

6.3.3

LAND USE

“Every community can do better on water conservation and efficiency via locally determined measures, such as, but not limited to, reinvestment in aging infrastructure, community education, enhanced building codes, and water-sensitive land-use planning.” Guiding statement from county commissioners, as submitted in their input document regarding Colorado’s Water Plan.¹⁹⁴

As Colorado grows, land-use planning and water planning will become more closely connected through the integration of several principles. Integration does not mean dilution of local control. Connecting these planning disciplines will not diminish private property rights, 1041 powers, and local zoning and development control. Financial incentives, best practices, partnerships, and technical resources can potentially better coordinate and enhance land-use planning and water planning. While density will be a major factor in reducing urban water demand, it is but one facet of creating more water-sensitive land-use decisions.

The manner in which Colorado develops into the future will have a strong influence on Colorado’s future water supply gap, and vice versa. This topic is relevant today, as illustrated by the fact that six boards of county commissioners representing both the eastern and western slopes, including Boulder, Denver, Eagle, Grand, Pitkin, and Summit Counties, as well as elected officials from the City and County of Broomfield, collaborated to craft comments about land-use-water integration for Colorado’s Water Plan. The importance of water-sensitive land-use planning was stated as, “1. Decrease the water supply gap. As Colorado’s population continues to grow, well thought out, effective, sustainable, and predictable land-use planning is essential. 2. Provide low cost alternatives for meeting the Gap. Water sensitive land-use often results in less stress on water systems, indoor and outdoor water savings, and reduction in expensive long-term capital outlay. 3. Protect the values of Colorado, including vibrant economies, agriculture, open space, and recreation. Local land-use planning should be among the first points of consideration to protect and support all of Colorado’s values and economic drivers. 4. Create more predictability and reliability as well as reduce risk in water supply planning, in turn creating more sustainability for current and future residents. 5. Encourage shared solutions including best management practices, collaborative physical projects and practical land-use models to address water quality and quantity challenges. 6. Result in benefits that reduce infrastructure and service costs, and enhance a community’s quality of life.”¹⁹⁵

In 2009, the CWCB began preliminary work in this arena by hosting the *Water and Land Use Planning for a Sustainable Future* conference, and in 2010, it created an associated report and density memo describing several actions that bridge land and water issues.¹⁹⁶ Recently, urban land use has been a major discussion point at the IBCC, which incorporated several options into the Water Conservation No-and-Low-Regrets Action Plan. Additionally, at the July 24, 2013 Joint Front Range Roundtable meeting, 92 percent of participants strongly agreed or agreed with the recommendation that water supply planning and land-use planning should be coordinated. At that same meeting, 55 percent of participants agreed that “coordination of urban land planning and water supply planning” was the most important conservation recommendation to discuss that day.¹⁹⁷

The following projects and initiatives illustrate these recommendations—and are being pursued in Colorado today.

Net-Zero Water Initiative

The Colorado Water Innovation Cluster is researching net-zero water through a CWCB water efficiency grant, and has assembled a large stakeholder group to create a net-zero water planning template, guidebook, and toolkit.¹⁹⁸ Net-zero water is a water management concept that mitigates effects on water quantity and quality through best practices, which are incorporated into the development or management of a site. While not truly a net-zero strategy, the best practices can result in a water-neutral site. Net-zero water strategies can be applied to a building site or on a more regional scale, and connect water management to land-use planning. The Net Zero Water Planning Template, as well as the guidebook and toolkit, will help users quantify their water footprint, evaluate reduction strategies, and recognize financial and environmental benefits by reducing their effects on water use and water quality.¹⁹⁹

Land Use Leadership Alliance

A recent collaborative effort involving water planners and land-use planners from local jurisdictions is moving the dialogue forward. Pace University School of Law's Land Use Law Center brought its Land Use Leadership Alliance (LULA) training program to Colorado in fall 2013. This training convened land-use and water planners with city managers, city council members, developers, regional government planning groups, and CWCB staff for four all-day sessions focused on the land-use and water planning nexus. These sessions proved very productive in the development of strategies for better integration of land and water planning, and also assisted in the development of relationships between land and water planners within and among municipalities.²⁰⁰

This collaboration is a model for integrating local planning efforts within a local government and with regional planning efforts. The latest LULA trainings took place in May 2015 and involved the participation of five more Front Range municipalities, including



Tract housing in urbanized areas are quite common. Lot size and landscape choices determine how much water new developments need.

Westminster, Lakewood, Commerce City, Broomfield, and Aurora. Additionally, representatives from South Adams Water and Sanitation, Denver Water, Bancroft-Clover Water, and Green Mountain Water and Sanitation attended. The LULA trainings will serve as a template for trainings the CWCB and the DOLA will organize in 2016, as Senate Bill 15-008 outlines.

Denver Regional Council of Government's Metro Vision

The Denver Regional Council of Governments (DRCOG) has also been exploring the nexus between water use and land-use patterns in recent years. Adopted in 2011, the latest *Metro Vision 2035* document, which for the first time includes a section that ties water conservation to land-use planning.

DENVER REGIONAL COUNCIL OF GOVERNMENTS WATER CONSERVATION VISION, GOAL, AND POLICIES

Vision: The Denver metro region will maximize the wise use of limited water resources through efficient land development and other strategies, recognizing that no single strategy will meet the state's water needs and the region will need to pursue a range of strategies concurrently.

Goal: Reduce regional per-capita M&I water use by working with municipalities, counties, water providers, and other stakeholders within the next 6 to 12 months (February 2012) to identify a specific numeric target or measurable benchmark against which to measure progress.

Policies:

1. **Regional Collaboration.** DRCOG will bring together local governments, water providers, and other stakeholders to facilitate collaborative efforts that promote water conservation.
2. **Best Practices.** DRCOG will work to increase understanding of the link between land development and water demand, and to identify best practices for promoting the efficient use of water resources across the region.
3. **Efficient Land Development.** Compact development, infill and redevelopment consistent with DRCOG's urban growth boundary/area and urban centers policies will help reduce water demand and related infrastructure costs.

Source: DRCOG Metro Vision 2035:34

DRCOG has a sustainability goal of increasing housing density by 10 percent between 2000 and 2035.²⁰¹ According to DRCOG's most recent analysis, the region has increased in density by 5.3 percent since 2000. These data suggest that the region is well situated to achieve the 10 percent density level by 2035.²⁰² In the residential housing sector, that 10 percent increase will produce approximately a 5 percent decrease in water use—which equates to 31,000 to 46,000 acre-feet of annual savings for the Denver metro area, depending on population growth (both existing and new). At the medium population growth, this is nearly 42,000 acre-feet of savings annually.²⁰³

Colorado Water and Growth Dialogue

Through a WEGP grant that addresses the water and growth dilemma, the CWCB is funding a project to estimate demand reductions from various land-use patterns. The Keystone Center secured funding from several grantors (including the CWCB) to complete a two-year dialogue that will bring together water providers, land-use planners and developers, public officials, and other key stakeholders. The goal is to identify meaningful strategies, practices, and policies that will help Coloradans achieve a measurable reduction in the water footprint of new development and redevelopment, and move closer to a long-term balance between water use and growth. To date, the project has produced a draft research report that examines strategies for implementing land-use patterns that reduce water demand. The report identifies four strategies that have the most potential to reduce water demand: Developing smaller residential lots (cluster development), changing from single-family to multi-family development (infill), increasing multi-family development (moving-up), and imposing turf/irrigation restrictions.²⁰⁴ Additionally, Denver Water and Aurora Water are modeling their service areas' water use patterns on top of existing land-use patterns. The group will then use DRCOG's UrbanSim model to generate future land-use patterns with the overlay of water use patterns. As the project progresses, it will generate several different exploratory scenarios by 2040. These scenarios could reflect the effects of climate change, economics, market demand, and political will for regulation. In 2016, this water and growth project will create a report and roadmap that describes the most promising strategies for addressing the water and growth dilemma in Colorado, along with specific recommendations for implementing and disseminating the strategies.²⁰⁵

Recent Legislation

In 2008, Colorado passed legislation requiring that building permit applications for developments of more than 50 single-family equivalents include specific evidence of an adequate water supply. Adequate water supply is defined as one that is sufficient for the development in terms of quality, quantity, and dependability. Developers must submit proof of adequate supply to the local government through a report from a professional engineer, or from a water

supply expert, that identifies the water source and the types of demand management appropriate for the site. Under this law, a local government was permitted to make the adequacy determination only once, at the beginning of the development permit approval process.²⁰⁶ In 2013, the governor signed legislation that modified the definition of the term “development permit.” The new definition clarifies that during the development permit approval process, the local government may grant permits for individual stages, rather than for the entire development.²⁰⁷

In 2015, Colorado passed Senate Bill 15-008, which tasks the CWCB and the DOLA with implementing trainings for local water use, water demand, and land-use planners. The topic areas will cover best management practices for water demand management, water efficiency, and water conservation. Additionally, the bill requires that all covered entities’ water efficiency plans must evaluate best management practices for water demand management, water efficiency, and water conservation that they may implement through land-use planning efforts.

BIPs

Each basin roundtable is formulating its own implementation plan that will include land-use goals and activities, in addition to already-planned projects and methods. Chapter 6 explores all of these.

Arkansas Basin

The Arkansas Basin did not address land use in an extensive manner in its BIP. The Arkansas Basin did, however, create a policy calling for the integration of land-use and water resource planning.

The Arkansas Basin came to consensus on a policy statement regarding land-use and water resource planning.

- ❖ *Policy Statement: The Arkansas Basin Round table supports the integration of land-use and water-resource planning.*²⁰⁸

Creating a policy statement for this type of integration is an important first step in the future of demand management in the Arkansas Basin.

Colorado Basin

The Colorado BIP created a theme; set a goal, measurable outcomes, and short- and long-term needs; and identified projects and methods that connect land use with water conservation.

Theme 5 is to “develop local water conscious land use strategies,” with a primary goal to “develop land-use policies requiring and promoting conservation.” The measurable outcomes associated with this goal include:

- ❖ *Developing recommendations for city, county, and state governing bodies promoting water awareness and efficiency in land-use policy.*
- ❖ *Developing educational material or opportunities for elected and planning officials on water supply issues and conservation options.*
- ❖ *Preserving agriculture by reducing the transfer of agriculture water to municipal use.*²⁰⁹

The Colorado Basin established short-term needs, long-term needs, and projects and methods to accomplish this goal. In the short term, it will review existing land-use regulations for water-conscious development requirements and evaluate potential growth in unincorporated areas and water supplies to those areas. In the long term, it will provide local jurisdictions with financial support to implement water-conscious development requirements, and draft recommended model-basin and statewide land-use planning guidelines that focus on water conservation and water-efficient land-use development. As for projects and methods to accomplish the goal, the Colorado Basin suggests the creation of statewide grant opportunities to enable local jurisdictions to review land-use regulations, conduct public outreach, and implement regulations. Additionally, current governmental council should develop model land-use regulations, and every county and city within the basin should have conservation plans with identified goals. The plan also asks that “the state land-use regulations be evaluated to meet long term exponential state population growth (and water demand) with a limited water supply.”²¹⁰

Additionally, the Grand County Region, Summit Region, Eagle River Region, Middle Colorado Region, and Roaring Fork Region all developed specific land-use themes and methods in their needs analysis.

The themes include:

- ❖ *Develop local water conscious land-use strategies that focus on growth that affects water supplies and nonconsumptive/environmental needs.*

The methods include:

- ❖ *Limit development to within urban boundaries*
- ❖ *Promote water conscious growth development through improved land-use policies.*
- ❖ *Water providers should work with neighboring entities to provide and plan for growth between boundaries*
- ❖ *Implement water provider conservation projects*
- ❖ *Review local governments' land-use policies for water-quality and environmental protection standards.*
- ❖ *Assess county master plans and codes for improvements in smart growth land-use policies*
- ❖ *Ensure new development appropriately incorporates water-related values.*²¹¹

Gunnison Basin

As with other BIPs, the Gunnison BIP ties land use to water conservation and demand management. The Gunnison Roundtable established goals related to land use and water conservation. Goal 9, which outlines public outreach and education regarding the role of citizens of the Gunnison Basin, identifies land use as a process to achieve this goal: “The GBRT Education Committee will prepare and present annual half-day State of the River seminars for local governments and planning staffs, with the objective of making sure that land-use decisions and new developments are made within the context of the Basin’s probable water future.”²¹²

The Gunnison Basin also identified statewide principles that connect water efficiency, conservation, and demand management.

Principle 5: Water conservation, demand management, and land-use planning that incorporates water supply factors should be equitably employed statewide. *Demand management strategies supported by the Gunnison Basin include growth only in proximity to existing or planned infrastructure, high density versus urban sprawl, and landscape limitations. Development in proximity to existing infrastructure should be encouraged only in non-productive, or the least productive, land to preserve productive agricultural land.*

*The Gunnison Basin believes that land-use policies are essential to promoting both water and land conservation. Local land-use policies and regulations should discourage sprawl, link water supplies to development, and provide incentives for higher density developments.”*²¹³

Additionally, the Gunnison Basin discusses land use in terms of Colorado River supplies. Under Principle 3: ***Any new supply project from the Colorado River System must have specifically identified sponsor and beneficiaries and meet certain minimum criteria, and “entities must incorporate water supply factors into land-use planning and development.”***²¹⁴

North Platte Basin

Due to low population and little municipal use, the North Platte Basin did not address land use in its plan.

Rio Grande Basin

As this chapter stated previously, the Rio Grande Basin has a low population and relatively minor municipal water use. The Rio Grande Basin does not address land use as more urban water basins have, but instead describes the use of conservation easements to manage land development. The conservation easements preserve agricultural land as well as environmental attributes.²¹⁵

South Platte/Metro Basin

According to the South Platte/Metro Basin, municipal water departments are tasked with meeting a large portion of the water supply needs in the South Platte Basin, and are already using programs such as water audits, rebates for efficient water fixtures and appliances, and education to reduce demand. These efforts could be more effective if water departments worked with their respective planning departments to plan and require water-efficient usage and land development within their cities. For instance, a water department may work with its planning department to implement water-efficient landscaping codes, subdivision regulations, zoning requirements, and master plans.²¹⁶

Nevertheless, many water utilities’ current roles are generally limited to providing for water needs within their service areas, with little cross-over to land-use authority. The South Platte/Metro Basin discusses current land-use authority and water provider authority, opportunities for collaboration,

and examples of current work in this arena. The plan describes the issue that has made collaboration between water and land-use planning difficult in the past. The South Platte/Metro Basin states, “The primary responsibility held by water utilities is to provide for water needs within communities. Coordinating or integrating the land-use and water planning process is a relatively new area being explored for reducing municipal water use. Increasing awareness of limited future water supply opportunities and the potential effects of climate change helps to spur this integration of planning.”²¹⁷

The South Platte/Metro Basin indicates that there are opportunities for closer collaboration and reduction in water use through more integrated land-use planning. These include:

- ❖ *Updates to Comprehensive Plans,*
- ❖ *Changes to zoning requirements,*
- ❖ *Revising water/land-use subdivision regulations, and*
- ❖ *Using the direction provided by the State Water Engineer and recent legislation.*²¹⁸

With regard to opportunities, the plan states that “increasing residential density has the potential to significantly improve water use efficiency and will continue to result in reduced effects on natural resources. The highly urbanized areas of the Front Range corridor have many opportunities to redevelop lands for higher population densities.”²¹⁹

Projects the South Platte/Metro Basin highlighted include the Keystone Center Land Use Study and LULA. The Keystone Center project will identify land-use patterns across the metro area and find ways to more closely integrate land and water planning. The LULA training program “focuses on finding land-use solutions to the challenges posed by growing Front Range populations and Colorado’s limited water resources. The LULA program is designed to help local land-use and water leaders create new networks of support, identify successful land-use techniques, and develop implementable local strategies that will enable a more ‘water-smart’ future for the region.”²²⁰

The South Platte/Metro BIP ends with a land-use recommendation in the section *Recommendation for Additional SP-BIP Analysis and Refinements*. This recommendation is:

Further Analysis of Planning Coordination—
*The South Platte and Metro Roundtables recommend further investigation into options for increased coordination between water utilities and land-use planners to better plan for water-efficient growth.*²²¹

Southwest Basin

The Southwest Basin identified a need to organize informational events about water conservation, land-use planning and water reuse efforts, tools and strategies. “One strategy to achieve the short-term goals of conservation, land-use planning (which will include coverage and discussion of the 60/40 and 70/30 ratios referenced above), and water reuse is to implement a pilot conservation and land-use planning session in 2015. Initially it is anticipated that this would be a two to four hour workshop for local decision makers and water utility personnel.” If successful, the basin could host the session throughout the basin (for example, in Cortez, Telluride, Pagosa Springs, and other locations) as with the Water 101 Seminar.²²²

Yampa/White/Green Basin

The Yampa/White/Green Basin did not describe projects or plans for land use in its BIP.

ACTIONS

One objective of Colorado’s Water Plan is that by 2025, 75 percent of Coloradans will live in communities that have incorporated water-saving actions into land-use planning. Ten communities have completed land-use and water trainings through the LULA process, and in order to reach the 75 percent population objective, a total of 80 communities and water providers will need to have participated in similar trainings by 2025. The trainings will support approximately 80 water providers and communities statewide to incorporate land-use practices into their water conservation plans. To facilitate the use of local land-use tools to reduce water demands for municipalities and urbanization of agricultural lands, the State will work with partners to pursue the following actions.

1. **Encourage the use of local development tools:** Through voluntary trainings in 2016, the CWCB and DOLA will encourage local governments to incorporate best management practices for water demand management, water efficiency, and water conservation into land-use decisions.

Trainings may cover the following topics:

- ❖ Expediting permitting for high-density buildings and developments that incorporate certain water efficiency measures, such as efficient irrigation systems (with plan-check and install-check).
- ❖ Including water supply and demand management in comprehensive plans.
- ❖ Installing climate-appropriate landscapes.
- ❖ Understanding the societal and environmental benefits of urban landscapes
- ❖ Using appropriate amounts of soil amendments.
- ❖ Incentivizing maximum-irrigable-area or WaterSense-certified landscapes.
- ❖ Instituting tax incentives for incorporating certain water efficiency measures for high-density developments, such as cluster developments.
- ❖ Establishing structured impact (tap) fees designed to promote water-wise developments and in-fill.
- ❖ Developing water-budget rate structures to help maintain initial projected water budgets for a site.
- ❖ Introducing landscape and irrigation ordinances.
- ❖ Exploring the environmental and farmland benefits of water sensitive urban land-use planning.

- ❖ Creating more stringent green-construction codes that include higher-efficiency fixtures and appliances and more water-wise landscapes.
- ❖ Exploring landscape-oriented professional education or certification programs.
- ❖ Examining opportunities to reduce agricultural urbanization and fragmentation.²²³

2. **Examine barriers in state law for implementing the above local development tools:** Over the next 18 months, the CWCB will examine barriers local jurisdictions may face while implementing local development tools.
3. **Incorporation of land-use practices into water conservation plans:** Over the next 18 months, the CWCB, through partnerships, will develop new guidance for water conservation plans that requires the incorporation of land-use practices. This is an addition to C.R.S. 37-60-126.
4. **Strengthen partnerships:** To be successful in integrating land-use and water planning, the CWCB will need to partner with many different agencies and groups. Within the next year, the CWCB will establish meetings with various agencies to map out ways in which the CWCB and other agencies can work together on these issues.
 - ❖ Local municipalities, local water providers, and county governments will implement water and land-use plans. Without their partnership and support of new ideas, comprehensive water and land planning will not succeed. In addition to partnering with local entities, the CWCB will partner with the Colorado Municipal League, Colorado Counties Incorporated and the Special District Association to ensure successful integrated water and land-use planning.

- ❖ The DOLA is involved in the land-use in the local government arena. Like the CWCB, the DOLA can also leverage its grant funding for water and land-use planning initiatives, such as incentives for incorporating water supply into comprehensive land-use planning.
 - ❖ The DORA regulates professionals in various industries and works to create a fair market place. The CWCB will work with the DORA to focus on the landscape and irrigation industry or the property management industry, and to consider developing certifications for these industries to conserve water.
 - ❖ Home-building and construction organizations, such as the Home Builders Association, LEED, and the U.S. Green Building Council, will be building communities that have a direct influence on water demand. They must be involved in crafting the vision for future water-sensitive developments.
 - ❖ Non-governmental organizations, such as Keystone Center, Alliance for Water Efficiency, Western Resources Advocates, American Planning Association, and economic development councils, can advance land-use and water integration innovation and research.
 - ❖ Academic institutions, such as Colorado State University, University of Colorado Boulder, University of Colorado Denver, One World One Water Center-Metropolitan State, and Rocky Mountain Land Use Institute, can advance land-use and water-integration innovation and research.
 - ❖ LULA brings an innovative training model that could change the way Colorado looks at this subject by breaking down institutional silos. The CWCB will work with LULA, or another local group, to create a Colorado-specific training model for the integration of sustainable, long-term, land, and water planning.
 - ❖ Councils of governments make connections between the local and state government levels. Councils of governments can be strong allies in trainings and research about the land-water nexus.
5. **Funding:** The CWCB should use the WEGP funds and Water Supply Reserve Account grant funds to fund aspects of the land-use and water planning nexus. The CWCB will work with the basin roundtables to proactively seek applicants to use WSRA funds for larger regional efforts that tie more directly into the basin roundtables. It will use the WEGP funds for smaller, more localized efforts.
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