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Water Supply Planning Series: Integrated Water Supply and Water Quality Opportunities via Reuse [1]

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For years, many utilities' water supply and water quality programs have effectively functioned as "silo" operations, where water quality personnel focused on their utility's need to meet its Clean Water Act discharge permit requirements on the one hand, while water supply staff focused upon managing a water rights portfolio, meeting customer demands, and complying with Safe Drinking Water Act requirements. In recent years, however, some utilities have recognized the value of a more integrated approach—one that identifies reuse and other available opportunities by taking a holistic view of wastewater effluent and emerging trends in the evolving water supply-water quality nexus. To date, our water supply planning series has focused on a variety of topics, starting with the importance of water supply audits to evaluate a utility's assets and liabilities. We have also highlighted the opportunity to utilize exempt interbasin transfers where appropriate, and we've examined the Four Corners doctrine, which can limit the need for expensive and time-consuming hearings on minor water right amendment applications meeting the *Marshall* criteria. This article highlights another often underutilized water supply planning option—exploring the confluence of water quality and water supply planning through consideration of reuse opportunities to augment and get the most out of existing water supplies.

In order to meet the growing population in Texas and related growth in water demands, utilities have begun to recognize the importance of wastewater effluent as a consistent and reliable water supply source. For many years, utilities disclaimed ownership of discharged effluent, fearing potential liability from downstream interests. That trend has changed in recent

[1] This article is included in an ongoing series of water supply planning articles that address issues related to such planning, aimed at supporting our clients' efforts at maximizing their use of water supply portfolios.

years, as water suppliers have recognized the nearly drought-proof nature of wastewater treatment plant discharges of treated effluent, and as Safe Drinking Water Act concerns have lessened in light of technological improvements and blending practices. Further, many utilities have recognized that, in light of the significant expenditures they have made to develop their potable water supply sources, it is smart to secure further returns on those investments by obtaining the right to reuse the effluent resulting from the initial use of such sources. While many reuse strategies focus heavily upon a bed-and-banks, indirect reuse approach, several recent examples highlight the successes (and TCEQ permitting templates) of direct reuse projects during the recent drought, including those in Wichita Falls and Big Spring, Texas, among others.

A return flows strategy may include formal permitting for subsequent diversion, or using return flows to firm up existing, more senior water rights, or both. A water rights holder may or may not need to secure additional supplies, but depending upon sedimentation in existing reservoirs, priority status of existing rights, new droughts of record, and many other factors, return flows may serve to bolster senior water rights that are not completely firm. This "firming up" approach can serve as valuable insurance, particularly in times of drought, although it can carry the risk of others' appropriation of the discharger's return flows where possible. To that end, entities can also appropriate return flows without a separate diversion authorization, in order to perfect a "firming up" strategy.

In order to examine the availability of return flows for water rights permitting, utilities should consider their own discharges pursuant to their TPDES permits, as well as those of other in-basin dischargers, identifying the relative sources of such flows as either surface water or groundwater-based—which may well come with different regulatory issues. Publicly available documents identify current and future return flows: TCEQ's Water Availability Models

("WAMs") include runs that consider the availability of return flows (i.e., WAM run 8), and the state and regional water planning efforts often include projections of reuse of effluent and/or return flows through a fifty year planning horizon. As such, any water utility should consider the availability—now or in the future—of return flows that may be available for permitting as a relatively low-cost option to augment existing supplies, whether for use for potable or non-potable purposes.

As we discussed in our recent water utility audit article, water suppliers should also examine their water supply contracts and related provisions concerning ownership of the wastewater resulting from water use. Contracts will often include restrictions on reuse opportunities, as many wholesale water providers seek to retain ownership over return flows. Such restrictions may well have implications as to who can apply (now or in the future) to appropriate return flows actually discharged. Depending upon reuse options that may be available, a water supplier may wish to approach third party dischargers (even those not subject to existing contracts) to purchase their return flows, without regard to whether such flows are already appropriated. Tying up return flows by contract can lay the foundation for a future water rights application, while effectively preventing others' appropriation of such flows.

Recent developments underscore the wisdom of a purposeful reuse strategy. The recently TCEQ-issued System Operations permit to the Brazos River Authority highlights the importance of permitting existing and future return flows (both for dischargers and third parties), and the value of securing reuse rights from others.

Reuse planning, and thinking about water supply and water quality programs as slices of a common water supply pie, can afford utilities the ability to stretch water supplies in a reliable and low-cost manner. Like other strategies we will examine in this ongoing series (including

conservation and accounting protocols), water reuse is an elegant tool to help build a supply portfolio over time that will help minimize or delay the need for more expensive new water supply projects. Through assessment of contract rights, options to firm up existing senior rights, and bed-and-banks permitting, water supply planners can pursue valuable avenues to serve existing customers and to plan for increased water needs in the future.

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