Part I - Water and Our Quality of Life

Matt Lindon, P.E. - The Water Guy – Assistant State Water Engineer

Picture this, if you will: swollen streams cascading out of east-facing, high-altitude glaciers, rolling down newly eroded canyon rivers full of landslide hummocks and slumps, across huge alluvial fans, into lush valleys, verdant wetlands and hinterland savannas with grasslands growing as high as the belly of a buffalo. Imagine meadows incised with numerous meandering streams lined with willows and clustered with cottonwoods. Envision floods over-flowing stream banks and beaver dams, spilling into wide and undefined floodplains, saturating the natural sponge of wetland organics and alluvial deposits, recharging near-surface and deep aquifers that slowly bleed their stored volume, keeping streams and rivers flowing all year round. This was the Wasatch back, Park City, Parley's Park, and the Snyderville Meadow a mere 10,000 year ago: a hydrologic system in balance.

Then came Parley Pratt with his new toll-road from Salt Lake City, Sam Snyder with his lumber mill, H.C. Kimball with his stagecoach, the miners, the Army, and the farmers. The 'Park' of Parley's "Park City" came from the settlers' name for our high mountain meadows. Most of the trees were quickly cut for the mines, homes and heat. More than 1,000 miles of mine tunnels were excavated for silver, draining the ground and drying up the surface water and streams, while the meadows were grazed and farmed. The streams were diverted to better irrigate the meadows or parks and serve the mines. Water rights were claimed and shared, divided and decreed, appropriated and adjudicated. From Thayne's Canyon and McLeod Creek to White Pine, Willow Creek and Spring Creek, the upper reaches of East Canyon were developed. Water was distributed by the State Engineer for free, according to need and for 'beneficial use' on a 'first come, first serve' basis. Disputes about flooding and drought were handled after

church, in the bars or at the streams and head gates with swinging fists and shovels. Everyone took their share of the surplus and the scarcity. The meadow still flooded, the streams still flowed.

Flash to the present: the boomers have taken over, "trophy" homes cluster the meadows and "McMansions" dot the hillside. Shallow and deep wells mine ancient waters to slake the unquenchable thirst of the growing population. Water is no longer acquired or appropriated from the State for free; it is bought and sold and traded like a commodity. Water disputes are not handled with reason and respect but are dragged vindictively through the courts - wasting time, money, energy and water. Ski resorts and Sundance, subsistence agriculture and snowmaking, empty golf courses and vacant lawns, growing demand and shrinking supply change the hydrologic regime. Large sewer pipes efficiently move wastewater away from the sources toward treatment plants, circumventing the historical surface stream system in between. Pavement and pumps, under-drains and storm sewers protect the subdivisions and development built in the wetlands and whisk runoff away, out-of-sight and out-of-mind. Streams are put in pipes, ditches are abandoned, and natural channels are made into plazas and parking lots. Natural drainage from our basin is reduced to a trickle at times. Water quantity and quality have been diminished. The water has been subdued: the meadow no longer fills in the spring, and the streams no longer flow in the summer.

The stream in my backyard, Willow Creek, still flows wildly during snowmelt season: recharging the local aquifer along with its related wetland. It shuts down abruptly when the snow is gone and our local water companies start capturing it for peak summer irrigation use. Lawn and garden irrigation increase water demand on our municipal suppliers tenfold. Willow Creek recovers nicely in the fall when irrigation ceases. The diminishment of surface stream flows also inhibits the recharge of the meadows and park areas that serve as storage sponges for late summer stream flows. The groundwater discharge area and

wetland behind my house flow nicely all spring in conjunction with Willow Creek and the high local water table. As the creek flow abates in the summer and autumn, the discharge stops and the wetland dries up along with the local aquifer, which does not recover until the next spring. Silver Springs is the primary source of culinary water for our subdivision of the same name. The spring normally discharges about 500 gallons per minute (gpm) of cool clean mountain water, which is suitable for bottling although it is considered relatively 'hard' because of the limestone source. This discharge can increase up to 1500 gpm in the spring because of the effects of surface runoff infiltration. However, this high flow is not usable because of water quality issues: the Total Dissolved Solids (TDS) rise above 1000 mg/l, making the water undesirable for drinking. In addition, the Silver Springs Subdivision was built in a wetland and has an extensive underdrain system that depresses the local water table so our homes don't flood or float. The underdrain system discharges several hundred gpm in the spring and never really drops below 100 gpm all year round. This illustrates the conjunctive relationship between surface water, groundwater, nuisance water and casual water along with water quality concerns in my local neighborhood. Hydrology, along with politics, is local.

With the recent passage of a trail, recreation and open space bond by more than 72 per cent of the vote during a difficult economic time, Parkites once again showed their commitment to our environment as well as the priority and importance of our quality of life. Trails are great but water is the key to that quality of life. Without it, the wildlife and vegetation that define this place will suffer, flowing mountain streams would dry up, and the meadows and wetlands would become barren savannas of dust. The moose, deer and elk will migrate away or die, the fish will go belly up or hunker down in the downstream reservoirs, and our natural vegetation will suffer and thin. The desertification of Park City would force us to make even tougher choices: golf courses or lawns,

snow making or Sundance, riparian wetlands or dry creeks devoid of the lifeblood that sustains us. The choice is ours.

Silver Springs Resident:
Matt Lindon - Assistant State Engineer/Technical Services
801-538-7481 mattlindon@utah.gov