaluating the County's current and desired land use patterns and the policies that inform them. Our existing land use policies broadly intend to create a clear delineation between the urban and rural landscape. However, in practice, our community land use patterns function as a continuum from more rural to more urban, with several

zones in between. The graphic below shows a conceptual transect of our community's current land use patterns.



Our community infrastructure and services have been built to assume that economic activity, jobs, and development are located in urban areas. However, building upon the work of the CGAC, we are now understanding and quantifying the disproportionate impacts of large-scale residential development activity and intensity occurring in rural areas of the County. While further analysis is underway, we recognize that this level of intensity in rural areas is not aligned with our community values or the intention of our existing land use policies. Put simply, intensity and activity are unwelcome in rural areas primarily because of *where* it is taking place. While our existing policies and code have managed growth and mitigated sprawl in rural areas, our land use policies need to be updated to address the community impacts of intensity and activity in rural areas while also balancing the desire for equity and affordability.

CGAC recommendations on housing:

We want to grow the community that will participate in our community and create policies and a Land Use Code that creates an environment to ensure we maintain the fabric of our community and this "Middle Economy." In addition to the recommendations below, the group strongly believes Pitkin County needs to not continue "problem identification" of housing, but rather be solution oriented and take action to address the housing needs of the community by all means necessary. Historically, Pitkin County's Land Use Code has not supported affordable housing outside the UGB, unless it was the preservation of a pre-existing development. Many types of affordable housing are currently needed for our community and in order to meet our values and goals, Pitkin County should look at how the Land Use Code can be revised to enable and incentivize different types of affordable housing outside of the UGBs.

Grounded in the CGAC recommendations and using the intensity studies and water analysis, staff and project team will discuss with the Workgroup *what* land use patterns are appropriate based on our

community values, and *where* they may be appropriate in the context of a conceptual transect identifying locations along a continuum transitioning from urban areas to more rural areas in the County.

Key Findings and Discussion Areas

As stated, this meeting intends to provide an overview of the water intensity analysis, informing the new policy changes regarding affordable housing location criteria from a land use perspective. The following provides a high level overview of the key takeaways.

1. While our existing land use policies assume stark urban/rural delineations, our community land use patterns function as a continuum from more rural to more urban. We are examining, evaluating, and updating our land use policies with the intent to align our community values with the most appropriate land use patterns.

2. The Community Growth Advisory Committee Final Report provides clear recommendations to enable affordable housing outside established UGBs and establishes criteria for suitable locations. This is the foundation for a new policy direction.

3. There are practical limitations for development outside of the UGBs related physical topography and hazard constraints, water reliability, and access to infrastructure and services that essentially serve as "self-limiting" policies for future development.

4. There are opportunities within unincorporated Pitkin County to enable affordable housing through densification of existing development, new development and Caretaker Dwelling Units (CDU). In order to support even a limited amount of affordable housing development outside the UGBs, existing Land Use policies must be revised as part of the Comprehensive Plan update - the foundation for enabling affordable housing in the future.

5. Proximity to water service districts is the most enabling factor for new affordable housing and densifying existing development. Water service districts that have the most reliable water supply are generally located within or close to established UGBs and municipalities.

6. What questions do you have about water availability as an enabling/limiting factor for affordable housing development and preventing sprawl?

GENERAL PROJECT UPDATE: All aspects of the Vision 2050 project continue to move forward. The Comprehensive Plan drafting is nearing completion and the document is anticipated to be discussed at the upcoming July Workgroup meeting before being shared for public review in August. Anticipated Comprehensive Plan milestones are detailed below:

- June:
    - 6/4 Discussion of Comprehensive Plan with Workgroup
    - Sharing of completed Data Analysis, including Intensity Studies
- July:
    - Workgroup review of the Comprehensive Plan

    - P&Z discussion of the Comprehensive Plan
    - BOCC discussion of the Comprehensive Plan
    - Kickoff for public engagement
    - Finalize Intensity White Paper
- August:
    - Broad Community Engagement on Comprehensive Plan
    - Targeted discussions with Caucuses, Community, Partners and Stakeholders
- September:
    - Broad Community Engagement on Comprehensive Plan
    - Finalization of the Comprehensive Plan
- Late Fall/Winter
    - Comprehensive Plan Adoption Process with P&Z, followed by BOCC

ATTACHMENTS:

Attachment A - The Brendle Group Pitkin County Water Analysis Summary
Attachment B - From Table of Recommendations - Housing in UGB

ATTACHMENT A

MEMORANDUM

To: Pitkin County Board of County Commissioners

From: Brendle Group

Date: May 12, 2025

Re: Pitkin County Vision 2050 Water Analysis Summary

Overview

Brendle Group is in the process of developing a Water Conditions Report that provides technical analysis to inform the Comprehensive Plan's water policy direction. The analysis will include a baseline of water supply, estimated 2050 future demand, and a summary of resulting water considerations for the County. This memorandum provides a preliminary summary of the analysis in progress and offers draft data and considerations to inform the Comprehensive Plan's water policy direction, in the context of water reliability and affordable housing development. The complete Water Conditions Report will be available in summer 2025.

Water Availability and Demand

To understand water availability and demand in Pitkin County, Brendle Group analyzed information related to public water systems, surface water and groundwater, wells, and agriculture.

Surface Water and Groundwater

Water supply comes from two sources: **surface water** and **groundwater**. Groundwater can be characterized as "**tributary**" (which means it is hydrologically connected to streams, rivers, and lakes and replenished through precipitation) or "**nontributary**" (meaning it is not hydrologically connected to surface water sources). Both surface and tributary groundwater are considered **renewable sources** of supply. Nontributary groundwater is considered a **nonrenewable source** of supply because it can take hundreds of years to naturally replenish.

Surface water and tributary groundwater supply 99% of Pitkin County's water; meaning Pitkin County's water supply is largely considered "renewable." The availability of these renewable sources for the County, can still be impacted by snowpack, drought, wildfire, and water administration. Specifically, the County is in the Colorado River Basin, which is currently overallocated, and as a result must adhere to specific processes to develop additional surface and tributary supplies to serve new development.

All surface water and tributary supplies require a water right that outlines the approved uses. Sometimes an augmentation plan is required, which allow tributary groundwater well users to replace or "augment" surface

water that is depleted due to tributary groundwater well pumping. This allows well users to pump even when they are not in priority to do so. Plans are approved in water court and applications must demonstrate where, when, and how water will be used; how much augmentation water is needed to account for the well pumping; and an engineering analysis that demonstrates that senior water rights will not be affected by the well's use. Given the nature of water rights in the basin and reliance on surface and tributary groundwater, **Pitkin County will be heavily dependent on augmentation water to support future growth and redevelopment.**

Within the County there are just over 3,600 water rights, with 65% of them being considered "absolute" meaning that it is legally recognized to divert a specific amount of water for its designated use. The remaining percent of rights are considered "conditional" which means the water is reserved for a planned use, but the water right hasn't been converted to an absolute use. These conditional rights are less secure, and in turn less reliable.

In addition to serving the County's needs, Pitkin County is exporting surface and tributary groundwater to Colorado's eastern slope. Collectively three transmountain diversions in Pitkin County account for 17% of the annual transmountain diversions across the State. As a result, an average of 40% Pitkin County's waters are diverted each year (Roaring Fork Conservancy, n.d.).

Within the larger Colorado River Basin, four additional transmountain diversion projects are planned. These include the expansion of Gross Reservoir, the Windy Gap & Chimney Hallow Reservoir Project, the Continental-Hoosier System Project, and the Eagle River Joint Use Project. With collection areas in Boulder, Grand, Summit, Park, and Eagle Counties it is unlikely that Pitkin County's supply will see major impacts. This is due to the County's location, as well as the seniority of its water rights compared to the new projects.

Public Water Systems

There are 50 public water systems in Pitkin County, according to the State of Colorado Department of Public Health and Environment (CDPHE) Water Quality Control Division (WQCD) database of which **31 provide ongoing water service** to County residents (the other 19 provide service to transient populations like campgrounds). These 31 public water systems serve approximately 82% of Pitkin County's population (13,900 people); however, 28 of the 31 serve 400 people or less. Collectively, the 31 public water systems **provide an estimated 13,000 to 15,200 acre-feet of water per year.**[1]

Service area boundaries for public water systems differ from incorporated limits and urban growth boundaries (UGBs). This is due to a variety of factors including annexation and development history, infrastructure availability, and service agreements. **Of the 31 public water systems in Pitkin County, 28 are located outside of UGBs.** The public water systems located outside of the UGB tend to be much smaller. On average they have 46 service connections per system and provide water to just over 2,000 people.

Wells

Nearly all Pitkin County's public water systems receive water from non-exempt tributary wells, with a handful receiving water from tributaries of the Roaring Fork River, among other sources. Non-exempt wells are subject to water rights priority system administration due to their scale (e.g., subdivisions, irrigated agriculture, most commercial applications, and municipalities). They are subject to augmentation plan requirements to ensure the availability of supply for downstream users.

[1] Please note, at the time this memo was drafted analyses were being finalized. These, and all subsequent estimates, may be adjusted as materials are finalized for the final Water Conditions Report, expected to be published in early Summer 2025.

Areas of Pitkin County not served by public water systems are **self-supplied users** that most commonly receive their water via wells. Roughly 2,300 permitted wells serve about 18% of Pitkin County's population (roughly 3,100 people). These wells are primarily permitted for domestic or household uses (73%) and the majority or located in unincorporated Pitkin County and/or in areas that are not served by a public water system (78%). Collectively they are estimated to **provide an estimated 1,100 to 3,200 acre feet of water per year.**

Of these 2,300 permitted wells some are considered **exempt.** In Colorado, the exempt well process is intended for rural areas where other supplies are not available and for small-scale applications. In Pitkin County, **62% of existing wells are "exempt,"** meaning they still require permits from the State Engineer, but are not subject to the same level of administration as non-exempt wells (i.e., augmentation plans are not required). Exempt wells are typically limited to pumping at 15 gallons per minute and are classified as **either domestic or household**.

Exempt wells on lots created by exemption (35 acres or larger) are generally for domestic use (serve up to three single-family dwelling units, can be used to irrigate up to one acre of land, and can provide limited water to domestic animals and livestock). Exempt wells on properties less than 35 acres (i.e., subdivisions platted prior to June 1, 1972) are limited to household use only (indoor use only). Within Pitkin County, **53% of the exempt wells are permitted for domestic use and 31% are permitted for household only use**.

Agriculture

Agricultural users often receive water via a well or a ditch. Within the county there are 137 named ditches, in addition to several unnamed ditches. As of the 2022 Agricultural Census there were 116 farms and ranches within the County that covered 36,630 acres (6% of the County's total acreage). Roughly 21% of this land was irrigated (~7,751 acres) (USDA, 2022). **Agricultural lands have used an estimated 20,000 – 25,000 acre-feet of water per year over the last 8 years.** This is based on historic weather patterns and data.

Summary and Future Use

Due to the variety of public water systems, wells, and ditches in Pitkin County, water is widely available to meet these demands – both physically and legally – for beneficial use. Together, across public water systems, self-supplied users, and agriculture users, **an estimated 34,100 – 43,400 acre-feet of water is currently used in Pitkin County every year.**

Brendle Group's preliminary analysis, which included a survey of the County's water providers, demonstrates that there is **likely enough water to meet current and future demand**, though water rights administration and augmentation plan requirements will dictate who can use the water, how much water can be used, and how water uses are determined. Additional factors such as climate change and development intensity may also impact water availability, as well as reliability.

By 2050, domestic demands (served by public water systems or wells) are expected to rise slightly (6 – 20%) . The range is due to uncertainty about how Pitkin County will change and redevelop. Pitkin County housing units tend to have large footprints, with higher-than-average water-using fixtures per dwelling unit. Brendle Group's analysis of Pitkin County's residential property records shows an average of 3.8 bathrooms per residential dwelling unit, an average that has steadily increased from 2.6 bathrooms per dwelling unit for units constructed in 1970 to 5.25 for units constructed in 2023. If this type of water-intensive development continues, domestic demand will continue to rise. Additionally, future agriculture demand is also expected to rise due to climate change requiring additional supplemental irrigation water. Final estimates of future water demand will be provided as part of Brendle Group's final Water Conditions Report.

Water Reliability

While water availably appears sufficient, factors such as the abundance/concentration of exempt wells, high household demand, climate change, infrastructure quality, and water rights seniority, raise **questions about future water reliability** within the County.

Sustainable water management includes not only on the physical and legal availability of water, but also the reliability of water – whether high-quality water is consistently available for beneficial use. Characteristics of a reliable water system include:

- Multiple sources of supply (e.g., surface water and tributary groundwater, water sourced from different watersheds), back-up systems, and/or interconnectedness with other systems
- Senior, absolute water rights
- Adequate storage for demand shifts and emergencies
- Modern and adequate infrastructure (e.g., low water loss)

In general, many of Pitkin County's public water systems have characteristics of reliable systems – especially those systems that have been serving Pitkin County for some time. Yet even some of those existing systems face challenges related to supply diversity, storage, seniority of water rights, and aging infrastructure.

When surveyed, while most water providers who responded (90%) indicated they had "sufficient" current water supplies (Figure 1), indicating they are not concerned about water supply to meet current demand. Yet, 50% indicated they only had "somewhat sufficient" or "insufficient" future infrastructure (Figure 2), and 40% indicated that they had "somewhat sufficient" to "insufficient" future financial means (Figure 3), which indicates that they may have concerns about future water reliability or their ability to serve in the future.

Note that Brendle Group sent the survey to all 50 water providers and the responses in Figure 1 to Figure 3 represent the 10 responses received. While a low overall percentage of total providers, the 10 who responded provide water to 69% of the County's population. Providers that indicated they had insufficient infrastructure or financial means tended to be smaller providers and metro districts serving individual HOAs.

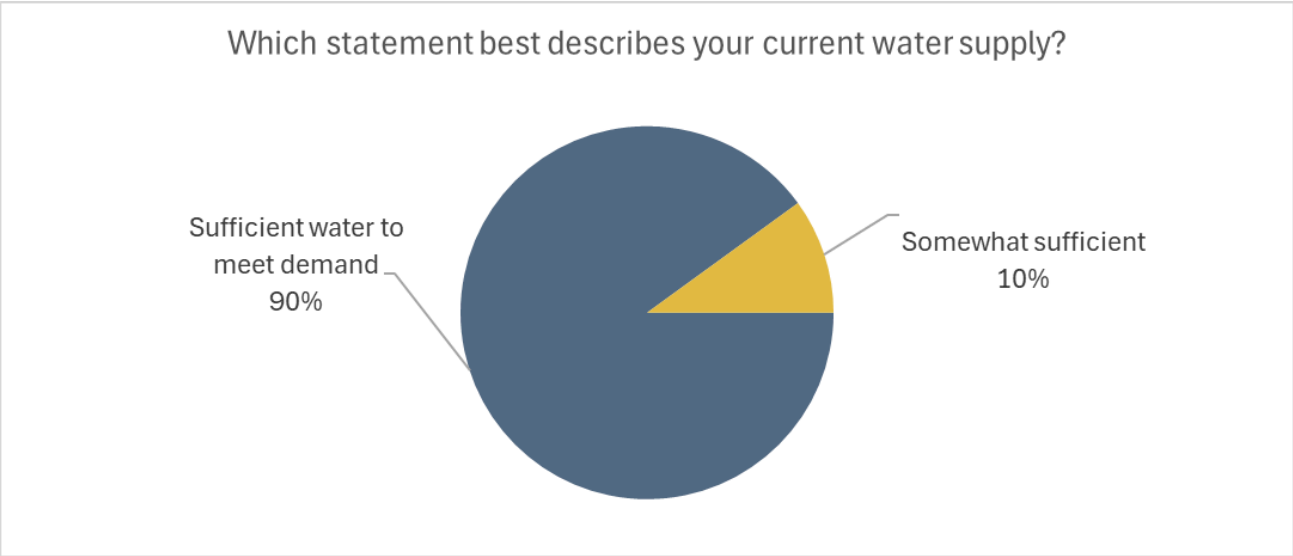


Figure 1. Water Provider Survey Results to Question About Current Water Supply

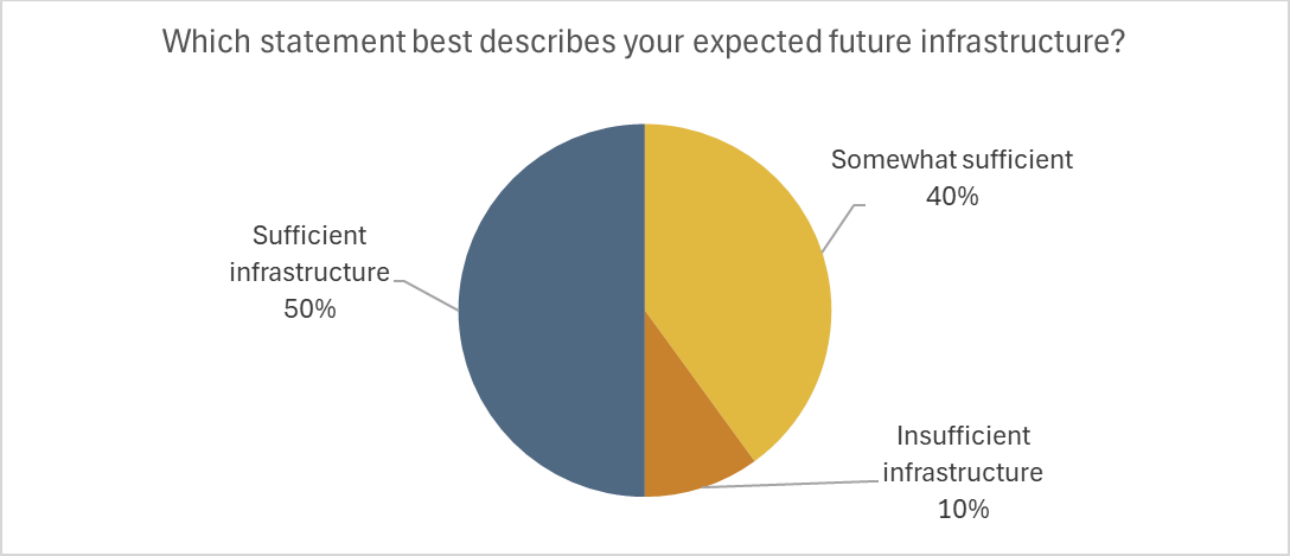


Figure 2. Water Provider Survey Results to Question About Expected Future (2050) Infrastructure

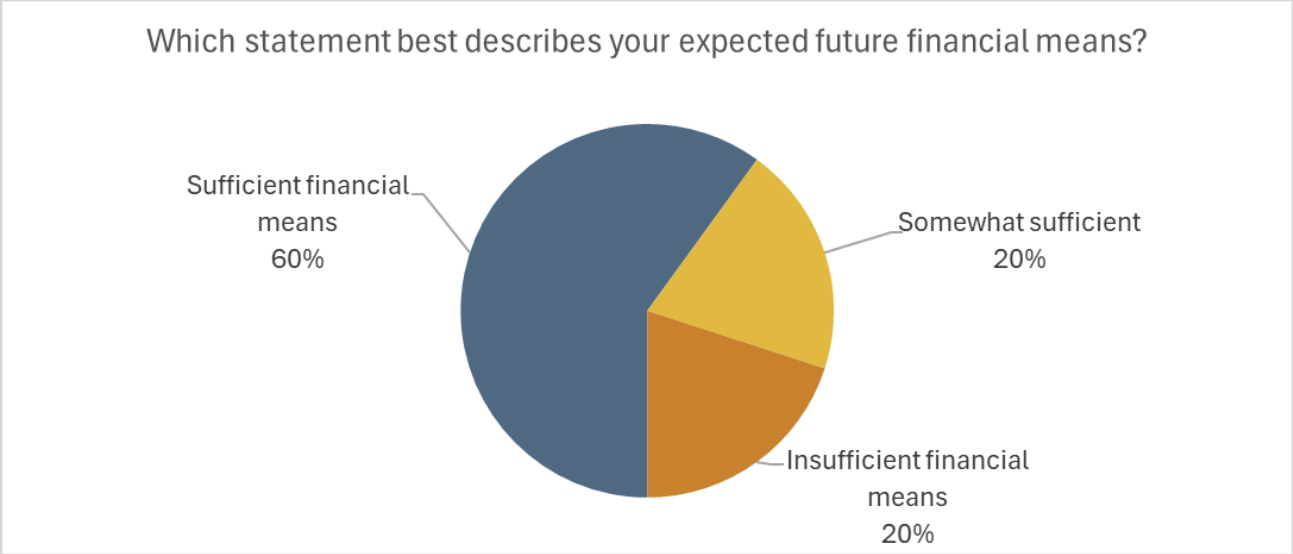


Figure 3. Water Provider Survey Results to Question About Expected Future (2050)Financial Means

To this end, public water systems and self-supplied users may be less resilient to drought/climate change, demand fluctuations, and/or other pressures if they have:

- Smaller providers with less resources
- One source of supply
- Junior, conditional water rights
- Dependence on augmentation plans
- No storage
- No connections to other systems
- Aging infrastructure (e.g., high water loss, risk of shut offs) and/or insufficient financial means to fix infrastructure

While some public water systems can supply water for development that already exists, many are not anticipating additional unplanned growth or redevelopment. Connecting to existing systems may require infrastructure improvements and support to ensure reliable supply.

Additionally, as noted above, 62% of Pitkin County's groundwater wells are "exempt" and therefore less regulated. Exempt wells are concentrated near the Colorado River Alluvial Aquifer and other major waterways; not evenly distributed across the County. This concentration means that these areas lack the assurances of augmentation plans and regulatory oversight, putting the reliability (i.e., consistent availability) of water in these areas at risk.

Furthermore, as discussed above, Pitkin County households, especially those served by non-exempt wells, tend to be larger properties, with higher-than-average numbers of water-using fixtures per dwelling unit.

Looking across the State of Colorado, the metric "gallons per capita per day" (GPCD) is frequently used to compare water use of different areas. **Colorado's statewide average is 164 GPCD** (Colorado Water Conservation Board, 2023). Brendle Group calculates **Pitkin County's average as 214 GPCD**. It is unclear whether these larger homes, that are assumed to have higher than average domestic use, are meeting the terms of household-only exempt well permits, but the ongoing proliferation of large homes served by household-only exempt wells could challenge future reliability.

Water Planning Considerations

While no large-scale reliability issues currently exist, climate change, agricultural demand, and increased household demand could challenge future water reliability. One of the policy aspects Pitkin County is evaluating in the Comprehensive Plan is affordable housing. In the context of affordable housing, the Comprehensive Plan has an opportunity to emphasize sustainable water management – a paradigm in which water reliability is considered, in addition to water availability.

For new development, **connections to existing public water systems help enable water reliability**. Existing public water systems with a portfolio of senior water rights and/or multiple sources of supply present opportunities for greatest reliability, followed by public water systems dependent on junior or augmented water rights. Depending on the system, additional support may also be required to ensure adequate and reliable infrastructure exists.

New public water systems are more limiting in terms of water reliability for new development; due to dependence on junior or augmentation water rights, along with less likelihood of connecting to other systems. However, it is assumed that they are more likely to have modern, adequate infrastructure. **The most limiting system – for both new development and surrounding wells and users – is a connection to an exempt well**.

Because the service areas of the existing public water systems in Pitkin County do not align perfectly with incorporated areas or UGBs, **opportunities exist to collaborate with the water providers to explore where additional water service capacity may exist** (both within and adjacent to existing service areas). In turn, Pitkin County can revisit future land use and zoning maps, in coordination with municipalities and their UGBs, to focus new development in areas with greatest potential water reliability – areas within or within reach of existing public water system services that have adequate supply and infrastructure. The subdivision process can remain a tool to limit the proliferation of new exempt wells on properties less than 35 acres.

Within the County, additional affordable development is hypothesized to take the form of 2-5 unit multifamily cluster developments or caretaker dwelling units (CDUs). **From a water perspective these are efficient land uses**. Factors that impact demand include the outdoor irrigated area and landscape requirements, type and number of fixtures, and number of residents.

Next Steps

Brendle Group will complete the Water Conditions Report in June 2025. The Report will summarize considerations outlined in this memo, as well as final current and future water estimates for the County. The final report will eventually fold into the final stages of the Comprehensive Plan development, setting the stage for future code revisions and associated implementation work.

References

Colorado Water Conservation Board. (2023). *Colorado Water Plan.* Retrieved from https://dnrweblink.state.co.us/CWCB/0/edoc/219188/Colorado_WaterPlan_2023_Digital.pdf

Roaring Fork Conservancy. (n.d.). *Transmountain Diversions*. Retrieved May 8, 2025, from https://www.roaringfork.org/your-watershed/watershed-facts/transmountain-diversions/

ATTACHMENT B

Table of Recommendations			
Component	**Recommendation**	**Rationale**	**Goals Achieved**

Affordable Housing Policies	<u>Allow Affordable Housing Beyond the UGBs</u>
	• Allow two, three, and four unit multifamily housing in rural Pitkin County, under the right context of zoning, hazard mitigation, and sufficient infrastructure.
	• Allow larger affordable housing density within the Hwy 82 corridor, if it meets the parameters below.
	• Parameters of larger density outside of UGBs
	  ○ Access to infrastructure (water and sewer)
	  ○ Low visibility/minimal visual impacts
	  ○ Close to transit and/or the main transportation corridor.
	• Look at expansion opportunities of existing affordable housing developments that are outside the UGBs. These developments may have the capacity and infrastructure for additional density.
	• Redevelopment should meet all performance standards criteria.
	• Review to ensure language is not prohibitive to only be within the UGBs
		• Current code restricts affordable housing only in the UGB. Affordable housing is critical to the goals of this Committee and may be appropriate in other areas. Actual details are beyond the scope of this Committee but are essential for climate, economy, and quality of life.
		• Affordable housing strengthens our community and is critical to maintaining the health and vibrancy of our valley's many small businesses, which are essential to a sustainable and resilient economy.
		• Bring all the tools that we can address the housing crisis, including regional and intergovernmental partnerships.
		• There is value in reimagining and expanding affordable housing solutions.
		• Incentivize municipalities, residents, and developers to invest in creative and community-beneficial options.
		• Pitkin County homeowners should be able to participate in the affordable housing program. There is a desire for some homeowners to create a rental unit on-site but do not have the means to build the unit.
			Climate:
			☑ 90% reduction of GHG emissions by 2050
			☑ Residential NetZero by 2030 (1)
			
			Balanced Economy:
			☑ Workforce/housing imbalance (2)
			☑ Pacing of development (1)
			
			Community Character:
			☑ Rural/wild preservation (1)
			☑ Highway congestion/ rural traffic reduction (2)