WVC General Plan Update
WATER USE + PRESERVATION

Every development has a hydrologic cost, and every community has a hydrologic budget. West Valley City's plan considers new land uses in the context of their impact on existing networks, fiscal sustainability, and critically, the impact on the water supply. As the City grows, balancing development needs with water resource management becomes increasingly crucial.

1. INTRODUCTION

1.1 Purpose and Scope

West Valley City is developing this Water Use and Preservation Element as required by Utah Code 10- 9a-403. This element addresses the relationship between land use decisions and water resources within the municipal boundaries. While water services are provided by multiple improvement districts rather than by the municipality directly, the City maintains land use authority that can significantly influence water conservation outcomes.

This plan recognizes both the City's opportunities and limitations in water management given this fragmented service provision structure.

1.2 Relationship to Other Plan Elements

This element is designed to complement and integrate with other elements of the West Valley City General Plan, particularly the Land Use Element, Transportation Element, and Parks and Recreation Element. Water considerations impact and are impacted by decisions in these areas.

1.3 State Requirements

The State of Utah requires municipalities to address water use and preservation in their general plans. This element fulfills the requirements outlined in Utah Code 10-9a-403(2)(a)(iv) and 10-9a-403(2)(f), which mandate addressing:

- Effects of development on water demand and infrastructure.
- Methods to reduce water demand in both existing and future development.
- Operational improvements to reduce wasteful water practices.
- Regional conservation goals.
- Landscape and development standards that promote water efficiency.

2. EXISTING CONDITIONS

2.1 Water Service Providers

Unlike many municipalities, West Valley City does not directly provide water services to its residents. Water services within the municipal boundaries are provided by four separate improvement districts:

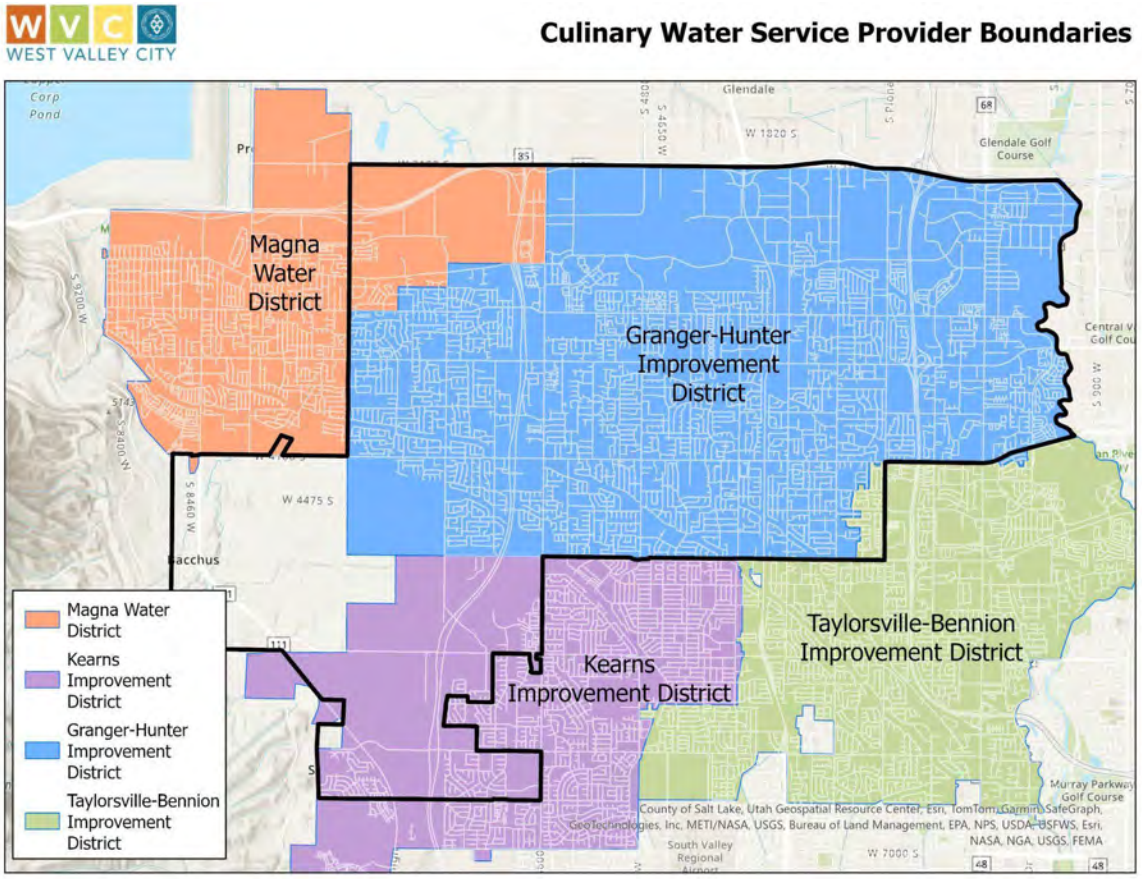
- Granger Hunter Improvement District (GHID)
- Kearns Improvement District
- Magna Water District
- Taylorsville-Bennion Improvement District

Each district maintains its own governance structure, infrastructure system, and water conservation policies, creating a complex landscape for water management. This fragmented service provision presents both challenges and opportunities for coordinated planning, requiring strong interagency relationships to ensure consistent application of water conservation principles throughout the City.

Granger-Hunter Improvement District (GHID) serves approximately 75% of the City with potable water. GHID obtains approximately 75% of its water supply from Jordan Valley Water Conservancy District (JVWCD), with the remaining 25% coming from district-owned groundwater wells. This service structure emphasizes the importance of interagency coordination for drought planning and water conservation.

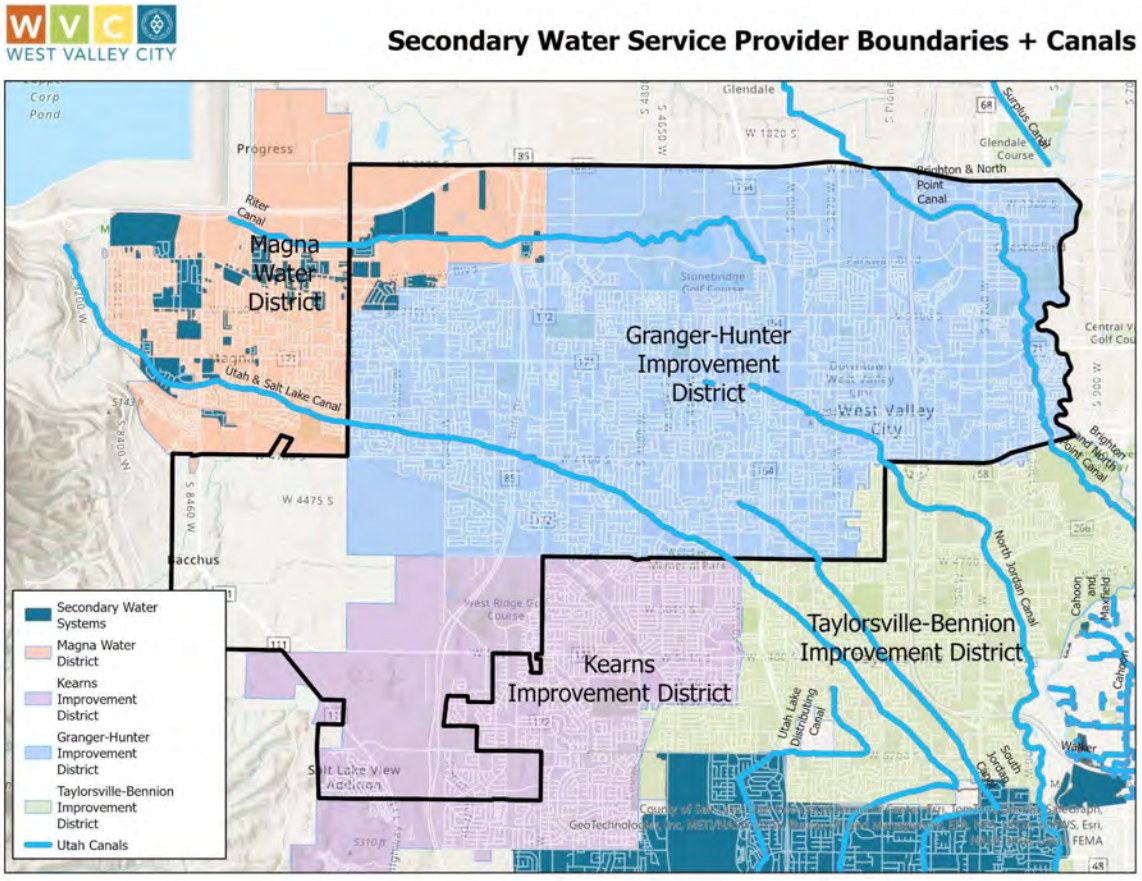
As required by Utah Code 10-9a-403(2)(f)(iv), West Valley City consults with these public water systems regarding how implementation of the land use element and water use element may affect water supply planning.

Exhibit 2.1.1 Service Area Map - Culinary



Map showing the service areas of culinary water providers.
Click here for a printable copy of the map. (Source: Utah Div of Water Resources - GIS).

Exhibit 2.1.2 Service Area Map - Secondary and Canals



Map showing the service areas of secondary water providers.
Click here for a printable copy of the map. (Source: Utah Div of Water Resources - GIS).

2.2Water Sources and Supply

The water for West Valley City is supplied through a combination of groundwater (wells) and surface water purchased from the Jordan Valley Water Conservancy District (JVWCD). For example, Granger Hunter Improvement District obtains approximately 75% of its water from JVWCD, with the remaining 25% coming from district-owned wells.

The total reliable water supply across all providers serving West Valley City appears adequate for current needs, though continued growth will require careful management of these resources. Water providers have developed water rights and storage capacity to meet current demands, though storage capacity has been identified as a potential constraint in some areas.

GHID's water distribution system consists of approximately 375 miles of distribution pipelines ranging in size from 4 to 30 inches in diameter, over 27,900 water meters, 3,480 fire hydrants, 9,988 valves, 43 pressure reducing valve stations, 6 booster pumping stations, and 10 water storage reservoirs totaling approximately 32 million gallons. The water system is divided into six pressure zones to accommodate topography and ensure adequate water pressure throughout the

service area.

2.3Water Infrastructure

The water distribution system within West Valley City consists of:

- Approximately 375 miles of distribution pipelines (GHID portion).
- Multiple pressure zones to accommodate the topography of the service area.
- Storage reservoirs with a combined capacity of approximately 32 million gallons (GHID portion).
- Wells, booster stations, and connections to the Jordan Valley Water Conservancy District.
- Pressure reducing valve stations and other system components.

GHID pumps groundwater from seven active wells with a combined capacity of approximately 14,050 gallons per minute (gpm). The district has water rights to 21,266 acre-feet per year, while its contract with JVWCD provides 17,000 acre-feet per year. Conservation efforts have shown positive results, with per capita water use following a declining trend. In 2024, GHID's per capita usage was approximately 147 gallons per capita per day (gpcd), with indoor use estimated at about 66 gpcd and outdoor use at 81 gpcd.

2.4Current Water Use and Trends

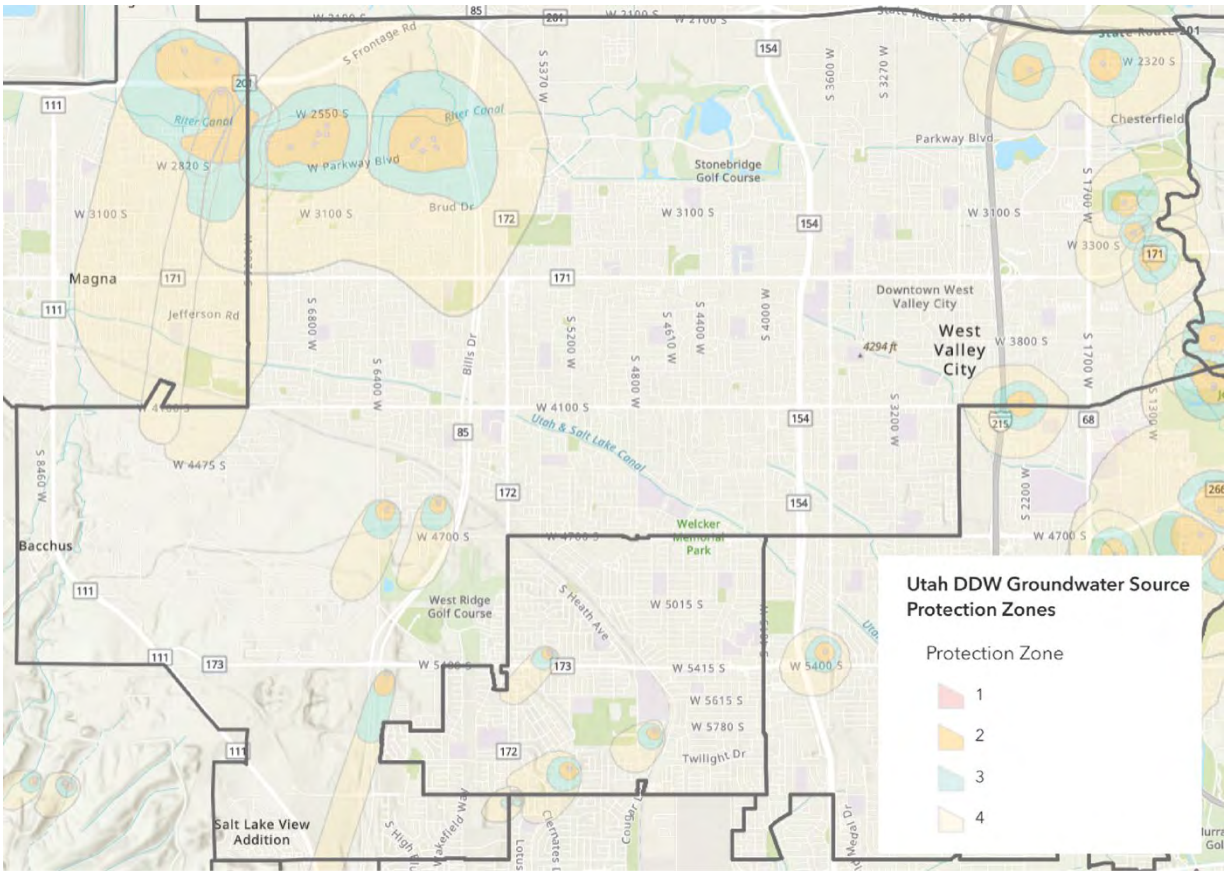
The following metrics are based on available data from the water providers serving West Valley City (drawing from the GHID 2020 Water Conservation Plan):

- Per capita water use has shown a declining trend over the past two decades.
- Current per capita usage is approximately 147 gallons per capita per day (in GHID service area).
- Residential use accounts for approximately 94% of connections.
- Commercial, industrial, and institutional uses make up the remaining connections.
- Indoor water use is estimated at about 66 gallons per capita per day, with outdoor use at 81gallons per capita per day.

In accordance with state requirements, West Valley City consulted with the Utah Department of Agriculture and Food regarding agricultural protection areas within City limits. The Department

confirmed that no designated agricultural protection areas exist within West Valley City boundaries. This finding aligns with the City's forecast to continue to follow predominantly urban and suburban development patterns.

Exhibit 2.4.1 Groundwater Protection Zones

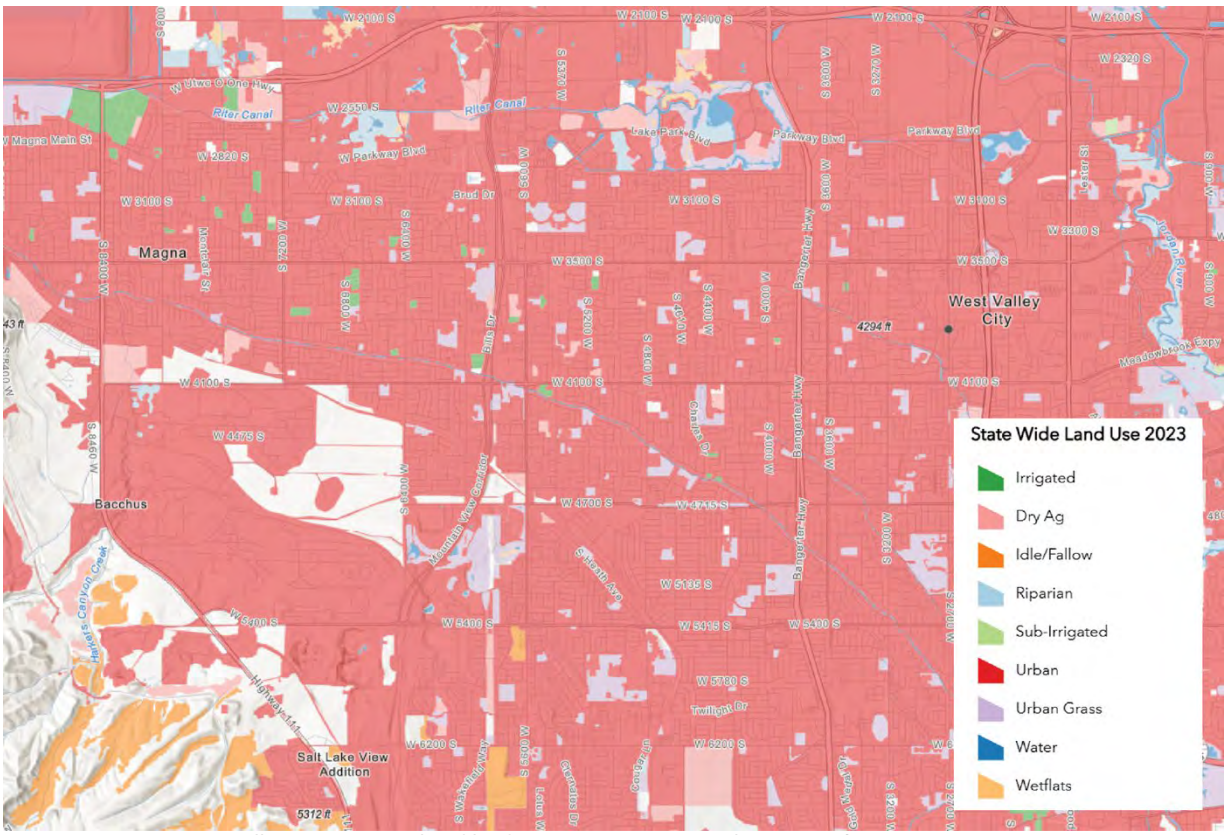


West Valley area groundwater protection areas. Source: Utah Department of Environmental Quality.
(click for source information)

Groundwater protection zones represent critical areas where land use decisions must carefully consider potential impacts to underground water resources. As shown in the map above, West Valley City contains several designated protection zones, particularly near the boundaries of the City. These zones are established by the Utah Department of Environmental Quality to safeguard drinking water wells and aquifers from contamination.

The presence of these protection zones influences the City's approach to land use planning, stormwater management, and development review processes. Development within these zones is subject to additional scrutiny to ensure that groundwater resources remain protected from potential contamination sources. The City coordinates with water providers to ensure that land use decisions in these areas align with source water protection goals.

Exhibit 2.4.2 Water-Related Land Uses



West Valley area water-related land uses, 2023. Source: Utah Division of Water Resources.
(click for source information)

This map illustrates the distribution of water-related land uses throughout West Valley City and surrounding areas as of 2023. The various colors represent different categories of land use that have distinct water consumption patterns and needs. Urban development (shown in red) dominates most of the urban area, while relatively small irrigated areas can be seen dispersed through the City.

Understanding the spatial distribution of water-related land uses helps the City identify areas where targeted conservation strategies would be most effective. For example, neighborhoods with larger irrigated landscapes present opportunities for outdoor water conservation programs, while commercial and industrial districts may benefit from process water efficiency measures.

The City uses this information to tailor water conservation policies to specific areas and to coordinate with water providers on infrastructure planning. As development patterns change over time, the City will update this analysis to reflect new water use patterns.

2.5Water Budget

The water budget analysis presented in this plan examines the balance between water supply and

demand within West Valley City. This analysis is primarily based on engineering studies from the Granger-Hunter Improvement District (GHID), which serves approximately 75% of the City area. While other providers serve portions of the City, GHID's data provides a representative picture of the City's overall water situation.

West Valley City's water budget consists of the following components:

1. **Expected Population Change:**
    a. The City anticipates population growth from 144,705 (2025) to approximately 155,700 by 2040, (approximate total of 10,995 people, or 7.6% over 15 years).
    b. The average household size in WVC is 3.771 (based on the Census ACS), which translates to around 3,547 new residential units that will be built by 2040.
    c. The City's general plan estimated that future growth will primarily consist of infill and redevelopment, with the following concentrations:
        i. Expand and intensify development along main corridors: Redwood Road, 3500 South, and 5600 West, and the TRAX Green Line, to create mixed-use nodes.
        ii. Advance the Fairbourne Station downtown project (~40 acres), combining civic, residential, and commercial with transit enhancements.
        iii. Support new residential development on vacant land that is in keeping with surrounding neighborhood character.
2. **Water Production and Demand Analysis:**
    a. Annual water production for the Granger-Hunter Improvement District (GHID), which serves approximately 75% of the City, was 22,288 acre-feet in 2024.
    b. Per capita water usage has shown a declining trend over the past two decades, reaching 147 gallons per capita per day (gpcd) in 2024.
    c. Water use by type in 2024 was distributed as follows:
        i. Residential: 72% (approximately 15,408 acre-feet/year)
        ii. Commercial/Industrial: 16% (approximately 3,470.2 acre-feet/year)
        iii. Institutional: 12% (approximately 2,580.88 acre-feet/year)
        iv. Indoor water use is estimated at about 45% (10,029 ac-ft) at a rate of 66 gallons per capita per day, with outdoor use at 55% (12,246 ac-ft) at a rate of 81 gallons per capita per day.
        v. System efficiency rate of 96.28.15% (3.72% average water loss in 2024). Note that efficiency rates are dependent on system leaks and reporting discrepancies.
3. Water Supply Analysis:
    a. Total reliable supply for GHID is 39,768 acre-feet/year:
        i. JVWCD Contract: 17,000 acre-feet/year (but can go to 120% of contract, or about 20,400 acre-feet)
        ii. Groundwater rights: 21,268 acre-feet/year
4. Current well capacity can produce up to 15,910 gallons per minute, which equals approximately 25,600 acre-feet/year if operated continuously. Note: This figure represents total installed well capacity. The GHID Water Master Plan reports operational

capacity at 14,050 gpm based on recent pumping performance, reflecting wells that are inactive due to water quality issues and current operational constraints.

a. The district's groundwater rights of 21,268 acre-feet/year provide adequate legal authority for this level of pumping, ensuring that water rights will not constrain future growth within the planned development timeline.
b. Based on the District's 40-year water right plan, combined with JVWCD's contract, the City has adequate water rights to serve projected growth through 2060.

5. **Future Capacity Considerations:**
    a. Water demand is projected to remain relatively stable due to conservation efforts offsetting growth.
    b. GHID's current system capacity and available water rights are adequate to meet projected demands through 2060.
    c. The current physical infrastructure can support anticipated growth generally, but some pipelines will require upsizing to maintain adequate pressure throughout the system.
    d. Storage capacity limitations exist in some zones and will require additional reservoirs in the western portions of the service area.

Figure 2.5.1 Average Water Consumption Baseline (2024)

Demand Type (gallons/day/ERU)	2024 Value
Annual Average Consumption	514
Indoor Average Consumption	231
Outdoor Average Consumption	283*
Peak Day Consumption	1,070

**Per capita values converted to ERU values using approximately 3.81 persons per residential connection. Note that the GHID estimate of people per connection is likely to decrease slowly over time (following regional demographic trends).*

Figure 2.5.2 Equivalent Residential Units (ERU) - assuming 3.3% growth

Type of Connection	Total 2024 ERUs (in GHID)	Total 2040 ERUs (in GHID)
Residential	26,738	27,620
Commercial/Industrial	5,335	5,511
Institutional	4,479	4,627
TOTAL ERUs	**37,238**	**38,467**
Population	129,855	148,633

**Note: An Equivalent Residential Unit (ERU) is defined as the average monthly culinary water demand by a residential unit or single-family dwelling. For GHID in 2024, each ERU used an average of 0.57 acre-feet per year.*

Figure 2.5.3: Projected Total Water Consumption (GHID)

Year	Total ERUs	Annual Consumption (gallons/day)	Annual Consumption (acre-feet/year)
2024	37,238	19,157,985	21,459.70
2040	38,467	13,493,040	15,118
Increase	**1,229**	**952,584**	**1,067**

Calculation: ERUs × 514 gpd/ERU = total daily consumption

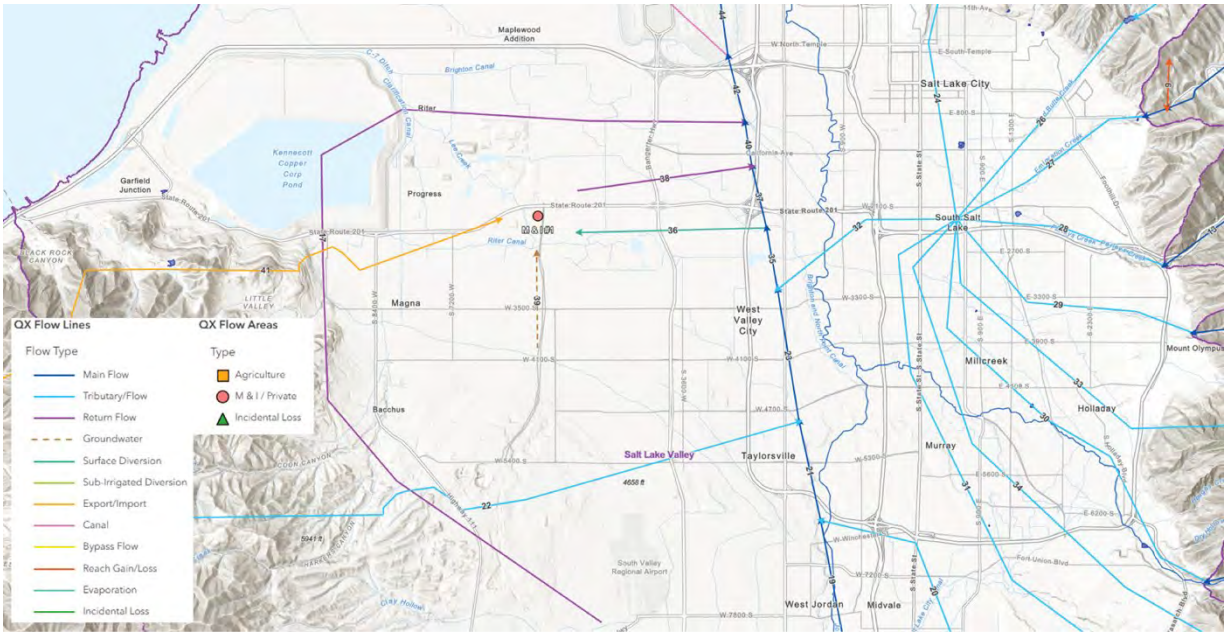
6. **Storage Capacity:**
    a. The City is served by four separate water districts, the largest of which (GHID) operates a total of 10 storage tanks providing approximately 32 million gallons of storage capacity:
    b. GHID storage analysis indicates that the City is adequately served for existing demands.
    c. The master plan shows that an additional 3 MG of storage will be needed in Zone 1 to address future deficiencies.
7. System Efficiency Metrics:
    a. Current water loss rate of 3.72 % as of 2024.
    b. GHID has implemented a systematic leak detection and repair program.
    c. Aging meters are being replaced with Advanced Metering Infrastructure (AMI) type meters to reduce unaccounted water loss. All water use data is transmitted daily to District servers where customers can access their data.
8. Drought Planning Considerations:
    a. The GHID Drought Contingency Plan identifies four drought levels that could result in supply reductions from 5% to 30% during drought conditions.
    b. During the 2021 drought, GHID customers reduced water use by approximately 10-15% in response to state and district outreach efforts.
    c. The City and water providers will consider additional conservation measures during drought periods to manage reduced supply conditions.

Based on this water budget analysis, GHID's current water supply appears adequate to meet existing demands. Future growth through 2060 can likely be accommodated through a combination of:

1. Continued reliance on existing contracted surface and groundwater water supplies from JVWCD,
2. Strategic use of existing groundwater rights during peak demand periods and drought conditions, and

3. Enhanced water conservation efforts to reduce per-capita consumption.

The primary infrastructure challenges identified are related to storage capacity limitations in certain pressure zones and the need for specific pipeline upgrades to maintain adequate pressure throughout the system. This suggests that while conservation remains important, the City's water rights and supply sources are sufficient to accommodate projected growth with appropriate infrastructure investments.



This map visualizes water flows throughout the Jordan River Basin, which includes West Valley City. Flow lines represent the movement of water, while colored flow areas show water use aggregations across municipalities and agricultural areas. Source: Utah Division of Water Resources. *(click for source information)*

3. WATER PLANNING CHALLENGES AND OPPORTUNITIES

3.1 Coordination with Multiple Water Providers

West Valley City faces the challenge of coordinating water planning with four separate improvement districts. This creates a need for regular communication and data sharing protocols. The City may explore the following coordination strategies:

- Hosting regular coordination meetings with all water service districts to ensure alignment on water conservation goals and infrastructure planning.
- Developing clear communication protocols for development review processes that trigger thresholds requiring water availability assessments.
- Maintaining the Development Review Committee with representatives from each water provider to collaboratively address regional water challenges.

- Explore the creation of regular data sharing agreements for consistent monitoring of conservation progress across district boundaries.

3.2 Climate Considerations and Water Security

Long-term water security is impacted by:

- Changing precipitation patterns.
- Snowpack variability.
- Drought conditions.
- Rising temperatures that increase demand.
- Great Salt Lake impacts.

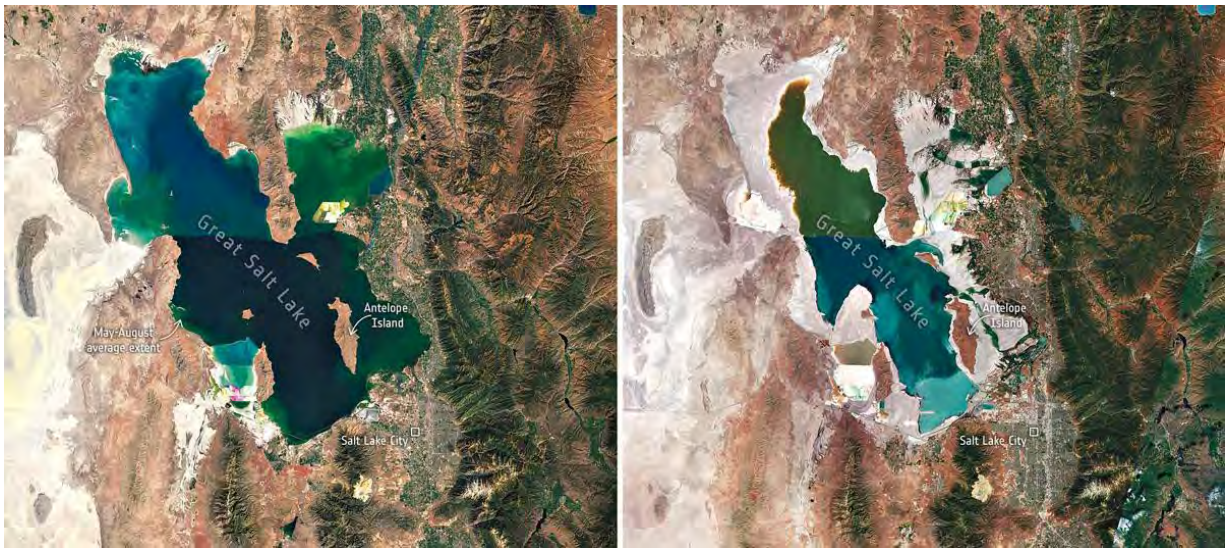
To address the challenges posed by changing climate conditions, West Valley City will consider:

- Working with water providers to develop drought-contingency plans that outline specific triggers and responses for various drought stages.
- Promoting integrated landscape design standards that function effectively under both drought and high-intensity precipitation events.
- Supporting water providers in developing alternative water supply options, including water reuse where feasible.
- Creating educational materials on resilient landscaping and water conservation techniques specifically tailored to projected shifts in our region.

3.3 Great Salt Lake Considerations

West Valley City recognizes its position within the Great Salt Lake watershed and acknowledges the critical importance of the lake to our region's ecology, economy, and public health. As documented in the Great Salt Lake Water Conservation Toolbox, declining lake levels threaten economic activities valued at approximately $1.5 billion annually, local public health through toxic dust exposure, and critical ecosystems that support millions of migratory birds. The Great Salt Lake also plays a vital role in generating precipitation over the basin, with research indicating that without the lake, surrounding areas could experience an approximate 50% reduction in precipitation.

Scientific research indicates that between 67-73% of the lake's decline is attributable to human water use, with municipal and industrial water consumption representing approximately 11% of water use along the Wasatch Front.



Aerial image of the extent of the Great Salt Lake. The image on the left is from 1985, and the image on the right is 2022.

The municipal water conservation policies outlined in this element directly contribute to addressing the declining water levels of the Great Salt Lake in the following ways:

- **Reduced Outdoor Water Use**: By targeting a reduction in residential landscaping water use through the various conservation measures described in this plan, West Valley City will help decrease water diversion from tributaries that would otherwise flow to the Great Salt Lake. Our approach aligns with regional findings that grass lawn replacement and efficient irrigation technology implementation represent among the most cost-effective and immediate actions available to municipalities.
- **Water Shepherding**: The City recognizes that water conservation efforts alone are insufficient if conserved water doesn't reach the Great Salt Lake. Therefore, West Valley City commits to coordinate with water providers to explore mechanisms for ensuring conserved water can be legally protected as it moves downstream toward the lake.
- **Regional Collaboration**: West Valley City will actively participate in watershed-wide initiatives to protect the Great Salt Lake, including partnerships with neighboring municipalities, water conservancy districts, and state agencies.
- **Monitoring and Reporting**: The City will track water conservation progress and annually estimate conservation achievements, enabling assessment of our community's contribution to the goal of increasing water delivery to the Great Salt Lake.

Water conservation measures outlined in this plan will contribute to restoring and maintaining the Great Salt Lake's level through:

1. **Direct Impact Assessment**: West Valley City will work with water providers to quantify how our community's conservation efforts contribute to increased flows to the Great Salt Lake. This will involve monitoring conservation achievements in terms of acre-feet saved and collaborating with water districts to track this water's journey.
2. **Policy Alignment**: The City will review and update its policies to align with the targets established by the Great Salt Lake Strike Team and other state-led initiatives focused on lake

preservation. The City's hope is to contribute a proportional share of the additional annual inflow needed to reach healthy lake levels.

3. **Cross-Jurisdictional Coordination**: West Valley City recognizes that protection of the Great Salt Lake requires coordination beyond municipal boundaries. Therefore, the City commits to participating in regional forums and collaborative governance structures focused on lake preservation.
4. **Education and Outreach**: The City will integrate Great Salt Lake awareness into its water conservation education programs, emphasizing the connection between residential water use and lake health to foster a community-wide commitment to conservation.
5. **Adaptive Management**: As scientific understanding of the lake's needs evolves, West Valley City will adapt its conservation approaches to reflect the most current data and recommendations from regional experts and state agencies.

3.4 Growth Impacts on Water Demand

As West Valley City continues to grow through development and redevelopment, water demand will increase. Understanding potential impacts requires:

- Current and future water budgets for each service area.
- Analysis of development impacts across district boundaries.
- Coordination of infrastructure planning with land use decisions.

According to the City's 2025 Moderate Income Housing Plan, West Valley City anticipates an annual average of 250 to 300 new dwelling units over the next five years. This would result in approximately 1,250 to 1,500 new units, with roughly 725 of these expected to be affordable to moderate income households. The remaining ~2,000 units are expected to be built between 2030 and 2040.

As the City continues to support diverse housing types, including rental properties, multi-family developments, and small-lot single-family homes, the general plan update outlines opportunities to align water conservation and affordable housing goals through efficient development patterns and water- conscious design.

3.5 Integration with Storm Water Management

As identified in the previous general plan, stormwater management remains an important consideration for West Valley City. The connection between water quality, water quantity, and development patterns presents opportunities for integrated water resource management.

3.6 Drought Planning

GHID has developed a comprehensive Drought Contingency Plan to address potential water supply reductions during drought conditions. The plan includes five drought levels with increasingly stringent water conservation measures:

- **Level 0 (Normal Water Supply)**: Ongoing water conservation education and water loss reduction.

- **Level 1 (Voluntary Water Conservation)**: Public outreach encouraging voluntary water reductions.
- **Level 2 (Voluntary Water Restrictions)**: Additional voluntary restrictions on time of day and watering frequency.
- **Level 3 (Mandatory Water Restrictions)**: Mandatory watering restrictions with enforcement and temporary rate increases for high water users.
- **Level 4 (Emergency Water Restrictions)**: Bans on certain types of outdoor irrigation and further rate modifications.

In recent drought conditions, GHID customers have demonstrated their willingness to conserve, with 10- 15% reductions achieved during the 2021 drought emergency. The City will coordinate closely with GHID regarding drought response to ensure consistent messaging and effective implementation of conservation measures.

3.7 Building Code and Interior Water Usage

West Valley City adopts and enforces the Utah State Building Code, which includes provisions for water- efficient fixtures and appliances in new construction and significant renovations. These provisions establish:

- Maximum flow rates for residential and commercial plumbing fixtures.
- Requirements for WaterSense-labeled fixtures in new construction.
- Standards for water-efficient appliances.

The City's authority to regulate interior water usage is primarily limited to enforcing these building code requirements. While these standards create a baseline for efficiency in new development, they represent only one component of comprehensive water management. The City's land use authority provides greater opportunity to influence outdoor water usage, which accounts for approximately 55% of total residential water consumption in West Valley City based on GHID consumption data, though this percentage can vary significantly based on lot size, landscaping choices, and seasonal conditions..

To complement building code requirements for interior water efficiency, this plan focuses on:

1. Partnering with water providers on educational initiatives regarding interior water conservation beyond code requirements.
2. Using the City's land use authority to promote water-efficient landscaping and irrigation systems.
3. Encouraging water providers to implement rate structures that incentivize conservation.

4. REGIONAL COLLABORATION

4.1 Regional Conservation Goals

West Valley City recognizes the importance of aligning with regional water conservation goals established by the State of Utah and Jordan Valley Water Conservancy District. These regional goals provide a framework for local conservation efforts and ensure that the City contributes to broader sustainability initiatives across the watershed. These goals include:

- Achieving state and regional per capita water use targets by 2030.

- Achieving target goals of gallons per capita per day use specific to West Valley City's region.
- Contributing to solutions addressing the Great Salt Lake water levels.

4.2 Coordination with State Agencies

As part of the general plan's development, West Valley City consulted with the Division of Water Resources and other relevant state agencies regarding regional water conservation goals and technical resources (UCA 10-9a-403(2)(f)(vi)).

State water experts provided technical assistance and review of this element of the general plan to ensure alignment with state conservation objectives and Great Salt Lake watershed considerations. This consultation informed the City's approach to water conservation policies and implementation strategies contained in this plan.

4.3 Great Salt Lake Watershed Considerations

As detailed in Section 3.3, West Valley City acknowledges its role in the Great Salt Lake watershed and has incorporated specific strategies to ensure our water conservation efforts contribute to lake preservation. The City will consult with the Division of Water Resources to ensure our implementation approach aligns with state-level initiatives for Great Salt Lake protection.

5. GOALS, POLICIES, AND IMPLEMENTATION

This section integrates the City's water conservation goals with specific implementation strategies and timelines. Each goal is presented with its supporting policies and specific implementation actions organized by timeframe.

5.1 Goal: Establish effective coordination between West Valley City and water service providers.

Policies:

- Develop formal communication protocols with all four water service districts.
- Include water providers in development review processes for projects exceeding certain thresholds.
- Coordinate capital improvement plans between the City and water providers.
- Maintain updated service area maps for all providers serving the City.
- Clearly define jurisdictional responsibilities between the City and water service providers for identifying and eliminating wasteful water practices, establishing a coordinated approach to water leak detection, infrastructure maintenance, and enforcement of water waste prohibitions.

Implementation Strategies:

- Establish quarterly coordination meetings with all water providers, building on the existing Development Review Committee structure where representatives from Granger Hunter, Magna, Kearns, and Taylorsville-Bennion Improvement Districts already participate.

- Develop a shared data platform for water usage, infrastructure, and planning information, with protocols that respect each district's operational independence.
- Formalize a technical advisory committee with representatives from each water provider to collaboratively address regional water challenges.
- Include water providers in land use planning processes, particularly for developments that may have significant water demand impacts.
- As resources are available, conduct a comprehensive operational audit across all City departments to identify and eliminate practices that waste water, establishing clear accountability metrics for water conservation at the departmental level.

Timeline:

- **Short-Term (1-2 years)**: Establish formal coordination protocols with all water service providers.
- **Medium-Term (3-5 years)**: Develop monitoring and reporting procedures for water use and conservation across provider boundaries.

5.2Goal: Reduce water demand in existing development.

Note: West Valley City recognizes and supports the conservation goals established by water providers serving the City. Granger-Hunter Improvement District has set conservation goals that exceed the State of Utah's Regional Water Conservation Goals. While the regional goal is to reduce per capita water use by 11% from 2015 levels by 2030, GHID has committed to reducing water use by an additional 6% by 2030 and 10% by 2040 from its already water-efficient baseline of 187 gpcd. The City's water conservation policies are designed to support and enhance these goals.

Policies:

- Partner with water providers on conservation education and outreach programs.
- Promote rebate and incentive programs available from water providers and the state.
- Support water-wise demonstration projects in visible public spaces.
- Provide resources and information about water conservation through City communication channels.
- Develop a research program to identify and test innovative retrofit technologies specifically designed to reduce water consumption in existing buildings with minimal disruption to residents and businesses.

Implementation Strategies:

- Develop and distribute information about water-wise landscaping options at various price points, acknowledging that full xeriscaping can represent a significant investment. Include information about phased approaches to landscape conversion that can make water-wise landscaping more financially accessible to residents.
- Host water-wise workshops in partnership with water providers.
- Create demonstration projects in visible public spaces.
- Recognize water conservation leaders through award programs.

- Implement targeted water audits for highest-volume commercial water users, with follow-up technical assistance.
- Establish a "Water-Wise Business Recognition Program" that publicly acknowledges businesses achieving significant water savings.

Timeline:

- **Short-Term (1-2 years):** Create educational materials about water conservation and promote existing rebate programs.
- **Medium-Term (3-5 years)**: Develop a comprehensive water conservation education program with targeted outreach to highest water users.
- **Long-Term (5+ years)**: Evaluate the effectiveness of water conservation education and incentive programs, adjusting approaches based on measured outcomes.

5.3 Goal: Ensure new development is designed for water efficiency.

Policies:

- Review and consider revisions to water-efficient landscaping standards for new development.
- Establish landscaping options for public streets that reduce or eliminate water-intensive turf.
- Develop ordinances that promote water conservation in site development.
- Require conservation measures in new development, particularly for large water users.
- Research and implement comprehensive methods and technologies to minimize water demand in new construction, including advanced building materials, innovative plumbing systems, and water recycling technologies.
- The City will work with GHID to effectively utilize and promote the district's four-tiered water rate structure, which was implemented in 2022. This rate structure is designed to:
    - Keep rates low for essential indoor use (Tier I).
    - Maintain reasonable rates for responsible outdoor water use (Tier II).
    - Apply progressively higher rates for higher water use (Tiers III and IV).
    - Include special drought surcharges that are automatically triggered during drought emergencies.
- Work with affordable housing developers to implement water-efficient designs that minimize long-term operating costs for residents while meeting conservation goals. This includes providing technical assistance for water-efficient fixture selection, landscaping design, and access to rebate programs through coordination with water service providers.

Implementation Strategies:

- Evaluate landscaping ordinances to further require additional regulations for water-wise designs in all new development.
- Update development codes to implement water-saving requirements, including maximum turf area provisions.
- Create water-efficient standards for public streets and rights-of-way, with emphasis on reducing or eliminating turf in parkstrips.

- Implement water concurrency standards that ensure adequate water availability before development approval.

Timeline:

- **Short-Term (1-2 years):** Review water-efficient landscaping standards for new development.
- **Medium-Term (3-5 years):** Consider water conservation measures and establish maximum turf area requirements for various development types.
- **Long-Term (5+ years):** Evaluate effectiveness of water-efficient design requirements and adjust standards based on measured outcomes.

5.4 Goal: Improve municipal operations to eliminate wasteful water practices.

Policies:

- Implement water-wise landscaping in all City parks and facilities.
- Develop and implement a schedule to retrofit existing City landscapes with water-efficient designs as part of a parks masterplan initiative.
- Install smart irrigation controllers and efficient fixtures in all City facilities.
- Train City staff on water conservation practices relevant to their areas of responsibility.
- Develop comprehensive public landscaping guidelines that establish specific water budgets, plant selection criteria, irrigation standards, and maintenance protocols for all City-owned properties and rights-of-way.

Implementation Strategies:

- Conduct a comprehensive water audit of all City facilities and operations.
- Develop a phased retrofit plan for City-owned landscapes, prioritizing high-visibility and high-water-use areas.
- Establish a municipal water budget for each City facility and track consumption against targets.
- Implement a cross-jurisdictional water waste reporting system that allows residents to easily report water waste and tracks the resolution of reported issues across all water provider boundaries.
- Train maintenance staff on efficient irrigation practices and water conservation techniques.

Timeline:

- **Short-Term (1-2 years)**: Install smart irrigation controllers in all City parks and facilities.
- **Medium-Term (3-5 years)**: Implement a program to retrofit City-owned landscapes with water- efficient designs, beginning with highest-use facilities.
- **Long-Term (5+ years):** Complete water-efficient retrofits for all City properties and maintain ongoing monitoring and improvement program.

5.5 Goal: Preserve and protect water quality and sensitive areas.

Policies:

- Identify and map sensitive areas that provide important water quality benefits.
- Consider ordinances that preserve and protect hydrologically- sensitive areas.
- Continue to acquire available property in sensitive areas for public open space and watershed protection.
- Work with GHID to address water quality challenges in local groundwater sources, including elevated levels of iron, manganese, and ammonia that can cause aesthetic problems. Support GHID's efforts to implement appropriate treatment for these constituents, which will allow fuller utilization of local groundwater resources during drought conditions when JVWCD supplies may be curtailed.

Implementation Strategies:

- Create educational materials about the connection between land use, water quality, and watershed health.
- Explore sensitive area overlay zones that provide special protections for areas with significant water quality benefits.
- Update development review procedures to include consideration of water quality impacts and protection of sensitive areas.
- Integrate stormwater management with water conservation efforts in landscaping requirements.

Timeline:

- **Short-Term (1-2 years)**: Consider ordinances that preserve and protect sensitive areas and update stormwater management standards.
- **Medium-Term (3-5 years)**: Complete mapping of sensitive areas and support GHID to implement education programs about watershed protection.
- **Long-Term (5+ years)**: Evaluate effectiveness of protection measures and adjust strategies based on water quality monitoring data.

5.6 Goal: Develop a coordinated drought response approach across all water provider boundaries.

Policies:

- Work with water providers to establish a consistent drought response framework with clearly defined drought stages based on specific hydrological triggers.
- Advocate for consistent water use restrictions that apply uniformly across municipal boundaries.
- Coordinate public messaging during drought conditions to prevent confusion among residents.
- Establish enforcement protocols that emphasize education first, followed by graduated penalties for non-compliance.
- Develop special provisions for critical facilities and vulnerable populations during severe drought conditions.

Implementation Strategies:

- Establish a Drought Response Coordination Committee with representatives from all water providers serving the City.

- Develop a unified drought communication plan that ensures consistent messaging across all provider boundaries.
- Create drought-specific landscape management protocols for City properties that can serve as examples for residents.
- Compile a comprehensive database of critical water users and vulnerable populations that may require special consideration during severe drought conditions.
- Develop coordinated enforcement procedures for water use restrictions during drought emergencies.

Timeline:

- **Short-Term (1-2 years):** Establish the Drought Response Coordination Committee and develop a unified communication plan.
- **Medium-Term (3-5 years)**: Develop and adopt a comprehensive drought contingency plan that covers all areas of the City regardless of water provider.
- **Long-Term (5+ years)**: Conduct regular drought simulations to test the effectiveness of response protocols and update plans based on lessons learned.

5.7 Goal: Support water technology innovation and efficient water infrastructure.

Policies:

- Support GHID in implementing its AMI (Advanced Metering Infrastructure) technology that provides real-time water meter readings, allowing customers to monitor consumption and detect leaks more quickly.
- Encourage adoption of smart water metering and real-time consumption feedback systems across all water provider service areas.
- Promote adoption of weather-based irrigation controllers for both municipal and private properties.
- Support GHID's efforts to build and operate water treatment facilities for its wells, improving water quality and allowing greater utilization of local groundwater resources during drought conditions.
- Partner with water providers and research institutions on water technology demonstration projects where resources are available.

Implementation Strategies:

- Invite water providers to coordinate infrastructure planning with the City's road and utility capital improvement program to improve construction timing and minimize service disruptions.
- Support infrastructure replacement programs that reduce water loss.
- Coordinate stormwater and water conservation efforts through integrated project design.
- Identify opportunities for water reuse and alternative water sources.
- Work with water providers to explore opportunities for expanding secondary water service areas.

Timeline:

- **Short-Term (1-2 years):** Maintain communication with water providers to integrate water infrastructure considerations into the City's capital improvement program.
- **Medium-Term (3-5 years):** Implement pilot projects demonstrating innovative water conservation technologies in City facilities.
- **Long-Term (5+ years):** Explore alternative water sources and technologies, including expanded secondary water systems and water reuse opportunities.

5.8 Goal: Ensure effective monitoring, evaluation, and adaptation of water conservation efforts.

Policies:

- Track water usage trends in coordination with water providers.
- Evaluate the effectiveness of conservation programs.
- Monitor development impacts on water demand.
- Regularly update water-related goals and policies based on new data.
- Adjust conservation strategies in response to changing conditions and new information.

Implementation Strategies:

- Develop a comprehensive water conservation monitoring framework in partnership with water providers.
- Establish key performance indicators for water conservation efforts and track progress against targets.
- Implement regular reporting procedures to communicate water conservation achievements to the public and policymakers.
- Create adaptive management protocols that allow for adjustment of conservation strategies based on monitoring results.
- Conduct regular reviews of water-related ordinances and policies to identify opportunities for improvement.

Timeline:

- **Short-Term (1-2 years)**: Implement comprehensive monitoring system and regular reporting procedures..
- **Medium-Term (3-5 years)**: Conduct comprehensive evaluation of water conservation achievements and adjust long-term goals and strategies based on results.
- **Long-Term (5+ years)**: Maintain ongoing adaptive management and continuous improvement of water conservation strategies based on monitoring results.

APPENDIX A: INFORMATION SOURCES

5.9 REPORTS AND PLANS

1. "GHID Water Conservation Plan Update 2020," Hansen, Allen & Luce (HAL Project No.: 019.54.100), October 2020
2. "GHID Drought Contingency Plan," J-U-B Engineers, Inc., June 2022
3. "Granger-Hunter Improvement District Water Master Plan," Bowen Collins & Associates, June 2022
4. "Tank Farm Evaluation Study," Hansen, Allen & Luce, Inc. (HAL Project No.: 019.50.100), May 2019
5. "Salt Lake Valley Groundwater Management Plan," 2002
6. "Rapid Intensification of the emerging southwestern North American megadrought in 2020-2021," Nature Climate Change, March 2022, Williams, Park A. et al.
7. "Preparing for Climate Change—A Management Plan," JVWCD, May 2017 (revised March 2018)
8. "Conceptual Understanding and Groundwater Quality of Selected Basin-Fill Aquifer in Salt Lake Valley, Utah," USGS, Paper 1781
9. “Water Master Plan 2020 Magna Water District,” Bowen Collins & Associates, August 2020.
10. “Great Salt Lake Water Conservation Toolbox,” SWCA, June 2024.

5.10 SUBJECT MATTER EXPERTS AND CONTACTS

9. **West Valley City Public Works**
    a. Daniel Johnson, P.E. Public Works Director. Email: daniel.johnson@wvc-ut.gov
10. **Kearns Improvement District**
    a. James "Woody" Woodruff, Public Works Director. Email: jwoodruff@kidwater4ut.gov
11. **Magna Water District**
    a. Trevor Andra, P.E., District Engineer. Phone: 801-231-4249 Email: Trevor@magnawaterut.gov
12. **Granger-Hunter Improvement District**
    a. Todd Marti, Assistant General Manager/District Engineer. Phone: 801.955.2234 Email: t.marti@ghid.gov
    b. Ian Bailey, GIS. Phone: 801.955.2205 Email: I.bailey@ghid.gov
    c. Michelle Ketchum, Director of Administrative Service.s Phone: 801-968-3551
    d. Jason Helm, General Manager.
13. **Taylorsville-Bennion Improvement District**
    a. Kevin Fenn, Assistant General Manager. Email: kevin@tbid.org

14. **Utah Division of Water Resources**
    a. Website: https://water.utah.gov/
    b. Data Portals: https://dwre-utahdnr.opendata.arcgis.com/
    c. Water Conservation Resources: https://conservewater.utah.gov/
15. **Jordan Valley Water Conservancy District**
    a. Website: https://jvwcd.org/
    b. Conservation Programs: https://jvwcd.org/public/water-conservation
    c. Conservation Garden Park: https://conservationgardenpark.org/
16. **USU Center for Water-Efficient Landscaping**
    a. Website: https://cwel.usu.edu/
    b. Plant Database: https://extension.usu.edu/yardandgarden/utah-water-wise-plants
17. **Great Salt Lake Collaborative**
    a. Website: https://www.greatsaltlakenews.org/
    b. Great Salt Lake Strike Team Reports: https://www.greatsaltlakenews.org/solutions
18. **Localscapes**
    a. Website: https://localscapes.com/
    b. Design Templates: https://localscapes.com/designs

A.2 IMAGERY, MAPPING SOURCES, AND GIS DATA

1. **NOTE: A library of water-related images is located at the following link:**
2. https://drive.google.com/drive/folders/1PltQ-UIHi-5aZuxPeDjrte_HoJOv86ka?usp=sharing
3. Google Maps/Google Earth imagery and street view photography used with permission under Google's non-commercial fair use policy. Map data ©2025 Google.
4. Utah Division of Water Resources Water-Related Land Uses Map, 2023 https://utahdnr.maps.arcgis.com/apps/webappviewer/index.html?id=a77c7bcf67fc4c60bb745bff5 d1818bd
5. Utah Department of Environmental Quality Groundwater Protection Zones Map https://www.arcgis.com/apps/mapviewer/index.html?layers=88293a87e2954112979e420222ffe3 d9
6. Utah Division of Water Resources Water Budget Dashboard https://dwre-utahdnr.opendata.arcgis.com/pages/water-budget-dashboard
7. Utah Division of Water Resources Flow Diagrams https://dwre-utahdnr.opendata.arcgis.com/pages/water-budget-flow-map
8. Utah Division of Water Resources Culinary Water Suppliers Data (2019) https://dwre-utahdnr.opendata.arcgis.com/datasets/utahDNR::mnireport2019-culinarywatarsuppliers/explore?location=40.677463%2C-111.979336%2C12.74
9. Jordan River Area Water Budget Data https://dwre-utahdnr.opendata.arcgis.com/pages/water-budget-dashboard
10. ESRI GIS Services (background mapping)
11. West Valley City Land Use Map and Planning Data
12. Wasatch Front Regional Council (WFRC) Traffic Analysis Zone (TAZ) population and employment projections

APPENDIX B: WATER CONSIDERATIONS BY ANTICIPATED LAND USE DISTRICT

While West Valley City does not directly provide water services to its residents, the City maintains exclusive authority over land use decisions that significantly impact water demand and infrastructure. As the land use authority, the City has both the responsibility and opportunity to shape development patterns that promote water efficiency and sustainability. Through thoughtful land use planning, the City can help ensure water resources remain available for future generations, even as the direct provision of water services remains with the improvement districts. This cooperative approach allows the City to fulfill its statutory obligations regarding water planning while respecting the operational expertise of the water providers.

This appendix analyzes the water consumption impacts and strategic conservation priorities for each land use district identified in the West Valley City General Plan. By understanding how different development patterns affect water demand, the City can make informed land use decisions that support regional conservation goals while accommodating growth. While the City does not directly provide water services, it exercises its land use authority to promote development patterns that use water resources efficiently.

The strategic priorities identified for each district should inform both land use decisions and coordination with water providers serving West Valley City.

The following points should be considered as the land use profiles are being developed in the general plan.

RESIDENTIAL DISTRICTS

VERY HIGH DENSITY RESIDENTIAL

Examples of Very High Density Residential include multi-story condominiums and apartments. These areas represent the highest residential densities in the city and are appropriate near transit stations, employment centers, and major commercial areas. Very high density residential development supports efficient use of land and infrastructure while providing housing diversity.

Development Characteristics

- Multifamily residential with densities exceeding 20 units per acre.
- Building heights typically 3-6 stories with structured or surface parking.
- Structured parking or surface parking with covered spaces.
- Enhanced amenity packages including recreation facilities.
- Architectural design with articulation and varied materials.
- Professional property management and maintenance.
- Typical unit sizes of 600-1,200 square feet.
- Common open space and recreation facilities.

Typical Development

This section is intended to include a number of images of typical development that should be expected in this district. Relevant images can be found in the folders at this link.

Water Consumption Impacts

- Significantly lower per capita outdoor water use due to minimal private yards.
- Shared landscapes can be managed more efficiently than individual residential yards.
- Indoor water consumption becomes the dominant water use category.
- Modern plumbing fixtures and appliances reduce per capita consumption.
- Professional management allows for immediate response to leaks or irrigation issues.
- Economies of scale make water-saving technology more cost-effective.

Strategic Priorities

- Require high-efficiency fixtures and appliances in all new multi-story developments.
- Implement water submetering for individual units to encourage conservation.
- Design common areas with water-efficient landscaping and smart irrigation.
- Explore opportunities for water reuse systems in larger developments.
- Implement structured parking solutions that reduce impervious surface area.
- Encourage location near transit to reduce parking demand and impervious surfaces.
- Establish minimum open space standards that include water-efficient landscaping.

HIGH DENSITY RESIDENTIAL

Examples of High Density Residential include stacked flat condominiums and apartments. These developments provide much-needed housing options for diverse household types and income levels while making efficient use of land. High density residential areas are typically located near commercial services and transportation corridors.

Development Characteristics

- Multifamily residential with densities of 12-20 units per acre.
- Building heights typically 2-4 stories with a mix of surface and structured parking.
- Surface parking with some covered spaces.
- Amenity packages including recreation facilities.
- Private balconies or patios for most units.
- Typical unit sizes of 700-1,200 square feet.
- A mix of rental apartments, condos and higher-density townhomes.
- Professional property management.

Typical Development

This section is intended to include a number of images of typical development that should be expected in this district. *Relevant images can be found in the folders at this link.*

Water Consumption Impacts

- Lower per capita outdoor water use compared to lower density housing.
- Common areas may still have significant landscape water requirements.

- Shared infrastructure creates opportunities for efficiency.
- Professionally managed irrigation systems can reduce waste.
- Moderate water savings compared to single-family development.

Strategic Priorities

- Establish maximum turf area requirements for common spaces.
- Encourage innovative water-saving technologies in new construction.
- Promote water conservation education for multi-family property managers.
- Consider secondary water connections for irrigation of common areas.
- Establish minimum open space standards with water-wise landscaping.
- Design parking areas to incorporate stormwater management features.
-

MEDIUM DENSITY RESIDENTIAL

Examples of Medium Density Residential include townhomes, row homes or single level condominiums. These housing types provide an important transition between lower-density single-family areas and higher-density multifamily or commercial areas. Medium density residential development provides opportunities for ownership and rental options at moderate price points.

Development Characteristics

- Attached housing with densities of 7-12 units per acre.
- Building heights typically 1-3 stories.
- Individual entries for most units.
- Small private outdoor spaces (patios or balconies).
- Shared common areas and amenities.
- Private garages with surface parking.
- Typical unit sizes of 900-1,800 square feet.
- Often developed as townhomes or row houses.

Typical Development

This section is intended to include a number of images of typical development that should be expected in this district. *Relevant images can be found in the folders at this link.*

Water Consumption Impacts

- Moderate outdoor water use for limited private yard spaces.
- Common areas may require significant irrigation if not designed for efficiency.
- Smaller lot sizes reduce irrigation needs compared to single-family homes.
- Opportunity for HOA management of efficient irrigation systems.
- Shared walls reduce indoor water demand for heating and cooling.

Strategic Priorities

- Implement water-wise landscaping standards for both private and common areas.
- Encourage HOAs to adopt progressive water conservation policies.
- Promote efficient irrigation systems for townhome developments.
- Consider water consumption in density bonus calculations.
- Ensure appropriate transitions to surrounding lower-density areas.
- Create design standards that allow for individual expression while maintaining cohesion.
- Require enhanced pedestrian connections to surrounding neighborhoods.
- Implement parking designs that reduce impervious surface areas.
- Establish clear standards for private versus common open space.
- Encourage location near neighborhood services and amenities.

SMALL LOT RESIDENTIAL

Small Lot Residential means single-family detached homes on small lots. This housing type maintains the privacy and character of single-family neighborhoods while increasing overall density. Small lot residential development allows for more efficient use of land and infrastructure while preserving the detached housing type preferred by many households.

Development Characteristics

- Single-family detached homes on small lots (5,000-7,000 square feet).
- Building heights typically 1-2 stories.
- Reduced setbacks compared to traditional single-family development.
- Private yards with limited common areas.
- Attached or detached garages, often with alley access.
- Typical unit sizes of 1,200-2,200 square feet.
- Traditional single-family ownership model.
- Limited common areas or amenities.

Typical Development

This section is intended to include a number of images of typical development that should be expected in this district. *Relevant images can be found in the folders at this link.*

Water Consumption Impacts

- Reduced outdoor water use compared to larger lot single-family homes.
- Presents a good opportunity for water-efficient new development.
- Backyard landscaping choices still significantly impact overall water use.
- Smaller lot size allows for more efficient irrigation systems.
- Individual metering encourages water conservation.

Strategic Priorities

- Establish maximum turf area requirements for new small lot developments.
- Provide water-wise landscaping resources targeted to small lot homeowners.
- Consider lot configuration that minimizes irrigated area while maintaining livability.
- Promote efficient irrigation technologies appropriate for smaller yards.
- Implement varied setbacks and building placements to avoid monotony.
- Require street trees and water-efficient public spaces.
- Develop model water-wise landscape plans specifically for small lots.
- Provide resources about water conservation to new homeowners in small lot developments.

LOW DENSITY RESIDENTIAL

Homes in these districts are typically single-family detached units. These neighborhoods form the traditional core of residential areas in West Valley City, providing housing for families and households seeking private yards and detached homes. Low density residential areas emphasize privacy, larger private yards, and traditional neighborhood character.

Development Characteristics

- Single-family detached homes on moderate-sized lots (8,000-10,000 square feet).
- Building heights typically 1-2 stories.
- Standard setbacks creating suburban character.
- Private yards with no common areas.
- Attached or detached garages with direct street access.
- Typical unit sizes of 1,800-3,000 square feet.
- Traditional single-family ownership model.
- Primarily residential with supporting community uses.

Typical Development

This section is intended to include a number of images of typical development that should be expected in this district. *Relevant images can be found in the folders at this link.*

Water Consumption Impacts

- Higher per capita outdoor water use due to larger yard areas.
- Landscaping choices have a significant impact on overall water consumption.
- Established neighborhoods may have water-intensive landscape traditions.
- Individual metering provides direct price signals for conservation.
- Largest residential water use category in most communities.

Strategic Priorities

- Target conservation education and incentives to existing low-density neighborhoods.
- Establish water budget programs for large lot properties.
- Promote conversion of water-intensive landscaping to water-wise alternatives.
- Implement progressive water rate structures that discourage excessive use.
- Create model landscape plans for water-efficient front yards.
- Develop educational programs about efficient irrigation techniques.
- Allow flexibility for accessory dwelling units to increase affordability.
- Establish clear standards for water-efficient landscaping in new developments.
- Provide resources about water conservation to homeowners associations.
- Create demonstration projects showcasing water-wise landscaping in traditional neighborhoods.

LARGE LOT RESIDENTIAL

Homes in these districts are typically single-family detached units. Large lot residential areas provide a transition between suburban residential densities and more rural areas. These neighborhoods offer spacious lots with substantial private yards and a more open character than standard single-family areas.

Development Characteristics

- Single-family detached homes on larger lots (12,000-20,000 square feet - 2 to 3 units per acre).
- Building heights typically 1-2 stories with some larger homes.
- Generous setbacks creating estate-like character.
- Substantial private yards with no common areas.
- Attached or detached garages, often oversized.
- Typical unit sizes of 2,500-4,000+ square feet.
- Traditional single-family ownership model.
- Often located in areas with significant natural features.

Typical Development

This section is intended to include a number of images of typical development that should be expected in this district. *Relevant images can be found in the folders at this link.*

Water Consumption Impacts

- Potentially very high outdoor water consumption due to extensive yards.
- Individual landscape choices have a major impact on citywide water use.
- May have private wells or secondary water connections in some areas.
- Largest per capita water users in the residential sector.
- Greatest opportunity for significant water conservation gains.

Strategic Priorities

- Implement strong incentives for water-wise landscaping conversion.
- Consider limits on irrigated area for new large lot developments.
- Promote alternative landscape approaches like xeriscaping and naturalized areas.
- Encourage transition to secondary water for outdoor irrigation where service is available.
- Establish water budgets for larger properties.
- Create demonstration projects showcasing estate-sized water-wise landscapes.
- Develop educational resources specifically for large lot owners.
- Allow flexibility for accessory dwelling units to increase housing options.
- Implement tiered water rates that discourage excessive use.
- Consider conservation requirements when large lot areas are annexed or rezoned.

RURAL RESIDENTIAL

Homes in these districts are typically single-family detached units. Rural residential areas preserve a semi-rural lifestyle within the city boundaries, often including opportunities for small-scale agricultural activities. These areas maintain lower densities and an open character while still providing urban services.

Development Characteristics

- Single-family detached homes on very large lots (0.5+ acres or 2 or fewer units per acre).
- Building heights typically 1-2 stories.
- Generous setbacks creating rural character.
- Extensive private yards, often with agricultural elements.
- Varied outbuildings for storage or agricultural uses.
- Typical unit sizes vary widely from modest to very large.
- Traditional single-family ownership model.
- Often in transition areas between urban and agricultural uses.

Typical Development

This section is intended to include a number of images of typical development that should be expected in this district. *Relevant images can be found in the folders at this link.*

Water Consumption Impacts

- Highest potential per capita water use among residential categories.
- May include small-scale agricultural uses with significant water needs.
- Often located in areas with limited water infrastructure.
- May have private wells or secondary water rights.
- Agricultural water use is typically separate from the culinary water system.

Strategic Priorities

- Develop water conservation approaches specific to rural lifestyle needs.
- Promote efficient agricultural irrigation techniques for small-scale farming.
- Encourage protection of natural waterways and groundwater recharge areas.
- Consider requiring water catchment systems for new rural residential construction.
- Create educational resources about efficient irrigation for small-scale agriculture.
- Promote drought-resistant crop varieties for hobby farms.
- Allow flexibility for accessory dwelling units to increase housing options.
- Establish standards for maintaining rural character while conserving water.
- Implement guidelines for efficient watering of livestock.
- Encourage preservation of natural drainages and water features.

COMMERCIAL AND MIXED USE DISTRICTS

BUSINESS PARK

Business Park areas on the General Plan Map illustrate the districts where very large office uses are grouped together and surrounded by open space, which provides a better transition to nearby residential neighborhoods. These areas emphasize high-quality development standards and significant landscaping to create attractive employment centers.

Development Characteristics

- Campus-style development with multiple buildings in a park-like setting.
- Significant open space and landscaped areas.
- Building heights typically 1-3 stories with some taller signature buildings.
- Primary uses include offices, research facilities, and light manufacturing.
- Typical development density of 0.3-0.5 floor area ratio.
- Limited retail uses serving primarily on-site employees.
- Buildings set back from public streets with landscaped frontages.

Typical Development

This section is intended to include a number of images of typical development that should be expected in this district. *Relevant images can be found in the folders at this link.*

Water Consumption Impacts

- Landscaped campuses traditionally have high outdoor water consumption.
- Large roof areas provide opportunities for rainwater harvesting.
- Parking areas create significant impervious surfaces affecting stormwater management.
- Current trends favor less water-intensive landscaping in business park settings.
- Typically lower water use per acre than residential development.

Strategic Priorities

- Implement district-scale water management strategies across business park areas.
- Require water budgets and conservation plans for large campus developments.
- Create landscape standards that limit turf areas to no more than 15% of open space.
- Encourage rainwater harvesting systems for landscape irrigation.
- Utilize parking lot designs that incorporate bioswales and permeable surfaces.
- Require smart irrigation systems with weather-based controllers.
- Develop shared parking strategies to reduce impervious surface area.
- Implement water-efficient technologies in all new construction.

ENTERTAINMENT DISTRICT

This section of the City already contains several entertainment-focused venues including the Maverik Center and the West Valley Performing Arts Center. This district encourages additional entertainment and complementary uses such as hotels and restaurants to build upon existing vitality, creating a destination area with regional draw.

Development Characteristics

- Entertainment venues serving local and regional audiences with distinctive architecture.
- Building heights typically 1-4 stories with signature architectural elements.
- High-quality materials and distinctive design elements.
- Active street frontages with significant pedestrian amenities.
- Public gathering spaces and plazas.
- Reduced parking requirements due to varied peak usage times.
- Nighttime lighting and activity.

Typical Development

This section is intended to include a number of images of typical development that should be expected in this district. *Relevant images can be found in the folders at this link.*

Water Consumption Impacts

- High concentration of restaurants results in significant indoor water consumption.
- Public spaces and decorative water features can increase outdoor water use.
- Landscape features are often designed for maximum visual impact rather than water efficiency.
- Large impervious areas from parking and plazas affect stormwater management.
- Opportunity for visible demonstration of water-efficient technologies.

Strategic Priorities

- Develop district-specific water conservation guidelines for entertainment venues.
- Implement water-efficient fixtures in all public facilities and restrooms.
- Create distinctive public spaces that demonstrate water-efficient landscaping.
- Design decorative water features to minimize consumption through recirculation.
- Encourage shared parking structures to reduce impervious surface area.
- Require food service businesses to implement water-efficient equipment and practices.
- Develop pedestrian-friendly streetscapes with water-wise landscaping.
- Create design standards for outdoor dining areas that incorporate water efficiency.
- Implement district stormwater management systems that capture runoff for reuse.

GENERAL COMMERCIAL

General Commercial is established to provide locations for a full range of office, retail commercial and service uses which are oriented to serve both local and regional market demand. A variety of commercial activities are encouraged, especially those which promote both day and night consumer activity.

Development Characteristics

- Wide range of retail, service, and office uses in various building types.
- Building heights typically 1-2 stories with some taller structures.
- Typical floor area ratios of 0.2-0.4.
- Moderate to large parking requirements (4-5 spaces per 1,000 square feet).
- Landscaping requirements around perimeter and within parking areas.
- Direct access to arterial or collector streets.
- Building orientation typically toward parking areas.

Typical Development

This section is intended to include a number of images of typical development that should be expected in this district. *Relevant images can be found in the folders at this link.*

Water Consumption Impacts

- Diverse water usage patterns depending on business types.
- Typically higher per-acre water consumption than residential areas.
- Often includes significant irrigated landscaping for aesthetic purposes.
- Large impervious surfaces from parking lots affect stormwater management.
- Opportunity for water efficiency improvements in older commercial areas.

Strategic Priorities

- Implement commercial landscaping standards that reduce water consumption.
- Require water efficiency audits for larger commercial water users.
- Encourage renovation of older commercial properties with water-efficient fixtures.
- Create design standards that reduce impervious surface area in parking lots.
- Establish water budgets for irrigated areas in commercial developments.
- Create incentives for green roof installations on larger commercial buildings.

NEIGHBORHOOD COMMERCIAL

The Neighborhood Commercial areas allow for convenient shopping facilities which appropriately fit within and serve a neighborhood-oriented market. These facilities supply day to day necessities for local residents while maintaining compatibility with surrounding residential areas.

Development Characteristics

- Small-scale retail and service uses serving surrounding neighborhoods.
- Building heights typically 1 story with some 2-story elements.
- Typical development size of 1-3 acres.
- Building design compatible with neighborhood character.
- Moderate parking requirements (3-4 spaces per 1,000 square feet).
- Direct access to collector streets.
- Building orientation typically toward the street with parking to the side or rear.
- Operating hours compatible with residential areas.

Typical Development

This section is intended to include a number of images of typical development that should be expected in this district. *Relevant images can be found in the folders at this link.*

Water Consumption Impacts

- Moderate water consumption aligned with surrounding neighborhood patterns.
- Smaller footprint results in lower overall water demand than larger commercial centers.
- Landscape areas are often integral to neighborhood compatibility.
- Opportunity to demonstrate neighborhood-scale water conservation techniques.
- Food service uses may have higher water demand than retail.

Strategic Priorities

- Implement water-efficient landscaping requirements with emphasis on transition areas.
- Establish water audits and conservation plans for food service businesses.
- Implement neighborhood-scale stormwater management techniques.

NON-RETAIL COMMERCIAL

These areas are meant to invite small-scale commercial offices and professional services that fit into lower density primarily residential (single family, detached) neighborhoods. Non-retail commercial areas provide employment and services while maintaining compatibility with residential character.

Development Characteristics

- Small-scale office and service uses are compatible with residential neighborhoods.
- Building heights limited to 1-2 stories.

- Architecture compatible with residential character.
- Modest parking requirements (3-4 spaces per 1,000 square feet).
- Enhanced landscaping to buffer adjacent residential uses.
- Limited hours of operation to minimize neighborhood impacts.
- Building size typically under 10,000 square feet.

Typical Development

This section is intended to include a number of images of typical development that should be expected in this district. Relevant images can be found in the folders at this link.

Water Consumption Impacts

- Generally lower water consumption than retail commercial.
- Water use primarily for employee needs and limited landscaping.
- Smaller building footprints result in less impervious surface area.
- Landscape buffers may require irrigation but serve an important compatibility function.
- Overall water demand is similar to residential on a per-acre basis.

Strategic Priorities

- Implement water-efficient landscaping appropriate for residential-adjacent locations.
- Implement stormwater management techniques appropriate to neighborhood scale.

MIXED USE

Mixed Use is intended to facilitate the integration of diverse but compatible uses into a single development. The level of intensity and variety of uses will depend upon the site location in the City as described in this chapter. Mixed-use areas create vibrant, walkable environments with complementary uses that activate spaces throughout the day.

Development Characteristics

- Combination of retail, office, and residential uses within single projects.
- Building heights typically 2-4 stories with some taller elements.
- Reduced parking requirements due to internal trip capture.
- Buildings oriented to create a pedestrian-friendly environment.
- Residential densities of 15-30 units per acre.
- Emphasis on shared amenities and public spaces.
- Typically developed as unified projects under single ownership or master developer.

Typical Development

This section is intended to include a number of images of typical development that should be expected in this district. Relevant images can be found in the folders at this link.

Water Consumption Impacts

- Diverse water usage patterns from combined residential and commercial uses.
- Higher density generally results in lower per capita outdoor water use.
- Mixed timing of peak water demands can optimize infrastructure utilization.
- Opportunity for shared irrigation systems across development.
- Indoor water use may be higher in commercial components than residential.

Strategic Priorities

- Develop integrated water management approaches that address both residential and commercial needs.
- Implement water-efficient landscaping throughout mixed-use developments.
- Encourage shared amenities that reduce overall water consumption.
- Require water budgets and conservation plans for large mixed-use projects.
- Implement parking strategies that reduce impervious surface area.

MANUFACTURING AND INDUSTRIAL DISTRICTS

Water Consumption Impacts

- Highly variable water use depending on specific industrial processes.
- Large site areas often include both extensive landscaping and parking/circulation.
- Process water needs vary significantly by industry type.
- Large roof areas create opportunities for rainwater harvesting.
- Industrial processes may allow for significant water recycling.

Strategic Priorities

- Encourage water recycling and reuse systems for industrial processes.
- Implement water-efficient landscaping standards for industrial parks.
- Provide technical assistance for water audits and efficiency improvements.
- Explore opportunities for water-sharing between compatible industries.
- Develop water conservation plans for significant industrial water users.
- Implement stormwater management techniques appropriate to industrial sites.
- Encourage sharing of private fire protection water systems where appropriate.
- Promote industrial clustering to allow for shared water infrastructure.

HEAVY MANUFACTURING

Heavy Manufacturing is established to provide suitable locations for uses engaged in the basic processing and manufacturing of materials or products predominantly from extracted or raw materials. These areas accommodate intensive industrial operations that may have environmental impacts requiring separation from sensitive uses.

Development Characteristics

- Intensive industrial operations with potential environmental impacts.
- Building heights typically 1-3 stories with specialized industrial structures.
- Very large building footprints often exceeding 50,000 square feet.
- Extensive parking and loading areas for employees and shipping.
- Minimal landscaping requirements (5% of site area).
- Significant buffers required adjacent to non-industrial uses.
- Typical floor area ratios of 0.2-0.4.
- May include outdoor storage and processing areas.
- Often requires specialized utility service including high-capacity water and sewer.

Typical Development

This section is intended to include a number of images of typical development that should be expected in this district. Relevant images can be found in the folders at this link.

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Water Consumption Impacts

- Potentially very high water consumption for industrial processes.
- Water quality concerns related to industrial activities
- May require significant water infrastructure capacity.
- Process water is often the dominant water use rather than landscape irrigation.
- Significant opportunities for water recycling and reuse.
- Stormwater management is critical due to potential contamination issues.

Strategic Priorities

- Require comprehensive water use and conservation plans for heavy industrial users.
- Implement performance standards for water recycling in water-intensive industries.
- Conduct regular water audits for major industrial water users.
- Work with water providers to incentivize opportunities for using non-potable water sources for industrial processes.
- Consider water availability and infrastructure capacity in new industrial zoning decisions.
- Establish robust stormwater management standards for industrial sites.
- Provide technical assistance for implementation of water-efficient technologies.

PARKS AND TRAILS DISTRICTS

PARKS & OPEN SPACE

These areas on the West Valley City General Plan Map indicate the locations of public parks, trail corridors, golf courses, and open space. These existing facilities represent significant community investments and provide essential recreation opportunities and environmental benefits. Maintenance and potential enhancement of these spaces is an ongoing priority.

Development Characteristics

- Existing developed recreation areas and natural open spaces of varying size and type.
- Range from highly developed parks to passive natural areas.
- Include both public and private recreation facilities.
- May have specialized facilities like golf courses, recreation centers, or sports complexes.
- Serve as organizing elements for surrounding neighborhoods.

Typical Development

This section is intended to include a number of images of typical development that should be expected in this district. Relevant images can be found in the folders at this link.

Water Consumption Impacts

- Many existing parks were designed with water-intensive landscaping.
- Often feature large turf areas with traditional irrigation systems.
- Opportunity for retrofitting with more efficient systems and landscaping.
- Golf courses typically have high water demand but increasing efficiency through technology.

Strategic Priorities

- Audit existing parks for water use and develop conservation plans.
- Retrofit irrigation systems with smart controllers and efficient heads.
- Convert portions of existing turf areas to water-wise landscaping.
- Implement demonstration gardens to showcase water-efficient alternatives.
- Develop education programs about water conservation within parks.
- Strategically reduce irrigation in areas of parks that are less utilized.
- Utilize rainwater harvesting techniques where applicable.
- Establish water budgets for each park to track and manage consumption.
- Implement new maintenance practices that reduce water waste.
- Create water-efficient renovation plans for older parks and facilities.

PROPOSED NEIGHBORHOOD PARK AREA

These areas have been identified as locations where a small, 0.5 to 5 acre park is needed. Neighborhood parks provide accessible recreation opportunities within walking distance of residential areas. These smaller parks typically focus on meeting the everyday recreation needs of surrounding residents with an emphasis on play areas and gathering spaces.

Development Characteristics

- Smaller parks (0.5-5 acres) serving surrounding neighborhoods.
- Playground equipment and multi-use open space.
- Limited parking, typically street parking or small lot (3-5 spaces).
- Seating areas, picnic facilities, and shade structures.
- Accessible by walking from surrounding residential areas.
- May include small-scale amenities like basketball courts or community gardens.

Typical Development

This section is intended to include a number of images of typical development that should be expected in this district. *Relevant images can be found in the folders at this link.*

Water Consumption Impacts

- Smaller overall footprint results in lower total water use than community parks.
- Opportunity to showcase water-efficient neighborhood-scale landscaping.
- Greater flexibility to utilize low-water design compared to athletic field-focused parks.
- Potential for community gardens with efficient irrigation systems..

Strategic Priorities

- Design neighborhood parks with minimal turf areas.
- Incorporate play areas with water-permeable or natural surfacing.
- Utilize shade structures and trees to reduce water needs and improve comfort.
- Install demonstration gardens with educational signage.
- Develop parks that reflect the character of surrounding neighborhoods.
- Implement efficient irrigation systems with smart controllers.
- Create flexible spaces that can adapt to changing neighborhood needs.
- Incorporate community gardens with efficient drip irrigation.
- Design parks to be maintained by neighborhood volunteers where appropriate.
- Utilize stormwater management techniques that reduce irrigation needs.

OTHER DISTRICTS

COMMUNITY USE

The Community Use designation is applied to a variety of government, community, or private land uses such as City and County government buildings, churches, schools, and even cemeteries. These areas provide essential public services and facilities that support neighborhood and citywide needs.

Development Characteristics

- Public and quasi-public facilities serving community needs.
- Building types vary widely based on specific community function.
- Often include significant public spaces and gathering areas.
- Typically incorporate higher design standards than commercial buildings.
- Usually include significant landscaped areas.
- Parking requirements based on specific use and capacity.
- Often serve as neighborhood anchors and community landmarks.
- Typically higher quality materials and architectural elements.

Typical Development

This section is intended to include a number of images of typical development that should be expected in this district. *Relevant images can be found in the folders at this link.*

Water Consumption Impacts

- Public buildings and schools can be significant water users.
- Community facilities often include extensive landscaped areas.

- High visibility makes these properties ideal for demonstrating conservation.
- Institutional users may have resources for advanced water systems.
- Operations typically under direct public control allowing for water management.

Strategic Priorities

- Implement exemplary water conservation practices in all city facilities.
- Partner with schools on water conservation education and demonstration projects.
- Use public buildings to showcase innovative water technologies.
- Consider secondary water connections for irrigation of public properties where service is available.
- Develop water management plans for all public and community facilities.
- Consider water capture and reuse systems for all new public facilities.
- Partner with institutional users on shared water conservation goals.

UTILITY

Utility is used to indicate where a private or public utility has a permanent installation, public access is generally not allowed, and the land is not likely to be used for any other purpose in the future. These areas accommodate essential infrastructure serving the community's basic needs for water, power, telecommunications, and other utilities.

Development Characteristics

- Utility infrastructure and operational facilities with specialized functions.
- Building types vary widely based on specific utility function.
- Often includes both buildings and specialized structures.
- Security fencing and controlled access points.
- Minimal public interface or amenities.
- Landscaping typically limited to perimeter areas.
- Sites designed for operational efficiency rather than aesthetics.
- May include service yards and equipment storage areas.

Typical Development

This section is intended to include a number of images of typical development that should be expected in this district. *Relevant images can be found in the folders at this link.*

Water Consumption Impacts

- Variable water needs depending on specific utility type.
- Some utilities are inherently water-related (water treatment, pumping).
- Primarily operational water use rather than irrigation.
- May include large impervious areas affecting stormwater management.
- Critical infrastructure often requires redundant water systems.

Strategic Priorities

- Coordinate with utility providers on water conservation initiatives.
- Encourage water-efficient practices in utility operations.
- Use utility corridors for demonstration of water-efficient landscaping.
- Consider water resource impacts in utility expansion planning.