COLORADO
Colorado Water Conservation Board
Department of Natural Resources

Water Efficiency, Reuse and Water/Land Use Planning Integration

Kevin Reidy
State Water Conservation Technical Specialist

As the State Water Conservation Technical Specialist, I assist municipal water providers across Colorado in planning for and implementing water efficiency in their water systems. With the completion of Colorado's Water Plan in 2015, the work has expanded to include water reuse, as well as the integration of water planning into land use planning.

By creating partnerships through financial and technical assistance, the CWCB can amplify efforts and make progress towards fulfilling Colorado Water Plan's goals, but more importantly, help manage water for a more sustainable and integrated water future.

With that in mind, while there are many projects happening simultaneously, here are a few that deserve a special shout-out.

Water Conservation and Efficiency

Besides reviewing and approving locally adopted water efficiency plans and implementation grants, I work on a variety of projects in this space. One very important one concerns distribution system water loss and control.

The Colorado Water Loss Initiative is a project that focuses on building the capacity of local water providers to carry out state-of-the-art water loss accounting in their water distribution systems. Over the last 5-7 years, water loss control has become a higher profile practice across the United States, with Georgia and California passing legislation to ensure all water providers are doing it. With this momentum, the CWCB gathered funding to carry out a 2 ½-year statewide training program for upwards of 165 water providers.

The CWCB staff has gathered a small statewide advisory group consisting of water providers, researchers and water loss experts to assist with implementation of the initiative.

The training will consist of 4 waves of remote and in-person trainings. The key to this training will be the reinforcement methods that a water provider team will learn in this workshop environment, and then go back to their utility to gather data and do the work. Each team will complete "homework," and then remotely go through their results with a team of technical experts. The training will be based on the American Water Works Association M36 Methodology, which is the best practice water loss control methodology.

The goal of the initiative is to have all participants complete their own system-wide water audit and save water and money in the process.

Water Reuse

On the water reuse front, the CWCB has been working with the Colorado Department of Public Health and Environment (CDPHE), WaterReuse Colorado and a group of stakeholders over the last 18 months to create a regulatory framework for direct potable reuse in Colorado (Phase I). No such regulations exist at present and a proactive regulation is needed to create a consistent and more certain environment that will allow water providers to explore this supply option.

Phase II of the direct potable reuse work builds on Phase I and consists of bringing together a group of national experts to work with local stakeholders to hammer out regulatory language for direct potable reuse in Colorado. Water reuse is considered to be an important part of future water supply and with the addition of direct potable reuse regulations there will be one more option for water providers to access.

Water Efficiency and Land Use Planning Integration

SB15-008 directed the CWCB, with assistance from the Department of Local Affairs (DOLA), to implement training around the integration of water efficiency into land use planning. In 2016-2017, the CWCB and DOLA created five training modules: Integrating Water into Land Use Planning: Setting the Stage, Integrating Water Efficiency into Comprehensive Planning, Integrating Water Efficiency into the Zoning Code, Addressing Water Efficiency in Planned Unit Developments, and Integrating Outdoor Water Use and Landscape Requirements into Codes and Plans. Additionally, the CWCB and DOLA created five webinars.

The second requirement from SB15-008 concerns evaluating best practices for water efficiency within a municipality's water efficiency plan that may be implemented through land use planning efforts. The CWCB is working with the Babbitt Water and Land Policy Center & the Getches Wilkinson Center for Natural Resources, Energy and Environment to create an addendum to CWCB's *Municipal Water Efficiency Plan Guidance Document*. This addendum will create a checklist, process and additional resources to help water providers integrate water demand management best practices into land use planning through their water efficiency plans.

Another water-land use integration opportunity for local water providers and governments is the Colorado Growing Water Smart (CGWS) training program created and carried out by the Sonoran Institute and many partners. CGWS provides training, technical assistance, and other resources to communities that allow them to better understand current and future water supply and demand, the range of land use planning tools to align growth and development with forecasted water supplies, and engage and educate their community to build support for needed plans and policies.

The communities participating in this program will leave the training with a concrete action plan and access to follow-up assistance to achieve their planning and policy goal identified at the workshop. The goal is to have 24 communities and 400 water providers, land use planners and elected officials trained over the next 18-24 months. We estimate that 1.2 million Colorado residents will be impacted by these trainings alone.

Trainings are crucial outreach for integrating water and land use planning, but what about the central questions of, "Why does integrating water into land use planning matter? Does it

help reduce future water demand?" The Colorado Water and Growth Dialogue set out to answer these questions and more. The Dialogue brought together a large group of water planners, land use planner, developers, academics and non- profit environmental professionals to identify, discuss and evaluate potential strategies for saving water in urban development and redevelopment. Additionally, the objectives included providing local communities with data, information and a tool box of strategies so that they may make better informed decisions. A simple trade off tool was created during the Dialogue to assist local governments envision the magnitude of planned changes on future water demand.

A major finding from the process was that, generally, as future populations move from less dense housing types to denser housing types, water demand will decrease on a per unit basis. This is a very simplified explanation as there are many caveats associated with the analysis, but it helped answer the original questions and provided a basis for more in-depth and sophisticated projects to follow. At present time, a final report for the Dialogue is being edited and will be published in early fall of 2018.

Finally, the CWCB and DOLA have leveraged the participation in the Colorado Water and Growth Dialogue to launch the Colorado Water and Land Use Planning Alliance. The Alliance is a group of approximately 30 land, water, non-profit, academia, development community and government professionals. The main idea was to organize the disparate ongoing work from all the efforts centered around water and land use integration to avoid duplication, focus resources, and coordinate/build on each other's work. One possible objective of the Alliance is to create a BMP framework and set of tools for integrating water and land use planning integration. With that in mind, the Alliance has created two working groups focusing on technical assistance and data/modeling with the idea to start creating a cohesive set of principles around these topic areas.

Conclusion

Water demand managers in Colorado are recognizing the integrated nature of managing water across disciplines, sources and uses. Water efficiency, reuse and water/land integration work together to reduce future water demand through human behavior change and efficient use of water. These approaches also aim to design our future living spaces to be water smart from the start. Planning for the context in which our future communities are built is critically important for reducing water demand when facing a doubling of statewide population by 2050 and a possible lower water supply/higher demand future. As we move forward in implementing Colorado's Water Plan, water managers cannot be afraid to reach beyond their silos and manage across disciplines to create more than the sum of the parts.