

# Watershed Management Planning in the Upper Gunnison River Basin

To enhance resilience of agricultural, municipal and recreational water uses and improve stream ecosystems

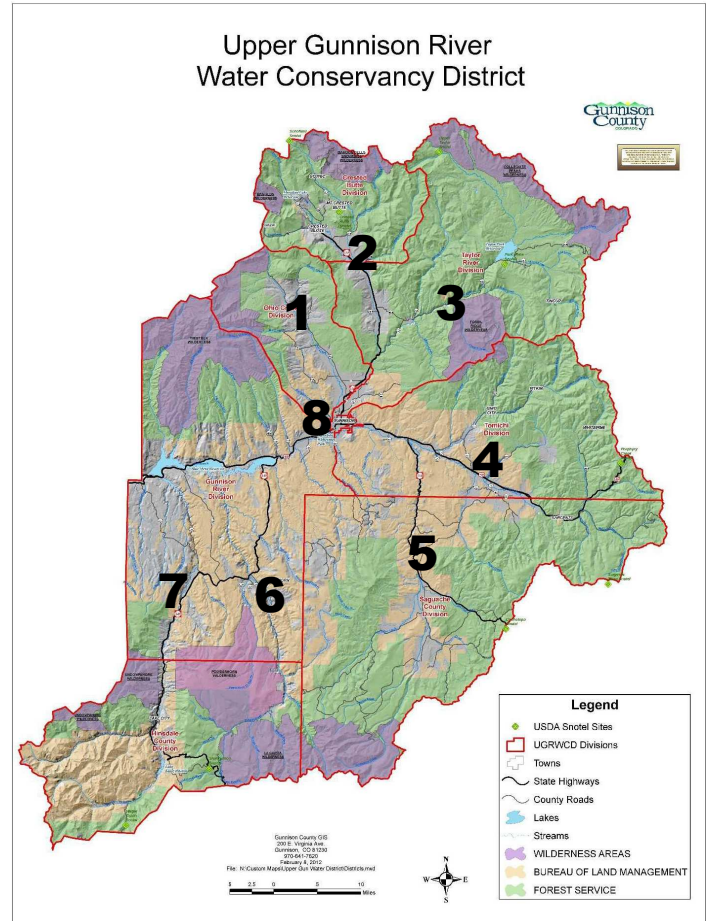
## What is 'watershed planning'?

Coloradans are engaged in a long-term water planning process, to address concerns about projected *mid-century water supply and demand* – an anticipated gap of as much 600,000 acre-feet of water (~195 billion gallons). Most of whatever shortfall occurs will be due to demand caused by urban population growth, primarily in the Front Range metropolis, but that will put pressure on water users throughout the state.

Rather than instituting a 'top-down' planning process focused on the urban challenge, however, Colorado's governor has ordered a statewide planning effort at the watershed level in Colorado's eight natural river basins. All Coloradans are invited to participate in cataloging and analyzing their own local water needs and concerns, and to develop watershed-level plans addressing those needs and concerns for moving through the next third of a century.

Given that mandate, the Upper Gunnison River Water Conservancy District board and staff (UGRWCD) are working with all the water users in the Upper Gunnison River Basin – all the watersheds that drain into Blue Mesa Reservoir (see map) – to develop strategies for protecting the local watersheds and uses therein that are foundational to our local economy and culture.

**The Upper Gunnison River Basin** is composed of seven distinctive *watersheds* that all have unique cultural and economic attributes (see map): **1**) Ohio Creek, **2**) East River (including Slate R.), **3**) Taylor River, **4**) Tomichi Creek (including Quartz), **5**) Cochetopa Creek, **6**) Cebolla Creek, **7**) Lake Fork of the Gunnison, **8**) the Mainstem of the Gunnison River from Almont to Blue Mesa Reservoir (and other small tributaries flowing directly into Blue Mesa).



## The Upper Gunnison River Basin Watershed Management Planning Process

Over the next several years, the UGRWCD will be working with water-user groups in those eight watersheds with one overarching goal in mind: the protection and sustainable continuity of the water uses that are the foundation of our local economic and cultural lives. Because each watershed is unique, we are beginning with a needs assessment study in each watershed – these studies are already underway for Ohio Creek, the East River and the Lake Fork.

**A Point of Frequent Confusion - 'Watershed Management Plan' and 'Stream Management Plan':** 'Watershed planning' covers all water uses from the time precipitation hits the ground until it leaves the watershed in a stream (or more subtly, as groundwater merging with groundwater from another watershed). Each 'Watershed Management Plan' will also include a 'Stream Management Plan,' which involves the environmental needs and recreational uses of the surface water flowing through the watershed. Given the preponderance in Upper Gunnison watersheds of agricultural use outside of the flowing streams, a major element in both watershed and stream planning will be balancing the environmental needs of the streams with the agricultural needs in the larger watershed.

**Each watershed study begins with a needs-assessment inventory,** current known needs and anticipated needs and concerns out to mid-century, taking into account these factors projected to change over the next three decades:

**Growth:** The State Demographer projects that the population of the Upper Gunnison Basin will increase by 50-100% by mid-century – from ~16,000 today to as much as 32,000. Statewide roughly the same range of increase is projected. Urban conservation will mitigate much of the increased demand, but some additional water will have to come from other sources.

**Climate Change:** Precipitation may stay roughly the same out to mid-century, but increased temperatures will cause more evaporation, transpiration and sublimation, reducing the amount of water in our watersheds as much as 20%. Stream flows in the Colorado River Basin are already 10% less for the 21<sup>st</sup> century to date than the late-20<sup>th</sup> century average.

**'Big River' Issues:** The Upper Gunnison River watersheds are an important part of the headwaters for the Colorado River that eventually provides some or all domestic water for ~40 million mostly-metropolitan people, irrigation water for more than 4 million acres of land providing food year-round, and water-based recreation activities, for much of the nation. Growth and climate change factors throughout the region served by the Colorado River (including major cities outside the natural basin) will probably result in needs to utilize water resources in increasingly efficient, creative and cooperative ways.

**Reconciling Ecosystem Needs with Agricultural and Domestic Uses:** Consumptive water uses that remove water from streams impact nonconsumptive instream needs (quantity, quality and temperature to sustain aquatic life), situations that require creative and collaborative user efforts at the interface of watershed and stream management.

## **Process for Developing Needs Assessments for the Individual Watersheds**

The UGRWCD will be the coordinating agency for the Watershed Management Planning processes, working with other water-related agencies and organizations within the Upper Gunnison Basin, including but not limited to:

- The Gunnison County Stockgrowers Association
- The seven municipal/domestic water suppliers in the Upper Gunnison Basin
- Trout Unlimited
- High Country Conservation Advocates
- Coal Creek Watershed Coalition
- Lake Fork Conservancy
- Recreational Industry organizations (rafting businesses, Crested Butte Mountain Resort, anglers' organizations)

***The Needs Assessment Inventories for the eight watersheds*** will be the first phase of the overall planning process, and is estimated to take four years (completed in 2020). Although each watershed is somewhat unique in its mix of uses, natural flows and other variables, a similar process will be used in assessing needs in each watershed, as follows:

- *Identify and engage key watershed stakeholders (water users and other water-related interests).* A watershed coordinator who is familiar with the watershed and its user groups will contract with the UGRWCD to do this down-on-the-ground work, compiling individual assessments of the *current and future* needs of those willing to participate – taking into account the probable decline of water supply due to climate change and growth.
- Identify information and data gaps, and address them, utilizing consultants when necessary or desirable.
- Develop pilot projects in each watershed to demonstrate best practices for efficiency, conservation and reconciliation instream and diversion needs.

***These needs assessments will begin*** with the Ohio Creek, East River and Lake Fork watersheds. Lessons learned there will be utilized as assessments begin on the other watersheds. Funding for the needs assessment inventories is being sought from the Colorado Water Conservation Board, to augment funds from the UGRWCD.

Once all eight needs assessment inventories have been completed, the planning partners will begin work on an overall ***Upper Gunnison River Basin Watershed Management Plan***, determining the funding needed to execute best-practice projects and programs to address needs identified in each watershed's inventory, and seeking those funds from state, federal and local sources. Such a plan in place will be necessary to obtain state and federal assistance.

***We must emphasize that this will be an 'adaptive management' planning process. All we know for sure is that relentless population growth and climate changes will make the future of water in the west different from the past, so what we are planning for is ways to make our water use as efficient as possible, our watershed and stream ecosystems as healthy as possible, and our approach to the future as fully and creatively aware as possible, in order to adapt to whatever the future brings us with as much of our current mix of water uses still operational as possible.***

### **FOR MORE INFORMATION:**

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