

Part III - Water Rights, Quality, and In-Stream Flows



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"Whiskey is for drinking, water is for fighting over." The free and easy appropriation of new water rights for 'beneficial use' in the basin by the State Engineer and the Division of Water Rights was discontinued years ago as it became apparent that there were more 'paper' water rights in the basin than there was actual 'wet' water. This systemic over-allocation is typical in water rights appropriation because only a fraction of approved water rights are actually developed in the allotted time: undeveloped waters can be forfeited and lapse back into the system. The forfeiture statutes have been largely diminished recently by the State Legislature, especially for public water suppliers that need to hoard water and plan for future development, so the over-appropriation issue is even harder to solve. The only other tool available for administration of over-appropriated basins is the Doctrine of Prior Appropriation. The priority date that is attached to each water right when approved is the basis for the concept of 'first in time, first in right'. If your water right has a late Priority Date and there is no more water left, then you are out of water and out of luck. This concept is easily enforced with surface water, for when your stream runs dry, you stop diverting. With groundwater, when your diversion exceeds the recharge rate and the water table drops, you often just dig your well deeper. This can result in an unsustainable mining of ancient groundwater and is monitored closely by all responsible stakeholders.

Groundwater management plans and a moratorium policy are now used by the State Engineer to protect the health of the basin's valuable groundwater resources. Plans are formulated and agreed on by all the stakeholders, from the water users to the water regulators, from the public to the politicians and from the

economists to the ecologists. These plans focus on the best science available to support management decisions. The Snyderville Basin was closed to new appropriations of surface water in 1937 by the Weber River Decree. Ground water appropriations were halted in 1973. In the late 1970s, the State Engineer placed a moratorium on the transfer of water rights into the basin where the amount of water exceeded 1.0 acre-foot per year (af/yr) or the typical single family domestic annual average usage. In 1988, the moratorium boundaries were expanded and the moratorium was extended to all such transfers. Additionally, the county has a system of 'Concurrency' that assures that developers and water users have the proper 'paper' water rights and 'wet water' in the form of real source capacity. This system has been very successful in bringing checks and balances to the state and county management of water to assure we do not overdevelop our resource in the basin by approving more water rights or growth than we can reasonably sustain. Wise use, acceptable yield, and sustainability of our groundwater are an imperative, not an option, if the resource is to remain viable for future generations.

Since new water right appropriations are no longer available, water must now be purchased, like a commodity, from other water users. A 'Change Application' must be submitted and approved by the State Engineer to ensure there is no impairment of other local water users by the change of the point of diversion or place of use. In the Snyderville Basin this transaction can be between local water users or be in the form of an 'Exchange Application' where a new water contract can be bought from the Weber Basin Water Conservancy District. Weber Basin has water rights in East Canyon Reservoir that are 'Exchanged' to a place of use or point of diversion upstream in the basin. This assumes that unused groundwater is currently discharging into East Canyon Creek, thereby filling the reservoir, and that it can be extracted upstream instead of from the reservoir. This assumption can be right or wrong depending on the year and recharge of the upper system and is monitored over the long term. The State Engineer will not approve large future applications to change or exchange water which

propose to move the point of diversion from the East Canyon Creek drainage to the Silver Creek drainage unless the applicant can demonstrate that the hydrologic system will not be adversely affected. It is said, however, that it is better to live at the headwaters of a system with a shovel than at the bottom end with all the water rights in the world.

Our pumping of groundwater for municipal use drops the local water table seasonally and over the long term, affecting the recharge of streams with excess groundwater. The State Engineer will require, as a condition of approval of all future applications to change or exchange water, that the applicant use all reasonable and prudent means to insure that the effluent or return flow from the water use remains in the drainage from which it is diverted. Both East Canyon Creek and Silver Creek have seen flows deteriorate to almost nothing during the summer months and during our recent drought period. This wreaks havoc with the local aquatic population and with our sewer treatment efforts that count on minimal flows in the natural stream to be mixed with their discharge. This can make it difficult for our treatment plants to meet the stipulated Total Maximum Daily Load (TMDL) goals of the U.S. Clean Water Act. The TMDL is a calculation of the maximum amount of a pollutant that a water body can receive and still safely meet water quality standards. Of particular concern in our area is the amount of macrophyte and periphyton growth of in-stream organisms, the dissolved oxygen in the stream, and the phosphorus that is generated from local rock outcrops or from ground disturbance from construction and development. An additional threat is Endocrine Disruptors: large organic chemicals that disrupt the hormonal system of aquatic organisms. They come from pharmaceuticals flushed from our bodies and toilets and are difficult to remove from wastewater.

Twenty three year ago the lowest 7 day average flow in East Canyon Creek over a given ten year period (7Q10) was 16 cfs, eighteen years ago it was 3.5 cfs and eight years ago it was calculated to be 1.8 cfs. Now it is less than one cfs with several days of no-flow recorded. Minimum average flow rates needed to sustain wildlife in East Canyon Creek were estimated by Kleinfelder Engineering at 6 cfs

and 5 cfs in McLeod Creek while the bare minimum needed to just keep the fish wet was estimated at 3 cfs. When water is exchanged upstream or put into a sewer pipe and transported downstream, it circumvents the natural system and the streams suffer. The sewer plant near Jeremy Ranch alone releases 4 cfs of treated, Class 1 water, but that needs to be mixed with natural flows and it isn't enough in itself to sustain the stream. Low flows and velocities were cited in the latest TMDL study as the most important factor in the demise of East Canyon Creek. The warm, phosphorus laden water encourages algae and plant growth in the stream that reduces the dissolved oxygen available for the fish and chokes the life out of them. Non-compliance with the TMDL and other regulations could necessitate expensive upgrades of our treatment plants. This potential expense compels us to address this issue proactively, at the upstream sources and at the bottom end of the treatment system, where healthy in-stream flows can help us meet our goals. The East Canyon Watershed Committee, formed by stakeholders several years ago is one organization attempting to address these issues.

Unfortunately, in-stream flows are hard to realize in Utah where only the Divisions of Wildlife Resources and State Parks can hold an in-stream right. Protecting stream flows and establishing a base or minimum flow for water quality and wildlife or for riparian habitat and aesthetics is difficult in this climate of high demand and expense for water rights. This protection may require cooperation of all the stakeholders and leadership to enable new legislation of in-stream flows. The public owns the water of the state and the State Engineer distributes it for 'beneficial use' and economic development, till it is all gone. The State Engineer must also consider other issues when approving a water right, such as economic feasibility and the public welfare. Fish and flowing water, unfortunately, are not considered a 'beneficial use' by the State Engineer. You read that correctly! Not considered a beneficial use – yet! If the people will lead, the leaders will follow. It is we who dictate what the 'public welfare' is that must be protected by The State Engineer and our legislators. We must send policy and

law makers a strong message that we value clean, flowing water and the riparian environments that contribute to the quality of life that we all cherish.

The changing picture of the future of the Snyderville Basin water resources is full of challenges. This is a system surely affected by man and climate and it is a system out of balance. Our water supply is now being taxed to its limits both in water quantity and water quality. Water flows downhill, but it also flows towards money. How much will we pay for good water when we are thirsty? What are the real costs of our consumption? Water is an inelastic commodity and when we need it, price is not the issue. Our affluence enables us to access the water within our basin and reach beyond its borders for augmentation, but it also inhibits our desire and ability to live within our natural means, as John Wesley Powell encouraged us to do more than one hundred and fifty years ago. We need to consider the needs and rights of our neighbors, the cost of our needs and wants to the streams and the wildlife, as well as the limits of the natural systems that sustain us. If we work at it, together we can live in harmony and balance with our environment and with each other. Sustainability will require good science and engineering, legislation and regulation, conservation and cooperation, all of which will respect the limits of nature and our environment and reveal the priorities and character of this great community.

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