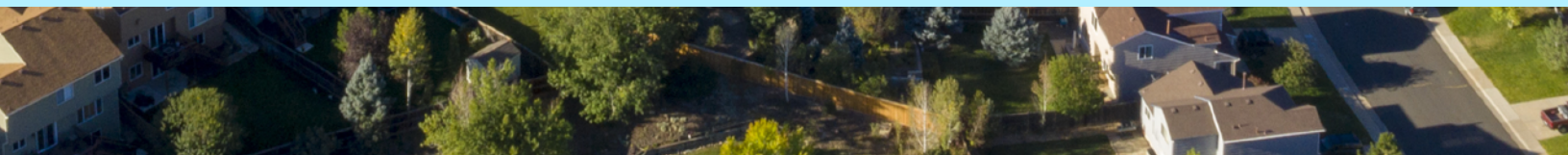




The State of Water and Land Use Planning Integration: Learning from Colorado Communities

March 2021





EXECUTIVE SUMMARY

The purpose of this report is to synthesize and document barriers, challenges, enabling conditions, resource needs, and priorities for adopting integrated water and land use planning solutions in Colorado communities. The overarching goal is to help inform future water and land use integration efforts throughout the state. In 2020, WaterNow Alliance and Western Resource Advocates conducted 24 informational interviews with water utility staff, land use planners, and elected officials in nine Colorado communities. The results of these interviews indicate that many communities have already taken – or are planning to take – some action to integrate their water and land use planning. However, a number of barriers are holding them back from taking more action, including staff capacity and knowledge, codes and regulatory hurdles, and competing priorities. Through these interviews, a number of recommended future actions were identified, including: initial steps communities can take when they are unclear where they should start, identifying existing programs that communities can utilize, and state-level policy actions that should be prioritized.

CONTENT

.....
.....
.....
.....
.....
.....
.....



AUTHORS

John Berggren, Water Policy Analyst, Western Resource Advocates
john.berggren@westernresources.org

Lindsay Rogers, Water Policy Analyst, Western Resource Advocates
lindsay.rogers@westernresources.org

Cynthia Koehler, Executive Director, WaterNow Alliance
ck@waternow.org

INTRODUCTION

Water and land use integration is recognized as a key strategy in Colorado's Water Plan that will allow communities to utilize existing water supplies efficiently despite climate change and population growth. In 2020, Western Resource Advocates (WRA) and WaterNow Alliance (WaterNow) conducted informational interviews with water providers, land use planners, and elected officials from Colorado communities to learn about their challenges, objectives, and priorities as they relate to water and land use planning integration. The goal of these interviews was not only to learn about the state of water and land use planning integration in Colorado but also to identify any lessons learned and specific opportunities that other Colorado communities might be able to utilize when implementing their own policies and programs. This report summarizes results from the interviews and provides recommendations based on those lessons learned. Thank you to the Babbitt Center for Land and Water Policy, a center of the Lincoln Institute of Land Policy, and the Colorado Water Conservation Board for providing support and funding for this work.

BACKGROUND AND METHODS

To better understand the state of water and land use planning in Colorado, WRA and WaterNow conducted 24 informational interviews between January 2020 and November 2020 with primarily Front Range communities, as well as several mountain towns. The goal for this project was to interview a water provider staff member, a land use planning/community development staff member, and an elected official from each community to gather information from all three perspectives given their differing relationships to water and growth. The communities were identified based on several variables including: high population growth, limited water supplies, diversity in water providers, and demonstrated interest in water and land use planning integration. WRA and WaterNow interviewed staff and elected officials from nine communities: the Town of Parker, the City of Centennial, the Town of Frederick, the Town of Severance, Boulder County, the City of Northglenn, the Town of Breckenridge, the Town of Frisco, and the City of Greeley.¹ Interviewees included Planning Directors, Senior Planners, Civil Engineers, Public Works Directors, Trustees, Council Members, County Commissioners, and Water Resource Program Supervisors.

While the interview protocols for the three types of interviews were similar, each was tailored for the interviewees' respective positions.² In early 2020, these interviews were conducted in person, but beginning in mid-March they transitioned to virtual platforms due to the COVID-19 pandemic. When and if possible, staff from both WRA and WaterNow conducted the interviews with one interviewer leading the conversation and the other primarily taking extensive notes. In-person interviews were recorded should there be any confusion or discrepancies in the notes. Virtual meetings were recorded if possible.

Following the interviews, detailed notes from each interview were uploaded to the qualitative analysis software, Dedoose.³ This online analyzing platform allows for the systematic analysis of each interview utilizing a set of variables and questions developed by WRA and WaterNow. The variables relate to each of the topics in the results section. Each interview has been coded by the various variables, which include: specific water and growth challenges, water and land use department interactions, water and land use integration efforts, and challenges to those efforts, among many other variables. Once the interviews were coded, WRA and WaterNow were able to identify common themes, priorities, challenges, lessons learned, and opportunities across the nine

¹ See Appendix A for background details on selected communities including population size, population growth, water provider(s), and water supply details.

² See Appendix B for land use planner representative, water utility staff representative, and elected official interview questions.

³ <https://www.dedoose.com/>

communities. Please note that for anonymity reasons, the responses discussed below are not attributed to any individual or specific community.

RESULTS

The results of the informational interviews, described below, are organized around eight identified themes:

1. Common water and growth challenges among the communities
2. Unique water and growth challenges in the communities
3. Current water and land use integration efforts
4. Barriers to water and land use integration
5. Differences between land use planners, water utility staff, and elected officials
6. Addressing barriers through external assistance
7. Moving forward: building upon existing efforts and new opportunities for furthering water and land use integration

1. Common water and growth challenges among the communities

All of the communities interviewed were concerned about how to plan for and manage future growth. In addition to water supply reliability concerns, many communities also discussed traffic, housing prices/affordability, and keeping the community's character (e.g., not losing the "small-town" feel). While some interviewees noted that they anticipate new growth to be more water efficient than in the past (e.g., smaller lot sizes, town homes, or modified landscapes), several expressed concern that this growth might continue to be traditional, large single-family home developments on large lots. Part of the issue identified is that the land development codes (LDCs) for many of these communities are outdated, which has consequences for the type of growth seen in these communities. A land use code or land development code is a planning implementation tool used to implement a community's comprehensive plan that can include zoning regulations, annexation policies, impact fees, and more. Colorado being a "local control" state means updates to local codes are left entirely up to the local jurisdiction. Updating the code can be time and staff-intensive, so it is not uncommon for land development codes to be quite outdated. For example, one interviewee noted their LDC is 40 years old.

Overall, the concerns expressed regarding water were primarily focused on the reliability of future water supplies. While there was some discussion about climate change being a driver of this concern, the most common challenge identified was future population growth and how to supply water to accommodate that growth. As one interviewee noted, the community's ability to provide water for new homes is the "800-pound gorilla in the room." In another community, water providers project that they will still need additional supplies in the coming decades even with "extreme conservation." When asked about growth challenges, one interviewee succinctly described the fundamental problem: "Water, water, water, water... That's the primary one. Everything else is relatively easily managed."

Another common concern among interviewees was the cost of water, especially those who receive Colorado Big Thompson Project (CB-T) supplies. Several interviewees discussed how dramatically the cost of CB-T shares has increased in recent years,⁴ leading them to consider alternatives to buying additional shares for growth. This commonly led the communities to consider modifications to landscape regulations, changes to lot sizes, or alternative water dedication policies as it is simply becoming too expensive to purchase additional CB-T shares. In one community, the land use

⁴ <https://www.kunc.org/business/2018-05-29/price-of-key-northern-colorado-water-supply-reaches-new-peak>

planners have heard from developers that the cost of water has made it too cost prohibitive to build.

2. Unique water and growth challenges in the communities

Several communities expressed that there is some concern among existing residents about high rates of population growth and new development, and how this might affect them (e.g., increased water rates, traffic, etc.). Interestingly, an elected official from one of these communities noted their residents' concerns about growth are largely a public perception problem; since the actual growth in their community has been stable and relatively low as a percentage of total population for some time. Accordingly, the elected official viewed the growth issue as largely a public messaging challenge for their staff.

“Water, water, water, water... That’s the primary one. Everything else is relatively easily managed.”

One of the smaller communities interviewed indicated that their primary growth-related challenge is the speed at which it is occurring. This community, which has a population of less than 10,000, saw 800 new homes built in 2019 and is on track for additional 1,000 in 2020. Ensuring basic infrastructure, including water systems, for such substantial growth is challenging for a small community with limited staff capacity.

Several of the communities interviewed have agricultural economies. Elected leaders in particular expressed a community-wide desire to preserve the local agricultural economy, avoid buy and dry, and prevent open farmlands from being redeveloped. Additionally, one community noted that a lot of their industrial uses and manufacturing were also ag-based, leading to additional water supply needs. In other words, the challenge was not just keeping water within the ag sector (e.g., irrigation), but also providing water for the ag-based manufacturing that occurs off the farm (e.g., cheese processing).

3. Current water and land use integration efforts

Pre-Application Meetings

The research team found a wide range of efforts to integrate water and land use planning among the communities interviewed. The first opportunity for land and water integration for a specific new development often happens at the developer's pre-application meeting. As one community described, it is at this initial meeting where the planning staff will direct the developer to speak with the water supplier at some point during the process. That is generally the extent to which water is discussed at those pre-application meetings, and the interviewee specifically noted that anything beyond that (e.g., discussions about water conservation) are rare. Alternatively, another community insists that developers speak with the relevant water providers before the pre-application meeting to ensure the developer understands the water-related components of their proposal, including requirements for raw water dedication/cash-in-lieu and water system development charges (i.e., tap fees).

This pre-application due diligence has been especially important in recent years as the costs associated with water and development have increased significantly. As noted in the previous section, CB-T shares have become significantly more expensive, and some water provider tap fees have increased. One interviewee described a specific case where a national hospital builder was shocked to learn that the tap fee for a new hospital was three times what the developer had budgeted. As will be discussed below, the increasing cost of water may incentivize additional integration efforts. Other

communities require the developer to provide their own raw water dedication at the pre-application meetings, and one community requires the developer to prove adequate water supplies.

Water & Land Use Planning Staff Interactions

The interviewees described a wide spectrum of interactions between land use planners and local water providers. Some communities shared that engagement between planners and water providers was very limited, while others seemed to have strong and long-standing working relationships. In several communities, there appeared to be a trend in recent years towards more engagement between the two departments – this was associated with new, regular meetings, external workshops to facilitate engagement, and/or a shared priority to update a plan or code.

Some communities described a significant degree of regular interaction. In one community, where water services are provided by the municipality, the interviewee described “almost daily” interactions between planning staff and water utility staff addressing primarily development proposals. Another interviewee from that same community noted that the planning and engineering sections (the water provider) have offices in the same small building, which enables much of that interaction, as they can easily “walk down the hall” to speak with each other. Another community has come up with a somewhat unique way of institutionalizing interactions between the two departments; all the town departments meet and discuss the city council’s agenda and priorities immediately following biweekly council meetings. Both planning and water staff are typically in attendance, so this practice facilitates discussions and collaboration.

Another interviewee noted that their community has made an explicit effort in the past year to better integrate water and land use planning, which has mostly taken the form of more organized and deliberate interactions between planners and water providers. The interviewee, who is a water provider, described how they have worked with planners on development proposals significantly more in the past year than in the previous four years. Another interviewee described a similar situation in their community, in that the relationship between planning and the water utility, “did go from nothing to quite a bit of a relationship/working partnership in the past three years.” One interviewee from another community described how recent participation in an external workshop provided the opportunity to have their water utility and land use planning staff interact. Another community had recently updated their integrated water resources plan, and in an apparent shift from prior years, the water utility staff brought in the planning department to discuss the plan update.

Still other communities explained that there was very little engagement between the water and land use planning staff; for example, water staff was not involved in updates to water-related land development code updates. This lack of engagement was discussed by one interviewee in another community even when acknowledging, “we certainly could be collaborating and coordinating more.” An interviewee from another community described interactions between the two departments as a “good relationship” but one that was limited to reviews of various projects and proposals. The interviewee opined that despite having a good relationship, it is not a very robust one, and that it would be valuable to have more substantive interactions throughout the development process. Similar sentiment was found in other communities where they acknowledged coordination would be helpful but did not seem to have taken specific steps in that direction.

“... we certainly could be collaborating and coordinating more.”

While interviewees described a wide range of engagement, encouragingly, many communities felt that their water and land use planners' efforts were either already well integrated or that they were taking substantive steps towards integration. No communities expressed that their land use and water initiatives were becoming more segregated.

Specific Integration Actions

Several communities are actively pursuing water and land use integration efforts in the coming months and/or years. These integration policies and programs, described in more detail in Section 7, include: comprehensive plan updates to add or update a water element; updates to landscape regulations to incentivize more efficiency that involve planners and water utility staff working together in a shift from past practice; and finally, coordination between land use planners and water staff on an LDC review for opportunities to improve water efficiency and management.

4. Barriers to water and land use integration efforts

Staff Capacity & Knowledge

Staff capacity issues were commonly identified as a significant barrier to water and land use integration efforts. For one community, the staff capacity challenge took the form of the planning department staff not having the training or knowledge to review irrigation plans, and therefore not understanding, evaluating, or requiring changes to those plans. Accordingly, the planning department did not feel like they were able to enforce the irrigation and landscape regulations in the municipal code. Further, several interviewees described how each planner has their own specialty, and if that does not include someone knowledgeable in water, then it is difficult to integrate water-related issues. Additionally, some planners noted the lack of time available to adequately research or learn best practices when it comes to integrating water and land use planning, as the incorporation of water into their work plans is quite complicated. In another community, interactions between planners and water providers were impacted by staff turnover and loss of institutional knowledge. For many years one specific water staffer would attend development meetings; after that person retired, water staff rarely attended the meetings. Conversely, one community noted that land use and water integration efforts were improving with a newer, more collaborative team of water and land use planning staff.

For most of the communities, staff lacked the time or resources required to take on water and land use integration efforts. Many local government planning departments are currently working at maximum capacity, so it would be difficult to add additional processes or requirements to the development process. As one interviewee noted, "The hard thing is things are happening so fast, so just having that time to sit down can be tricky; bodies and time are the biggest constraint." Or as another interviewee from a different community described, "It's a matter of time and resources. It would almost take the dedication of an entire staff person to do something [related to land use and water integration]." Similar constraints were noted from water utility staff—one interviewee described it as, "I just don't have the time as I'm focused on treating water, fire flows, and water quality."

One particularly interesting disclosure was that some water and land use planners may deprioritize integration because they do not perceive such integration as materially contributing to their respective missions. For example, one water provider indicated that the main challenge to integrated planning efforts is that their primary objective of providing safe and sufficient water to the community always takes the priority, so any new initiative or long-term planning effort takes a back seat due to staff capacity issues. They specifically noted this is common with new relationships (in this case, between planners and water providers); developing working relationships can take a significant amount of time and is seen as not necessarily contributing to the water provider's primary objective.

Access to Resources

The interviews revealed that there is also a dearth of readily available information for municipal staff to learn about water and land use planning policies. One interviewee, who works for a smaller community, noted that while there seems to be a lot of information circulating about what some of the bigger communities have been able to accomplish (e.g., Aurora), they did not see that same level of educational material relevant for smaller communities. Given substantial time constraints and the small size of their department, the interviewee does not have the time to conduct that outreach to small communities and learn directly from their peers.

Codes & Regulations

Another challenge found in several communities was that many of their regulations, codes, and ordinances are outdated and in need of updates. As one interviewee put it, their landscape regulations are, “just old.” Interviewees from another community described how their older regulations and codes are problematic because they do not establish any water use efficiency requirements or parameters. Without such guidance, land use planners need to examine each development proposal on a case-by-case basis, which limits what they can do for water efficiency. In a different community, an interviewee commented that a water provider within their jurisdiction uses an older model to predict water demands. The chosen model does not incorporate the latest water efficient fixtures (e.g., low-flow toilets), which can lead to questionable water dedication requirements in new developments.

Special Water Districts

Some of the communities interviewed have their own municipal water providers while others rely on services from one or more special district water providers. For the former, interactions between water provider staff and planning staff were generally less challenging. However, several interviewees noted the difficulty of working with a special district not part of municipal government. One community, for example, is served by 12 different water providers. Sometimes collaborating with an outside organization is a logistical issue—their offices are in different buildings and in different parts of the community. In addition and more critically, special districts and municipalities can have different cultures, requirements, policies, and goals. One interviewee lamented that while the planning department has certain requirements meant to reduce urban sprawl, the water provider does not, which leads to enforcement challenges. As that interviewee described, “It’s like the weird uncle coming in and telling them what to do.”

A recurring theme for communities served by special districts is that water is not necessarily a priority for elected city officials that do not have jurisdiction over water service. Two communities identified this problem, sharing that their elected officials may lack the requisite knowledge to discuss water because they do not need to engage in decision-making on this topic. As one interviewee commented, because there is an outside organization providing water to the community, the elected officials spend their time focused on the many other issues within the municipality’s jurisdiction.

Competing Priorities and Jurisdictional Challenges

Even in some cities and towns with a municipal water provider, elected decision-makers have not bought into the concept of prioritizing water use efficiency. These elected officials were seen as a potential barrier to land and water integration. For example, one land use planner expressed that historically they had difficulty passing updated water efficient landscaping standards through their elected decision-making body. Other interviewees discussed their concerns about their elected leaders who express preference for the aesthetic of green turf lawns and felt that “rock gardens” or xeriscape landscaping would not match the community’s aesthetics, making water efficient landscapes less of a priority.

Another interviewee described the challenge as planners and engineers simply think about process and problem solving in different ways. Similarly, a land use planner from a different community described the difficulty of sorting through these issues with the water provider because they each look at the same issue with different end goals in mind (e.g., the water provider is concerned with providing adequate drinking water now and into the future whereas the land use planner is focused on approving new developments based on their current land development code). They noted it is not a criticism of the water providers, but rather a consequence of the nature and focus of their respective departments.

Similarly, most planners interviewed described fundamental differences between the two departments that make collaboration challenging. These included “[each having] so many separate priorities”, “we have different goals”, and “planners and engineers think about process and problem solving in different ways.” Likewise, several water utility staff described structural challenges (“development ordinances aren’t written in a way that’s thoughtful with efficient water use”), a lack of understanding by the planners (“it would be helpful to at least have conversations, to have them understand the impact of land use zoning and water”), and not seeing the benefit of even doing so (“I don’t really need or want to coordinate with the planners”).

Conversely, one water provider opined that the planners did not seem to be familiar with the impact of land use zoning and water efficiency strategies on available water resources. For example, the planners did not seem to appreciate the water implications of certain plant species. In another community the challenge was described as differences in missions between the two departments: the planning department focuses on aesthetics and livability whereas the water provider focuses on water conservation. In this case, historically, the planners had not considered water conservation until the water utility staff “bull-dozed” their way into meetings with planners. Once those conversations occurred, the planners were more receptive to conservation considerations.

In terms of jurisdictional challenges, several planners described a perceptual problem in that they thought they do not have the authority to get involved in water utility decision-making. As one interviewee described, “we don’t have a lot of control over things like water rates.” A similar sentiment was heard from water utility staff, as a couple interviewees suggested that the utility department does not have authority over land use code. One interviewee simply stated, “[water utility] doesn’t have power over code.” While not consistently heard during the interviews, this concern about regulatory jurisdiction was perceived to be a barrier in several communities.

Developer Community Motivations

Another challenge identified by an interviewee was that developers primarily care about costs over everything else, so unless there is strict enforcement of any water efficient planning codes or ordinances, they probably will not be realized in the development. The interviewee, who is a water provider, described giving feedback on some landscape plans for new developments, but did not think there would be any modifications as, “feedback is only as good to a developer as the rules that enforce it.”

COVID-19 Impacts

Finally, ongoing impacts from COVID-19 were identified as a major challenge as the scale of the pandemic became clear over the course of the interviews. In addition to the obvious public health impacts, many of those interviewed described revenue shortfalls, budget cuts, program reprioritization, and hiring freezes/layoffs. In one community there was a 15% reduction in every department’s budget for the remainder of the year. In other communities, especially ones where tourism is a primary economic driver, sales tax revenue was down significantly leading to substantial budget shortfalls. Relating to water and land use integration, most of the communities noted that

new hires, initiatives, or programs were all put on hold because of how much uncertainty there was for the remainder of the year and into 2021. One interviewee indicated that their community tends to be quite conservative with any non-essential or new services or programs. Several communities also described the potential for long-term impacts for water and growth in that the economic impacts of the pandemic have altered or reduced their growth projections. When asked about their community's growth projections, one interviewee responded with, "[w]ell, it's hard to say now because growth projections were kicked in the butt by COVID."

5. Differences between land use planners, water utility staff, and elected officials

There were notable differences in the description of interactions between the three types of interviewees. Land use planners primarily described interactions with water utility staff as simply revolving around specific development proposals, whereas water utility staff described in general a more comprehensive relationship that included additional interactions around ordinances, tap fees, and even daily interactions in some cases. Elected officials, in responding to questions about inter-departmental relationships, mostly described the situation as "they work closely" or "they generally do not" without much additional detail, as might be expected given that elected officials are generally several steps removed from these staff interactions.

Interestingly, another difference that emerged in several of the communities was that land use planners and elected officials were generally more optimistic about the state of the community's water resources and the security of their water rights portfolio to meet future water demands than their water utility counterparts. Not surprisingly, water staff, who are responsible for long-term supply forecasting and planning, and are therefore much closer to this information than political leaders or land use planners, generally expressed more concern about the community's water supply resilience and ability to meet increased future demands. For example, in one community, the land use planner described the community as "one of the best in Colorado in terms of water supplies, with no real issue of shortages." Conversely, the water utility staff in that same community described their water situation as, "we don't have enough water to meet huge population growth—our projection is that even with extreme conservation we'll need more water supply."

6. Addressing barriers through external assistance

One of the questions asked during the interviews related to the benefit of external assistance and support to further integrate planning efforts. Two interviewees from the same community described how they are always looking for outside resources, support, and

information, with the goal of keeping up to date on a variety of topics. This general interest in learning was evident throughout their interviews. During an interview with another community, WRA and WaterNow described their recent effort to analyze ten communities' landscape regulations as they relate to water efficiency. Like the other community, this interviewee expressed significant interest

For example, in one community, the land use planner described the community as "one of the best in Colorado in terms of water supplies, with no real issue of shortages." Conversely, the water utility staff in that same community described their water situation as, "we don't have enough water to meet huge population growth—our projection is that even with extreme conservation we'll need more water supply."

in seeing that analysis, to learn what some of their community peers have done with regards to landscape regulations.

A land use planner from one community specifically noted that one of their elected officials was particularly engaged and interested in water and growth, and was always encouraging staff to identify potential support, including outside funds, grants, and trainings. The planner noted that it really helped to have such an engaged elected official who actively encouraged them to apply for such support.

Other communities had more specific needs that could potentially be met with external support. For example, one community would like assistance and training for how to review and evaluate the landscape component of development proposals, including irrigation system design. That is not a skill staff could necessarily develop in-house, so external support would be helpful. Similarly, several interviewees described the need for training/research on specific topics, such as best practices for landscape regulations and how to integrate water efficiency throughout a development code. Several interviewees who are planners noted that they or other staff in their department do not have water backgrounds, so that additional water-specific training would be helpful. Other communities noted they could use external support in updating various plans, including water efficiency plans, raw water master plans, and comprehensive plans. Several interviewees described how this external support is especially helpful for them as they don't identify with the commonly studied and prominent case studies (e.g., Aurora, Westminster), and that more case studies on small communities and communities with private/multiple water providers would be helpful.

7. Moving forward: building upon existing efforts and new opportunities for furthering water and land use integration

As indicated above, several of the communities interviewed were actively pursuing some sort of water and land use planning effort. Other communities identified water and land use integration opportunities that they were interested in exploring in the future. These efforts and opportunities are discussed below.

Landscape Codes

Four communities are currently in the process of—or considering in the future—updating their landscape codes to be more water efficient. Specific ideas included maximum turf regulations, more prescription on the types of plants allowed, and requirements for native vegetation.

One community has already drafted revisions and updates to parts of their landscape code but is waiting to present them to newly elected officials (the previous officials were not receptive to such code revisions). Another community is also revising their landscape codes (which had not been updated in 10 years), intentionally having both land use planners and water utility staff involved in the update. As noted by an interviewee from this community, “[w]e’re on a path to make this a better process.” The update will include more “water conscious” components such as efficient sprinkler systems, xeriscape principles, etc.

Comprehensive Plan

Another community is updating their comprehensive plan to include a water element, with the specific goal of eventually adding more prescriptive landscape codes. Currently, the community operates on a case-by-case basis but would like to get to a place where the landscape code has prescriptive language about what is and is not allowed. An interviewee from this community noted that the benefit of the update is not necessarily the end product, but rather the process of the update itself. If done properly, the process will bring together water and land use staff in a room to understand each other's issues. That will help those staff better understand common goals, challenges, and values, ultimately

forming a stronger working relationship. Another community, also in the process of updating their comprehensive plan, noted that not only will water utility staff be involved, but there will be a specific equity component, highlighting a unique opportunity for water and land use integration.

Water & Land Use Planner Coordination

Interestingly, only four communities were actively trying to find ways to improve day-to-day coordination and communication between their planning department and water providers. This ranged from simply opening lines of communication between the two organizations all the way to modifying the development review process so the two are working closely together on all development proposals.

Special Water District Coordination

One community served by a private water provider expressed a desire for the community and the water provider to have similar water efficiency requirements. The interviewee noted that this would provide the city with more authority and backing when reviewing development proposals.

Graywater

Three of the communities expressed interest in allowing graywater systems. This interest ranged from permissive ("If someone wanted to do graywater, I wouldn't actively oppose it") to enthusiasm for adopting a graywater ordinance. However, the interviewees were hesitant to push for a graywater ordinance due to perceived uncertainties around state regulations, public health, plumbing issues, and water rights.

Elected Official Education

Several interviewees noted the importance of educating elected officials on these topics. For example, one interviewee described doing a "water presentation" to every new council following elections, to make sure they are up to speed on the latest water-related issues. Several interviewees noted how even if elected officials say water is a top priority, sometimes it is not clear if those officials have the motivation to follow through with support for water and land use initiatives. According to one interviewee regarding their elected officials, "we still have a lot of education we need to do with them, as they are more focused on the energy side of sustainability, not necessarily water." One interviewee even requested that WRA and WaterNow present to the newly elected board to get them up to speed on water and land use topics, suggesting that sometimes education from external sources can be just as, if not more, effective than from municipal staff.

Non-Potable Supplies

Another community recently updated their municipal code to require developers to dedicate their own water, which may entail procuring CB-T shares. Utilizing non-potable supplies (e.g., ditch water) reduces the need for more expensive (and difficult to acquire) potable water, such as CB-T shares. Part of the program now allows developers to apply for an alternative supply by conducting a demand analysis with support from city staff. The goal of the program is to incentivize the use of non-potable supplies for outdoor irrigation as an alternative supply.

Incentive Programs

All nine of the communities interviewed are either currently, or expressed interest in, providing incentive and/or education programs to encourage more water efficient landscaping. These programs include sprinkler audits, turf replacement incentives, Garden-In-A-Box programs, smart water meters, and demonstration gardens.

In terms of process, one community expressed the desire for primarily incentive-based regulations and programs to encourage more water efficient design and landscaping, as opposed to regulatory

requirements. For example, they are considering installing demonstration gardens in high-profile/ community entry way areas and are interested in providing a water efficient plant list to developers and property owners. An interviewee from that community noted how their residents tend to enjoy educational programs that have been offered in the past, so that could be one avenue for encouraging water conservation practices.

DISCUSSION

The interviews provide key information about attitudes, perceptions, and current status of water and land use integration efforts and lead to a number of key findings and lessons learned. As described above, most of the interviewees expressed some concern about the reliability of future water supply in the face of growth and development, drought, and increasing cost to purchase new supply. Many communities had already taken – or were currently taking – action to integrate their water and land use planning. However, the degree of their interest and perceived ability to move forward with integration differed between the communities, and a number of barriers held them back from taking more action including staff capacity and knowledge, codes and regulatory hurdles, and competing priorities. Notable distinctions were also identified between the three categories of interviewees. Generally, land use planners were less concerned about water supply security than their water counterparts, and water utility staff often did not feel they had the authority – or saw the value in – coordinating with land use planners – even when doing so could support their water-related objectives. Elected officials appeared to have interest – but little direct involvement – in integrated water and land use planning.

Looking forward, it appears these communities, at the very least, understand some important and substantive steps they could take towards water and land use integration. The communities were able to articulate the types of external resources that would be most useful to support them in implementing new policies and programs (e.g., landscape ordinances, elected official education, efficiency incentive programs, etc.).

RECOMMENDATIONS

This report is intended to serve as a resource to Colorado communities – and the broader community of Colorado stakeholders interested in water and land use planning – that will inform future water and land use integration steps and future community engagement needs. In addition to providing information about the communities interviewed—including challenges, goals, priorities, barriers, and enabling conditions from which other communities might learn from—these interviews also revealed strategic recommendations for how other communities might begin or strengthen water and land use planning in their communities, and how additional outside resources could best support them.

The interview process clarified that communities exploring land use and water integration are very much open to and interested in support about how best to prioritize integrated planning efforts.⁵ The preliminary results from these informational interviews lend themselves to identifying those options. Below is an initial list of recommendations for communities to consider:

1. If your community is in the process of updating its comprehensive plan (or plans to soon), consider how water can be explicitly included in that update. Incorporating water efficiency into a comprehensive plan is a critical first step in integrating water

⁵ Personal communications with Anne Castle, Senior Fellow at the Getches Wilkinson Center for Natural Resources, Energy and the Environment. Anne Castle co-authored “Best Practices for Implementing Water Conservation and Demand Management Through Land Use Planning Efforts: Addendum to 2012 Guidance Document”: <https://dnrweblink.state.co.us/cwcbsearch/ElectronicFile.aspx?docid=208193&d-bid=0>

conservation into the land use decision-making process. Inclusion of this language can help to direct your community's future land development code updates, water efficiency incentive programs, and other actions. There are numerous resources available to support communities with their comprehensive plan updates. For example, the state passed legislation in 2020 to provide direction for including water efficiency in comp plan updates and to direct DOLA to offer technical assistance and education to interested communities.⁶ Another resource available to communities is the Babbitt Center's Incorporating Water into Comprehensive Planning Manual, which provides detailed recommendations for comp plan language and numerous case studies of communities who have already included water efficiency.⁷

2. Review your community's landscape regulations and compare with peer communities to identify potential opportunities for updates. For example, the WRA and WaterNow analysis of 10 communities' landscape regulations is available upon request and will help communities systematically review their own regulations. South Metro Water Supply Authority's Model Regional Landscape & Irrigation Ordinance is another excellent resource for identifying best practices for water efficient landscape ordinances.⁸
3. Identify potential sources of unconventional alternative water supplies (e.g., graywater, rainwater, non-potable) and necessary first steps to incentivize greater adoption of those supplies (e.g., ordinance development, incorporating into system development charge structure). Again, examples from peer communities can help illuminate how to overcome real or perceived barriers. If there are concerns around state regulations, public health, plumbing issues, or water rights, conducting public education and outreach—including sharing case studies from peer communities—might help overcome those perception challenges.
4. Establish regular meetings and opportunities for land use planners and water utility staff to discuss upcoming integrated water and land use planning actions, longer-term goals, identified challenges, and priorities facing each department or organization. As discussed above, this could occur prior to or following city council/town board meetings, pre-application meetings, or on a separate schedule.
5. Educate elected officials about the importance of water and land use integration, which might help open opportunities for greater coordination and communication between land use planners and water providers (e.g., make it more of a priority).

The interviews also revealed the importance and value of outside resources to support communities (especially those that are resource- and capacity-limited) in integrating their water and land use planning objectives. In addition to the reports noted above, additional opportunities are provided here:

1. Project Accelerator: WaterNow Alliance's Project Accelerator provides up to 250 hours of pro bono assistance to advance a community's sustainable water project and/or priorities. In Colorado, these projects are typically centered around integrating water and land use planning. Past examples and more information can be found on WaterNow's website.⁹
2. Growing Water Smart: Sonoran Institute's and Babbitt Center for Land Use & Water

6 HB 20-1095: Local Governments Water Elements in Master Plans: <https://leg.colorado.gov/bills/hb20-1095>

7 Incorporating Water into Comprehensive Planning Manual: <https://www.lincolnst.edu/incorporating-water-comprehensive-planning>

8 South Metro Water Supply Authorities' Model Regional Landscape & Irrigation Ordinance: <http://southmetrowater.org/education/resources/model-landscape-irrigation-ordinance>

9 WaterNow Alliance's Project Accelerator Program: <https://waternow.org/our-work/our-work-projects/project-accelerator/>

Policy's Growing Water Smart program is a 3-day intensive training that brings together teams of 5-7 local water and land use decision-makers from a city or water district to collaborate on long-term water security and address water-related growth and development challenges. The program also includes follow-up technical assistance funding. Growing Water Smart may be particularly helpful to promote stakeholder engagement in communities with independent water districts.

3. Colorado Water and Land Use Planning Alliance: Convened in December 2017, the Colorado Water and Land Use Planning Alliance is a non-formal, multi-stakeholder group of representatives from state agencies, local governments, advocacy organizations, research organizations, and others who come together with the purpose of coordinating to develop resources, provide technical assistance, and track progress on water and land use integration across Colorado. You can join the Alliance's quarterly meetings to stay up to date on available water and land use integration resources.¹⁰
4. Elected Official Education: Several interviewees noted the value of active and informed local water decision makers. There are numerous organizations in Colorado available to support staff in educating local leaders about water and land use challenges, whether this is a one-on-one presentation to city councils or workshops around specific – and sometimes complex - water topics such as conservation-oriented tap fees or alternative transfer methods (ATMs). For example, WaterNow Alliance hosts a Water 101 workshop during our Annual Summit specifically for elected leaders. These educational resources will give local leaders the tools they need to both encourage and guide their staff towards integrated water and land use solutions. Outside organizations can play an important role in educating and developing conscientious water decision-makers that will provide encouragement and feedback to staff around water wise development.¹¹

Finally, this series of interviews brought to light new policy actions that could be taken at the state-level to encourage the integration of water and land use planning.

- Colorado Water Conservation Board & Department of Local Affairs Funding: The primary reason stated for not further integrating water and land use planning was a lack of staff capacity and/or resources to develop a program or policy, and this challenge has been exacerbated by local funding cuts related to COVID-19. CWCB and DOLA should advocate for increased grant funding to support communities in integrating their water and land use planning including funding for: comprehensive plan updates, landscape ordinance amendments, conservation-oriented system development charge development, etc. CWCB and DOLA can also provide support in spreading the word about other relevant federal grant opportunities, such as the Bureau of Reclamation's WaterSMART program.¹²
- Small Community Case Studies: Several interviewees noted that the Colorado communities commonly featured in educational materials are often larger, better-resourced, Front Range cities. These featured communities often face different challenges and realities than smaller communities and communities outside of the Front Range. Organizations focused on education and outreach around water and land use planning should be conscientious about including examples from small, under-

¹⁰ Colorado Water & Land Use Planning Alliance: Contact Christy Wiseman, Land Use and Water Planner with the Colorado Department of Local Affairs (DOLA) christy.wiseman@state.co.us

¹¹ Several non-profits working in this space include (but aren't limited to): WaterNow Alliance, Western Resource Advocates, Colorado WaterWise, Water Education Colorado, Sonoran Institute, and Babbitt Center for Land Use & Water Policy

¹² US Bureau of Reclamation WaterSMART Program: <https://www.usbr.gov/watersmart/index.html>

resourced, and geographically diverse communities.¹³

- Comparative Research: Due to the small sample size included in this analysis, drawing correlations between communities based on size, geographic location, per capita water usage, type of water provider and land use authority relationship, political affiliation, or other variables, is not feasible. Larger-scale community surveying would be valuable to shed light on the types of external support or resources would be most valuable to different types of communities.

CONCLUSION

If 2020 was any indicator, Colorado – like the rest of the West – is getting hotter and drier. Colorado is in its worst drought since 2012. 100% of the state is experiencing some level of drought, with 90.6% of the state under at least severe drought conditions as of January 26th, 2021. In August 2020, the Pine Gulch fire grew into the largest wildfire in Colorado's history. Compounding this issue, in many Colorado communities, high and sustained rates of population growth is placing more and more stress on limited water supplies and the cost of new supply is climbing.

To address these challenges, it's imperative that staff, management, and elected representatives of Colorado's cities, towns, and water providers take action now to develop as water efficiently as possible. Many communities are already taking important steps to integrate their water resources and land use planning, and they're recognizing that there's more work to be done to build resilient communities.

¹³ For example, DOLA's 2020 Annual Small Communities workshop featured a session around integrated water and land use planning.

APPENDIX A

Town/City/County Name	Location	Population (2019)	Population Growth	Type of Water Provider(s)	Water Supply Portfolio	GPCD
City of Northglenn	Suburban community approximately 13 miles north of Denver metropolitan area.	39,000	Northglenn has experienced moderate growth, as between 2010-2019 the city's population increased by 9.5%.	Northglenn Public Works Department handles the retail water sales, stormwater, and wastewater of the town.	Northglenn's main source is local surface water from the Clear Creek watershed. The Town also has some trans-basin water rights and non-tributary groundwater rights in the South Platte River.	126
Town of Parker	Suburban community southeast of Denver, CO.	54,300	Parker has experienced high growth, as from 2010-2019 the town's population increased by 23%.	Parker Water & Sanitation District, a municipal-owned utility, provides water and wastewater services for the Town.	Parker gets most of its water supply from the Reuter-Hess Reservoir. Within Douglas County, three major surface streams are an intricate part of the South Platte River Basin hydrology. The District relies on 45 wells located throughout the Parker area.	133
City of Centennial	Suburban community in the South Denver Metropolitan Area.	110,900	Centennial has seen moderate growth, as between 2010-2019 the city's population increased by 12%.	The City has 12 drinking water providers and a separate stormwater provider.	Centennial's 12 different water providers all have different water rights portfolios, some of these providers receive retail supplies from Denver Water, an entity with a diverse water portfolio that includes transbasin supplies.	N/A

Town/City/County Name	Location	Population (2019)	Population Growth	Type of Water Provider(s)	Water Supply Portfolio	GPCD
Town of Frederick	Suburban town roughly 30 miles north of the Denver Metropolitan Area.	12,700	Frederick has experienced very high growth, as between 2010 and 2019 the town's population increased by 65%.	The Engineering Department of the Town of Frederick handles the delivery of potable water from an adjacent water utility, the Central Weld County Water District (CWCWD), as well as providing raw water for agriculture, and handling the storm-water of the town.	Frederick has 3,487 units of the Colorado-Big Thompson (CBT) project. The town is also a participant in the Northern Integrated Supply Project (NISP), securing 2,600 acre-feet once the project is complete. Further, raw water is sourced from the Lower Boulder ditch, and stored in Milavec Lake for later irrigation uses.	194
Town of Severance	Town located on the Colorado Eastern Plains, 15mi East of Fort Collins.	4,700	Severance has experienced very high growth, as between 2010-2019 the town's population increased by 68%.	Severance receives treated water from North Weld County Water District (NWCWD).	Severance acquires its own raw water supplies and transfers them to NWCWD for treatment and delivery. The Town owns C-BT shares and North Poudre Irrigation Company shares. NWCWD get treated water from Soldier Canyon Filter Plant, Fort Collins-Loveland Water District, and East Larimer County Water District.	120.8 (Residential)

Town/City/County Name	Location	Population (2019)	Population Growth	Type of Water Provider(s)	Water Supply Portfolio	GPCD
Boulder County	Located Northwest of Denver; 740 sq mile county that includes the City of Boulder.	326,200	Boulder County has experienced moderate growth, as between 2010-2019 the County's population increased by 11%.	Most Boulder County residents receive water from their municipal owned water utility, with the exception of some unincorporated areas.	Boulder County is not a municipal water provider, however the County owns agricultural and environmental water rights.	N/A
Town of Breckenridge	Recreation-based mountain community in Summit County, approximately 80 miles west of Denver.	4,900	Breckenridge has experienced high growth, as between 2010-2019 the town's population increased by 17%.	Breckenridge Public Works Division provides maintenance and delivery of fresh water, water plant operation	Breckenridge main source of water is the Blue River and its tributaries. The town has water rights that includes direct streamflow rights, storage rights, and augmentation water	104 (Residential, average from 2011-2015)
Town of Frisco	Recreation-based mountain community in Summit County, approximately 80 miles west of Denver.	3,100	Frisco has experienced high growth, as between 2010-2019 the town's population increased by 17%.	Wayne Bristol Surface Water Treatment Plant and wells	Wayne Bristol Surface Water Treatment Plant has a water right on North Ten Mile Creek. The Town also has four water wells which are utilized to supplement the Water Treatment Plant.	110 (Residential)
City of Greeley	Greeley is situated about 30 miles south-east of Fort Collins and 60+ miles northeast of Denver.	108,600	Greeley has experienced high growth, as between 2010-2019 the city's population increased by 19%.	Greeley Water and Sewer, a municipal owned utility, manages the City's water resources, including treating and distributing the various supply sources.	Greeley draws raw water from four main river basins on both sides of the Continental Divide: the Cache la Poudre (Poudre), Big Thompson, Upper Colorado, and Laramie.	113 (Residential)

APPENDIX B

Informational Interview - Land Use Planner

Interview Questions

1. What does growth in your community look like in the coming years?
2. What growth related issues are most important right now?
3. How many staff do you have in the land use department, and how many are involved in long range planning? Is this sufficient, or are you looking to expand (or reduce)?
4. How does your water supply look in terms of future growth? What water topics/issues come up when you're looking 10-20 years into the future?
5. We're interested in learning about how the land use department interacts with your water provider.
 - a. Where physically are the water provider staff that work with located?
 - b. (To prepare, look at most recent comp plan and the water element in it) To what extent were the water providers a part of the water element in the last comp plan? When is the next comp plan coming up?
 - c. Please tell us about your landscape ordinance – When was it last updated, and was the water provider involved? Is it working for you, or are you looking to make changes?
 - d. Please tell us about the process for new development proposals. Is there a pre-application meeting? What issues related to water arise when new developments are proposed? Who reviews any water-related components (e.g., irrigation plans)?
 - e. Do you meet with your water providers for other reasons? If yes, for what reasons?
6. Are there additional points of interaction that could be useful to you, or to your relationship, but that are not currently happening?
7. What is challenging about coordinating with your water provider(s)?
8. What might make it easier?
9. To what extent is the town/city council involved with issues related to growth and water? What is your perception of where their interests are, or what their concerns may be?
10. Would external support be helpful in your development process? This could include state grants, workshops, online tutorials, consulting, etc.
11. Are there any specific water/land use planning initiatives in development in _____ right now that could benefit from outside capacity or expertise? [Opportunity to explain more about WNA/WRA project support]
12. What type of project support might be valuable?
13. Who do you think should be involved in talking with us about this potential project support further? Can we schedule a call/meeting to discuss this further with relevant colleagues?
14. If needed, ask for contact info of anyone else we should be speaking with.

Informational Interview - Water Provider

Interview Questions

1. What does growth in your community look like in the coming years?
2. How does your utility plan for growth?
3. What water topics/issues/solutions come up in the conversations about growth? (e.g. new supply projects, conservation, raw water, tap fees)
4. How many people at the water utility (and what are their titles/names) are involved in looking at future supply and demand?
5. For what reasons do you (or those other individuals) talk to the land use planners about the issues/topics related to future water supply/demand?
 - a. Was the water utility involved in the most recent comp plan update?
 - b. Involved in landscaping standards?
 - c. Please tell us about the process for new development proposals. Is there a pre-application meeting? What issues related to water arise when new developments are proposed?
6. Are there additional points of interaction that could be useful to you, or to your relationship, but that are not currently happening?
7. What is challenging about coordinating with your land use planners?
8. What might make it easier?
9. Are there specific programs or policies you would like to adopt but have faced challenges (e.g., political will, staff capacity) in doing so?
10. To what extent is the town/city council involved with issues related to growth and water? What is your perception of where their interests are, or what their concerns may be?
11. Would external support be helpful in your development process? This could include state grants, workshops, online tutorials, consulting, etc.
12. Are there any specific water/land use planning initiatives in development in _____ right now that could benefit from outside capacity or expertise? [Opportunity to explain more about WNA/WRA project support]
13. What type of project support might be valuable?
14. Who do you think should be involved in talking with us about this potential project support further? Can we schedule a call/meeting to discuss this further with relevant colleagues?
15. If needed, ask for contact info of anyone else we should be speaking with.

Informational Interview - Elected Official

Interview Questions

1. What does growth in your community look like in the coming years?
2. What growth related issues are most important right now?
3. How does your water supply look in terms of future growth? What water issues/topics come up when you're looking 10-20 years into the future?
4. Do you hear much from constituents about water and growth? If so, what are the things they care about?
5. To your knowledge, in what ways does the land use department work with your water provider(s) on growth and development issues?
6. From your perspective, are there any opportunities where land use planners and water providers could interact more, to benefit the community?
7. What might be some of the barriers and challenges?
8. What are important criteria for you when considering new programs and policies (e.g., financing/economics, sustainability, certainty, constituent support, proven success)?
9. Is your community currently working on any water and land use planning initiatives? Have you prioritized any initiatives for future implementation? (e.g. comprehensive plan, land use codes or ordinances, new development incentive programs, tap fee structures, etc.)
10. Are there any barriers or limitations that your community has experienced – or that you think you may experience – in implementing this initiative?
11. Do you think your community could benefit from outside capacity or expertise to develop or implement this program? [Opportunity to explain more about WNA/WRA project support]
12. If needed, ask for contact info of anyone else we should be speaking with.