



Addendum to 2012 Sample of a Water Efficiency Plan

**City of Shallow Creek and Shallow Creek Water District
Fiction County, CO**

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Prepared for:

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TABLE OF CONTENTS

Purpose and Scope of this Sample Plan Addendum	4
 Sample Plan Addendum Addressing Land Use Measures for Water Providers with Land Use Authority.....	5
Executive Summary.....	5
Add to “Profile”	5
Add to “Efficiency Program”	6
Section 2.3 Past and Current Demand Management Activities	6
Section 3.1 Water Efficiency and Water Supply Planning	8
New Section 3.3 Summary of Land Use Activities	8
Past and Current Land Use Activities	8
Planned Land Use Activities.....	8
Section 4 Selection of Water Efficiency Activities	10
Section 4.3.1 Foundational Activities	14
Section 4.3.2 Targeted Technical Assistance and Incentives	15
Section 4.3.2 Ordinances and Regulations	15
Section 4.3.2 Education Activities	16
Section 5.1 Implementation Plan.....	16
Section 5.2 Monitoring Plan.....	17
 Sample Plan Addendum Addressing Land Use Measures for Water Providers Without Land Use Authority	20
Executive Summary.....	20
Add to “Profile”	20
Add to “Efficiency Program”	21
Section 2.3 Past and Current Demand Management Activities	22
Section 3.1 Water Efficiency and Water Supply Planning	24
New Section 3.3 Summary of Land Use Activities	24
Past and Current Land Use Activities	24
Planned Land Use Activities.....	25
Section 4 Selection of Water Efficiency Activities	28
Section 4.3.1 Foundational Activities	31

Section 4.3.2 Targeted Technical Assistance and Incentives	33
Section 4.3.2 Ordinances and Regulations	33
Section 4.3.2 Education Activities	34
Section 5.1 Implementation Plan.....	34
Section 5.2 Monitoring Plan.....	35

PURPOSE AND SCOPE OF THIS SAMPLE PLAN ADDENDUM

This Addendum to the CWCB's "[Sample of a Municipal Water Efficiency Plan](#)" dated August 2012 (2012 Sample Plan) is based on the "Best Practices for Implementing Water Conservation and Demand Management through Land Use Planning Efforts" dated January 2019 (2019 Guidance Addendum). It is intended to supplement the 2012 Sample Plan by providing examples of the activities promoting water conservation that may be adopted by water providers in conjunction with the land use authorities and planning departments with jurisdiction over their service areas.

Some water providers submitting Water Efficiency Plans are sub-entities within the same municipal government structure as the planning department, both ultimately reporting to the same city or town council. Other water providers are independent of the land use authorities with jurisdiction over their service areas and may serve regions within multiple different land use jurisdictions. The opportunities and challenges in the implementation of land use measures for these two different types of water providers may be quite diverse. Accordingly, this Sample Plan Addendum includes separate sections for those water providers that are part of the local government with land use authority ([Water Providers With Land Use Authority](#)) and those that are not part of a municipal government and serve areas governed by other authorities ([Water Providers Without Land Use Authority](#)). Water providers within a municipal government that also serve areas outside of the municipal jurisdiction may want to refer to both sections.

This Sample Plan Addendum contains paragraphs and sections addressing various land use measures that might be adopted by water providers in concert with the applicable land use entity. These examples are taken from the 2019 Guidance Addendum and represent only a subset of the many possible land use efforts described there. Used together, the 2019 Guidance Addendum and this Sample Plan Addendum are intended to provide a comprehensive tool for the incorporation of land use efforts into Water Efficiency Plans.

The discussion of land use measures will be dispersed throughout many sections in an actual Water Efficiency Plan. This Sample Plan Addendum includes only the land use-related discussions with reference to the broader sections in which they would occur. Many water providers have adapted the organizational structure of the template in the 2012 Guidance and 2012 Sample Plan to better fit their needs; accordingly, the organizational structure used here should be considered exemplary, not mandatory.

This Sample Plan Addendum continues the example of the fictitious municipality of Shallow Creek located in Fiction County, as described in the 2012 Sample Plan. In the section for Water Providers with Land Use Authority, the water utility within the Public Works Department of the City of Shallow Creek serves the entirety of the City and no areas outside the City. In the section for Water Providers Without Land Use Authority, the water provider is the Shallow Creek Water District, which serves certain areas in unincorporated Fiction County, the City of Shallow Creek, and the Town of Spruce.

SAMPLE PLAN ADDENDUM ADDRESSING LAND USE MEASURES FOR WATER PROVIDERS WITH LAND USE AUTHORITY

Provided below are examples of sections and paragraphs describing land use measures that may be adopted by municipal water providers. The section headings in this Sample Plan Addendum correspond to those in the 2012 Sample Plan. These land use-related discussions should be integrated into the same sections in a Water Efficiency Plan that will also contain discussions of all applicable water conservation and efficiency measures considered and undertaken.

Executive Summary

Add to “Profile”

The City’s water utility functions are managed within the Public Works Department. The Public Works Director, assisted by the Deputy Director for Water Resources, oversees the City’s water utility. The water utility serves all development within the City boundaries and does not serve any areas outside the City limits.

Development in the City of Shallow Creek is overseen by the Community Planning Department (Planning Department), which reports to the City Manager and ultimately, the City Council. The Planning Department is led by the Community Planning Director who is also known as the City Planner (City Planner). Review of development proposals occurs first by Planning Department personnel, then by a volunteer Planning and Zoning Commission, which makes recommendations to the City Council as the ultimate decision-maker. The Planning Department’s responsibilities include:

- Planning for long term economic vitality, environmental quality and development design quality, demonstrated through the Shallow Creek Community Comprehensive Plan.
- Consideration of proposals for new development and zoning changes within the City and formation of recommendations to the Planning and Zoning Commission and the City Council.
- Managing building permit applications, reviewing building plans and inspecting work in progress to ensure public health and safety.
- Ensuring compliance with the City of Shallow Creek’s Municipal Code and response to citizens’ concerns.

The City has a comprehensive plan that provides the vision for the community and includes policies on development and re-development. The comprehensive plan addresses water supply and conservation as follows:

"Land use density and intensity should correspond to existing and/or planned infrastructure capacity and natural resource capacity, including water resources. The City of Shallow Creek will promote infill development, where possible, in order to more efficiently manage the resulting growth in infrastructure so as to minimize costs of operations and maintenance. Development proposals will be reviewed by the City of Shallow Creek to ensure that there are no potential adverse impacts to the City's water supply as a result of the development."

Add to "Efficiency Program"

The City has begun to better integrate its water utility and land use planning functions. The City recognizes that the initial configuration of new development will significantly influence the amount of water used over time by that development, and the overall water use within the City. The Public Works and Planning Departments are exploring optimal methods for ensuring that new and existing development within the City is water efficient. Landscape requirements and outdoor watering restrictions have been adopted and the City is planning to require water conservation as a component of its water adequacy determination and to modify its building code to require adherence to green building standards, all as described further below.

Section 2.3 Past and Current Demand Management Activities

New subsection on Land Use Efforts

Land Use Efforts. The City's Public Works Director and the City Planner meet quarterly to discuss matters of mutual concern, such as development trends, water supply constraints, infrastructure plans, population projections, changes to the zoning map, and the anticipated water demands for the next ten years. The water utility has worked with the Planning Department and the City Council to implement a water waste ordinance, outdoor watering restrictions, landscape requirements for new homes, and a xeriscape demonstration garden. The estimated savings as a result of these activities is included in Table 5, and totals approximately 9.2 AF/year (2.4 AF/year from the "development proposal review" in the section on Foundational Activities and 6.8 AF/year from the activities in the section on Ordinances and Regulations).

Table 5: Current and past water efficiency program measures, land use partners, and estimated water savings (based on Worksheet A from CWCB Guidance Document)

[This Table expands Table 5 from the 2012 Sample Plan to include the land use measures described in the text. The land use measures appear in blue italics.]

Water Efficiency Activities	Land Use Jurisdiction Partner	Period of Implementation	Annual Water Savings for Past Five Years (AF)					Total Five-Year Water Savings	Average Annual Water Savings
			2007	2008	2009	2010	2011		
Foundational Activities									
Increasing block rate structure		1984-present	5	5	5	5	5	25	5
Passive indoor savings (Res. & CII)		1994-present	25	25	25	25	25	125	25
Regular meetings	County, City	2010-present						0	0
Development proposal review	County	2002-present	4	0	2	3	3	12	2.4
Subtotal			34	30	32	33	33	162	32.4
Targeted Technical Assistance and Incentives									
Toilet rebate program		2007-2009	3	5	5			13	4.3
Clothes washer rebate program		2007-2010	3	3	6	6		18	4.5
Xeriscape loan program		2009-present			6	8	12	26	8.7
Commercial indoor audits		2008-2010		3	4	6		13	4.3
Assistance with CII efficiency plans		2007-present	2	3	4	4	4	17	3.4
Subtotal			8	14	25	24	16	87	17.4
Ordinances and Regulations									
Outdoor watering time restrictions	County, City	1999-present	4	4	4	4	4	20	4
Water waste ordinance	County, City	2002-present						0	0
Landscape regs. for new homes	County, City	2004-present	5	7	0	0	2	14	2.8
Subtotal			9	11	4	4	6	34	6.8
Education Activities									
Provide historic use data on water bill		2010-present							
Public information and education	County, City, Town	1993-present							
Xeriscape demonstration garden	City	1999-present							
Subtotal			0	0	0	0	0	0	0
	Total Savings		51	55	61	61	55	283	56.6

Section 3.1 Water Efficiency and Water Supply Planning

Add to “Revised Demand Forecast”

Incorporating water conservation into new development approvals through better integration of the water utility and planning functions of the City will decrease the amount of water required per unit for new development. Accordingly, a decreased amount of water per unit can be used to project future demand. This impacts the amount of new water supplies required for acquisition and the required capacity of water treatment, water distribution, and wastewater treatment infrastructure. The impact of the projected decrease in water consumption as a result of land use measures is taken into account in Figures 10 and 11. Water savings resulting from land use measures have been estimated using Colorado State University’s [Integrated Urban Water Model](#).

New Section 3.3 Summary of Land Use Activities

[New Section 3.3 will be used to summarize the City’s water and land use integration activities that may be scattered in other sections throughout the Plan.]

Past and Current Land Use Activities

- Adopted water waste ordinance – “Water Waste Prohibited. Water shall be used only for beneficial purposes and shall not be wasted.”
- Adopted permanent outdoor watering restrictions – Outdoor watering is prohibited during the hours of 10am to 5pm from May through October. Residential outdoor watering may occur on Tuesday, Thursday, and Saturday for odd-numbered, and on Wednesday, Friday, and Sunday for even-numbered addresses.
- Adopted a landscape ordinance that limits the amount of turf installed and provides a list of low-water use plants that must be utilized by new residential and commercial development.
- Planted and maintained a xeriscape demonstration garden on the grounds at City Hall.

Planned Land Use Activities

The water utility and Planning Department have reviewed and considered all of the activities identified as “Foundational” in the CWCB’s Best Practices for Implementing Water Conservation and Demand Management Through Land Use Planning Efforts, Addendum to 2012 Guidance Document and are planning to implement some of the recommended activities in each subsection. The Planning Department and Public Works Department have already established regular contact, but will now form a Water and Land Use Planning Team with members from each department and ensure that the members of the team are educated on the goals,

opportunities, challenges, and anticipated projects of each department. A self-assessment process is underway, and the results will be used to inform future collaboration.

The water utility and the Planning Department are working together on future population, land use, and water demand estimates, using the same publicly available data. A procedure has been established for communication of water-related conditions in development and zoning change approvals and for follow-up and enforcement by the water utility. A designated representative of the water utility will be included in all pre-application meetings between development proposal applicants and Planning Department personnel for the purpose of providing information about how adoption of water efficiency or conservation measures in the proposed development can impact overall water use and the need for new infrastructure, thereby potentially reducing the cost of tap fees, water dedications, and required infrastructure improvements.

The Water District and the City are working together to allocate responsibilities for post-occupancy enforcement of the water-related requirements in development approvals.

After consultation between the water utility and the Planning Department, the Planning Department is recommending to the Planning and Zoning Commission and the City Council a modification of the water element in the City's comprehensive plan. The proposed revision will include a full description of the City's water supplies and demands, now and into the future, compared to population growth and development projections. The comprehensive plan will detail the past and current land use activities identified above, as well as state the City's water conservation goals. The revised water element will also state the City's desire to minimize "buy and dry" transactions in surrounding agricultural land made necessary by water supply needs and to maintain the quantity and quality of water flowing in regional streams and rivers.

The water utility and Planning Department are working together to make water conservation part of the demonstration of the adequacy of water supplies for new development. This means that developers will be required to show that they have incorporated water conservation techniques into the development proposal. This will allow developers to select the water conservation techniques that best fit with the development proposal. The development permit application will include a water demand assessment, quantifying the amount of water expected to be used by the development, per unit and total volume at buildout. The inclusion of water conservation measures will be required as one of the checklist items in the Planning Department's review of any new development application.

As part of this same discussion, the Public Works and Planning Departments are also exploring whether the 50-unit minimum for which a water adequacy determination is required by state law is appropriate in light of the impacts on the City's water supplies or whether the minimum should be decreased for development within the City of Shallow Creek. The results of that discussion will be proposed and recommended to the Planning and Zoning Commission and the City Council for adoption.

The water utility and Planning Department are working together to “right-size” the City’s water dedication requirements. Conservation measures that have already been adopted and those anticipated have resulted in decreased water usage per single-family equivalent unit. That reduction can allow a correspondingly decreased water dedication requirement, while maintaining appropriately conservative safety factors, and further the City’s goal of minimizing the economic and environmental impacts of future water supply acquisition.

The City intends also to create developer incentives to further reduce water demand, incorporate water efficiency into its zoning code and rezoning procedures, offer a turf replacement rebate, and coordinate education and outreach across the region. As a developer incentive, the City will establish a building permit fee refund program for new development that incorporates water conservation measures over and above existing requirements. For zoning and rezoning, the City will revise its Planned Unit Development (PUD) requirements to include water conservation. A turf replacement rebate is being investigated to reduce irrigation on all outdoor properties (residential, commercial, and industrial).

Education and outreach across the region will be coordinated in tandem with a “Know Your Water” campaign, which the City will start and then work to expand over a three-year period. The water utility and Planning Department will convene a meeting of other water suppliers and land use authorities in the Shallow Creek and Fiction County region in order to share educational resources with other municipalities and water providers as needed.

All of the land use measures listed above are further described in Section 4 below.

Section 4 Selection of Water Efficiency Activities

Add at end of introductory material on screening criteria

In addition to the factors of Efficiency and Practicality, Estimated Cost per AF, and Water Savings identified above, two additional factors were used to evaluate and screen potential land use activities. These two factors are:

- Likely support by new home customers, and therefore, developers, for proposed land use measures.
- Preference for expansion or modification of existing regulations rather than completely new requirements.

These factors were incorporated into the selection process described below for consideration of land use measures.

The addition of land use activities within the existing suite of water efficiency activities undertaken by the City has increased projected water savings from 2,725 AF/year to 2,850 AF/year—an addition of 125 AF/year in savings—as shown in Table 9 below.

4.2 Components of Water Efficiency Plan

New Section 4.2.5 Land Use Activities

The final component of the efficiency plan is the suite of coordinated land use and water conservation activities described in Section 3.3 above and, in additional detail, in Section 4.3 below. These activities are collectively estimated to result in additional savings of 125 AF/year when fully implemented.

4.3 Demand Management Activities

Revised Tables 8 and 9 (on following pages)

Table 8: New and updated water efficiency activities

[This Table expands Table 8 in Section 4.3 of the 2012 Sample Plan to include the land use measures described in the text. The land use measures appear in blue italics.]

Water Efficiency Activities	Sectors Impacted	Implementation Period of New Activities
Foundational Activities		
Individualized, Informational Water Budget Program	All, indoor & outdoor	2013 - 2036
Enhanced Water Loss Control	Municipal	2012 - 2036
<i>Form Land Use Planning Team and Conduct Self-Assessment</i>	<i>All, indoor & outdoor</i>	<i>2019</i>
<i>Joint Estimate of Population and Projected Water Demand</i>	<i>All, indoor & outdoor</i>	<i>2019 - 2036</i>
<i>Water Utility Rep Participates in Pre-application Meetings</i>	<i>All, indoor & outdoor</i>	<i>2019 - 2036</i>
<i>Post-occupancy Enforcement of Water Conditions</i>	<i>All, indoor & outdoor</i>	<i>2019 - 2036</i>
<i>Enhance Water Element in Comprehensive Plan</i>	<i>All, indoor & outdoor</i>	<i>2019 - 2020</i>
<i>Conservation Required to Demonstrate Water Adequacy</i>	<i>All, indoor & outdoor</i>	<i>2020 - 2036</i>
Targeted Technical Assistance and Incentives		
Expanded Multi-Family Toilet and Clothes Washer Rebates	Multi-family, indoor	2012 - 2036
Targeted Irrigation Audits and Landscape Efficiency Rebates	All, outdoor	2012 - 2036
Pre-Rinse Spray Valve Direct Installation	CII, indoor	2012 - 2036
Cooling Tower Efficiency Tune Ups	CII, indoor	2012 - 2036
<i>Building Permit Fee Refund Program</i>	<i>All, indoor & outdoor</i>	<i>2019 - 2036</i>
<i>Turf Replacement Refund Program (5-year pilot program)</i>	<i>All, outdoor</i>	<i>2019 - 2023</i>
Ordinances and Regulations		
Conservation Oriented Tap Fee Ordinance	CII, indoor & outdoor	2013 - 2036
All New Residential Development Must Meet EPA WaterSense New Home Specifications	SF & MF residential, indoor & Outdoor	2014 - 2036
Water Efficient Landscape Ordinance	All, outdoor	2011 - 2036
Certification of Landscape Professionals	All, outdoor	2010 - 2036
<i>PUD Regulations Amended to Require Outdoor Conservation</i>	<i>All, outdoor</i>	<i>2020 - 2036</i>
<i>Water Dedication Requirements "Right-Sized"</i>	<i>All, indoor & outdoor</i>	<i>2019 - 2036</i>
Education Activities		
Public Information and Education	All	2010 - 2036
K-12 Education	SF & MF residential	2010 - 2036
<i>"Know Your Water" Campaign</i>	<i>SF & MF residential</i>	<i>2019 - 2036</i>
<i>Coordinate Education and Outreach Across the Region (3-year Campaign)</i>	<i>All, indoor & outdoor</i>	<i>2019 - 2021</i>

Table 9: Projected water savings by customer category

[This Table expands Table 9 in Section 4.3 of the 2012 Sample Plan to include the land use measures described in the text. The land use measures appear in blue italics.]

Sector	Water Efficiency Activities Impacting Sector	Projected Water Savings 2012-2036 (AF)
SF & MF Residential – Indoor	Individualized, Informational Water Budget Program	1135
	Expanded Multi-Family Toilet and Clothes Washer Rebates	
	All New Residential Development Must Meet EPA WaterSense New Home Specifications	
	K-12 Education	
	<i>"Know Your Water" Campaign</i>	
SF & MF Residential – Outdoor	Individualized, Informational Water Budget Program	635
	Targeted Irrigation Audits and Landscape Efficiency Rebates	
	All New Residential Development Must Meet EPA WaterSense New Home Specifications	
	Water Efficient Landscape Ordinance	
	Certification of Landscape Professionals	
	K-12 Education	
	<i>"Know Your Water" Campaign</i>	
CII Indoor & Outdoor & Dedicated Irrigation	<i>PUD Regulations Amended to Require Outdoor Conservation</i>	345
	Targeted Irrigation Audits and Landscape Efficiency Rebates	
	Pre-Rinse Spray Valve Direct Installation	
	Cooling Tower Efficiency Tune Ups	
	Conservation Oriented Tap Fee Ordinance	
	Water Efficient Landscape Ordinance	
	Certification of Landscape Professionals	
Dedicated Irrigation	<i>PUD Regulations Amended to Require Outdoor Conservation</i>	635
	Water Reuse System	
All	<i>Turf Replacement Program</i>	100
	Public Information and Education	
	<i>Form Land Use Planning Team and Conduct Self-Assessment</i>	
	<i>Joint Estimate of Population and Projected Water Demand</i>	
	<i>Water Utility Rep Participates in Pre-application Meetings</i>	
	<i>Post-occupancy Enforcement of Water Conditions</i>	
	<i>Enhance Water Element in Comprehensive Plan</i>	
	<i>Building Permit Fee Refund Program</i>	
	<i>Conservation Required to Demonstrate Water Adequacy</i>	
	<i>Water Dedication Requirements "Right-Sized"</i>	
	<i>Coordinate Education and Outreach Across the Region (3-year Campaign)</i>	
Total Projected Savings		2,850

Section 4.3.1 Foundational Activities

New subsection on Land Use Measures

The water utility within the Public Works Department and the Planning Department have formed a Water and Land Use Planning Team with members from each department. This integrated team will educate its members on the goals, opportunities, challenges, and anticipated projects of each department related to water supplies and future development. The water utility and Planning Department are conducting a self-assessment for the purpose of better understanding the degree to which some integration of the land use and water functions has already occurred and the areas in which integration is lacking.

The Water and Land Use Planning Team is working to estimate future population in the City, based on current land use designations in the comprehensive plan. Future water demand is being projected from these population estimates, based on published information on water use by various types of residential and commercial development.

A designated representative of the water utility will be included in all pre-application meetings between development proposal applicants and Planning Department personnel for the purpose of providing information about how adoption of water efficiency or conservation measures in the proposed development can impact overall water use. Adoption of measures that reduce anticipated water demand may decrease the up-front cost to developers in the form of tap fees and, potentially, reduce or eliminate the need for new infrastructure that the development might be required to pay for. This information is provided for the purpose of allowing prospective developers to make economic and market-based decisions based on information concerning the water impacts of the proposed development.

A procedure has been established for communication of water-related conditions in development and zoning change approvals and for follow-up and enforcement by the water utility. The water utility and Planning Department are working together to allocate responsibilities for post-occupancy enforcement of the water-related requirements in development approvals.

As described in Section 3.3 above, the Planning Department has recommended to the Planning and Zoning Commission an addition to the water element in the City's comprehensive plan to include a full description of the City's water supplies and demands, now and into the future, compared to population growth and development projections. The revised water element will also state the City's desire to minimize "buy and dry" transactions in surrounding agricultural land made necessary by water supply needs and to maintain the quantity and quality of water flowing in regional streams and rivers, in addition to the previously stated goals of minimizing the costs of infrastructure and avoiding adverse impact on water supplies.

The Planning Department, in consultation with the water utility, is making water conservation part of the demonstration of the adequacy of water supplies for new development pursuant to Colo. Rev. Stat. § 29-20-303. Developers will be required to show that they have incorporated water conservation techniques into the development proposal. Developers are able to select the additional water conservation techniques that best fit with the development proposal. The development permit application will also include a water demand assessment, quantifying the amount of water expected to be used by the development, per unit and total volume at buildout. The inclusion of water conservation measures will now be required as one of the checklist items in the Planning Department's review of any new development application.

The Planning Department and Public Works Department are examining the 50-unit minimum for which a water adequacy determination is required by state law to determine whether this minimum is sufficient to protect against adverse impacts to the City's water supplies. The two departments are considering a lower threshold of development that would require a water adequacy determination. The results of this discussion will be proposed and recommended to the Planning and Zoning Commission and the City Council for adoption.

Section 4.3.2 Targeted Technical Assistance and Incentives

New subsection on Land Use Measures

The Planning Department is establishing a building permit fee refund program for new development that incorporates certain listed water conservation measures that exceed those already required by the landscape ordinance. Standards are being established for further reductions in turf areas for new development and developers choosing to follow such standards will receive a 50% refund of building permit fees associated with the development. The refund will be provided after inspection by the City of the established landscape. The funding for the partial refund is being provided by the water utility and the Planning Department.

The water utility, in consultation with the Planning Department, is instigating a turf replacement program for residential and commercial property. Standards are being developed for appropriate replacement materials that will consume less water while not adversely impacting stormwater flows and maintaining the quality of the residential properties and neighborhoods.

Section 4.3.2 Ordinances and Regulations

New subsection on Land Use Measures

The Planning Department, working with the water utility, is proposing an amendment to the City's Planned Unit Development (PUD) regulations that will require adherence to water conservation best practices, including Water Sense outdoor fixtures, landscaping standards, and

soil amendment requirements. The potential water savings associated with these proposed changes are being estimated and the results will be provided to the Planning and Zoning Commission and City Council with an appropriate recommendation.

The water utility and Planning Department are working together to “right-size” the City’s water dedication requirements. Conservation measures that have already been adopted and those anticipated have resulted in decreased water usage per single-family equivalent unit. That reduction can allow a correspondingly decreased water dedication requirement, while maintaining appropriately conservative safety factors, and further the City’s goal of minimizing the economic and environmental impacts of future water supply acquisition.

Section 4.3.2 Education Activities

New subsection on Land Use Measures

The water utility and the Planning Department are jointly sponsoring a “Know Your Water” campaign designed to help customers and citizens understand the source of the City’s water supplies and their limitations and challenges. Information on these topics will be provided to all prospective developers and included in water utility billing statements. It will also be available on the web pages of both departments.

The water utility and Planning Department will convene a meeting of other water suppliers and land use authorities in the Shallow Creek and Fiction County region. The purpose of this meeting is to explore joint messaging and a jointly designed and operated regional education campaign on drought and water efficiency. This regional campaign is intended as a three-year effort.

Section 5.1 Implementation Plan

Betty Bodean, Water Conservation Coordinator for the City, will work directly with the City Planner, Craig Waters, to implement the land use measures described in this Plan. Land use measures are included in the implementation schedule shown in Table 13.

Table 13: Water efficiency activity implementation schedule

[This Table expands Table 13 in Section 5.2 of the 2012 Sample Plan to include the land use measures described in the text. The land use measures appear in blue italics.]

Water Efficiency Activities	Implementation Period of New Activities
Foundational Activities	
Individualized, Informational Water Budget Program	2013 - 2036
Enhanced Water Loss Control	2012 - 2036
<i>Form Land Use Planning Team and Conduct Self-Assessment</i>	<i>2019</i>
<i>Joint Estimate of Population and Projected Water Demand</i>	<i>2019 - 2036</i>
<i>Water Utility Rep Participates in Pre-application Meetings</i>	<i>2019 - 2036</i>
<i>Post-occupancy Enforcement of Water Conditions</i>	<i>2019 - 2036</i>
<i>Enhance Water Element in Comprehensive Plan</i>	<i>2019 - 2020</i>
<i>Conservation Required to Demonstrate Water Adequacy</i>	<i>2020 - 2036</i>
Targeted Technical Assistance and Incentives	
Expanded Multi-Family Toilet and Clothes Washer Rebates	2012 - 2036
Targeted Irrigation Audits and Landscape Efficiency Rebates	2012 - 2036
Pre-Rinse Spray Valve Direct Installation	2012 - 2036
Cooling Tower Efficiency Tune Ups	2012 - 2036
<i>Building Permit Fee Refund Program</i>	<i>2019 - 2036</i>
<i>Turf Replacement Refund Program (5-year pilot program)</i>	<i>2019 - 2023</i>
Ordinances and Regulations	
Conservation Oriented Tap Fee Ordinance	2013 - 2036
All New Residential Development Must Meet EPA WaterSense New Home Specifications	2014 - 2036
Water Efficient Landscape Ordinance	2011 - 2036
Certification of Landscape Professionals	2010 - 2036
<i>PUD Regulations Amended to Required Outdoor Conservation</i>	<i>2020 - 2036</i>
<i>Water Dedication Requirements "Right-Sized"</i>	<i>2019 - 2036</i>
Education Activities	
Public Information and Education	2010 - 2036
K-12 Education	2010 - 2036
<i>"Know Your Water" Campaign</i>	<i>2019 - 2036</i>
<i>Coordinate Education and Outreach Across the Region (3-year Campaign)</i>	<i>2019 - 2021</i>

Section 5.2 Monitoring Plan

Data on water usage will be collected and maintained as described in Table 14 (Worksheet K). Curated information from these data sets of water use will be shared at every meeting of the Water and Land Use Planning Team. Additionally, the water utility and Planning Department will coordinate every year to present this information and updates about water efficiency programs to the City Council.

The Planning Department will convey immediately to the water utility any water-related conditions contained in development approvals and zoning changes. The entities will allocate responsibility for monitoring compliance and enforcement action.

In order to monitor the implementation and effectiveness of land use practices, the Planning Department will collect and maintain data on building permit refunds, and the water utility will collect and maintain data on per unit water use, turf replacement square feet implemented, and post-occupancy enforcement actions. This monitoring data is reflected in Table 14 (Worksheet K).

Table 14: Worksheet K – Selection of Demand Data for Efficiency Plan Monitoring

[This Table expands Table 14 in Section 5.2 of the 2012 Sample Plan to include the land use measures described in the text. The land use measures appear in blue italics.]

Monitoring Data	HB 10-1051 Reporting Requirement		Selection		Entity/Staff Responsible for Data Collection and Evaluation	Schedule/Timing of Monitoring	
	Annual	Monthly	Annual	Monthly			
Total Water Use							
Total treated water produced (metered at WTP discharge)				√	Betty Bodean	First quarter of the year.	
Total treated water delivered (sum of customer meters)	√			√	Betty Bodean	First quarter of the year.	
Raw non-potable deliveries				√	Betty Bodean	First quarter of the year.	
Indoor and outdoor treated water deliveries				√	Betty Bodean	First quarter of the year.	
Treated water peak day produced							
Raw water peak day produced/delivered							
Non-revenue water	√			√	Betty Bodean	First quarter of the year.	
Building Permit Refunds					√	Craig Waters	First of each month.
Turf Replacement Square Feet Implemented					√	Betty Bodean	First of each month.
Post-Occupancy Enforcement Actions					√	Betty Bodean	First of each month.
Water Use by Customer Type							
Treated water delivered		√			√	Betty Bodean	First quarter of the year.
Raw non-potable deliveries					√	Betty Bodean	First quarter of the year.
Indoor and outdoor treated water deliveries				√		Betty Bodean	First quarter of the year.
Large users							
Unit water use (e.g. AF/account or AF/irrigated acre)					√	Betty Bodean	First of each month.
Other Demand Related Data							
Irrigated landscape (e.g. AF/acre or number of irrigated acres)				√		Betty Bodean	First quarter of the year.
Precipitation							
Temperature							
Evapotranspiration				√		Betty Bodean	First quarter of the year.
Drought index information							
Economic conditions							
Population				√		Betty Bodean	First quarter of the year.
New taps				√		Betty Bodean	First quarter of the year.

SAMPLE PLAN ADDENDUM ADDRESSING LAND USE MEASURES FOR WATER PROVIDERS WITHOUT LAND USE AUTHORITY

Provided below are examples of sections and paragraphs describing land use measures that may be adopted by water providers that are not part of a municipal governmental entity and serve areas for which land use authority is exercised by other entities. This example assumes that the water provider is the Shallow Creek Water District, a special district under Title 32 of the Colorado Revised Statutes, as opposed to the City of Shallow Creek as described in the 2012 Sample Plan and in the section above.

The section headings in this Sample Plan Addendum correspond to those in the 2012 Sample Plan. These land use-related discussions would be integrated into the same sections in a Water Efficiency Plan that will also contain discussions of all applicable water conservation and efficiency measures considered and undertaken.

Executive Summary

Add to “Profile”

The Shallow Creek Water District (Water District) serves properties in three different land use jurisdictions: certain areas of unincorporated Fiction County, the City of Shallow Creek, and the Town of Spruce. The land use function for each is described below.

Fiction County’s Planning Department (County Planning Department) reviews development applications and provides information to the Fiction County Planning Commission, which in turn makes recommendations to the Board of County Commissioners. Fiction County’s comprehensive plan contains no water element, but does provide that the County will develop and incorporate green building guidelines that address energy and resource efficiency, including water use efficiency.

Development in the City of Shallow Creek is overseen by the Community Planning Department (City Planning Department), which reports to the City Manager and ultimately, the City Council. The City Planning Department is led by the Community Planning Director who is also known as the City Planner (City Planner). Review of development proposals occurs first by City Planning Department personnel, then by a volunteer Planning and Zoning Commission, which makes recommendations to the City Council as the ultimate decision-maker. The City Planning Department’s responsibilities include:

- Planning for long term economic vitality, environmental quality and development design quality, demonstrated through the Shallow Creek Community Comprehensive Plan.

- Consideration of proposals for new development and zoning changes within the City and formation of recommendations to the Planning and Zoning Commission and the City Council.
- Managing building permit applications, reviewing building plans and inspecting work in progress to ensure public health and safety.
- Ensuring compliance with the City of Shallow Creek's Municipal Code and response to citizens' concerns.

The City has a comprehensive plan that provides the vision for the community and includes policies on development and re-development. The comprehensive plan addresses water supply and conservation as follows:

"Land use density and intensity should correspond to existing and/or planned infrastructure capacity and natural resource capacity, including water resources. The City of Shallow Creek will promote infill development, where possible, in order to more efficiently manage the resulting growth in infrastructure so as to minimize costs of operations and maintenance. Development proposals will be reviewed by the City of Shallow Creek to ensure that there are no potential adverse impacts to the City's water supply as a result of the development."

In the Town of Spruce, review of development applications is performed by the Town Planner, who makes recommendations to the Town Council. The Town has no comprehensive plan, but has design standards that seek to promote variety and visual interest compatible with the rural town atmosphere and to encourage structures that respect the environment and character of the Town. These design standards suggest native landscaping and water-conserving fixtures.

Add to "Efficiency Program"

The Water District has begun to better integrate its provision of water service with the long-range planning processes and development approvals of Fiction County and the City of Shallow Creek. The Water District recognizes that the initial configuration of new development will significantly influence the amount of water used over time by that development, and the overall water use within its service area. Because the Water District itself does not have land use authority, it has and will continue to work with the County and the City to explore optimal methods for ensuring that new and existing development is water efficient. As a result of this collaboration, both the County and the City have adopted water efficiency measures, and more are anticipated, all as described further below. The Water District will initiate better communication and collaboration with the Town of Spruce.

Section 2.3 Past and Current Demand Management Activities

New subsection on Land Use Efforts

Fiction County: The General Manager of the Shallow Creek Water District meets quarterly with the Planning Director for Fiction County to discuss matters of mutual concern within the portions of the Water District's service area in unincorporated areas of the county, such as development trends, water supply constraints, infrastructure plans, population projections, changes to the zoning map, and anticipated water demands for the next ten years. The Water District comments on all referrals from the County on subdivision proposals, noting particularly any additional infrastructure needs that the proposed development will instigate.

The Water District has worked with the County Planning Department to develop a water waste ordinance that was adopted by the Board of County Commissioners. After discussions between the Water District and the County Planning Department, the Water District's outdoor watering time restrictions have been adopted by the County Commissioners for all unincorporated areas within the County, even those outside of the Water District's service area. The Water District and the County Planning Department worked together to develop appropriate landscape regulations for new homes, to be included in the conditions applicable to all new development permits. The estimated savings as a result of these activities are included in Table 5.

City of Shallow Creek: The Shallow Creek Water District is housed in the same City-owned building as the City Planning Department. Regular interaction occurs between Water District and Planning Department personnel. The City has adopted a landscape ordinance, developed with help from the Water District, that limits the amount of turf installed and also provides a list of low-water use plants that must be utilized by new residential and commercial development. The Water District and City have collaborated to build a xeriscape demonstration garden on the grounds of the City facility, and offer regular tours of this demonstration garden to residents and developers. The Water District and City have also collaborated to adopt a water waste ordinance and outdoor watering time restrictions, resulting in an additional 4-acre feet of water savings annually. These savings are included in Table 5.

Town of Spruce: Interaction between the Water District and the Town of Spruce is more limited. Periodic meetings between the Water District General Manager and the Town Planner have occurred in the past, but have not been conducted on a regular basis. The Spruce Town Council's focus on expanding economic development within the Town boundaries has tended to supersede concerns about water efficiency. The Water District aspires to work with the Town to enact native landscaping standards and require water-conserving outdoor fixtures in new developments, in harmony with the Town's existing design standards that seek to promote variety and visual interest compatible with the rural town atmosphere and to encourage structures that respect the environment and character of the Town.

Table 5: Current and past water efficiency program measures, land use partners, and estimated water savings (based on Worksheet A from CWCB Guidance Document)

[This Table expands Table 5 from the 2012 Sample Plan to include the land use measures described in the text and list the land use jurisdiction partner for each land use-related activity. The land use measures appear in blue italics.]

Water Efficiency Activities	Land Use Jurisdiction Partner	Period of Implementation	Annual Water Savings for Past Five Years (AF)					Total Five-Year Water Savings	Average Annual Water Savings
			2007	2008	2009	2010	2011		
Foundational Activities									
Increasing block rate structure		1984-present	5	5	5	5	5	25	5
Passive indoor savings (Res. & CII)		1994-present	25	25	25	25	25	125	25
Regular meetings	County, City	2010-present						0	0
Development proposal review	County	2002-present	4	0	2	3	3	12	2.4
Subtotal			34	30	32	33	33	162	32.4
Targeted Technical Assistance and Incentives									
Toilet rebate program		2007-2009	3	5	5			13	4.3
Clothes washer rebate program		2007-2010	3	3	6	6		18	4.5
Xeriscape loan program		2009-present			6	8	12	26	8.7
Commercial indoor audits		2008-2010		3	4	6		13	4.3
Assistance with CII efficiency plans		2007-present	2	3	4	4	4	17	3.4
Subtotal			8	14	25	24	16	87	17.4
Ordinances and Regulations									
Outdoor watering time restrictions	County, City	1999-present	4	4	4	4	4	20	4
Water waste ordinance	County, City	2002-present						0	0
Landscape regs. for new homes	County, City	2004-present	5	7	0	0	2	14	2.8
Subtotal			9	11	4	4	6	34	6.8
Education Activities									
Provide historic use data on water bill		2010-present							
Public information and education	County, City, Town	1993-present							
Xeriscape demonstration garden	City	1999-present							
Subtotal			0	0	0	0	0	0	0
	Total Savings		51	55	61	61	55	283	56.6

Section 3.1 Water Efficiency and Water Supply Planning

Add to “Revised Demand Forecast”

Incorporating water conservation into new development approvals through better integration between the Water District and the three land use authorities in its service area will decrease the amount of water required per unit for new development. Accordingly, a decreased amount of water per unit can be used to project future demand. This impacts the amount of new water supplies required for acquisition and the required capacity of water treatment, water distribution, and wastewater treatment infrastructure. The impact of the projected decrease in water consumption as a result of land use measures is taken into account in Figures 10 and 11. Water savings resulting from land use measures have been estimated using Colorado State University’s [Integrated Urban Water Model](#).

New Section 3.3 Summary of Land Use Activities

[New Section 3.3 will be used to summarize the Water District’s water and land use integration activities undertaken with each land use authority that may be scattered in other sections throughout the Plan.]

Past and Current Land Use Activities

Fiction County:

- County invites Water District to comment on every development proposal review, with a particular focus on increased infrastructure needs or costs.
- Adopted water waste ordinance – “Water Waste Prohibited. Water shall be used only for beneficial purposes and shall not be wasted.”
- Adopted permanent outdoor watering restrictions for all unincorporated areas within the County, even those outside of the Water District’s service area – Outdoor watering is prohibited during the hours of 10am to 5pm from May through October. Residential outdoor watering may occur on Tuesday, Thursday, and Saturday for odd-numbered, and on Wednesday, Friday, and Sunday for even-numbered addresses.
- Adopted landscape regulations for new homes and all new development proposals.

City of Shallow Creek:

- Adopted water waste ordinance – “Water Waste Prohibited. Water shall be used only for beneficial purposes and shall not be wasted.”
- Adopted permanent outdoor watering restrictions – Outdoor watering is prohibited during the hours of 10am to 5pm from May through October. Residential outdoor watering may occur on Tuesday, Thursday, and Saturday for odd-numbered, and on Wednesday, Friday, and Sunday for even-numbered addresses.

- Adopted a landscape ordinance that limits the amount of turf installed and provides a list of low-water use plants that must be utilized by new residential and commercial development.
- Planted and maintained a xeriscape demonstration garden on the grounds at City Hall.

Town of Spruce:

- Periodic meetings between the Water District General Manager and Town Planner.

Planned Land Use Activities

All Land Use Jurisdictions:

A Water and Land Use Planning Team is being formed with members from the Water District, the County, and the City of Shallow Creek. Members of the team will be educated on the goals, opportunities, challenges, and anticipated projects of each entity. The Town of Spruce will also be invited to participate. The Water and Land Use Planning Team is conducting a self-assessment, and the results will be used to inform future collaboration.

The Water District will coordinate education and outreach across the region in a “Know Your Water” campaign. The Water District will start this campaign in its service area and work with each appropriate land use authority for proper implementation. The Water District will convene a meeting of other water suppliers and land use authorities in the Shallow Creek and Fiction County region to explore joint messaging and a jointly designed and operated regional education campaign on drought and water efficiency. This regional campaign is intended as a three-year effort.

Fiction County:

The Water District and the County have already established regular contact and will now participate in the Water and Land Use Planning Team described above.

The County’s comprehensive plan includes a goal that the County will develop and incorporate green building guidelines that address energy and resource efficiency, including water use efficiency. Thus, the Water District will work with the County Planning Department to identify and incorporate appropriate green building guidelines into its building standards, to adequately address water conservation and provide for water-saving fixtures in new development.

A designated representative of the Water District will be included in all pre-application meetings between development proposal applicants and County Planning Department personnel for the purpose of providing information about how adoption of water efficiency or conservation measures in the proposed development can impact overall water use and the need for new infrastructure, thereby reducing the cost of tap fees, water dedications, and required infrastructure improvements.

City of Shallow Creek:

The Water District and City Planning Department have reviewed and considered all of the activities identified as “Foundational” in the CWCB’s Best Practices for Implementing Water Conservation and Demand Management Through Land Use Planning Efforts, Addendum to 2012 Guidance Document, and are planning to implement some of the recommended activities in each subsection. The Water District and City have already established regular contact, but will now both participate in the Water and Land Use Planning Team described above, and ensure that the members of the team are educated on the goals, opportunities, challenges, and anticipated projects of each entity.

The Water District and City are working together on future population, land use, and water demand estimates, using the same publicly available datasets. A procedure has been established for communication of water-related conditions in development and zoning change approvals and for follow-up and enforcement by the Water District. A designated representative of the Water District will be included in all pre-application meetings between development proposal applicants and City personnel for the purpose of providing information about how adoption of water efficiency or conservation measures in the proposed development can impact overall water use and the need for new infrastructure, thereby potentially reducing the cost of tap fees, water dedications, and required infrastructure improvements.

After consultation between the Water District and City, the City Planning Department is recommending to the City Planning and Zoning Commission and the City Council a modification of the water element in the City’s comprehensive plan. The proposed revision will include a full description of the City’s water supplies and demands, now and into the future, compared to population growth and development projections. The comprehensive plan will detail the past and current land use activities identified above, as well as state the City’s water conservation goals. The revised water element will also state the City’s desire to minimize “buy and dry” transactions in surrounding agricultural land made necessary by water supply needs and to maintain the quantity and quality of water flowing in regional streams and rivers.

The Water District and City are working together to make water conservation a required component of the demonstration of the adequacy of water supplies for new development. This means that developers will be required to show that they have incorporated water conservation techniques into the development proposal. This will allow developers to select the additional water conservation techniques that best fit with the development proposal. The development permit application will include a water demand assessment, quantifying the amount of water expected to be used by the development, per unit and total volume at buildout. The inclusion of water conservation measures will be required as one of the checklist items in the City’s review of any new development application.

As part of this discussion, the Water District and City Planning Department are also exploring whether the 50-unit minimum for which a water adequacy determination is required by state

law is appropriate in light of the impacts on the City's water supplies or whether the minimum should be decreased for development within the City of Shallow Creek. The results of that discussion will be proposed and recommended to the Planning and Zoning Commission and the City Council for adoption as appropriate.

The City also intends to create developer incentives to further reduce water demand, incorporate water efficiency into its zoning code and rezoning procedures, and offer a turf replacement rebate. As a developer incentive, the City will establish a building permit fee refund program for new development that incorporates water conservation measures over and above existing requirements. For zoning and rezoning, the City will revise its Planned Unit Development (PUD) requirements to include water conservation. A turf replacement rebate is being investigated to reduce irrigation on all outdoor properties (residential, commercial, and industrial).

The water utility and Planning Department are working together to "right-size" the City's water dedication requirements. Conservation measures that have already been adopted and those anticipated have resulted in decreased water usage per single-family equivalent unit. That reduction can allow a correspondingly decreased water dedication requirement, while maintaining appropriately conservative safety factors, and further the City's goal of minimizing the economic and environmental impacts of future water supply acquisition.

The Water District and the City are working together to allocate responsibilities for post-occupancy enforcement of the water-related requirements in development approvals.

Town of Spruce:

The Water District will work to establish regular meetings with representatives from the Town of Spruce and their Town Planner in particular and will encourage participation by the Town in the Water and Land Use Planning Team. Meetings have occurred between the two entities before but have not been regular or institutionalized. These meetings will allow for exploration of the other Foundational Activities described in the CWCB's Best Practices for Implementing Water Conservation and Demand Management Through Land Use Planning Efforts, Addendum to 2012 Guidance Document.

The Water District recognizes potential to promote water conservation through interpretation of the existing Town design standards. Specifically, the Town's design standards that "seek to promote variety and visual interest that is compatible with the rural town atmosphere and to encourage structures that respect the environment and character of the Town" could be strengthened to create native and low-water use landscape standards and encourage water-saving fixtures in new development. The District is working on a list of native and low-water use plants that would be appropriate for the Town of Spruce. This list will exist as a model for voluntary adoption and could be codified by the Town through ordinance if the Town Council determines to adopt it as a requirement. The Water District will encourage the Town to

consider the green building standards promoted by the County as a means to require water-saving fixtures in new development.

All of the land use measures listed above are further described in Section 4 below.

Section 4 Selection of Water Efficiency Activities

Add at end of introductory material on screening criteria

In addition to the factors of Efficiency and Practicality, Estimated Cost per AF, and Water Savings identified above, two additional factors were used to evaluate and screen potential land use activities. These two factors are:

- Likely support by new home customers, and therefore, developers, for proposed land use measures.
- Preference for expansion or modification of existing regulations rather than completely new requirements.

These factors were incorporated into the selection process described below for consideration of land use measures.

The addition of land use activities within the existing suite of water efficiency activities undertaken by the Water District and its land use authorities has increased projected water savings from 2,725 AF/year to 2,865 AF/year—an addition of 140 AF/year in savings, as shown in Table 9 below.

4.2 Components of Water Efficiency Plan

New Section 4.2.5 Land Use Activities

The final component of the efficiency plan is the suite of coordinated land use and water conservation activities described in Section 3.3 above and, in additional detail, in Section 4.3 below. These activities are collectively estimated to result in additional savings of 140 AF/year when fully implemented.

4.3 Demand Management Activities

Revised Tables 8 and 9 (on following pages)

Table 8: New and updated water efficiency activities

[This Table expands Table 8 in Section 4.3 of the 2012 Sample Plan to include the land use measures described in the text. The land use measures appear in blue italics.]

Water Efficiency Activities	Land Use Jurisdiction	Sectors Impacted	Implementation Period of New Activities
Foundational Activities			
Individualized, Informational Water Budget Program		All, indoor & outdoor	2013 - 2036
Enhanced Water Loss Control		Municipal	2012 - 2036
<i>Form Land Use Planning Team and Conduct Self-Assessment</i>	<i>County, City, Town</i>	<i>All, indoor & outdoor</i>	<i>2019</i>
<i>Joint Estimate of Population and Projected Water Demand</i>	<i>City</i>	<i>All, indoor & outdoor</i>	<i>2019 - 2036</i>
<i>Water Utility Rep Participates in Pre-application Meetings</i>	<i>County, City</i>	<i>All, indoor & outdoor</i>	<i>2019 - 2036</i>
<i>Post-occupancy Enforcement of Water Conditions</i>	<i>City</i>	<i>All, indoor & outdoor</i>	<i>2019 - 2036</i>
<i>Enhance Water Element in Comprehensive Plan</i>	<i>City</i>	<i>All, indoor & outdoor</i>	<i>2019 - 2020</i>
<i>Conservation Required to Demonstrate Water Adequacy</i>	<i>City</i>	<i>All, indoor & outdoor</i>	<i>2020 - 2036</i>
Targeted Technical Assistance and Incentives			
Expanded Multi-Family Toilet and Clothes Washer Rebates		Multi-family, indoor	2012 - 2036
Targeted Irrigation Audits and Landscape Efficiency Rebates		All, outdoor	2012 - 2036
Pre-Rinse Spray Valve Direct Installation		CII, indoor	2012 - 2036
Cooling Tower Efficiency Tune Ups		CII, indoor	2012 - 2036
<i>Building Permit Fee Refund Program</i>	<i>City</i>	<i>All, indoor & outdoor</i>	<i>2019 - 2036</i>
<i>Turf Replacement Refund Program (5-year pilot program)</i>	<i>City</i>	<i>All, outdoor</i>	<i>2019 - 2023</i>
<i>Native and Low Water Use Plant List</i>	<i>Town</i>	<i>All, outdoor</i>	<i>2019-2020</i>
<i>Water-Saving Fixtures in New Development</i>	<i>Town</i>	<i>All, indoor</i>	<i>2022-2036</i>
Ordinances and Regulations			
Conservation Oriented Tap Fee Ordinance		CII, indoor & outdoor	2013 - 2036
All New Residential Development Must Meet EPA WaterSense New Home Specifications		SF & MF residential, indoor & outdoor	2014 - 2036
Water Efficient Landscape Ordinance		All, outdoor	2011 - 2036
Certification of Landscape Professionals		All, outdoor	2010 - 2036
<i>Water Dedication Requirements "Right-Sized"</i>	<i>City</i>	<i>All, indoor & outdoor</i>	<i>2019 - 2036</i>
<i>PUD Regulations Amended to Require Outdoor Conservation</i>	<i>City</i>	<i>All, outdoor</i>	<i>2020 - 2036</i>
<i>Green Building Guidelines</i>	<i>County, Town</i>	<i>All, indoor</i>	<i>2019 - 2022</i>

Education Activities			
Public Information and Education		All	2010 - 2036
K-12 Education		SF & MF residential	2010 - 2036
<i>"Know Your Water" Campaign</i>	<i>County, City, Town</i>	<i>SF & MF residential</i>	<i>2019 - 2036</i>
<i>Coordinate Education and Outreach Across the Region (3-year Campaign)</i>	<i>County, City, Town</i>	<i>All, indoor & outdoor</i>	<i>2019 - 2021</i>

Table 9: Projected water savings by customer category

[This Table expands Table 9 in Section 4.3 of the 2012 Sample Plan to include the land use measures described in the text. The land use measures appear in blue italics.]

Sector	Water Efficiency Activities Impacting Sector	Projected Water Savings 2012-2036 (AF)
SF & MF Residential – Indoor	Individualized, Informational Water Budget Program	1150
	Expanded Multi-Family Toilet and Clothes Washer Rebates	
	All New Residential Development Must Meet EPA WaterSense New Home Specifications	
	K-12 Education	
	<i>"Know Your Water" Campaign</i>	
	<i>Green Building Guidelines</i>	
	<i>Water-Saving Fixtures in New Development</i>	
SF & MF Residential – Outdoor	Individualized, Informational Water Budget Program	635
	Targeted Irrigation Audits and Landscape Efficiency Rebates	
	All New Residential Development Must Meet EPA WaterSense New Home Specifications	
	Water Efficient Landscape Ordinance	
	Certification of Landscape Professionals	
	K-12 Education	
	<i>"Know Your Water" Campaign</i>	
	<i>PUD Regulations Amended to Require Outdoor Conservation</i>	
	<i>Native and Low Water Use Plant List</i>	
CII Indoor & Outdoor & Dedicated Irrigation	Targeted Irrigation Audits and Landscape Efficiency Rebates	345
	Pre-Rinse Spray Valve Direct Installation	
	Cooling Tower Efficiency Tune Ups	
	Conservation Oriented Tap Fee Ordinance	
	Water Efficient Landscape Ordinance	
	Certification of Landscape Professionals	
	<i>PUD Regulations Amended to Require Outdoor Conservation</i>	
	<i>Native and Low Water Use Plant List</i>	
Dedicated Irrigation	Water Reuse System	635
	<i>Turf Replacement Program</i>	
	<i>Native and Low Water Use Plant List</i>	

All	Public Information and Education	100
	<i>Form Land Use Planning Team and Conduct Self-Assessment</i>	
	<i>Joint Estimate of Population and Projected Water Demand</i>	
	<i>Water Utility Rep Participates in Pre-application Meetings</i>	
	<i>Post-occupancy Enforcement of Water Conditions</i>	
	<i>Enhance Water Element in Comprehensive Plan</i>	
	<i>Building Permit Fee Refund Program</i>	
	<i>Conservation Required to Demonstrate Water Adequacy</i>	
	<i>Water Dedication Requirements "Right-Sized"</i>	
	<i>Coordinate Education and Outreach Across the Region (3-year Campaign)</i>	
Total Projected Savings		2,865

Section 4.3.1 Foundational Activities

New subsection on Land Use Measures

All Land Use Jurisdictions:

The District will form a Water and Land Use Planning Team with members from each land use jurisdiction. This integrated team will meet regularly and educate its members on the goals, opportunities, challenges, and anticipated projects of each entity related to water supplies and future development.

The Water and Land Use Planning Team is working to estimate future population in the Water District's service area, based on current land use projections. Future water demand is being projected from these population estimates, based on published information on water use by various types of residential and commercial development and using the Water District's projected per unit usage, incorporating the impact of past and future conservation and efficiency measures.

The Water District and the City and County Planning Departments are conducting a self-assessment for the purpose of better understanding the degree to which some integration of the land use and water functions has already occurred and the areas in which integration is lacking. The Town of Spruce will be invited to participate as well.

Fiction County:

A designated representative of the Water District will be included in all pre-application meetings between development proposal applicants and the County Planning Department personnel, for the purpose of providing information about how adoption of water efficiency or conservation measures in the proposed development can impact overall water use. Adoption of measures that reduce anticipated water demand may decrease the up-front cost to developers in the form of tap fees and, potentially, reduce or eliminate the need for new infrastructure that the development might be required to pay for. This information is provided to allow

prospective developers to make economic and market-based decisions based on information concerning the water impacts of the proposed development.

City of Shallow Creek:

A designated representative of the Water District will be included in all pre-application meetings between development proposal applicants and the City Planning Department personnel, to provide information about how adoption of water efficiency or conservation measures in the proposed development can impact overall water use, and allow for market-based decisions as described above in the section on Fiction County. A procedure has been established for communication of water-related conditions in development and zoning change approvals and for follow-up and enforcement by the Water District.

As described in Section 3.3 above, the City Planning Department has recommended to the City Planning and Zoning Commission an addition to the water element in the City's comprehensive plan to include a full description of the City's water supplies and demands, now and into the future, compared to population growth and development projections. The revised water element will also state the City's desire to minimize "buy and dry" transactions in surrounding agricultural land made necessary by water supply needs and to maintain the quantity and quality of water flowing in regional streams and rivers, in addition to the previously stated goals of minimizing the costs of infrastructure and avoiding adverse impact on water supplies.

The City Planning Department, in consultation with the Water District, is making water conservation part of the demonstration of the adequacy of water supplies for new development pursuant to Colo. Rev. Stat. § 29-20-303. Developers will be required to show that they have incorporated water conservation techniques into the development proposal. Developers are able to select additional water conservation techniques that best fit with the development proposal. The development permit application will also include a water demand assessment, quantifying the amount of water expected to be used by the development, per unit and total volume at buildout. The inclusion of water conservation measures will now be required as one of the checklist items in the Planning Department's review of any new development application.

The City Planning Department and Water District are examining the 50-unit minimum for which a water adequacy determination is required by state law to determine whether this minimum is sufficient to protect against adverse impacts to the City's water supplies. The two entities are considering a lower threshold of development that would require a water adequacy determination. The results of this discussion will be proposed and recommended to the Planning and Zoning Commission and the City Council for adoption.

The Water District and the City are working together to allocate responsibilities for post-occupancy enforcement of the water-related requirements in development approvals.

Section 4.3.2 Targeted Technical Assistance and Incentives

New subsection on Land Use Measures

City of Shallow Creek:

In the City of Shallow Creek, the City Planning Department is establishing a building permit fee refund program for new development that incorporates certain listed water conservation measures that exceed those already required by the landscape ordinance. Standards are being established for further reductions in turf areas for new development and developers choosing to follow such standards will receive a 50% refund of building permit fees associated with the development. The refund will be provided after inspection by the City of the established landscape. The funding for the partial refund is being provided by the Water District and the Planning Department.

The Water District is working with the City to initiate a five-year pilot turf replacement program for residential and commercial property. Standards are being developed for appropriate replacement materials that will consume less water while not adversely impacting stormwater flows and maintaining the quality of the residential properties and neighborhoods. The funding for the turf replacement program will be provided by the Water District.

Town of Spruce:

The Water District is compiling a native and low water use plant list, for the purpose of providing evidence-backed information that can be voluntarily adopted by developers and residents in the Town of Spruce, and potentially considered for formal adoption by the Town Council. The Water District is also working with the Town of Spruce to identify ways to encourage low water use fixtures in new development.

Section 4.3.2 Ordinances and Regulations

New subsection on Land Use Measures

Fiction County:

Fiction County's comprehensive plan laid out a goal that the County will develop and incorporate green building guidelines that address energy and resource efficiency, including water use efficiency. The Water District is working with the County to realize this goal, by reviewing and assessing the water conservation standards utilized in green building guidelines and recommending appropriate standards for incorporation into the County building standards. Such standards will require adoption of water conservation measures and utilization of water-saving fixtures, both indoor and outdoor.

City of Shallow Creek:

The City Planning Department, working with the Water District, is proposing an amendment to the City's Planned Unit Development (PUD) regulations that will require adherence to water conservation best practices, including utilization of Water Sense outdoor fixtures, landscaping standards, and soil amendment requirements. The potential water savings associated with these proposed changes are being estimated and the results will be provided to the City Planning and Zoning Commission and City Council with an appropriate recommendation.

The Water District and the City Planning Department are working together to "right-size" the City's water dedication requirements. Conservation measures that have already been adopted and those anticipated have resulted in decreased water usage per single-family equivalent unit. That reduction can allow a correspondingly decreased water dedication requirement, while maintaining appropriately conservative safety factors, and further the City's goal of minimizing the economic and environmental impacts of future water supply acquisition.

Section 4.3.2 Education Activities**New subsection on Land Use Measures**All Land Use Jurisdictions:

The Water District is starting a "Know Your Water" campaign designed to help customers and citizens understand the source of their water supplies and the associated limitations and challenges. Information on these topics will be provided to all prospective developers and included in Water District billing statements. It will also be available on the web pages of all land use jurisdictions.

The Water District will convene a meeting of other water suppliers and land use authorities in the Shallow Creek and Fiction County region. The purpose of this meeting is to explore joint messaging and a jointly designed and operated regional education campaign on drought and water efficiency. This regional campaign is intended as a three-year effort.

Section 5.1 Implementation Plan

Betty Bodean, Water Conservation Coordinator for the Water District, will work directly with the Fiction County Planning Department, Shallow Creek's City Planner, Craig Waters, and the Town of Spruce's Planner, Tina Palmer, to implement the land use measures described in this Plan. Land use measures are included in the implementation schedule shown in Table 13.

Table 13: Water efficiency activity implementation schedule

[This Table expands Table 13 in Section 5.2 of the 2012 Sample Plan to include the land use measures described in the text. The land use measures appear in blue italics.]

Water Efficiency Activities	Implementation Period of New Activities
Foundational Activities	
Individualized, Informational Water Budget Program	2013 - 2036
Enhanced Water Loss Control	2012 - 2036
<i>Form Land Use Planning Team and Conduct Self-Assessment</i>	<i>2019</i>
<i>Joint Estimate of Population and Projected Water Demand</i>	<i>2019 - 2036</i>
<i>Water Utility Rep Participates in Pre-application Meetings</i>	<i>2019 - 2036</i>
<i>Post-occupancy Enforcement of Water Conditions</i>	<i>2019 - 2036</i>
<i>Enhance Water Element in Comprehensive Plan</i>	<i>2019 - 2020</i>
<i>Conservation Required to Demonstrate Water Adequacy</i>	<i>2020 - 2036</i>
Targeted Technical Assistance and Incentives	
Expanded Multi-Family Toilet and Clothes Washer Rebates	2012 - 2036
Targeted Irrigation Audits and Landscape Efficiency Rebates	2012 - 2036
Pre-Rinse Spray Valve Direct Installation	2012 - 2036
Cooling Tower Efficiency Tune Ups	2012 - 2036
<i>Building Permit Fee Refund Program</i>	<i>2019 - 2036</i>
<i>Turf Replacement Refund Program (5-year pilot program)</i>	<i>2019 - 2023</i>
<i>Native and Low Water Use Plant List</i>	<i>2019 - 2020</i>
<i>Water-Saving Fixtures in New Development</i>	<i>2019-2036</i>
Ordinances and Regulations	
Conservation Oriented Tap Fee Ordinance	2013 - 2036
All New Residential Development Must Meet EPA WaterSense New Home Specifications	2014 - 2036
Water Efficient Landscape Ordinance	2011 - 2036
Certification of Landscape Professionals	2010 - 2036
<i>PUD Regulations Amended to Required Outdoor Conservation</i>	<i>2020 - 2036</i>
<i>Water Dedication Requirements "Right-Sized"</i>	<i>2019 - 2036</i>
<i>Green Building Guidelines in County Building Standards</i>	<i>2019 - 2021</i>
Education Activities	
Public Information and Education	2010 - 2036
K-12 Education	2010 - 2036
<i>"Know Your Water" Campaign</i>	<i>2019 - 2036</i>
<i>Coordinate Education and Outreach Across the Region (3-year Campaign)</i>	<i>2019 - 2021</i>

Section 5.2 Monitoring Plan

Data on water usage will be collected and maintained as described in Table 14 (Worksheet K). Curated information from these data sets will be shared at every meeting of each Water and Land Use Planning Team. Additionally, the Water District will coordinate with each land use authority to present information and updates about water efficiency programs to their governing councils as appropriate.

The City and County Planning Departments will convey immediately to the Water District any water-related conditions contained in development approvals and zoning changes. The entities will allocate responsibility for monitoring, compliance, and enforcement action.

In order to monitor the implementation and effectiveness of land use practices, the City will collect and maintain data on building permit refunds, and the Water District will collect and maintain data on per unit water use, turf replacement square feet implemented, and post-occupancy enforcement actions. This monitoring data is reflected in Table 14 (Worksheet K).

Table 14: Worksheet K – Selection of Demand Data for Efficiency Plan Monitoring

[This Table expands Table 14 in Section 5.2 of the 2012 Sample Plan to include the land use measures described in the text. The land use measures appear in blue italics.]

Monitoring Data	HB 10-1051 Reporting Requirement		Selection		Entity/Staff Responsible for Data Collection and Evaluation	Schedule/Timing of Monitoring	
	Annual	Monthly	Annual	Monthly			
Total Water Use							
Total treated water produced (metered at WTP discharge)				√		Betty Bodean	First quarter of the year.
Total treated water delivered (sum of customer meters)	√			√		Betty Bodean	First quarter of the year.
Raw non-potable deliveries				√		Betty Bodean	First quarter of the year.
Indoor and outdoor treated water deliveries				√		Betty Bodean	First quarter of the year.
Treated water peak day produced							
Raw water peak day produced/delivered							
Non-revenue water	√			√		Betty Bodean	First quarter of the year.
Building Permit Refunds					√	Craig Waters	First of each month.
Turf Replacement Square Feet Implemented					√	Betty Bodean	First of each month.
Post-Occupancy Enforcement Actions					√	Betty Bodean	First of each month.
Water Use by Customer Type							
Treated water delivered		√			√	Betty Bodean	First quarter of the year.
Raw non-potable deliveries					√	Betty Bodean	First quarter of the year.
Indoor and outdoor treated water deliveries				√		Betty Bodean	First quarter of the year.
Large users							
Unit water use (e.g. AF/account or AF/irrigated acre)					√	Betty Bodean	First of each month.
Other Demand Related Data							
Irrigated landscape (e.g. AF/acre or number of irrigated acres)				√		Betty Bodean	First quarter of the year.
Precipitation							
Temperature							
Evapotranspiration				√		Betty Bodean	First quarter of the year.
Drought index information							
Economic conditions							
Population				√		Betty Bodean	First quarter of the year.
New taps				√		Betty Bodean	First quarter of the year.