

WATER USE & PRESERVATION ELEMENT

Of the Grand County General Plan

JUNE 2026

06-01-26 Edition



GRAND COUNTY
— U T A H —

In cooperation with the Grand Water and Sewer Service Agency, the Thompson Special Service Water District, and the Arches Special Service District.

DISCLAIMER

This Water Use and Preservation Element is part of the Grand County General Plan and serves as a planning and policy document. It guides land-use decision-making and establishes a framework for evaluating the relationships among development, water demand, and available infrastructure. It does not constitute a regulatory document, a capital improvement commitment, or a guarantee of water availability.

1. No Guarantee of Water Availability or Service

Nothing in this Element shall be interpreted as:

- A guarantee of water availability for any property, project, or use;
- An assurance of water service by any water provider; or
- A commitment by Grand County or any other entity to construct, finance, or maintain water infrastructure.

All development proposals are subject to independent verification of water availability by the applicable provider.

2. No Allocation or Control of Water Rights

Grand County does not allocate or administer water rights. Authority over water rights is vested in the Utah Division of Water Rights, governed by state law. This Element does not allocate, modify, or create any entitlement to water use.

3. Planning Assumptions and Projections

Analyses, projections, and estimates are based on the best available data at the time of adoption and are intended for planning purposes only. They are subject to change and should not be relied upon as precise forecasts for specific projects or investments.

4. Infrastructure and Funding Uncertainty

Infrastructure projects identified in this Element are conceptual and subject to engineering feasibility assessments, environmental reviews, funding availability, and interagency coordination. Inclusion of a project does not constitute a commitment to construct or fund it.

5. Third-Party Systems and Operations

Water systems in Grand County are owned and operated by independent entities. The County does not control system operations, maintenance, or service decisions. County development approvals do not obligate providers to deliver water service; rather, the County does not approve developments without will-serve letters from the appropriate water provider.

6. No Creation of Vested Rights or Entitlements

This Element does not create vested development rights, entitlements to water service, or legal claims against the County or any water provider. All land use decisions remain subject to applicable laws, regulations, and approval processes.

7. Relationship to Other Plans and Regulations

In the event of conflict, state law and water rights administration shall control; water provider determinations regarding their capacity and service shall prevail. This Element shall be interpreted as a policy guide rather than a controlling regulatory document.

8. Limitation of Liability

Grand County shall not be liable for decisions made by third-party water providers, changes in water availability or system capacity, or reliance on planning-level projections contained in this Element.

This Element provides a framework for planning and coordination, not a guarantee of water service. All development decisions must be supported by independent verification of water availability, infrastructure capacity, and regulatory compliance.

8. Focus is Water Use and Water Demand

The focus of this element is water use and water demand. For individuals, water use is often expressed as gallons per capita. The water demand is the number of gallons of water used per capita times the number of people using the water. In this Element, water demand is typically measured in acre-feet. This Element does not address the issue of water supply.

DOCUMENTS REVIEWED

This Element is based on a review of planning documents, water system data, state guidance materials, and technical resources relevant to water demand and land use in Grand County.

1. Grand County Planning Documents

- Grand County General Plan (current adopted version)
- Spanish Valley Future Land Use Plan
- Grand County Land Use and Development Management Code
- Previous planning studies and policy documents related to land use, growth, and infrastructure

2. Water Provider Plans and System Data

- Grand Water & Sewer Service Agency (GWSSA) planning documents and system data
- Arches Special Service District (ASSD) system information and operational data
- Thompson Special Service Water District (TSSWD) system information
- Moab City Water Conservation Plan Update
- Castle Valley Water Management Plan

3. State Planning Guidance and Technical Resources

- Utah Division of Water Resources – State Water Plan and regional planning documents
- Utah Division of Water Resources – Water conservation guidance and per capita use targets
- Utah Division of Water Rights – water rights administration and regulatory information
- Relevant provisions of Utah Code §17-79-403(2)(v), including amendments under Senate Bill 110 (2022) and Senate Bill 76 (2023)

4. Local and Project-Specific Information

- Data related to the Uranium Mill Tailings Remedial Action (UMTRA) project in Crescent Junction and Thompson Springs
- Local water use estimates, including culinary and irrigation demand
- Population projections and demographic data used for demand modeling

5. Funding and Implementation Resources

- Guidance materials and program information for the Permanent Community Impact Board (PCIB)
- State and federal funding program information relevant to water infrastructure and conservation

SECTION 1. INTRODUCTION

Grand County, Utah, lies in an arid high-desert environment where water availability is limited and variable. Precipitation is low, evapotranspiration rates are high, and groundwater recharge depends on the snowpack in the La Sal Mountains. These conditions create a constrained water supply that does not inherently expand with population growth or development.

The County's primary water sources include groundwater from the Glen Canyon, Castle Valley, and Valley Fill Aquifers, supplemented by surface water stored at Ken's Lake Reservoir and by limited spring-fed systems. These sources support culinary and irrigation uses throughout the County but are subject to physical and operational limitations. Culinary water is derived only from the Glen Canyon and Castle Valley Aquifers. Ken's Lake and the Valley Fill Aquifer are the sources of secondary water.

Grand County continues to experience steady population growth and significant seasonal fluctuations driven by tourism and recreation. These factors increase both baseline and peak water demand, placing additional pressure on water systems, storage capacity, and distribution infrastructure.

This Water Use and Preservation Element is adopted in accordance with Utah Code §17-79-403(2)(v), as amended by Senate Bill 110 (2022) and Senate Bill 76 (2023). This Element addresses:

- The effect of permitted development and land use patterns on water demand and infrastructure;
- Methods of reducing water demand and per capita consumption for future development;
- Methods of reducing water demand and per capita consumption for existing development; and
- Opportunities for the County to modify its operations to eliminate practices or conditions that waste water.

The purpose of this Element is to integrate water-demand considerations into land-use planning and decision-making. A central premise is that water availability is a limiting constraint on development, not a condition that can be assumed to expand with growth.

The County does not operate public water systems. Independent entities, including the GWSSA, the ASSD, the TSSWD, and other providers, provide water service. This Element serves as a policy and coordination tool to align land-use decisions with water conditions and to support coordination between the County and water providers.

The GWSSA provides drinking and agricultural irrigation water to Spanish Valley and nearby unincorporated areas. The system includes four production wells that draw from the Glen Canyon Aquifer, an EPA-designated Sole Source Aquifer. It diverts surface water from Mill Creek through the Sheley Tunnel into Ken's Lake Reservoir. It maintains about 4.5 million gallons of

drinking water storage and supplies about 3,631 acre-feet of drinking water rights and 7,823 acre-feet of irrigation or secondary water rights annually.

The ASSD provides sanitary sewer service within its service area. Culinary water is sourced from private shares of Colorado River Water, serving two hotel properties and the Canyonlands by Night and Day tour company.

The TSSWD serves a small community and relies on two springs in Thompson Canyon for its drinking water. System reliability depends on the continuous operation of production, storage, and distribution components, as well as the district's ability to prevent and repair leaks.

The County also recognizes the unique conditions associated with the completion of the UMTRA project at Crescent Junction and Thompson Springs. Although legacy contamination has been removed, these areas remain constrained by limited water infrastructure. Future development will require demonstrated water rights and long-term infrastructure reliability.

Implementing this Element will require coordination, investment, and funding. Grand County will seek financial support through programs such as the Permanent Community Impact Board (PCIB) to advance infrastructure projects and support system improvements in water-constrained areas.

SECTION 2. POPULATION GROWTH AND DEMAND DRIVERS

Population growth is the primary long-term driver of water demand in Grand County and provides the analytical foundation for evaluating future water demand. This section establishes the relationship among projected population trends, seasonal demand variability, and land use patterns.

Grand County is expected to grow from approximately 10,000 residents in 2025 to approximately 14,300 by 2065. Although moderate in rate, this growth reflects a sustained increase in baseline demand that must be accounted for in long-term water planning.

2.1 Seasonal Demand

In addition to permanent residents, Grand County experiences substantial seasonal fluctuations associated with tourism and recreation. These increases have important implications:

- **Peak Demand:** Visitor activity increases short-term water demand about one and a half times the demand associated with permanent residents. Outdoor watering during the summer months increases demand by about four times that of winter demand;
- **Infrastructure Sizing:** Water systems must be designed to accommodate peak rather than average demand; and
- **Operational Stress:** Wells, storage tanks, and distribution systems experience increased stress during high-use periods.

2.2 Land Use Patterns and Demand

The manner in which growth occurs — particularly land use patterns and development design — has a direct effect on per capita water use:

- **Low-Density Development:** Larger lots with large irrigated landscapes increase outdoor water demand and should be located in areas with water rights;
- **Higher-Density Development:** Compact development may reduce irrigated area and lower per capita use;
- **Landscape Design:** Turf-intensive landscaping significantly increases demand, while drought-tolerant landscaping reduces it; and
- Large lot residential is more appropriate in areas where secondary water is available.

2.3 Spatial Distribution of Growth

Growth is expected in Spanish Valley and GWSSA-served areas, in unincorporated areas with limited infrastructure, and in Crescent Junction and Thompson Springs (post-UMTRA). In water-constrained areas, development must be evaluated based on demonstrated water rights, infrastructure feasibility, and long-term reliability.

2.4 Key Findings

- Grand County will continue to experience population growth over the planning horizon;
- Population growth will increase baseline water demand in the absence of conservation measures;
- Seasonal tourism slightly increases peak demand;
- Land use patterns and development design are critical determinants of per capita water use, especially in areas with large outdoor turf areas; and
- The spatial distribution of growth affects infrastructure needs and system capacity.

SECTION 3. GRAND COUNTY WATER PROFILE

This section describes the physical water systems, infrastructure conditions, and institutional framework that define water availability in Grand County.

3.1 Water Sources

Groundwater

Groundwater is the primary culinary water source in the County. The principal aquifers include:

- Glen Canyon Aquifer, designated as a Sole Source Aquifer by the EPA;
- Valley Fill Aquifer, which provides a localized supply in developed areas.

Recharge occurs slowly and largely depends on the snowpack in the La Sal Mountains. These systems must be managed conservatively to maintain long-term sustainability.

Surface Water and Storage

Ken's Lake Reservoir stores diverted water and supports agricultural irrigation and secondary water systems in Spanish Valley. Surface water availability varies with hydrologic conditions and cannot be relied on as a fully stable source without careful management.

Spring Systems

Spring-fed systems supply water in localized areas, particularly in Thompson Springs. These systems have limited capacity and minimal redundancy, making them sensitive to demand increases and fluctuations.

Non-Potable Colorado River Water for Irrigation

Colorado River water represents a significant opportunity to reduce pressure on drinking water systems by serving outdoor irrigation demand with non-potable water. Grand County and GWSSA hold Colorado River water rights that are not currently developed for large-scale use, but which could be applied to irrigation and landscape watering in areas where infrastructure allows.

The core principle is straightforward: drinking water — drawn from the Glen Canyon Aquifer and treated to culinary standards — is a finite and carefully managed resource. It should be reserved for indoor uses where water quality is essential: drinking, cooking, and sanitation. Outdoor irrigation, which accounts for the majority of total water demand in the summer months, does not require that level of treatment. Supplying it with non-potable Colorado River water frees up drinking water capacity and reduces the burden on groundwater systems.

GWSSA currently operates a secondary water system in Spanish Valley that delivers non-potable irrigation water from Ken's Lake, separate from its culinary supply. This dual-system model forms the foundation for expanding non-potable use. Where secondary water infrastructure is available or can be extended, new development should be required to use it for all outdoor irrigation rather than drawing from the culinary system. Support should be given to local water providers in their efforts to secure new water sources.

In areas where secondary infrastructure does not yet exist, the County will coordinate with GWSSA and other providers to evaluate the feasibility of extension. Development in those areas may be contingent on participation in future expansion of the secondary system, particularly for higher-intensity uses with significant irrigation demand.

Use of non-potable Colorado River water for irrigation is subject to state water rights administration and must comply with applicable diversion and use requirements. The County will coordinate with the Utah Division of Water Rights and relevant providers to ensure that expanded non-potable irrigation use is consistent with existing rights and approvals.

3.2 Infrastructure Systems and Service Areas

Multiple independent entities, including GWSSA, ASSD, and TSSWD, provide water service. These systems include production wells, storage tanks, pumping facilities, and distribution networks. Infrastructure capacity varies significantly across the County. The County neither owns nor operates these systems, nor does it control water rights; its role is to align land use decisions with these providers' capabilities.

3.3 System Constraints

- Groundwater recharge is slow; water availability cannot be assumed to increase with demand;
- Well production rates, storage volume, and distribution network limitations limit system capacity;
- Peak demand during the irrigation season can strain system capacity; and
- Smaller rural systems have limited redundancy, increasing vulnerability to supply interruptions.

3.4 Crescent Junction and Thompson Springs

These areas remain water-constrained despite completion of the UMTRA project.

- Crescent Junction lacks a centralized culinary water system and requires well, storage, and distribution infrastructure before significant growth can occur; and
- Thompson Springs relies on limited spring-fed systems with minimal redundancy and requires upgrades to support reliability.

Development in these areas must be evaluated based on demonstrated water rights, infrastructure feasibility, and long-term reliability.

3.5 Funding and Implementation Context

The development of water infrastructure requires substantial financial investment. Grand County will pursue funding through the Permanent Community Impact Board (PCIB) and other state and federal programs to support rural system improvements, expansion of storage and distribution systems, and conservation and efficiency programs.

3.6 Key Findings

- Natural and infrastructure conditions constrain culinary water availability in Grand County;
- Groundwater systems provide the primary water source, but recharge slowly;
- Infrastructure capacity varies significantly and limits development potential in certain areas;
- Crescent Junction and Thompson Springs remain water-constrained;
- Long-term water planning depends on coordination, funding, and infrastructure development;
- The Grand County Land Use Code should address development within sole-source aquifer areas; and
- Property owners with septic tanks/systems are encouraged to regularly maintain their systems and, where practical, upgrade them to newer technologies.

SECTION 4. WATER USE CONDITIONS

This section describes existing water use patterns, including total demand, per capita consumption, outdoor irrigation, system efficiency, and seasonal variability. These conditions establish the baseline against which future demand projections and conservation strategies are evaluated.

4.1 Total Water Demand

Based on available provider data, total system demand is approximately:

- Culinary Demand: ~988 acre-feet per year;
- Irrigation and Secondary Demand: ~1,490 acre-feet per year; and
- Total System Demand: ~2,400–2,500 acre-feet per year

Culinary demand is relatively stable and predictable. Irrigation demand varies significantly based on weather conditions, landscape design, and seasonal occupancy.

4.2 Per Capita Water Use

Average system-wide water use is estimated at 184 gallons per capita per day (GPCD), which is currently within the regional conservation target established by the Utah Division of Water Resources. Reducing per capita water use over time is necessary to offset the effects of population growth.

4.3 Culinary Outdoor Water Use and Irrigation

Culinary outdoor irrigation is the largest discretionary component of water demand and the most significant opportunity for long-term reduction. In peak months, outdoor use significantly exceeds indoor demand, making it the primary driver of both total demand and peak system stress.

4.4 Seasonal Demand and Peak Conditions

Peak demand typically occurs during spring and summer irrigation seasons. Infrastructure must be sized to meet peak demand, not average demand. Managing peak demand is essential to avoiding costly infrastructure expansion.

4.5 System Efficiency and Water Loss

Current system losses are estimated at approximately 7–8 percent of total culinary production, or roughly 80–90 acre-feet per year. Sources of loss include distribution system leaks, meter inaccuracies, and system flushing. Reducing system losses effectively increases available water without the need to develop new infrastructure.

4.6 Key Findings

- Outdoor irrigation represents the largest and most controllable component of water demand;
- Total water demand is driven more by irrigation and seasonal factors than by indoor use;
- Per capita water use is within regional targets but should continue to decline to offset growth;
- Peak demand is the primary driver of infrastructure requirements; and
- System losses present opportunities for improvement.

SECTION 5. EFFECT OF DEVELOPMENT ON WATER DEMAND (§17-79-403(2)(v)(A))

This section evaluates the relationship between projected development patterns and future water demand, and assesses the implications on existing and planned water infrastructure. The analysis is based on population projections from Section 2 and current water use patterns from Section 4.

5.1 Demand Management

Water demand in Grand County is not solely a function of population growth. It is shaped by how development is designed, how landscapes are managed, and what conservation standards are applied. Without intervention, continued growth will increase total demand and place additional pressure on infrastructure. However, achievable conservation measures — such as limiting non-functional turf, requiring efficient irrigation systems, and expanding use of non-potable water for outdoor uses, and some indoor uses — can offset growth-related increases and keep total demand at or near current levels. More aggressive measures can reduce demand below current levels even as the population grows.

5.2 Interpretation of Demand Scenarios

- Under the Baseline Scenario, total demand increases through 2060;
- Under the 20% Moderate Conservation Scenario, total demand increases more slowly than in current conditions;
- Under the 30% High Conservation Scenario, total demand increases significantly less than current levels.

These results establish that water demand is not solely a function of growth, but is strongly influenced by policy, design, and management decisions.

5.3 Infrastructure Implications

Without conservation, continued growth would necessitate significant capital investment in system expansion. Peak demand conditions represent the most critical constraint on infrastructure, as they can exceed pumping capacity, deplete storage reserves, and increase the risk of service interruptions.

Development in areas with limited infrastructure — such as Crescent Junction and Thompson Springs — may require new water sources, infrastructure construction, and demonstrated long-term reliability before proceeding.

5.4 Key Findings

- Population growth will increase baseline water demand in the absence of conservation measures;
- Outdoor irrigation is the primary driver of increased demand associated with development;
- Moderate conservation measures can offset the additional demand associated with projected growth;
- Peak seasonal demand is the primary constraint on infrastructure capacity; and
- Development design and land use policy are the primary determinants of water demand.

SECTION 6. METHODS OF REDUCING WATER DEMAND FOR FUTURE DEVELOPMENT (§17-79-403(2)(v)(B))

This section identifies methods to reduce water demand associated with future development. The most effective demand-reduction strategies are those embedded in land use regulations, development standards, and infrastructure requirements.

6.1 Land Use and Development Pattern Controls

- Encourage compact and clustered development to reduce irrigated areas;
- Discourage large-lot, water-intensive development in areas with limited infrastructure or water rights;
- Align zoning and future land use designations with long-term water availability; and
- Limit development intensity in areas where infrastructure capacity is constrained.

6.2 Landscape Design Standards

The County will require:

- Limitation or prohibition of non-functional turf;
- Use of drought-tolerant and climate-adapted plant materials;
- Hydro zoning to group plants with similar water needs; and
- Reduction of irrigated areas to those that serve a functional purpose.

6.3 Irrigation System Requirements

The County will require:

- Installation of drip irrigation systems or equivalent high-efficiency technology;
- Encourage the use of secondary water, including permanent year-round secondary water infrastructure;
- Use of smart irrigation controllers that adjust watering based on weather conditions; and
- Design standards that minimize overspray, runoff, and evaporation losses.

6.4 Water-Efficient Building Design

The County will require or encourage the installation of high-efficiency plumbing fixtures and water-efficient appliances in new construction. The County may also encourage the use of non-potable water for certain indoor uses.

6.5 Development Review Requirements

All development proposals must demonstrate:

- Availability of legally recognized water rights;
- Confirmation of system capacity from the applicable water provider; and
- Ability to deliver water under both average and peak demand conditions.

Development reliant on new or expanded water infrastructure must demonstrate a credible funding strategy. Development shall not rely on speculative or unproven water availability.

6.6 Water-Constrained Areas

In Crescent Junction, Thompson Springs, and similar areas:

- Development shall be limited by demonstrated water availability;
- New infrastructure must be constructed before or concurrent with development; and
- Development intensity may be restricted based on system capacity.

6.7 Key Findings

- Water demand associated with future development can be significantly reduced through design and regulatory standards;
- Outdoor irrigation is the primary controllable component of demand;
- Development review processes provide an effective mechanism for implementing demand reduction; and
- Water-constrained areas require stricter controls to ensure long-term reliability.

SECTION 7. METHODS OF REDUCING WATER DEMAND FOR EXISTING DEVELOPMENT (§17-79-403(2)(v)(C))

Where Grand County's built environment is already in place, reducing water use in existing development offers the most immediate opportunity to improve system efficiency and reduce total demand.

7.1 Landscape Conversion and Outdoor Water Use Reduction

The County will support and coordinate programs that:

- Provide incentives for removal of non-functional turf;
- Prioritize high-water-use properties; and
- Encourage replacement with drought-tolerant, climate-adapted landscaping.

7.2 Irrigation System Retrofits

The County will support programs that encourage:

- Installation of smart irrigation controllers;
- Conversion to drip irrigation systems or other high-efficiency technologies; and
- Repair or replacement of inefficient or outdated irrigation systems.

7.3 Pricing and Demand Management

The County will support providers' efforts to maintain or expand tiered pricing structures that increase rates for high-volume use, and to implement seasonal watering restrictions and drought response measures.

7.4 System Efficiency and Water Loss Reduction

The County will support providers' efforts to conduct system-wide leak-detection programs, implement advanced metering infrastructure, and reduce system losses.

7.5 Public Education and Outreach

The County will support public education campaigns focused on water-wise landscaping and irrigation practices, as well as partnerships with water providers, schools, and community organizations.

7.6 Targeted Regulatory Measures

Where voluntary measures are insufficient, the County may implement ordinances that address water waste, require landscape upgrades during major redevelopment, and limit the irrigation of non-functional turf.

7.7 Key Findings

- Existing development represents the largest opportunity for near-term water demand reduction;
- Outdoor irrigation is the primary driver of discretionary water use;
- Incentive programs and irrigation retrofits can produce significant and measurable savings;
- Pricing and demand management strategies are effective tools for influencing behavior; and
- Targeted regulatory measures may be necessary to achieve long-term conservation goals.

SECTION 8. COUNTY OPERATIONAL IMPROVEMENTS TO ELIMINATE WATER WASTE (§17-79-403(2)(v)(D))

Although the County does not operate public water systems, it owns and manages water rights, facilities, parks, landscapes, and infrastructure that contribute to overall water demand. These assets provide an opportunity to achieve direct reductions while demonstrating best practices for the community.

8.1 County Facilities and Indoor Water Use

Subject to funding availability, the County will retrofit facilities with high-efficiency plumbing fixtures, replace outdated equipment with water-efficient systems, and incorporate water-efficient design into all new County facilities. Protocols for prompt leak detection and repair will be established.

8.2 County Landscapes and Outdoor Water Use

Within approved budgets, the County will:

- Replace non-functional turf with drought-tolerant, climate-adapted landscaping;
- Retrofit irrigation systems with drip irrigation or equivalent high-efficiency technology;
- Install smart irrigation controllers that respond to weather conditions; and
- Eliminate overspray, runoff, and unnecessary watering.

8.3 Operational Policies

The County will establish policies requiring timely repair of leaks and irrigation failures, limit irrigation during peak daytime hours to reduce evaporation, and incorporate water efficiency into procurement and operational decisions.

8.4 Monitoring and Performance Tracking

The County will regularly track water use at County facilities, establish baseline usage levels, evaluate the effectiveness of conservation measures over time, and incorporate water use data into broader planning and reporting efforts.

8.5 Key Findings

- County operations represent a controllable source of water demand;
- Outdoor irrigation at County facilities is the largest contributor to operational water use;
- Facility upgrades and irrigation improvements can significantly reduce consumption; and
- The County can influence broader community behavior through demonstration and leadership.

SECTION 9. REGIONAL COLLABORATION

Long-term water reliability in Grand County depends on coordination among multiple jurisdictions, water providers, and regulatory agencies. Water resources, infrastructure systems, and demand patterns extend beyond jurisdictional boundaries, and no single entity has comprehensive authority over all aspects of water management.

9.1 Institutional Context

Water management involves multiple independent entities:

- Grand County – responsible for land use planning, zoning, and development approvals;
- Water Providers – GWSSA, ASSD, and TSSWD, responsible for water rights, system operations, and infrastructure;
- Municipalities and Neighboring Jurisdictions – including Moab City, Castle Valley, and San Juan County; and
- State Agencies – Utah Division of Water Resources and Division of Water Rights.

9.2 Coordination Objectives

Grand County will pursue regional collaboration to:

- Align land use decisions with available water and infrastructure capacity;
- Ensure growth occurs within long-term resource constraints;
- Improve the effectiveness of conservation and demand management; and
- Maintain compliance with state and interstate water policies.

9.3 Coordination Mechanisms

- Maintain regular communication with water providers regarding system capacity and infrastructure planning;
- Require consultation with water providers during review of development proposals;
- Utilize data from water provider master plans, conservation plans, and state resources; and
- Participate in regional initiatives related to water infrastructure development.

9.4 UMTRA Transition Coordination

The County will coordinate with state agencies and water providers to evaluate infrastructure needs at the UMTRA site, in Crescent Junction, and in Thompson Springs, and to ensure that post-remediation development does not exceed available resources.

9.5 Funding Coordination

Grand County will collaborate with partners on applications to the Permanent Community Impact Board (PCIB), prioritize projects that reduce water demand, and align funding applications with regional planning efforts.

9.6 Key Findings

- Effective water planning requires coordination across jurisdictional and institutional boundaries;
- Accurate data from water providers must inform land use decisions;
- Regional collaboration is necessary to develop long-term infrastructure solutions; and
- Coordinated funding strategies are essential to implementing priority projects.

SECTION 10. GOALS, POLICIES, AND IMPLEMENTATION

This section establishes the goals, policies, and implementation measures necessary to manage water demand and to align land-use decisions with available resources. The policies are implemented through land use regulation, development review, interagency coordination, and capital planning.

Goal 1: Align Growth with Water Availability and Infrastructure Capacity

Policy 1.1 – Water Availability Verification

All development proposals shall demonstrate the availability of a reliable water supply before approval.

- Require documentation of legally recognized water rights or service commitment from a provider;
- Require verification of system capacity, including peak demand conditions; and
- Coordinate with water providers during development review.

Policy 1.2 – Infrastructure Capacity and Phasing

Development shall be limited by the capacity of existing and planned water infrastructure.

- Condition approvals on necessary infrastructure improvements;
- Require phasing of development based on system capacity; and
- Align development intensity with service area capabilities.

Goal 2: Reduce Per Capita and Total Water Demand

Policy 2.1 – Demand Reduction Targets

- Support conservation programs and provider initiatives;
- Track system-wide water use and performance metrics; and
- Integrate demand reduction goals into planning decisions.

Policy 2.2 – Peak Demand Management

- Promote irrigation efficiency and landscape standards;
- Support provider efforts to implement seasonal demand controls; and
- Align infrastructure planning with peak demand conditions.

Goal 3: Reduce Outdoor Water Use

Policy 3.1 – Landscape Efficiency Standards

- Limit or prohibit non-functional turf;
- Require drought-tolerant landscaping; and
- Encourage hydro zoning and efficient design.

Policy 3.2 – Irrigation System Efficiency

- Require drip irrigation or equivalent systems;
- Require smart irrigation controllers; and
- Prohibit inefficient irrigation practices.

Policy 3.3 – Non-Potable Water for Outdoor Irrigation

Grand County shall prioritize the use of non-potable Colorado River water for outdoor irrigation to preserve treated drinking water for indoor use.

- New development where GWSSA secondary water infrastructure is available shall connect to the secondary system for all outdoor irrigation and shall not use the culinary system for landscape watering;
- New development in areas without existing secondary infrastructure shall be evaluated for the feasibility of connection or participation in future system expansion, and approvals may be conditioned accordingly;
- The County shall coordinate with GWSSA and other providers to identify priority areas for secondary system extension and to align capital planning with development patterns;
- Existing development is encouraged to convert outdoor irrigation to secondary water where connections are available; and
- The County shall not approve development that proposes to use culinary water for large-scale irrigation where a non-potable alternative exists or can feasibly be made available.

Goal 4: Improve System Efficiency and Reduce Water Loss

Policy 4.1 – System Efficiency

- Support leak detection and repair programs;
- Encourage advanced metering infrastructure; and
- Coordinate with providers on system performance improvements.

Goal 5: Address Water Constraints in Rural Areas

Policy 5.1 – Crescent Junction and Thompson Springs

- Require verification of water rights and infrastructure capacity;
- Condition development on the construction of necessary infrastructure; and
- Limit intensity of development based on system capability.

Goal 6: Support Conservation in Existing Development

Policy 6.1 – Existing Development Programs

- Support turf conversion and irrigation retrofit programs;
- Encourage provider-led pricing and demand management strategies; and
- Promote public education and outreach.

Goal 7: Improve County Operations

Policy 7.1 – County Water Use Reduction

- Retrofit County facilities with efficient fixtures;
- Convert landscapes to drought-tolerant designs; and
- Monitor and track water use at County properties.

Goal 8: Strengthen Regional Coordination

Policy 8.1 – Interagency Coordination

- Maintain regular communication with providers;
- Integrate provider data into planning decisions; and
- Participate in regional water planning efforts.

Goal 9: Pursue Funding for Infrastructure and Conservation

Policy 9.1 – Funding Strategy

- Pursue funding through the Permanent Community Impact Board (PCIB);
- Coordinate regional funding applications; and
- Align capital planning with funding opportunities.

Phasing Strategy

Phase 1: 2026–2030 (Immediate Impact)

Focus: Rapid demand reduction, system efficiency improvements, and rural system stabilization.

- Leak detection and Advanced Metering Infrastructure
- Turf conversion programs
- Thompson Springs system upgrades

Phase 2: 2030–2040 (System Expansion)

Focus: Infrastructure expansion and demand offset through improvements to irrigation systems.

- Secondary irrigation system expansion
- Storage improvements

Phase 3: 2040+ (Long-Term Reliability)

Focus: System optimization and regional integration.

SECTION 11. CONCLUSION

This Water Use and Preservation Element establishes a comprehensive framework for integrating water resource considerations into land use planning and decision-making in Grand County. The Element demonstrates that limited groundwater recharge, variable surface water conditions, and finite infrastructure capacity constrain water availability. These constraints must be recognized as governing factors in future growth and development.

Projected population growth and seasonal demand will increase baseline and peak water demand over time. However, as shown in Section 5, water demand can be stabilized or reduced through conservation measures, efficient development design, and coordinated infrastructure planning. Additionally, opportunities for recharge need to be pursued.

A central conclusion of this Element is that policy choices determine water demand. Land use patterns, landscape standards, irrigation practices, and system management collectively define the relationship between growth and water use. This Element establishes a framework in which development is aligned with available water resources rather than assuming that resources will expand to meet demand.

This Element also recognizes the institutional structure of water management in Grand County. Water providers retain authority over water rights, system operations, and service delivery, while the County is responsible for land use planning and development approvals. Effective water management depends on ongoing coordination among these entities and with state agencies.

The Element also addresses the unique conditions associated with Crescent Junction and Thompson Springs following completion of the UMTRA project. While environmental constraints have been reduced, water infrastructure limitations remain. Development in these areas must be supported by demonstrated water rights, infrastructure investment, and long-term reliability.

Implementation of this Element will require sustained coordination, investment, and funding. Grand County will pursue financial support through programs such as the PCIB to advance infrastructure improvements and support conservation initiatives.

Through the goals, policies, and implementation measures established in this Element, Grand County commits to:

- Treating water availability as a governing constraint on development;
- Reducing per capita and total water demand through conservation and efficiency;
- Promoting land use patterns and development practices that minimize water use;
- Improving system efficiency and reducing water waste; and
- Coordinating with water providers, regional partners, and state agencies to ensure long-term sustainability.

By adopting this Element, Grand County affirms its commitment to managing growth in a manner that protects limited water resources, maintains system reliability, and supports the long-term health, safety, and welfare of its residents, businesses, and visitors.

APPENDIX

A.1 Demand Reduction Summary

Combined implementation of conservation and infrastructure projects can achieve an estimated total reduction of 800–1,500+ acre-feet per year. The primary source of savings is reduced outdoor irrigation, with secondary benefits including reduced peak demand and improved system reliability. This reduction is sufficient to offset projected growth-related increases in demand and maintain total system demand at or near current levels.

A.2 Funding Strategy

Grand County and its partners will pursue funding through:

- The Permanent Community Impact Board (PCIB) – primary funding source;
- State water infrastructure and conservation programs;
- Federal funding where applicable; and
- Local funding and partnerships.

PCIB funding is particularly critical for rural system development, infrastructure improvements, and the implementation of conservation programs.