

General Plan Requirements - Examples

Rev. 12/24

This guide is intended for use by city planners, planning commissioners, and/or community development personnel from the various municipalities and counties across the state of Utah as they are developing a new General Plan or comprehensive General Plan amendment.

Its specific focus is to provide plan examples related to integrating water and land planning that are detailed in *Utah Code 10-9a-403* and *17-27a-403*. The primary components of Utah Code 10-9a-403 and 17-27a-403 will be detailed below, followed by diverse examples that showcase approaches to each element.

Water Use and Preservation Element - Required Components Stated by Utah Code 10-9a-403 and 17-27a-403

1. The effect of permitted development or patterns of development on water demand and water infrastructure.
2. Methods of reducing water demand and per capita water use for existing development.
3. Methods of reducing water demand and per capita water use for future development.
4. Modifications that can be made to a local government's operations to reduce and eliminate wasteful water practices.

Other Requirements:

1. Active consultation with the public water system(s) serving your community with drinking water regarding how the implementation of this integrated water & land use element may affect: Water supply planning, drinking water sources, storage capacity, distribution planning, current master plans, infrastructure asset management or replacement plans, and impact fee facility plans
2. Consultation with the Division of Water Resources for information and technical resources regarding regional water conservation goals, including how implementation of the land use element and the water use and preservation element may affect Great Salt Lake, Colorado River, or overall watershed health.
3. The Planning Commission must recommend the following:
 - a. Water conservation policies to be determined by the municipality or county;
 - b. Landscaping options within a public street for current and future development that do not require the use of lawn or turf in a parkstrip;
 - c. Changes to an ordinance that promotes the inefficient use of water;
 - d. Low water use landscaping standards for a new: commercial, industrial, or institutional development; common interest community, as defined in Section 57-25-102; multifamily housing project



Examples that Fit:

1. The effect of permitted development or patterns of development on water demand and water infrastructure

This component urges communities to calculate and understand their projected water demand for current and future growth

Example: 2030 Casa Grande General Plan

How Much Water Is Needed to Support Future Growth?

To answer this question, we first need to determine the amount of growth likely to occur. Although the timeframe for this General Plan is ten years (2020-2030) an attempt has been made to look beyond that timeframe and project the growth that is likely to occur over the next 30 years. The population of Casa Grande is projected to essentially double over the next 30 years. The specific increases by decades is projected as follows:

Year	Casa Grande Population Estimate	Change
2020	57,518	
2030	75,049	+17,531
2040	92,880	+17,831
2050	118,395	+25,515

Figure 3:37 Casa Grande Population Estimate Change 2020-2050
Source:

To accommodate this new population the following number of dwelling units will need to be provided:

- 2020-2030: 6,407 dwelling units
- 2030-2040: 6,519 dwelling units
- 2040-2050: 9,350 dwelling units

The existing vacant lots with Certificates of Assured Water Supply (CAWS) will allow for the construction of single-family dwellings to meet most of this demand. Other types of residential development which are not CAWS dependents (i.e., apartments, manufactured homes, park models, pre-CAWS subdivisions) will provide residential products to meet the remaining demand. It is safe to assume that most of this future residential growth will occur with Planned Area Developments, or other types of residential developments that will have significant amounts of irrigated common areas. Accordingly, the water usage, based upon current usage rates, would be 96 gallons per day per person resulting in the following additional water supply needed to support the projected residential growth:

- 2020-2030: 2,067 additional acre-feet/yr
- 2030-2040: 2,103 additional acre-feet/yr
- 2040-2050: 3,016 additional acre-feet/yr

Example taken from the City of Casa Grande, AZ
2030 Casa Grande General Plan



Contact: CityCountyPlanning@utah.gov
For more information, visit Water.utah.gov/water-general-plan

Examples that Fit:

1. The effect of permitted development or patterns of development on water demand and water infrastructure (Continued)

This component urges communities to calculate and understand their projected water demand for current and future growth

Example: 2030 Casa Grande General Plan (Continued)

How Much Water Is Needed to Support Future Growth?

An accurate estimate of the water supply that will be needed to support this new commercial and industrial growth is difficult to predict as the water usage varies significantly depending on the type and nature of the business/industry. The AZW water usage of 198 gallons per day per capita (GCPD) does provide a metric that can be applied to provide a rough estimate of the new water supply demands that may be associated with all future growth including residential, commercial and industrial development assuming non-residential uses grow proportionately to residential uses.

This approach indicates that the following additional annual water supply will be necessary to meet water supply demands for all types of future projected growth:

- 2020-2030: 4,263 additional acre-feet/yr
- 2030-2040: 4,338 additional acre-feet/yr
- 2040-2050: 6,221 additional acre-feet/yr

The calculation of the additional acre feet of groundwater needed to support projected growth represents a worst-case scenario.



Figure 3-41 Projected Water Demand and Population Growth
Source: Arizona Water Company, Arizona Department of Water Resources, Office of Economic Opportunity, 2020

Example taken from the City of Casa Grande, AZ
2030 Casa Grande General Plan



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Examples that Fit:

1. The effect of permitted development or patterns of development on water demand and water infrastructure (Continued)

This component urges communities to calculate and understand their projected water demand for current and future growth

Other Examples to Explore:

Maricopa County, AZ, describes the total water use in the region, including both surface water and groundwater. The county describes the shift in water use per sector over time, noting that overall water use remained stable even as agricultural water use declined and municipal use increased. It uses this information to estimate projected total water use in 2025 (2016, 96–99).

Santa Fe County, NM, compiles water use data from Santa Fe County Water Utility, City of Santa Fe, 53 other water suppliers, and estimates for self-supplied homes, to understand the nature of water withdrawals in the county. This is historical use data allocated by type of land use, which aids the county's ability to use this data for land use and development approval processes (2015, 198–199).

City of Fernley, NV, differentiates between surface and groundwater supplies in its discussion of water supply, as well as water storage and future infrastructure needs associated with these supply sources (2018, 106).

Examples and verbiage taken from the Babbitt Center for Land and Water Policy's *Incorporating Water into Comprehensive Planning: A Manual for Land Use Planners in the Colorado River Basin*



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Examples that Fit:

2. Methods of reducing water demand and per capita water use for existing development

This component urges communities to discuss conservation measures within their jurisdiction for existing development

Example: City of Lindon General Plan (2023)

Protecting Our Water Resources: Introduction

Findings from a citywide water conservation plan prepared for Lindon in 2019 identified several problems that need to be addressed as priorities:

- Secondary water is not metered, accounted for, and/or billed.
- There are issues such as main line leaks, theft, or inaccurate meters.
- Contractor authorized use is metered by a hydrant meter provided by the city, reported and billed separately. However, the usage is not included in the metered water sales. There has been unauthorized use by contractors obtaining water from hydrants without having notified the city. The city continues to be vigilant in trying to enforce regulations.
- Residents lack understanding and fail to implement landscape water requirements and efficient water-use habits and practices. Many residences do not know how much water is required to maintain healthy landscaped areas and how to consistently use water efficiently indoors. Many citizens' irrigation and indoor practices are based on convenience rather than plant needs and water supply considerations.
- Lindon residences typically include large areas of grass and other water-intensive landscaping. Overwatering of these landscaped areas from the pressure irrigation system is the result of unmetered secondary water supplies and poor watering practices.

Current Conservation Measures

Having both culinary and pressurized secondary irrigation systems provides flexibility in dealing with water conservation. Lindon's current water conservation program is primarily focused on the following strategies:

- Providing educational materials to residents about efficient indoor and outdoor water use
- Regularly adjusting water rates
- Installing secondary water meters
- Managing water shortages in the culinary system, such as during emergency events such as losing a well

Example taken from the City of Lindon, UT General Plan: Water Preservation Element



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Examples that Fit:

2. Methods of reducing water demand and per capita water use for existing development (Continued)

This component urges communities to discuss conservation measures within their jurisdiction for existing development

Other Examples to Explore:

City of Aurora, CO, is a big proponent of water conservation, with a history of ambitious and successful water saving goals. The city has enacted strategies “such as limiting outdoor watering to three days a week, waterwise landscaping rebates, and other programs. Conservation, water efficiency, and demand management practices are incorporated into Aurora’s land use planning and development standards. These programs have saved 528 million gallons of water between 2014 and 2016” (2018, 13).

Washoe County, NV, emphasizes the importance of water meters for achieving water conservation in several policies: “Require the uniform mandatory installation and use of water meters in Washoe County. Water meters are essential to provide for water conservation, equity in billing for water use and effective management of water resources. [Related policies:] 1. Water meters will be required on all new residential, commercial and industrial construction, to the extent allowed by law. 2. The Washoe County Utility Services Division will recommend that the Washoe County Board of County Commissioners amend the water conservation ordinances to allow the use of water meters to monitor and enforce water conservation. 3. Where legally allowed, individual non-metered water users will be encouraged to request the installation of water meters on a voluntary basis. Economic incentives can be used to provide the needed encouragement” (2010, chap. Public Services and Facilities Element: 13–14).

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Examples that Fit:

3. Methods of reducing water demand and per capita water use for future development

This component urges communities to discuss conservation measures within their jurisdiction for future development

Example: City of Santa Fe, NM General Plan

Growth Management

Water Offset Program - The city's continuing efforts in water conservation have become nationally-recognized. The city uses a dual-track approach:

- Water Conservation at home, work and school through progressively-scaled rate pricing, rebates on replacement of older more water-wasteful household fixtures, and community advertising and education.
- Transfer of Water Rights - New residential and commercial development must offset the anticipated water to be used through conservation, or transfer enough water rights to serve the entire development at build-out.

This has proven to be an effective and comprehensive approach to growth management. During the past 20 years, the city's overall annual water consumption decreased nearly 25%, while the population increased 15%.

Urban Design - Well-designed development uses less land by creating smaller residential lots and using more multi-family housing, thereby making more efficient use of land and city utilities.

Example: City of Albuquerque, NM General Plan

Growth Management

Land use policies and zoning regulations that govern the location, density, and design of development also influence the water consumed at the scale of each site and the larger regional scale. Multi-family housing generally has lower per capita water consumption than single-family units. Further, a recent analysis of residential water use found a correlation between household water consumption and lot size, likely due to reduced need for landscape irrigation. Zoning that allows smaller lot sizes and a range of multi-family housing options helps with water conservation efforts.

Example taken from the City of Santa Fe and Albuquerque, NM General Plan



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Examples that Fit:

3. Methods of reducing water demand and per capita water use for future development (Continued)

This component urges communities to discuss conservation measures within their jurisdiction for future development

Other Examples to Explore:

San Diego County, CA, expedites plan reviews for developments that use water conservation measures and requires buildings to improve water efficiency as a condition of renovation, additions, or sales. These measures are taken in part to reduce the need for additional water purveyors (2011, chap. Implementation Plan: 25, 39).

City of San José, CA, promotes the use of green building techniques, with particular emphasis on water efficiency: “Promote use of green building technology or techniques that can help reduce the depletion of the City’s potable water supply, as building codes permit. For example, promote the use of captured rainwater, graywater, or recycled water as the preferred source for non-potable water needs such as irrigation and building cooling, consistent with Building Codes or other regulations.... Update the Green Building Ordinance to require installation of water efficient fixtures and appliances that are WaterSense certified, Energy Star rated, or equivalent during construction or renovation of bathrooms, kitchens, laundry areas, and/or other areas with water fixtures/appliances that are proposed to be replaced” (2018, chap. 3: 6).

City of Cheyenne, WY, proposes a variety of measures in its comprehensive plan to conserve resources and landscapes, such as: “establish an overlay zone for conservation site planning and design to avoid resources; allow density transfers out of the natural and cultural areas to other parts of the property, if feasible; encourage clustered development away from resources; and establish guidelines for wildlife-friendly development” (2014, 75). The city also has policies to provide incentives for clustering to preserve agricultural lands: “Revise zoning for Agriculture and Rural lands identified on the Future Land Use Plan to make it consistent with these areas appropriate for continued ranching and agricultural uses. The intent of the Plan is to limit inappropriate urban-scale or rural large lot sprawling development in these areas and to provide incentives for clustering” (141).

Examples and verbiage taken from the Babbitt Center for Land and Water Policy’s *Incorporating Water into Comprehensive Planning: A Manual for Land Use Planners in the Colorado River Basin*



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Examples that Fit:

4. Modifications that can be made to a local government's operations to reduce and eliminate wasteful water practices

This component promotes Cities and Counties lead by example and blend water conservation policies and practices into their operations

Example: City of Dallas, TX

MLK Center Campus - Waterwise Landscape Beautification

The City of Dallas, TX, helped transform the landscaping of the Martin Luther King Community Center, which is part of Dallas' Department of Housing/ Community Service. This landscape retrofit was developed for water conservation purposes, boasting water-wise plants, irrigation, and maintenance. Once complete, the site and streetscape blended community context through a lens of water conservation while offering a model landscape for their community

Example: City of Chowchilla , CA

Arterial and Street Landscaping

The City of Chowchilla, CA, has a policy for landscaping arterial and major collector streets with drought-tolerant plants and low-water-use irrigation systems. This provides a great example of water-wise landscape to the public

Other Topics

City Hall or City-Owned Building Retrofits

- Include water-wise building retrofit ideas in your General Plan such as installing AMI metering or updating inefficient plumbing

Examples and verbiage taken from the City of Dallas, TX as well as the the Babbitt Center for Land and Water Policy's *Incorporating Water into Comprehensive Planning: A Manual for Land Use Planners in the Colorado River Basin*



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Examples that Fit: Waterwise Landscape Requirements

The Planning Commission must recommend a variety of waterwise landscape options for their community

1. Landscaping options that do not require the use of lawn or turf in the parkstrip

2. Low water use landscaping standards for a new: commercial, industrial, or institutional development; common interest community

Communities within Central Utah, Jordan Valley, Washington County, or Weber Basin Water Conservancy Districts' service areas should work with their district to adopt qualifying landscape ordinances and discuss them in their General Plan.

Communities outside of a partner water district's service area, including unincorporated areas, could adopt similar standards such as:

- No lawn on parking strips or areas less than eight feet in width in new development.
- No more than 50% of front and side yard landscaped area in new residential developments is lawn. Lawn limitations do not apply to small residential lots with less than 250 square feet of landscaped area.
- In new commercial, industrial, institutional and multi-family development common area landscapes, lawn areas shall not exceed 20% of the total landscaped area, outside of active recreation areas.

Contact Information

If you have further questions or are in need of some technical assistance when it comes to creating this water use & preservation element please contact us via email at waterandland@utah.gov

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