



Executive Summary

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EXECUTIVE SUMMARY

Every day, the City of Olympia delivers affordable, high-quality drinking water to over 60,000 people through approximately 20,000 connections. This water consistently meets 100 percent of US Environmental Protection Agency (USEPA) standards for safe drinking water, and it is pumped to everyone's homes at a fraction of the cost some will pay for bottled water.

This Water System Plan serves as a guide for Utility staff to use in achieving objectives and implementing strategies over the next six years, and provides benchmarks against which progress toward the Utility's goals can be measured.

This Plan has been prepared in accordance with WAC 246-290-100, which requires public water systems with more than 1,000 connections to submit a water system plan every six years for review and approval by the Washington State Department of Health (DOH). The Plan demonstrates the Drinking Water Utility's operational, technical, managerial and financial capability to achieve and maintain compliance with relevant local, state and federal regulations, and how the Utility will address present and future needs.

Overall Vision

The Utility's mission is to provide and protect healthy drinking water for the community, with a long-term vision that Olympia's Drinking Water Utility sustains present and future water supplies for our community while protecting the environment. This mission and vision have been developed in the context of the City's commitment to sustainability.

This Plan evaluates the City of Olympia's water system from the perspective of the full hydrologic cycle, not solely from the traditional perspective of source, storage and distribution. It recognizes the connection between groundwater and surface water, and the effect that Olympia's groundwater-dependent water system may have on surrounding surface water bodies.

Additionally, this Plan helps carry out the vision and goals stated in the Olympia Comprehensive Plan. In particular, the following chapters of the Comprehensive Plan give guidance to this strategic management plan for the Utility:

- Community Vision and Values
- Public Participation and Partners
- Utilities
- Natural Environment
- Capital Facilities Plan

Challenges

The years 2015-2020 will be less capital intensive than the previous planning cycle. The Utility achieved its goal of reserving water rights for a 50+ year water supply, replaced the primary source at McAllister Springs with the McAllister Wellfield, and achieved significant water conservation targets.

The following challenges face the Drinking Water Utility for 2015-2020:

1. **Aging infrastructure.** Assessment, repair and replacement of existing infrastructure will continue to be a challenge for the Utility.
2. **Changing water quality regulations.** The Utility must be ready to respond to any changes in water quality regulations and treatment requirements imposed by state and federal agencies.
3. **Keeping pace with development.** Fast or slow, the rate of growth will determine how new water sources are developed and when they come online.
4. **Protecting groundwater from contamination.** Risks to groundwater will increase with a growing population, and will require the City to regularly evaluate, monitor, and take action to control sources of pollution.
5. **Equitable and predictable rates and fees.** Creating predictability for customers and developers is difficult in a complex economic and regulatory environment.
6. **Public education and involvement.** Keeping customers and the community involved and informed about challenges, needs, plans and proposals can help ensure that programs and projects are responsive to customer needs and community values.

2015-2020 Drinking Water Utility Goals

The primary framework for this Plan is the Utility’s long-term vision that Olympia’s Drinking Water Utility sustains present and future water supplies for our community while protecting the environment. The Utility sees itself as a steward of water resources and therefore takes a broad view of the entire hydrologic cycle, rather than focusing narrowly on system infrastructure.

Table S1 defines the key planning terms used in this Plan. Understanding them will make it easier to see how specific elements of this Plan relate to each other.

Table S1 Key Planning Terms

Goals¹	Broad, qualitative statements of what the Drinking Water Utility intends to achieve.
Objectives	Specific, measurable statements of what will be done to achieve the Goals within a particular time frame.
Strategies	General approaches or methods for achieving Objectives and resolving specific issues. Strategies speak to the question “How will we go about accomplishing our Objectives?”

1. Definitions are adapted from EPA’s Planning for Sustainability: A Handbook for Water and Wastewater Utilities, EPA-823-R-12-001, February 2012.

The goals, objectives and strategies presented in Table S2 offer a roadmap for the Utility’s direction over the next six years. Further information and discussion regarding the goals, objectives and strategies are in Chapters 4-14.

The Utility will focus on a number of programs over the next six years:

- **Asset Management.** This program will enable staff to manage the condition of infrastructure assets, evaluate life cycles, and track ongoing costs of repair and replacement, in order to optimize management of the Utility’s infrastructure.
- **McAllister Wellfield Mitigation.** The Utility will continue to fulfill the requirements of our water rights mitigation plan, often in coordination with other jurisdictions and local tribes.
- **Water Conservation.** Having exceeded previously established goals for water use efficiency, the Utility has set new, achievable water use efficiency goals to build on past program success.

The Utility has a strong foundation of well-developed, ongoing programs and will continue to refine and strengthen these programs in 2015-2020, guided by the goals, objectives and strategies compiled in Table S2.

Table S2 2015-2020 Goals, Objectives and Strategies

<p>Goal 1. Adequate supplies of water are available for the Olympia community while protecting in-stream flows and sustaining long-term capacity of aquifers. (Chapter 4)</p>
<p>Objective 1A. Maintain water rights that ensure adequate supply for at least 50 years, so sources can be protected from contamination or commitment to lower priority uses.</p>
<p>Strategies</p> <ol style="list-style-type: none"> 1. Evaluate existing water rights and forecasted demand every six years. 2. Continue implementing required mitigation actions associated with McAllister Wellfield water rights.
<p>Objective 1B. Encourage multi-jurisdictional approaches to water rights and source development.</p>
<p>Strategies</p> <ol style="list-style-type: none"> 1. Through agreements and in consultation with neighboring tribes and cities, take a cooperative, regional approach to mitigating aquifer pumping impacts on water bodies in the Deschutes and Nisqually WRIAs (11 and 13, respectively). 2. Continue to evaluate future operational strategies for development of the former Olympia Brewery water rights.
<p>Objective 1C. Monitor water levels in all pumped aquifers and maintain numerical groundwater models to better understand aquifer characteristics and evaluate the impacts of the City’s withdrawals.</p>
<p>Strategies</p> <ol style="list-style-type: none"> 1. Continue to monitor water level data and update numerical models as needed for all water sources. 2. Continue to expand the long-term water level monitoring protocol for implementation in all water supply areas to better understand impacts of the City’s withdrawal on the aquifers used for water supply. 3. Evaluate whether aquifer pumping tests are needed in certain water supply aquifers and conduct tests as needed. 4. Maintain numerical models for all water sources. Use these models to predict future water supply impacts from climate, development, and additional withdrawals.

Goal 2. Water is delivered at useful pressures and meets Safe Drinking Water Act standards – and it looks and tastes great. (Chapter 11)

Objective 2A. Maintain 100 percent compliance with all state and federal monitoring requirements.

Strategies

1. Continue compliance monitoring for source, distribution and tap locations according to required timelines, with analysis performed by accredited laboratories.
2. Continue groundwater protection monitoring to alert staff about contamination that may be migrating toward drinking water sources.
3. Continue tracking developments associated with future state and federal monitoring requirements.
4. Continue close monitoring of nitrate levels in Shana Park Well 11 (S10). If levels begin to increase, evaluate treatment or development of a new source.

Objective 2B. Maintain 100 percent compliance with all state and federal treatment requirements.

Strategies

1. Maintain a minimum free chlorine residual of 1.07 mg/L at Shana Park Well 11 (S10) in order to maintain compliance with CT6.
2. Maintain a minimum pH of 7.0 at Shana Park Well 11 (S10), Allison Springs Well 13 (S09) and Allison Springs Well 19 (S11); and a minimum 7.5 at McAllister Wellfield (S16) and Indian Summer Well 20 (S12).
3. Verify minimum chlorine residual of 0.2 mg/L in the distribution system through measurement of residual chlorine levels, as part of monthly system coliform sampling.

Objective 2C. Respond to customer water quality concerns promptly and maintain accurate reporting.

Strategies

1. Investigate, validate and respond to water quality complaints by way of phone calls, emails and/or site visits.
2. Meet all reporting and record retention deadlines.

Objective 2D. Support the groundwater protection network with monitoring and data collection.

Strategies

1. Continue sampling groundwater protection monitoring wells in all Drinking Water Protection Areas.
2. Continue maintaining data loggers in all Drinking Water Protection Areas.

Goal 3. Olympia's water supplies are used efficiently to meet the present and future needs of the community and natural environment. (Chapters 5 & 6)

Objective 3A. Reduce indoor use by an additional 100,000 gallons per day (gpd) over past program savings. (Chapter 5)

Strategies

1. Continue to implement flow reduction programs through partnership with the LOTT Clean Water Alliance and Cities of Lacey and Tumwater for single-family, multi-family and industrial/commercial/institutional (ICI) customers who receive LOTT sewer service.
2. Continue to implement water-saving programs for residential City water customers who are on septic systems and therefore cannot participate in the LOTT programs.
3. Continue outreach to raise awareness of the importance of water use efficiency.

Objective 3B. Reduce outdoor use by an additional 5 percent over past program savings. (Chapter 5)

Strategies

1. Continue to implement outdoor water use reduction programs for residential customers.
2. Continue to implement the Efficient Irrigation Hardware Rebate Program for ICI customers.
3. Continue outreach to raise awareness of the importance of water use efficiency.

Objective 3C. Maintain water loss below 10 percent of production. (Chapter 5)

Strategies

1. Continue to monitor water loss in the system annually, as required by the DOH, by evaluating production, authorized consumption (both metered and unmetered) and resulting Distribution System Leakage (DSL).
2. Continue to work closely with the Olympia Fire Department and surrounding fire districts to get accurate estimates of water used for fire suppression, fire flow testing, sprinkler flushing and training conducted off-site.
3. Continue to work closely with the Utility's Operations & Maintenance section to monitor water loss due to field use, main breaks and leaks, as well as expanding leak detection efforts.
4. If the water system exceeds the DSL standard, develop and implement a Water Loss Control Action Plan as required by DOH.

Objective 3D. Meet the needs of current and future City reclaimed water customers. (Chapter 6)

Strategies

1. Continue to respond to inquiries about reclaimed water use, regulations, availability, capacity, opportunities, and requests for assistance with existing infrastructure.
2. Continue to support development-driven advancement of reclaimed water for direct beneficial use, using the *Reclaimed Water System Expansion Plan* to guide placement of infrastructure.
3. Continue to implement and enforce the City's reclaimed water ordinance, engineering design and development standards and End User Agreements to ensure compliance.

Objective 3E. Direct reclaimed water towards meeting the regional wastewater management goal of reducing the amount of treated wastewater discharged into Puget Sound. (Chapter 6)

Strategies

1. Seek opportunities to increase infiltration of reclaimed water to recharge groundwater and enhance in-stream flows.
2. Participate as a LOTT partner in state and local reclaimed water regulation development activities, including presence on technical and advisory groups.
3. Support efforts to expand infrastructure for partnered or regional uses.

Objective 3F. Enhance Reclaimed Water Program efficiency and effectiveness (Chapter 6)

Strategies

1. Engage in a reclaimed water project or effort involving direct beneficial reuse when it:
 - Benefits implementation of the City's Reclaimed Water Program
 - Results in the use of significant volumes of reclaimed water
 - Involves a high-profile or model use or user
 - Aligns with implementing the *Reclaimed Water System Expansion Plan*
2. Pursue grants and other funding sources that support the Reclaimed Water Program's objectives and strategies.

Goal 4. Customers have access to the information they need, have a role in accomplishing Utility goals, and participate in Utility decision making. (Chapter 1)
Objective 4A. Engage with drinking water customers regularly.
<p>Strategies</p> <ol style="list-style-type: none"> 1. Work with Olympia’s Utility Advisory Committee to develop and review drinking water policies, projects, programs and rates. 2. Provide useful information to customers through the Utility bill insert that accompanies each water bill. 3. Maintain the Utility’s web pages with current information that is easy to find and understand.
Objective 4B. Coordinate customer service and education with the City’s other water resource utilities and LOTT.
<p>Strategies</p> <ol style="list-style-type: none"> 1. Cooperate with the Wastewater Management Utility, Storm and Surface Water Utility and LOTT in educational/promotional activities.
Goal 5. Groundwater quality is protected to ensure clean drinking water for present and future generations and to avoid the need for expensive replacement or treatment facilities. (Chapter 7)
Objective 5A. Prevent contamination of groundwater through surveillance and response.
<p>Strategies</p> <ol style="list-style-type: none"> 1. Continue to monitor groundwater quality to understand risks to groundwater, detect contamination and evaluate pollution reduction efforts. 2. Continue to improve spill prevention actions and implement spill response procedures.
Objective 5B. Strengthen and exercise partnerships with citizens and state/local agencies.
<p>Strategies</p> <ol style="list-style-type: none"> 1. Raise awareness about the need to protect groundwater and change human behaviors that place groundwater at risk. 2. Collaborate on groundwater protection efforts with state, county and neighboring city agencies.
Objective 5C. Improve program policies, procedures and tools to enhance the effectiveness of groundwater protection efforts.
<p>Strategies</p> <ol style="list-style-type: none"> 1. Continue to clarify the City’s groundwater protection policies and simplify the development review process. 2. Streamline program processes and procedures. 3. Ensure that groundwater protection-related capital projects and major equipment are included in the Utility’s Asset Management Program.
Goal 6. Infrastructure is prudently financed, and sustainably constructed, maintained and operated to ensure reliable delivery of high quality water to a growing community. (Chapters 8-13)
Objective 6A. Design and construct infrastructure to ensure reliable delivery of water. (Chapters 8, 9, 10)
<p>Strategies</p> <ol style="list-style-type: none"> 1. Develop and maintain multiple, geographically dispersed sources of water supply to enhance the reliability of the system. (Chapter 8) 2. Develop and maintain storage and transmission/distribution infrastructure to ensure delivery of water at adequate pressure throughout the system and maintain required fire flow (Chapters 9 & 10)

<p>Objective 6B. Continue to improve maintenance management, including preventive maintenance, repairs and replacements. (Chapter 12)</p>
<p>Strategies</p> <ol style="list-style-type: none"> 1. Document and report on equipment efficiency and capacity annually. 2. Maintain, clean and exercise equipment per manufacturer recommendations. 3. Maintain buildings and grounds in a park-like manner.
<p>Objective 6C. Continue to improve the Utility’s emergency response program and maintain facility security. (Chapter 12)</p>
<p>Strategies</p> <ol style="list-style-type: none"> 1. Plan for the anticipated impacts of sea level rise. 2. Continue to maintain and be prepared to implement the water system emergency response plan. 3. Store emergency supplies at several strategic locations and replenish before expiration dates 4. Conduct tabletop and/or field exercises periodically. 5. Maintain existing security equipment at critical facilities. 6. Update or replace pump station telemetry system hardware and software as needed.
<p>Objective 6D. Continue to improve O&M program management, including safety and asset management. (Chapter 12)</p>
<p>Strategies</p> <ol style="list-style-type: none"> 1. Continue scheduling and documenting all water system maintenance in VueWorks. 2. Continue employee safety program, including safety committee review of accidents, review of new regulations and available training, and monthly staff training sessions. 3. Ensure that all Utility infrastructure is accurately depicted on maps and related databases. 4. Develop and implement an asset management program, in coordination with Public Works and City-wide efforts, to prioritize future capital improvement projects.
<p>Goal 7. Drinking Water Utility finances are managed responsibly, and costs are recovered equitably based on customer use. (Chapter 14)</p>
<p>Objective 7A. Set rates that reflect financial policies and recover the cost of providing services to each customer class.</p>
<p>Strategies</p> <ol style="list-style-type: none"> 1. Increase annual depreciation funding to 75 percent of depreciation by 2020 in order to equitably charge current customers for the use and decline in value of the system. 2. Analyze how the tiered and seasonal rate structure is affecting consumption patterns/ revenue, and propose changes to the rate structure as appropriate. 3. Conduct a cost-of-service study for wholesale and retail customers on a six-year cycle or more often as needed. 4. Coordinate regular rate studies with the City’s other water resources utilities, so that the full impact of utility rate increases on customers is considered.
<p>Objective 7B. Manage Utility rates and connection fees consistent with the City’s guiding principle of growth paying for growth.</p>
<p>Strategies</p> <ol style="list-style-type: none"> 1. Increase the General Facility Charges to reflect the current pro rata share of system costs. 2. Review General Facilities Charges regularly to ensure that they accurately and equitably distribute system costs to new development and are adjusted for inflation.
<p>Objective 7C. Use debt financing responsibly to support needed capital facility investments and “smooth” rate impacts.</p>
<p>Strategies</p> <ol style="list-style-type: none"> 1. Continue the capital funding strategy that utilizes existing resources from reserves and general facility charges first before relying upon debt financing. 2. Maintain the required debt coverage ratio and a solid bond rating 3. Pursue grants and state low-interest loans when available.

Summary of Capital Projects

Table S3 lists Capital Projects scheduled for construction in the next six years. Developer-contributed projects are not included in this table, as they will not require City funding. For a complete list of projects for the 20-year planning period, see **Chapter 13, Table 13.2**.

Table S3 2015-2020 Recommended Capital Improvement Projects

Project Schedule and Costs (in thousands of dollars) ¹							
Code	Project Name	2015	2016	2017	2018	2019	2020
Water Source (WS)							
WS-1	Briggs Well Construction ²						
WS-2	McAllister Wellfield Corrosion Treatment		2,475	825			
WS-3	McAllister Wellfield Mitigation - Deschutes River	200	142	100	100	100	100
WS-4	Groundwater Protection (Easements, Appraisals, etc.)		11	4	11	4	11
WS-5	Wellhead Protection Program			188	175	38	
WS-6	Groundwater Monitoring Wells	75	138	188	200	50	
WS-7	Olympia Brewery Water Engineering Analysis	38	13				38
WS-8	Indian Summer Well Chlorination		113	38			
WS-9	Hoffman Well Treatment ²						
WS-10	Shana Park Source Contingency Plan		113	38			
Water Storage (ST)							
ST-1	New Log Cabin Tank Construction	6,750	2,250				
ST-2	Fir Street Tank #1 and #2 Seismic Retrofit			750	250		
ST-3	Elliott Tank Seismic Retrofit			938	313		
ST-4	Hoffman Tank Interior Coating Replacement			434	145		
Transmission and Distribution (TD)							
TD-1	Distribution System Oversizing	27	27	27	27	27	27
TD-2	Morse-Merryman Extension to New Log Cabin Tank	900	300				
TD-3	PRVs - East Bay Drive					185	62
TD-4	AC Pipe - Blvd Road Roundabout - Morse-Merryman		585	195			
TD-5	Fones Road Water Main Construction						1,725
TD-6	Fones Road Booster Rehabilitation Design/Construction	813	273				
TD-7	Kaiser Road Water Main Extension to Evergreen Park			570	190		
TD-8	Indian Summer Extension to Rich Road ²						
TD-9	McCormick Valve House		113	38			
TD-10	Percival Creek Water Main	75	325	100			

Transmission and Distribution (TD) , Cont.							
TD-11	West Bay Booster Station Pump and Electrical Upgrade	113	38				
TD-12	Meridian Overflow and 36-inch Water Main	113	38				
TD-13	Eastside Street and Henderson Boulevard Water Main Extension ²						
TD-14	Park Drive Booster Pump Station						500
Operations and Maintenance (OM)							
OM-1	Small Diameter Water Main Replacement	488	500	500	500	500	500
OM-2	Asphalt Overlay Adjustments	11	11	11	11	11	11
OM-3	Storage Tank Coatings (Interior/Exterior)				225	75	225
OM-4	Booster Station Upgrade/Rehabilitation			113	150	150	150
OM-5	AC and Aging Pipe Replacement	375	500	500	500	500	500
OM-6	PRV Telemetry (Radio-Based) ²						
OM-7	Distribution Main Condition Assessment	19	25	25	25	25	25
OM-8	Cross Country Mains	19	25	25	25	25	25
OM-9	On-site Generator Replacement Plan		56	19	56	19	56
OM-10	Asset Management Program	38	50	50	50	50	50
OM-11	Corrosion Control (Aeration) Tower Condition Assessment & Upgrades		19	25	25	25	25
OM-12	Water Meter Replacement ²						
OM-13	Water Meter AMR Radio Replacement ²						
OM-14	McAllister Wellfield Mitigation - Woodland Creek	38	50	50	50	50	50
Reclaimed Water (RW)							
RW-1	Reclaimed Water Infrastructure						188
RW-2	Port of Olympia - Eliminate Northern Dead End		38	13			
RW-3	Reclaimed Water Filling Stations						75
Planning (PL)							
PL-1	Water System Plan						225
PL-2	Infrastructure Pre-Design and Planning	16	21	21	21	21	21
TOTAL		10,104	8,244	5,780	3,048	1,854	4,588

1. Costs are in September 2014 dollars. Totals of individual years may not equal subtotals, due to rounding.

2. Some projects are not scheduled in the six year planning period, only for the 7-20 year planning period (see **Table 13.2**).

Planning Process

This Plan has been prepared by Drinking Water Utility staff, with technical assistance from HDR Engineering, Inc. and financial analysis by Financial Consulting Services Group. The Plan has been reviewed by the City's Utility Advisory Committee and the City Council's Land Use and Environment Committee.

The Utility Advisory Committee (UAC) serves as the principal public advisor on utility policy matters for the City's four public utilities: Drinking Water, Wastewater, Storm and Surface Water, and Waste ReSources. Committee members played a key role in reviewing this Plan and providing recommendations to clarify and improve it.

The draft Water System Plan has also been reviewed by Thurston County and the City of Olympia Community Planning and Development Department for consistency with local plans and regulations, as required by WAC 246-290-108 (Appendix S3).

SEPA Review

The State Environmental Policy Act (SEPA) requires the City to consider the potential environmental impacts of a proposal before making any final decisions.

After reviewing the SEPA Checklist, the City's environmental review officer issued a Determination of Non-significance (DNS) on August 13, 2015 (Appendix S1). This means that no significant adverse environmental impacts were identified. No comments were received from the public nor were any appeals filed.

Potential impacts of construction projects planned for 2015-2020 were not specifically evaluated; they will be evaluated in a separate SEPA process when each project is designed.

Public Hearing

As part of the Water System Plan process, DOH requires utilities to hold public hearings to give the community an opportunity to comment on the Plan. A staff briefing and public hearing on the draft Water System Plan, including the water use efficiency goals, was held during the October 6, 2015, City Council meeting. The meeting agenda and minutes, which reflect Council's action on the Water System Plan, are included as Appendix S2.

Notice of the draft Water System Plan was mailed with customer utility bills, was posted on DOH's Water Use Efficiency website, and was noticed through the standard Council meeting public notice process. The complete 2015-2020 Water System Plan is available at olympiawa.gov.