ONSITE WATER REUSE PROGRAM GUIDEBOOK

IMPLEMENTING ONSITE WATER REUSE IN AUSTIN

April 1, 2024

Austin WATER

AustinWater.org | AW_onsitereuse@austintexas.gov

TABLE OF CONTENTS

Austin WATER

INTRODUCTION TO ONSITE WATER REUSE SYSTEMS

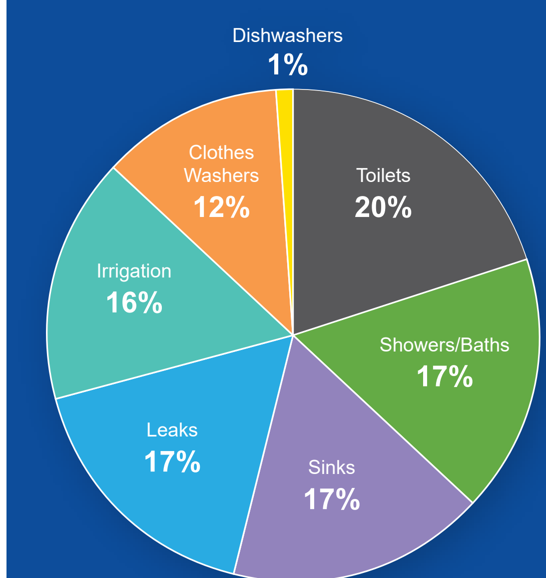
Purpose

Onsite water reuse systems (OWRS), sometimes referred to as water recycling systems, when properly designed and operated, make efficient and safe use of water that would otherwise be diverted to a treatment plant or water body. Recognizing this fact, the City of Austin adopted the Onsite Water Reuse System Ordinance in December of 2020. It added Chapter 15-13 to the City of Austin Code, to regulate the collection, treatment, and use of alternative water sources for non-potable uses in multifamily and commercial buildings. Effective April 1, 2024, Chapter 15-13 became a mandatory requirement for new development projects of 250,000 square feet or more of gross floor area to install and operate an onsite water reuse system. This guide helps developers, architects, and design engineers navigate the City of Austin's regulations and permitting process for onsite water reuse systems. It also describes incentives for installation and provides general design guidance.

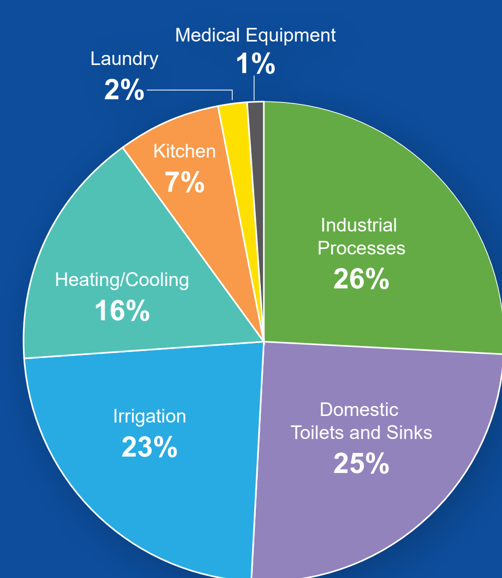
Background

For more than 100 years, Austin Water has been committed to providing, safe, reliable, high quality and sustainable water to our customers. Austin Water currently treats drinking water from the Colorado River at three treatment plants located along Lakes Austin and Travis. In an effort to maintain a sustainable water supply for future generations, Austin Water is committed to reducing its water demands through conservation programs, and to promote efficient and resilient water systems that will help mitigate the effects of future droughts.

Recognizing that a significant portion of water use at multifamily residential and commercial developments (irrigation/outdoor, heating/cooling, clothes washing, toilet flushing and certain industrial processes) could be met by a non-potable supply, Austin Water provides rebate incentives for property owners who install certain types of onsite collection and water reuse systems at their property.



Average Multifamily Residential Usage in Austin



Average Commercial Usage in Austin

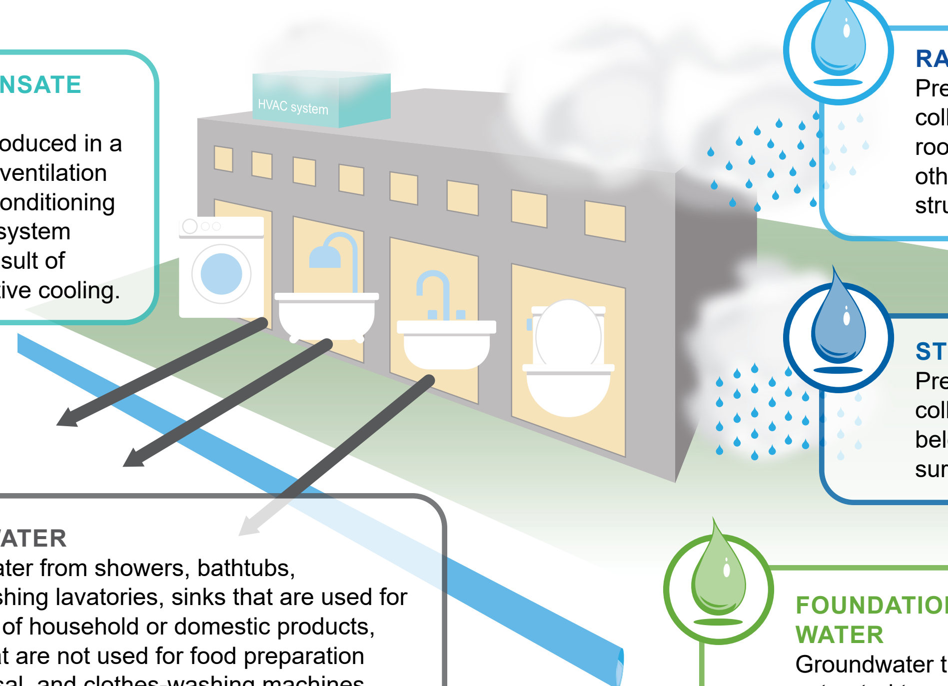
Benefits of Onsite Water Reuse

Implementing an onsite water reuse system into a development project requires additional permitting steps and increases a project's capital cost. It's important to keep in mind, however, that while there are some additional challenges inherent in implementing OWRS, there are also a number of benefits associated with having these systems included as part of a development. As developers get more comfortable with designing and permitting OWRS, and start to experience these benefits, some may even to choose to voluntarily include them in their projects. A few benefits to consider:

- **Increase the project's value.** Data shows that sustainable homes are not only in high demand among potential renters and homebuyers, but people are also willing to pay more per month for a sustainable home, including homes with water saving technology.
- **Reduce a site's utility rates and connection fees.** By reusing water that would otherwise go into the City's sewer or stormwater infrastructure, the project can reduce its ongoing wastewater and drainage charges. By reducing the potable water demand, the project will have lower water bills, and, pay reduced impact fees to connect to the City's infrastructure.
- **Contribute to Austin's long-term sustainability.** Austin is a rapidly developing city with new people and businesses moving here every day. In order to sustain that growth, Austin needs to carefully manage its limited water resources. By reducing a project's potable water demand, you help ensure that water will be available for continued growth.
- **Add resiliency elements.** Supplemental water sources can provide an extra layer of security for buildings and their tenants during climate-related catastrophic events, such as droughts or severe storms, which may cause disruptions in water service delivery.
- **Get reimbursed for project costs.** Austin Water has developed several incentive programs through the GoPurple program to help offset water reuse project costs. Most notably, Austin Water is currently administering a pilot incentive program which makes up to $500,000 available to each eligible project that includes an OWRS if the system can offset sufficient potable water demand. These projects are also eligible for reduced monthly meter charges and expedited building permit review. Check the OWRS program webpage for the most up to date information on Austin Water's incentive programs.
- **PACE financing.** PACE financing allows property owners to invest in energy and water improvements with little to none of their own upfront capital. PACE is essentially long-term financing covering up to 100 percent of the cost of allowed projects and can be used for a term as long as the projected useful life of the improvements. This results in utility cost savings that exceed the amount of the repayment—meaning that PACE programs help property owners save more than they spend to implement energy and water projects.

Alternative Onsite Waters and End Uses

The Onsite Water Reuse System Ordinance allows for the usage of several alternative onsite water sources that can be collected from commercial and multifamily buildings. See the schematic below for a description of alternative onsite water sources regulated under the ordinance.



CONDENSATE WATER
Water produced in a heating, ventilation and air conditioning (HVAC) system as the result of evaporative cooling.

RAINWATER
Precipitation collected from roof surfaces or other aboveground structures.

STORMWATER
Precipitation collected at or below grade surfaces.

GRAYWATER
Wastewater from showers, bathtubs, handwashing lavatories, sinks that are used for disposal of household or domestic products, sinks that are not used for food preparation or disposal, and clothes-washing machines. Graywater does not include wastewater from the washing of material, including diapers, soiled with human excreta or wastewater that has come into contact with toilet waste.

FOUNDATION DRAIN WATER
Groundwater that is extracted to maintain a building's or facility's structural integrity and would otherwise be discharged to the storm sewer.

These onsite alternative water sources can be treated and reused to meet the following non-potable end uses:

Indoor Uses:	Outdoor Uses:
Toilet and urinal flushing	Subsurface irrigation
Clothes washing	Drip or other surface non-spray irrigation
Trap priming	Spray irrigation
Indoor water features/ fountains	Outdoor water features/ fountains
Fire protection	Cooling applications
	Dust control/street cleaning

While the Onsite Water Reuse Program provides a permitting framework for larger commercial, mixed-use, and multifamily developments, Austin Water also encourages the use of alternative water sources in single-family and two-unit homes through its residential rainwater and graywater programs. For more information, visit: www.austintexas.gov/department/rebates-tools-programs.

Other Alternative Onsite Water Systems

Other types of alternative onsite water systems are currently allowed to be used in multifamily and commercial buildings in Austin, but they are regulated by the Texas Commission on Environmental Quality (TCEQ) and therefore not included in the City of Austin's Onsite Water Reuse System Ordinance. These include systems constructed for industrial and closed loop process water reuse, and systems constructed for blackwater or domestic wastewater reuse. Regulations for these types of reuse systems can be found in Chapter 210 of Title 30 of the Texas Administrative Code.

Help Available

Austin Water offers project assistance to customers who are interested in blackwater reuse. Austin Water can help a project applicant navigate the permitting process through the TCEQ and is working on developing a resource webpage with permitting guidance for blackwater reuse systems. Currently, you can find information about the City of Austin's On-site Blackwater Reuse Pilot Project on Austin Water's webpage. This reuse system is collecting wastewater from the City's Permitting and Development Center building and then treating the water before sending it back into the building to flush toilets and urinals. To find out more about the project go to: www.austintexas.gov/department/site-blackwater-reuse-pilot-project-meet-oscar-and-clara.

REQUIREMENTS FOR ONSITE WATER REUSE SYSTEMS

New development projects submitting a Site Plan Application on or after April 1st of 2024 will be subject to Onsite Water Reuse System requirements as outlined in Chapter 15-13 of Austin City Code. These state that projects of particular sizes and characteristics are required to install and operate an OWRS according to the table below. If a Site Plan Application comes in before April 1, 2024, these requirements will not apply, even if the project has to submit a site plan correction.

Project Size	Other Project Characteristics	Required Sources	Required End Uses
250,000 sf or greater of GFA	Project has one or more commercial, multifamily or mixed use buildings	Combined AC condensate and Rainwater	Irrigation Toilet/urinal Cooling tower
	Exception: project has four or more multifamily buildings with a FAR <1	Combined AC condensate and Rainwater	Irrigation
Less than 250,000 sf of GFA	Project has a cooling tower of 100 tons or greater capacity	AC condensate	Cooling tower

GFA = *Gross Floor Area*   **FAR** = *Floor to Area Ratio*

If a project is supply limited (meaning there is not enough of the required sources to meet the required end uses), excess demand can be met with potable back up water, and no additional sources need to be collected. It may be possible to eliminate a required end use and still fully use the required sources available to a project. Example: a commercial high rise with a cooling tower is required to collect rainwater and condensate water to meet toilet flushing, irrigation, and cooling tower end uses. The available supply from rainwater and condensate water is 2.5 million gallons per year. The total demand from just the cooling tower is 3.1 million gallons per year. The project could potentially forego supplying onsite water to the irrigation system and toilets, as long as 100% of the required supply will be utilized to meet cooling tower demand each month (i.e. no additional potable offset is achieved by supplying the toilets and irrigation system).

If a project is demand limited (meaning the required end uses do not fully utilize the required sources available to a project), it may be possible to eliminate a required source. Example: a multifamily development is required to collect rainwater and condensate water to meet irrigation end use only. The available supply from rainwater is 1 million gallons per year, and the available supply from condensate water is 0.9 million gallons per year. The irrigation demand is 0.85 million gallons per year. The project could potentially choose to collect rainwater or condensate water rather than collecting both, as long as either source will fully meet the project's demand for each month (i.e. no additional potable offset is achieved by collecting both sources).

The Water Balance Calculator, which is a required submittal for OWRS permitting, is designed to help developers determine which required sources and end uses will be needed for their project to comply with mandatory OWRS installations. Projects that go above and beyond the minimum code requirements for source waters and end uses may be eligible for the OWRS Pilot Incentive Program. Example: a multifamily project that collects rainwater and condensate water to supply toilet flushing, irrigation and laundry end uses is eligible for a rebate of up to $500,000 if the project can offset an additional one million gallons of potable water per year.

PERMITTING ONSITE WATER REUSE SYSTEMS

Permitting Overview

All multifamily or commercial development projects are required to obtain approval from Austin Water before installing an onsite water reuse system. The requirements for obtaining an OWRS approval and operating permit are outlined in Chapter 15-13 of the City of Austin Code. All application materials can be found on the Austin Water OWRS webpage at www.austintexas.gov/department/onsite-water-reuse-systems.

The permitting and approval process for OWRS projects is integrated into the City's overall building permit process. These projects involve coordinated reviews between Austin Water Onsite Water Reuse (AW-OWR), Austin Water Special Services Division (AW-SSD), Development Services Department Commercial Plan Review (DSD-CPR), and Development Services Department Building Inspections Division (DSD-BID). For district-scale projects with private plumbing located in the City's right-of-way, Land Management review will also be required.

The table below shows the various departments' roles in each step of the permitting of an OWRS project, which are explained in greater detail following this section.

	Applicant	AW-OWR	AW-SSD	DSD-CPR	DSD-BID	Land Management
Site Plan Approval	**STEP 1:** Complete a Water Balance Calculator and Meter Demand Sheet and OWRS Sheet Set	Approves the Water Balance Calculator and Meter Demand Sheet				
	STEP 2: Submit an OWRS Implementation Plan and/or Obtain Encroachment Agreement if needed	Approves Implementation Plan for district-scale systems				Approves encroachment agreements for OWRS with infrastructure located in the public right-of-way
Building Permit Approval	**STEP 3:** Submit an OWRS Permit Application and Engineering Report	Approves engineering report for treatment system design and issues the Permit to Construct the OWRS				
	STEP 4: Submit an Alternative Water System Permit Application	Approves alternative water source plans to protect the City's drinking water supply from the non-potable water system				
	STEP 5: Obtain Building Permits			Approves building plans and ensures the OWRS meets the City's Plumbing Code		
Construction Inspections	**STEP 6:** System Construction and Inspection				Inspects the building construction, including mechanical, electrical and plumbing systems and signs off on the project	
	STEP 7: Cross-Connection Control Test and Inspection	Conducts OWRS certification inspection and signs off on project	Verifies third-party cross-connection inspection and test have been performed and signs off on the project			
Ongoing Monitoring and Reporting	**STEP 8:** Submit Documentation for a Permit to Operate	Issues the Permit to Operate in Conditional Start Up Mode				
	STEP 9: Operate in Conditional Start Up Mode	Reviews monthly monitoring reports and approves OWRS to Operate in Final Use Mode				
	STEP 10: Operate in Final Use Mode	Reviews annual monitoring reports and renews OWRS annual permit	Reviews backflow assembly and cross-connection testing reports			

[1] 1 This step is only applicable to district-scale projects that share plumbing across property lines or projects that have piping or other components in the public right-of-way

Non-LRT OWRS vs. LRT OWRS

OWRS treatment requirements were derived using a risk-based framework that considers both the quality of the water to be used, as well as the potential for human exposure. Treatment requirements are specified in terms of Log Reduction Targets (LRTs) which will be higher for source water with higher concentrations of pathogenic organisms and for uses with more potential for human exposure. Meeting these LRTs requires treatment processes capable of sufficiently reducing the pathenogenic contentrations.

Some OWRS will use sufficiently clean source water or have low enough potential for human exposure that they have no LRT requirements. These systems will therefore not be required to provide pethogen removal treatment, and subsequently not have to perform sampling to demonstate pathogen removal. These "Non-LRT OWRS" include the following:

1. Air conditioning condensate only systems. Air conditioning condensation is an extremely clean source water and does not contain enough pathenogenic material to nessecitate treatment (though pathonogenic material can become introduced to this source water during storage).
2. Non-spray type irrigation systems. Projects that reuse alternative onsite water only for subsurface or non-spray irrigation pose very minimal risk to human health and safety since the water is used just at or just below the ground surface.

All other systems are considered LRT OWRS because they reuse source waters containing pathogenic organisms either for indoor fixtures or outdoor spray type uses where there is a potential for human contact. Without proper treatment, these systems pose a greater risk to human health and safety since the water could be incidentally ingested. The permitting pathway for both project types is identicle, except for the following:

1. The Engineering Report for the Non-LRT OWRS does not need to include material pertaining to achieving and monitoring LRT compliance.
2. During Conditional Operation and Operation, no LRT water quality sampling or reporting is required. Flow monitoring and reporting are still required.

Step by Step Permitting Process

OWRS projects are required to undergo 10 review and approval steps. This process has four stages: site plan approval, building permit approval, construction inspections, and ongoing monitoring and reporting.

Site Plan Approval

STEP 1

Complete a Water Balance Calculator, Meter Demand Sheet, and Plan Sheet for AW-OWR Site Plan Approval

Water Balance Calculator. Based on the project information entered, the Water Balance Calculator will show the required onsite water sources and demands for the project, along with a required potable offset. In some cases, particular sources or demands can be omitted from the OWRS if the total offset is achieved. Once the sources and demands that meet the required offset have been selected, an "Acknowledgement" sheet will populate. The Acknowledgement sheet has a summary of the OWRS required for the project and must be included in the Austin Water Notes sheet of the project's Site Plan sheet set. Final design of the OWRS will be submitted during the building permit phase of the project.

Water Quality Volume credit. If the project chooses to claim water quality volume credit for their OWRS, they must include Appendix R7b from the Water Balance Calculator on the Water Quality and Drainage sheet of the project's Site Plan sheet set. The Water Balance Calculator is programmed to automatically populate appendix R7b based on the amount of rainwater being diverted by the OWRS.

OWRS Meter Demand Sheet. A separate dedicated City meter is required to supply make up water to the OWRS and must be sized based on the fixture and flow demands served by the OWRS. The Meter Demand Sheet must be filled out and sent to AW_Onsitereuse@austintexas.gov for review and approval. The approved complete Meter Demand Sheet must be included in the Austin Water Notes sheet of the project's Site Plan sheet set. Most projects will realize a reduction in their water and wastewater impact fees since there are no service units associated with the OWRS make up meter and the potable water meter only needs to be sized to serve the project's potable fixtures.

OWRS Plan Sheet. This sheet can be a standalone plan sheet or incorporated into the Austin Water Utility Plan sheets for the Site Plan. At a minimum the plans must show:

- Location of the OWRS collection tank and related treatment and distribution systems
- Dedicated City meter and make up water line supply to the OWRS labeled as backup non-potable supply
- Overflow connections to the storm drain system (or sanitary drains for graywater systems)
- Containment Reduced Pressure Principle Backflow Prevention Devices (RP) immediately downstream of any City water meters serving the property
- Any Alternate Method of Compliance (AMOC) details for future cross-connection testing (flowable fill or dye injection ports located outside of a building).

Exemptions and Fees in Lieu

Exemptions. A qualifying development is not required to have an onsite water reuse system when the development is participating in a city, state, or federal program that requires:

- a minimum of fifty percent on-site income-restricted dwelling units for 60% or lower median family income for rental units; or
- a minimum of fifty percent on-site income-restricted dwelling units for 80% or lower median family income for ownership units.

These projects must be certified as meeting the above criteria by the City's Housing Department in order to obtain Site Plan Application approval. Projects will also undergo a verification step with the Housing Department prior to building occupancy to ensure the affordable housing has been provided.

Fees in Lieu

A development project can apply for a payment of a fee in lieu to installing an onsite water reuse system for Site Plan Application approval. Austin Water may approve projects to pay a fee in lieu if the project meets the following criteria:

- contains a multifamily building;
- is more than 500 feet from the City's reclaimed water system;
- the project site plan shows separate dedicated meters and distribution plumbing to all required non-potable fixtures within the project; and
- the project site plan and building plans show the site has adequate physical separation, backflow prevention, etc. between potable and non-potable water systems.

These projects are designed to be 'reclaimed-ready' for when a City reclaimed water main gets installed to the property. At that point, only the service line from the City's reclaimed main to the meter and the new reclaimed meters need to be installed to provide reclaimed water service to the project.

The general method for calculating the onsite water reuse system fee in lieu is as follows:

- Pipe Diameter (in inches) x Cost per inch-foot (per the City's fee schedule) x 500 Linear Feet
- Pipe diameter is determined from the Austin Water Meter Demand Sheet which can be downloaded from the OWRS program webpage.

STEP 2

Submit an OWRS Implementation Plan to AW-OWR and/or Obtain an Encroachment Agreement from Land Management (applicable only to district-scale systems and projects with components in the public right-of-way)

OWRS can be designed for a variety of scales, including for a single building or for a district (a project spanning two or more lots, tracts, land uses, or site plans and may cross public rights-of-way). Sharing alternative water sources within a district-scale development project can provide greater efficiencies for onsite water reuse. District-scale projects are subject to additional requirements given the complexity of design, phasing, and implementation.

District-scale projects must submit an Onsite Water Reuse System Implementation Plan to AW-OWR. The plan must be prepared in accordance with the Onsite Water Reuse System Implementation Plan Checklist, which includes, but is not limited to:

- Schematic layout of OWRS components
- Details on the OWRS
- Estimated potable and non-potable water supplies and demands
- Estimated discharges to the sewer system
- Proposed ownership model and compliance plan
- Phasing for implementation of district-scale project

District-scale projects must also execute an enforceable legal agreement that defines the roles and responsibilities of the supplier and user(s). In addition to having a treatment system manager responsible for the district-scale system, each property shall designate a site supervisor to oversee operation and maintenance of their portion of the district-scale project, including distribution and/or collection systems. The site supervisor is also responsible for acting as a liaison between the users of the treated water, Treatment System Manager and AW-OWR.

OWRS with infrastructure located within the public right-of-way (such as a sidewalk or street) are required to obtain an Encroachment Agreement from the City of Austin – Land Management. This review ensures there are no potential public utility conflicts with the OWRS.

Building Permit Approval

STEP 3

Submit an OWRS Application and Engineering Report to AW-OWR

Each project (including Non-LRT systems) must submit an Onsite Water Reuse System Permit Application with an Engineering Report for the design of the OWRS. The application requires signatures of the project owner, the project applicant, and the OWRS design engineer. The Water Balance Calculator was filled out during the Site Plan Application phase of the project, but if there have been changes made to the project, these should be reflected in the Water Balance Calculator that is submitted at the Building Permit approval stage.

Tips on preparing an OWRS Permit Application and Engineering Report:

- Submit the OWRS Permit Application through the City's Permitting Portal. The application fee must be paid for the application to be complete (no fee is required for Non-LRT projects).
- Austin Water will accept Water Balance Calculators with modifications made to the calculator's default assumptions for occupancy, fixture flow rates, or others if backup documentation is provided at the time of submittal.
- Re-submit an OWRS Permit Application form, Engineering Report, and Water Balance Calculator if a project's design changes.
- Projects with only non-spray type irrigation will be required to submit a landscape irrigation plan that shows the type of irrigation system that will be installed.

Engineering Reports must be prepared by a qualified engineer licensed in TX, following the AW-OWR template and include information on the following project elements:

- Alternative water sources collected and treated for non-potable end uses
- Entity or entities involved in the design, treatment, operation, and maintenance of the OWRS
- Cross-connection and backflow prevention measures
- For LRT-OWRS
    - Treatment processes used to meet required water quality criteria
    - Demonstration of compliance with the pathogen log reduction targets
    - Information on operating conditions and continuous online monitoring
    - Contingency plan and system bypass that will allow the system to divert to the sewer if not meeting water quality requirements

AW-OWR approval of the Engineering Report is required to obtain building permit approval from DSD-CPR, so it's recommended to submit the Engineering Report for review and approval in advance of the project's building permit application.

Upon approval of the OWRS Permit Application, Austin Water will issue a Permit to Construct the OWRS and inform the project applicant of the next steps.

STEP 4

Submit an Alternative Water System Permit Application to AW-SSD

This application is required to review and approve the property as a site that contains an alternative water source with AW-SSD, which is responsible for ensuring that the alternative water source (the OWRS in this case) is designed to protect the City's drinking water supply through adequate backflow protection and Cross Connection Testing protocols. AW-SSD can approve alternate methods of compliance (AMOCs) for Cross Connection Testing methods such as flowable fill encasement and dye injection systems

STEP 5

Obtain Building Permits from DSD-CPR

After approval of the Onsite Water Reuse System Permit Application by AW-OWR and the Alternative Water System Permit Application by AW-SSD, the project may obtain a building permit from the Development Services Department. This step requires review and approval of the Commercial Plan Review by DSD-CPR. Once the building permit is obtained, the OWRS can be constructed.

Construction Inspections

STEP 6

System Construction and Inspection from DSD-BID

During construction, the project must obtain all necessary building inspections from DSD-BID, including a plumbing inspection, to verify that the OWRS meets the City of Austin Plumbing Code requirements.

Planning Ahead with Alternate Methods of Compliance

Buildings with OWRS will be required to undergo initial and periodic cross-connection testing to ensure separation between the potable and non-potable water systems. A typical two-sided cross-connection test involves draining both the potable water system and the non-potable water system in a building and then re-pressurizing these systems one at a time to ensure there is no interconnection between the two systems. This requires a building to be without water services for a substantial amount of time. Having an Alternate Method of Compliance (AMOC) approved during the Alternative Water System Permit Review process can eliminate the need to shut down a building during a cross-connection test. Two examples of acceptable AMOCs are dye injection tests (useful for testing indoor fixtures) and one-sided shut-down tests (useful for testing outdoor irrigation systems).

A dye injection system is a relatively inexpensive apparatus that allows the cross-connection test to be performed by injecting a dye into the non-potable distribution system while keeping both the potable water system and the non-potable water system online. A one-sided shutdown test can be performed on an irrigation system when the building's potable water line is encased in flowable fill from the meter to the building. The AW Special Services Division Review team can recommend other acceptable AMOCs on a case-by-case basis.

Cross-Connection Control Test and Inspection from AW-SSD and AW-OWR

STEP 7

Cross-Connection Test

Prior to starting up any OWRS, a cross-connection test is required to ensure separation between the building's non-potable and potable water systems. The test must be completed by a state licensed Customer Service Inspector (CSI) or Water Supply Protection Specialist (WSPS) who is registered with AW-SSD. When the test is complete, the inspector will certify the results using the CCT Form. This completed form can be submitted electronically to AW-SSD. A list of companies and individuals registered with AW-SSD to perform a CCT is available at www.austintexas.gov/department/onsite-water-reuse-systems.

With an approved AMOC (as described in Step 4) the cross-connection test can be performed without having to shut down a building. This makes the recurring cross-connection tests specified in the table below less of a burden on a building operator:

Cross-Connection Inspection and Testing Requirements

Before conditional startup[1]	Every 4 years	After major plumbing alteration

[1] For new construction, cross-connection test must be performed for building to receive Temporary Certificate of Occupancy (TCO)

OWRS Certification Inspection

Once the OWRS is constructed, the project engineer must conduct a final inspection in support of preparing a Construction Certification Letter. AW-OWR staff must be present for the project engineer's final inspection to get a walk-through of the OWRS components for project sign-off.

The Construction Certification Letter must be submitted to AW-OWR certifying that the OWRS was installed in accordance with the approved Engineering Report. If system modifications were made during construction, the letter must detail the changes. The Construction Certification Letter must be provided on company letterhead, signed, and stamped by a Texas licensed engineer.

Contact AW-OWR at AW_OnsiteReuse@austintexas.gov to schedule the final inspection.

STEP 8

Submit Documentation for a Permit to Operate from AW-OWR

Once steps 1 through 7 are completed, the project must submit to AW-OWR:

- The engineer's Construction Certification Letter
- A final operation and maintenance manual
- Proof of a contract with a certified laboratory (for LRT systems)
- Proof of a contract with the designated treatment system manager
- Treatment system manager affidavit acknowledging sufficient skills, abilities and training
- Documentation of an enforceable legal agreement (applicable only to district-scale projects)
- A change of ownership form (if the property has been transferred to a new owner)
- Pay the annual permit fee to receive the permit to operate (fee must be paid annually)

Once the above materials have been submitted, AW–OWR will issue a permit to operate the OWRS.

Operation and Ongoing Monitoring

STEP 9

Operate in Conditional Start Up Mode

Operation in Conditional Startup Mode for a minimum of 90 days is required for all systems. The requirements are summarized below. If a project does not complete the requirements for conditional startup within 365 days of the permit issuance, the permit will expire, and a new application must be submitted to and approved by AW-OWR.

Requirements for Conditional Startup Operation:

- Verify that log reduction targets are met
- Verify compliance with water quality standards – BOD, TSS, total coliform, etc.
- Divert treated water to sewer (air-conditioning condensate systems and rainwater systems may be allowed to forego or end bypass conditions prior to the end of the conditional startup mode)
- Supply end uses with potable water
- Operate in final plumbing configuration with an approved cross-connection test completed
- Confirm all alarms and diversions work as described in the Engineering Report
- Treatment System Managers must submit monthly monitoring reports of water quality sampling and system performance to AW-OWR:

Summary of Conditional Startup Water Quality Sampling Requirements

Parameter	Rain/Condensate	Stormwater/ Foundation Drain	Graywater
Total Coliform	Weekly for rainwater	Weekly	Weekly
BOD5 & TSS	N/A	N/A	Weekly
Chlorine Residual	Continuously at entry to end-use plumbing		
LRTs	Continuously as specified in the engineering report		
Flow	Continuously measuring alternative water treated by the OWRS		

PERMITTING ONSITE WATER REUSE SYSTEMS

STEP 10

Operate in Final Use Mode with AW-OWR Approval

After satisfying the requirements of Conditional Startup Mode, an OWRS will be operated in Final Use Mode. To maintain a valid permit to operate, ongoing monitoring and reporting are required for OWRS to ensure systems are properly working and continuously protecting public health. If a treatment process is being used to achieve log reduction targets, continuous online monitoring of treatment process performance via surrogate parameters is required. Examples of continuous monitoring methods for common treatment processes can be found on page 24.

In Final Use Mode, Treatment System Managers must submit annual monitoring reports of water quality sampling and system performance to AW-OWR:

Summary of Final Operating Permit Water Quality Sampling Requirements

Parameter	Rain/Condensate	Stormwater/ Foundation Drain	Graywater
Total Coliform[1]	Monthly	Monthly	Monthly
BOD5 & TSS	N/A	N/A	Monthly
Chlorine Residual	Continuously at entry to end-use plumbing		
LRTs	Continuously as specified in the engineering report		
Flow	Continuously measuring alternative water treated by the OWRS		

[1] Total coliform monitoring may be eliminated after 12 consecutive months of consistent compliance.

Lastly, in accordance with the approved operations and maintenance manual, the OWRS must be regularly inspected and tested to verify that the system is operating correctly, meets permit requirements, and remains physically separated from the potable water system. Backflow prevention assemblies must be tested annually, and cross-connection tests must be conducted at least every four years.

DESIGNING ONSITE WATER REUSE SYSTEMS

General Layout

Each OWRS will have a unique design to meet project specific requirements, but all systems will likely include the following components:

1. Collection/Storage

Storage allows onsite water to accumulate until it is needed. For rainwater, the larger the storage tank, the more potable offset can be achieved. The Water Balance Calculator requires that the active storage volume provided be equal to 1 inch times the roof area of the project, unless there isn't a demand for the volume of rainwater. For example, if the project will involve a building with 200,000 square feet of roof area, the required active storage for the OWRS would be 200,000 square feet X 1 inch / 12 inches/feet X 7.48 gallons per cubic feet = 124,666 gallons.

The "active storage" means the only volume of the collection cistern that can be used to store water can be counted towards the storage requirement. If a cistern has an overflow outlet at 1 foot below the top of the tank, the volume contained in the top foot of the tank cannot be counted as active storage. Similarly, if the rainwater will be pumped out of the storage tank, and the pump can only function if submerged in 1 foot of water, the bottom foot of water cannot count towards the active storage volume requirement. If no treated water storage is provided (see below), the elevations of valves initiating and ending back up water supply will influence active storage volume.

2. Treatment

If the OWRS has an LRT requirement, treatment of the onsite water must be provided. See the next section for a detailed discussion of designing treatment for OWRS.

3. Treated water tank

For OWRS that are providing treatment, a treated water storage tank is recommended. This will allow water to be treated at a rate that is slower than that rate that it will be used, which will reduce treatment costs. Additionally, having this additional tank simplifies the approach to providing make-up water supply.

4. Municipal make-up supply and automated valves

All OWRS will require municipal make-up water to meet non-potable demands when onsite supply is insufficient or when the system is down for maintenance. The system must be designed to supply the appropriate source water (treated onsite supply ormunicipal make-up) using automated valves. An incorrectly designed valve can result in municipal make-up water filling storage tanks and causing onsite supplies to overflow to sewer.

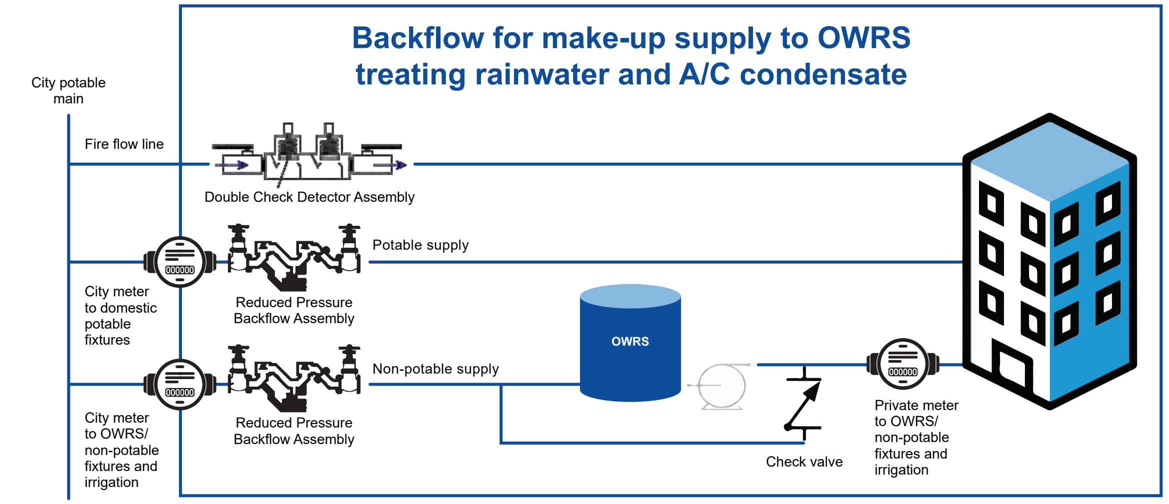
5. Backflow prevention

Make-up water must be supplied in a manner that protects the City's public water system and, if applicable, recycled water system from potential backflow. Properties that have OWRS must follow the backflow prevention requirements listed below, which are consistent with the City of Austin's Plumbing Code.

- Containment Reduced Principle Backflow Assembly (RPBA) immediately downstream of the water meter to protect the municipal water connection that serves the property with the OWRS

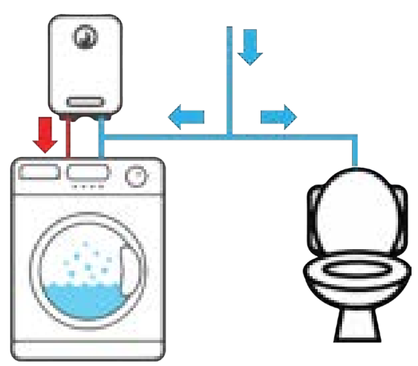
Chapter 15-13 requires the OWRS to have a dedicated backup meter that only supplies makeup water to the OWRS and downstream non-potable end uses. This eliminates the need for an additional isolation backflow assembly at the point of connection to the OWRS because their is no interconnection between the potable and non-potable supply lines.

The schematic below shows an example rainwater/AC condensate OWRS project layout that would satisfy the needs for backflow prevention and allow make-up water to be supplied during OWRS maintenance.



6. Dual plumbing

Treated non-potable water from the OWRS must be provided to required indoor non-potable demands (toilets/urinals) through a dedicated supply line. While clothes washers are not currently a required non-potable end use, Chapter 15-13 allows treated non-potable water to be used in clothes washers. Projects that dual plumb for clothes washers need special consideration for backflow prevention. In most instances, the most cost-effective approach for providing heated non-potable water to washing machines will be individual on-demand water heaters. The adjacent schematic shows how a single non-potable supply line could be configured to supply both toilets and washing machines.



All OWRS projects will require two meters to monitor the amount of water being supplied by the reuse system. The first meter is located at the property line and provides makeup water to the OWRS. AW will own and collect readings on this meter to determine how much makeup water is being supplied to the OWRS. The second meter will be owned and operated by the project owner and will be located on the OWRS supply line downstream of any City makeup water line. Readings from these two meters, taken by the OWRS operator at the same time, will determine how much onsite source water is being supplied to the non-potable end uses. The difference between the reading of the private meter and the City meter will indicate the amount of onsite water being reused and thus the total potable offset provided by the project. The Backflow schematic above shows the location of the two meters.

Treatment System Requirements

The Engineering Report is used to document how a project's treatment system complies with the requirements for OWRS. This includes detailed information on the treatment processes and how they are used to meet the water quality criteria for allowed alternative water sources and end uses. In addition to physical and chemical water quality requirements, projects must demonstrate compliance with the pathogen log reduction targets, or LRTs, listed below, which represent the minimum requirements for the removal or inactivation of pathogens including viruses, protozoa, and bacteria.

Log Reduction Targets for Onsite Water Reuse Systems			
Alternate Water Source	**Enteric Virus**	**Parasitic Protozoa**	**Bacteria**
Condensate Water	--	--	--
Rainwater	--	1.5	0
Stormwater	3.5	3.5	3.0
Stormwater Outdoor Use Only	3.0	2.5	2.0
Foundation Drain Water	3.5	3.5	3.0
Foundation Drain Water Outdoor Use Only	3.0	2.5	2.0
Graywater	6.0	4.5	3.5
Graywater Outdoor Use Only	5.5	4.5	3.5

To meet the LRTs and other water quality requirements, projects should design an effective treatment train which may include the use of common treatment processes such as microfiltration (MF), ultrafiltration (UF), membrane bioreactor (MBR), ultraviolet light (UV) disinfection, and chlorination. The Engineering Report should detail how the treatment train will achieve pathogen reduction credits in order to meet the LRTs, including addressing any validation and ongoing monitoring requirements related to the treatment processes. Austin Water will review each project's Engineering Report and accept pathogen reduction credits based on established crediting frameworks such as those developed for drinking water, potable reuse, and non-potable reuse.

The following table provides example pathogen reduction credits for common treatment processes and example information that must be submitted with the project's Engineering Report. Other treatment processes may be used within the treatment train and Austin Water will assess pathogen reduction credits on a case-by-case basis.

Example Pathogen Reduction Credits for Treatment Processes			
Example Treatment Process	**Maximum Log Reduction Credits Virus/ Protozoa/Bacteria**	**Example Information to be Included in an Engineering Report**	**Example Continuous Monitoring Requirements**
Microfiltration or Ultrafiltration	0/4/0	Description and calculation of how the system defines an acceptable pressure decay test value per the EPA's Membrane Filtration Guidance Manual to detect 3.0 µm breach	▪ Daily pressure decay test ▪ Effluent Turbidity
Membrane Biological Reactor (MBR)	1.5/2/4	Operation within the Tier 1 operating envelope as defined in the AWRCE Membrane bio-reactor, WaterVal validation protocol	▪ Effluent Turbidity
Reverse Osmosis	Up to 2/2/2	Demonstration of ability to meet salt rejection criteria and a description of surrogate parameter used to calculate pathogen reduction credits	▪ Influent and Effluent Total Organic Carbon (TOC) ▪ Influent and Effluent Electrical Conductivity
Ultraviolet (UV) Light Disinfection	Up to 6/6/6	UV reactor's validation report following US EPA UV Disinfection Guidance Manual or NSF/ANSI 55 Class A validation and demonstration of ability of system to meet criteria to achieve specified UV dose	▪ UV intensity ▪ Flow rate
Chlorine Disinfection	Up to 5/0/5	Demonstration of ability to achieve a target CT[1] including description of chlorine contactor, contact time provided, and monitoring of chlorine residual	▪ Free chlorine residual ▪ Flow rate
Ozone Disinfection	Up to 4/3/4	Demonstration of ability to achieve a target CT[1] including description of ozone contactor, contact time provided, and monitoring of ozone residual	▪ Ozone residual ▪ Flow rate

[1] CT = disinfectant residual concentration (C) x contact time (T)

Additional Water Quality Requirements for Graywater Systems

High concentrations of organics will be present in many sources of graywater. As a result, biological treatment is required for graywater systems to reliably meet the treated water biological oxygen demand (BOD) limit of 25 mg/L and the total suspended solids (TSS) limit of 30 mg/L. Using biological treatment to reduce BOD and suspended solids will help:

- Improve reliability of pathogen reduction performance in downstream processes such as UV, chlorine, or ozone disinfection
- Increase operational reliability of downstream processes such as membrane filtration, reverse osmosis, or UV disinfection
- Minimize issues with aesthetics (color and odor)
- Minimize regrowth of microorganisms (including Legionella) in the distribution system

The list below provides biological treatment technologies that can reduce BOD and TSS in an onsite graywater system:

- Membrane Biological Reactor (MBR)
- Engineered Wetland
- Sequencing Batch Reactor
- Moving Bed Biofilm Reactor
- Conventional Activated Sludge
- Biofilter

A MBR can provide the dual-benefit of reducing organics concentrations and providing pathogen reduction credit under an existing crediting framework (see example graywater treatment trains).

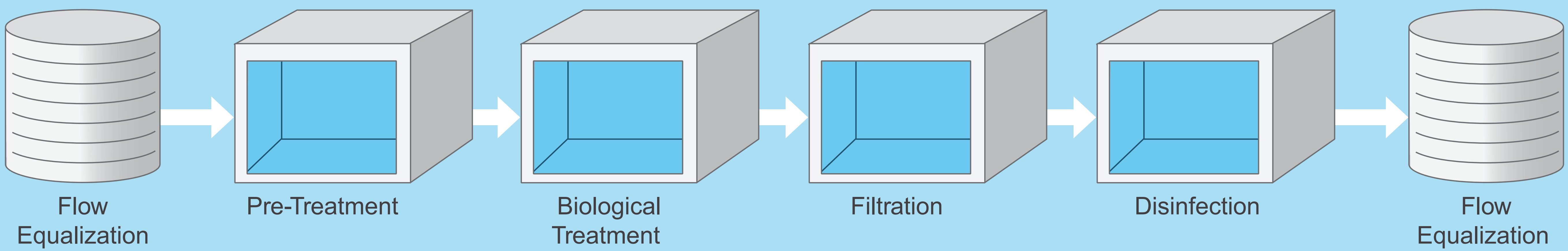
The following sections provide guidance on how to credit common treatment processes, create effective treatment trains to meet the LRTs, and document the validation and ongoing monitoring requirements.

Example Treatment Trains

The following pages provide example treatment trains to illustrate how unit processes can be used to meet the LRTs and other water quality requirements. Also shown are the parameters that must be continuously monitored at critical control points to ensure treatment system performance and demonstrate the ability of each treatment process to achieve the pathogen reduction credits. Treatment trains shown here are for planning purposes only. An engineer licensed in Texas and experienced in water and wastewater treatment must prepare the Engineering Report documenting the treatment train and its ability to meet the water quality and monitoring requirements.

Treatment train selection will depend on project-specific factors such as source water, space constraints, and end uses. Common treatment train elements are shown here.

Treatment train selection will depend on project-specific factors such as source water, space constraints, and end uses. Common treatment train elements are shown here.



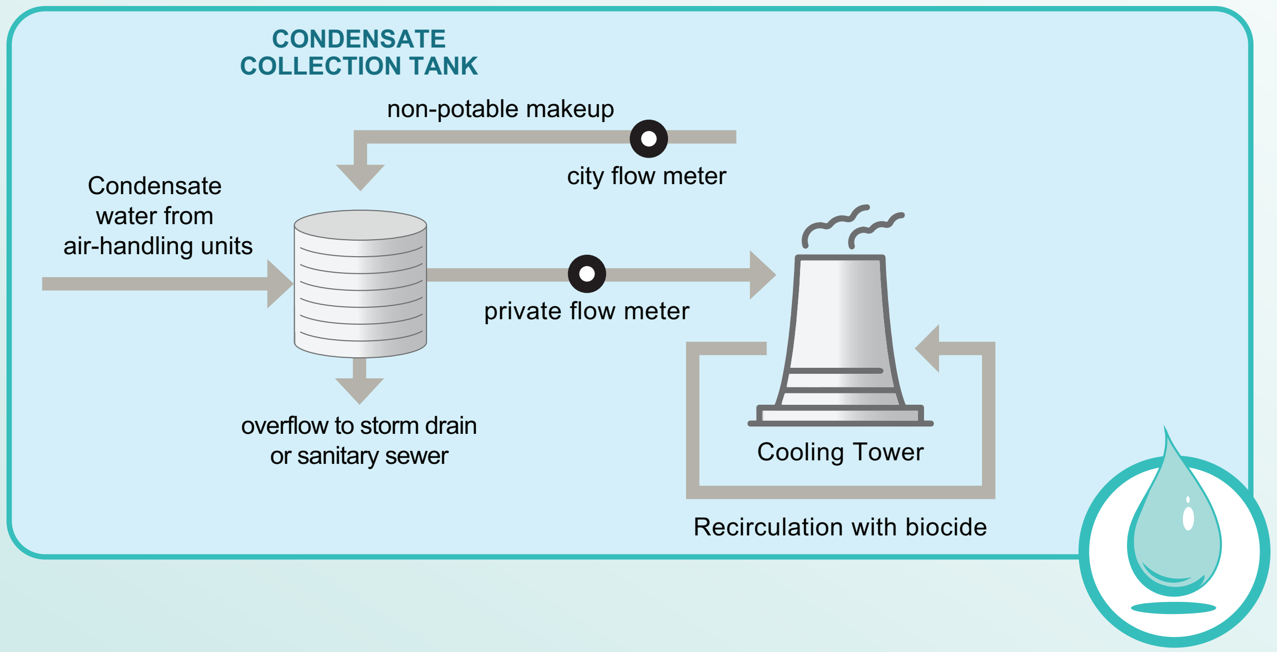
.

Considerations for selecting appropriate treatment processes include:

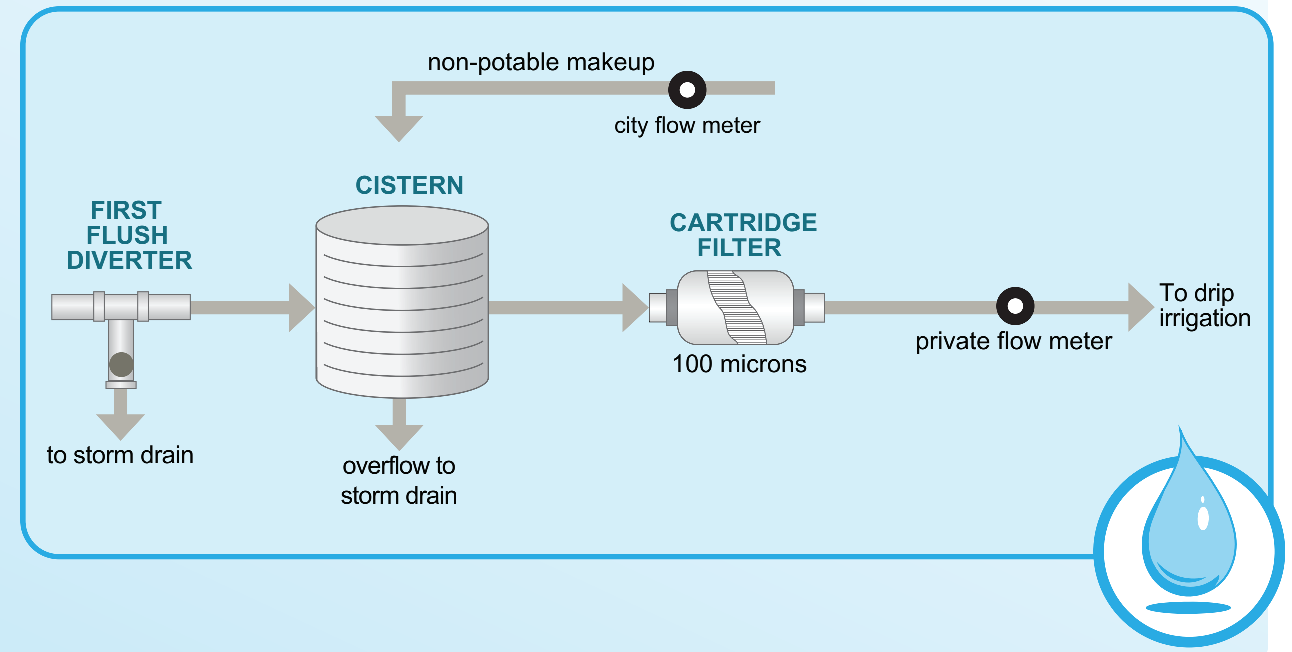
- Source water quality entering the treatment system
- Water quality standards
- Solids management
- Site constraints including footprint and access
- Energy usage
- Economics (both capital and operating costs)
- Aesthetics (i.e. color and odor)
- Ease (or complexity) of operation and maintenance
- Reliability to ensure uptime and production

Example Treatment Trains

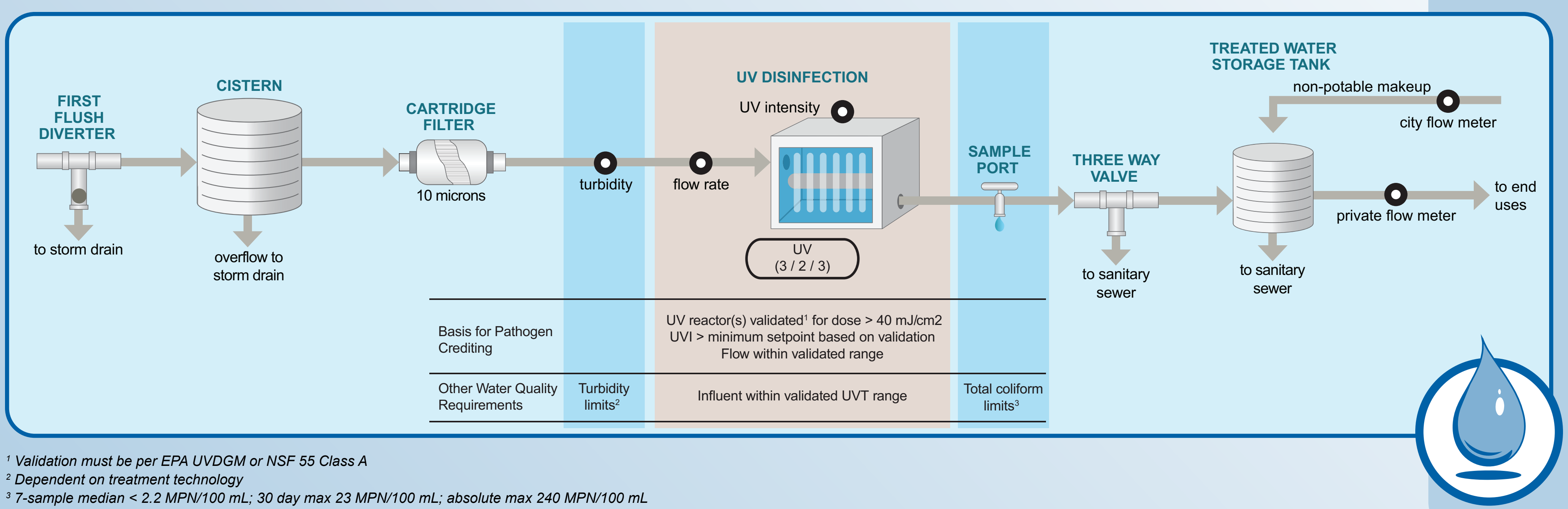
1. NON-LRT OWRS: CONDENSATE TO COOLING TOWER SYSTEM



2. NON-LRT OWRS: RAINWATER TO NON-SPRAY IRRIGATION SYSTEM



3. LRT OWRS: AC CONDENSATE AND RAINWATER TO SPRAY IRRIGATION SYSTEM

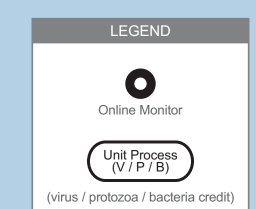


[1] Validation must be per EPA UVDGM or NSF 55 Class A
[2] Dependent on treatment technology
[3] 7-sample median < 2.2 MPN/100 mL; 30 day max 23 MPN/100 mL; absolute max 240 MPN/100 mL

For rainwater, the only specified LRT is for protozoa. In this example, the LRTs are met with a validated UV reactor that operates within certain operating conditions. The inclusion of a cartridge filter upstream of the UV reactor provides pre-treatment to improve the water quality of the water prior to disinfection and helps meet the turbidity limits. Because the use is outdoors, no chlorine residual is required.

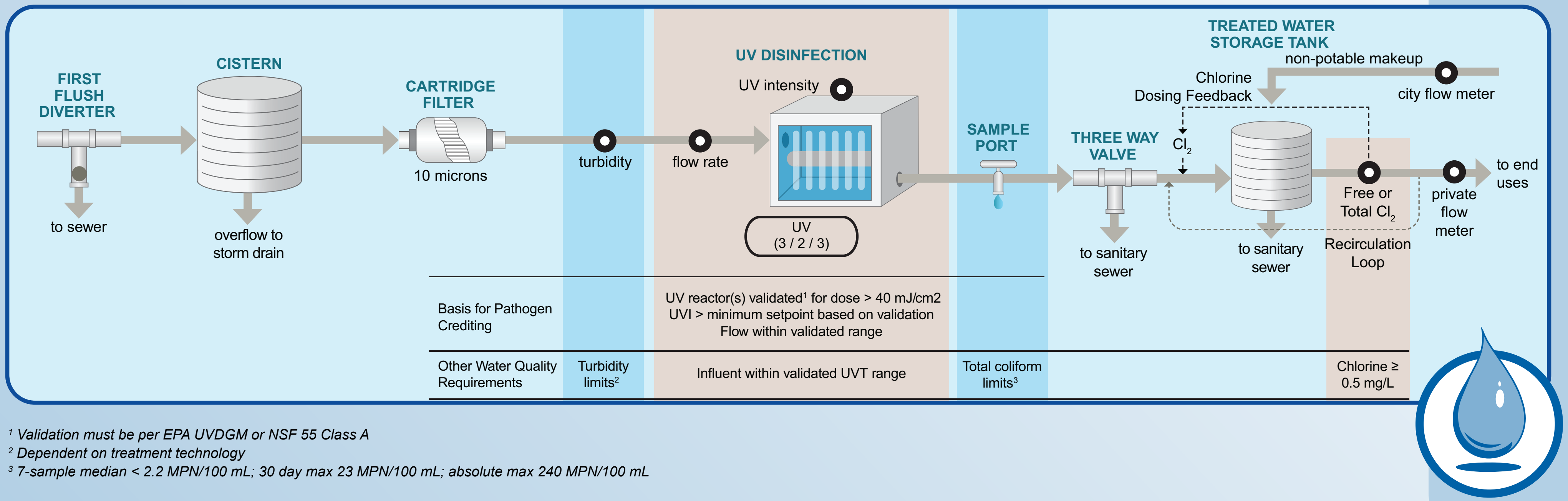
Pathogen Crediting Summary

	Required	Total
Virus	N/A	3
Protozoa	1.5	2
Bacteria	N/A	3



Example Treatment Trains

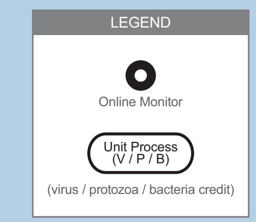
4. LRT-OWRS: AC CONDENSATE AND RAINWATER TO INDOOR USES



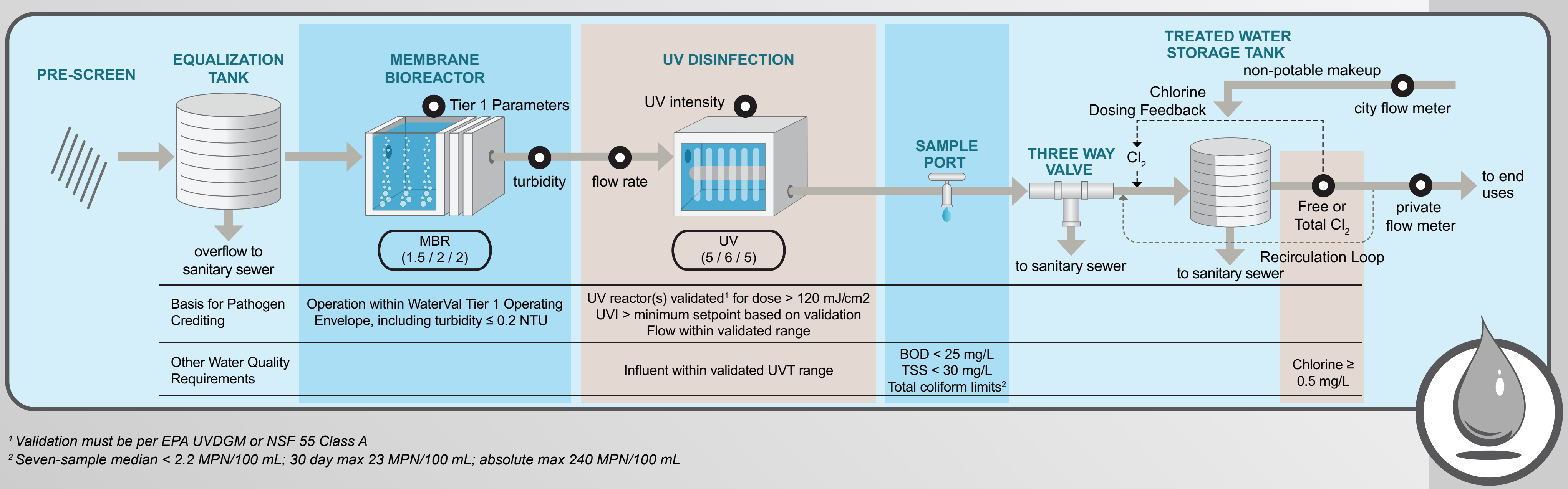
[1] Validation must be per EPA UVDGM or NSF 55 Class A
[2] Dependent on treatment technology
[3] 7-sample median < 2.2 MPN/100 mL; 30 day max 23 MPN/100 mL; absolute max 240 MPN/100 mL

For rainwater, the only specified LRT is for protozoa. In this example, the LRTs are met with a validated UV reactor that operates within certain operating conditions. The inclusion of a cartridge filter upstream of the UV reactor provides pre-treatment to improve the water quality of the water prior to disinfection and helps meet the turbidity limits. Because the use is indoors, a chlorine residual is required.

Pathogen Crediting Summary		
	Required	**Total**
Virus	N/A	3
Protozoa	1.5	2
Bacteria	N/A	3



5. LRT-OWRS: GRAYWATER TO INDOOR USES SYSTEM



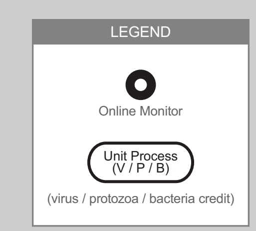
[1] Validation must be per EPA UVDGM or NSF 55 Class A
[2] Seven-sample median < 2.2 MPN/100 mL; 30 day max 23 MPN/100 mL; absolute max 240 MPN/100 mL

In this example, the graywater system meets the LRTs for indoor use using MBR and UV:

- **MBR:** credit for operation within the WaterVal 2017 MBR Validation Protocol Tier 1 operating envelope
- **UV:** A validated UV system providing a dose of 120 mJ/cm2 can achieve the remaining pathogen credits required (for more information on UV crediting, see Page 28). In this example, the UV Intensity Setpoint method is used to verify UV performance.

The system must also be able to successfully operate during conditional startup, and provide secondary disinfection with chlorine to maintain protection of the distribution system.

Pathogen Crediting Summary		
	Required	**Total**
Virus	6	6.5
Protozoa	4.5	8
Bacteria	3.5	9



Additional Disinfection Guidance

Pathogen Crediting for UV Disinfection

UV Reactor Validation

To receive pathogen reduction credits, UV reactors must be validated for a stated dose under specified flow and UVT.

Accepted validation protocols include:

- **NSF/ANSI 55 Class A.** NSF/ANSI 55 Class A reactors are all validated for a dose of 40mj/cm2. NSF and IAPMO maintain lists of validated Class A reactors.
- **EPA UV Disinfection Guidance Manual.** Reactors validated using this approach may be validated for varying doses under varying sets of conditions. To receive credit for a particular dose, submit the full validation report, as well as documentation demonstrating that a state agency has approved the reactor for the claimed dose under the proposed project design flow rate and the maximum UVT of the source water.

Austin Water maintains a partial list of validated reactors on its webpage.

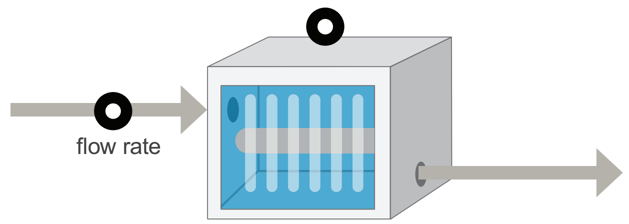
Pathogen Log Reduction Credits for Validated UV Reactors

Validated Dose (mJ/cm^2)	Virus	Protozoa	Bacteria
40	2	3	2
80	3.5	6	3.5
120	5	6	5
150	6	6	6

Credits apply for reactors validated using MS2 as the challenge organism

Monitoring Validated UV Reactors

To receive the pathogen credits, continuous online monitoring is required. The UV intensity setpoint method can be used, which involves monitoring the flow rate and UV intensity and verifying that both parameters are within their specified ranges. Setpoints are based on the operating envelope determined as part of the validation testing and should be provided in the manufacturer's documentation.



With the UV Intensity Setpoint approach, UVT monitoring is not required on the influent to the UV reactor. However, it is critical to consider the likely water quality of the influent in terms of UVT when selecting the appropriate reactor. An MBR-treated blackwater may have a UVT in the 60-75% range; if a reactor was validated only down to a UVT of 80%, the system will fail to meet the UV intensity setpoint and thus the reactor would not be an appropriate choice.

Additional Disinfection Guidance

Pathogen Crediting for Chlorine

Crediting Framework

Credit based on CT, where:

CT = C_{l2} residual concentration (C) * Contact time (T)
Contact time = average hydraulic residence time * baffling factor

Chlorine Contactor Design Requirements

- All water entering the contactor must be chlorinated prior to entering the contactor
- Chlorine cannot be added in an internal recirculation loop
- Chlorine residual must be measured in the contactor effluent

Free Chlorine Monitoring

If seeking CT credit for free chlorine disinfection, project must provide evidence in the Engineering Report that the free chlorine analyzer selected can distinguish between free and combined chlorine.

Important Consideration: Ammonia

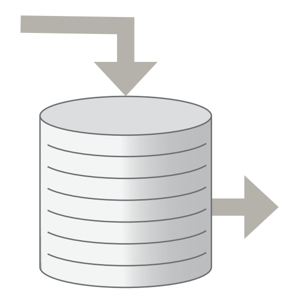
Why is it important?

In blackwater and graywater systems, it presents a challenge for free chlorine disinfection. Ammonia will consume free chlorine and convert it to chloramine, a weaker disinfectant.

How can it be managed?

- Ammonia can be removed through biological treatment via nitrification, i.e. conversion of ammonia to nitrate
- A chlorine dosing control system can be used to breakpoint ammonia and ensure a free chlorine residual
- If ammonia won't be fully removed, consider alternate disinfection for LRT credit, such as UV

Chlorine Contactor Types



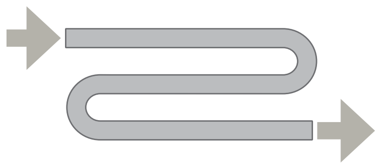
Tank Contactor

Default Baffling Factor: 0.1

Pros: Simple design

Cons: Requires larger footprint for same CT, more challenging to control chlorine dosing if tank residence time is long

Pipeline Contactor



Default Baffling Factor: 0.6[1]

Pros: Smaller footprint for same CT because of higher baffling factor, easier control due to faster feedback

Cons: More complex design

[1] Design requirements: Length/diameter (L/D) ratio > 40; Reynold's number > 4,000 (i.e. turbulent flow regime); no expansions/contractions.

Additional Disinfection Guidance

Primary and Secondary Disinfection

Primary Disinfection: used to achieve the pathogen log reduction targets for onsite water reuse systems. Associated with the control of enteric viruses, parasitic protozoa, and enteric bacteria.

Secondary Disinfection: used to maintain a disinfectant residual to prevent contamination as water travels through the distribution system. Provides protection against opportunistic pathogens such as Legionella.

Comparison of pros (+) and cons (-) of common disinfectant options for primary and secondary disinfection.

Disinfection Process	Log Reduction Credit (Primary)	Maintaining Residual in Distribution System (Secondary)	Additional Considerations
Free Chlorine	(+) Smaller footprint required for virus credit because of low CTs needed (-) Not effective against protozoa[1] (-) Requires dosing control system to maintain residual	(+) Effective for controlling biofilm growth (-) Will need to breakpoint chloramine in potable makeup water to maintain free chlorine residual (-) Less stable than chloramine	(+) Color control
Chloramine	(-) Requires very large footprint to reach necessary CT values for virus credit (-) Not effective against protozoa	(+) Stable residual (+) Easy to blend with existing potable makeup (+) Less reactive with organics, may reduce overall chemical usage (-) Requires chemical storage and handling of chlorine, ammonia	
UV	(+) Effective against virus, protozoa, and bacteria (+) Relatively simple implementation with pre-validated reactors	(-) Not suitable as a secondary disinfectant due to lack of residual	
Ozone	(+) Effective against virus (-) Not effective against protozoa[1]	(-) Not suitable as a secondary disinfectant due to lack of stable residual	(+) Color Control

[1]The two major groups of parasitic protozoa are Giardia and Cryptosporidium. Both free chlorine and ozone can be effective against Giardia; however, because they are not effective against Cryptosporidium, they have been described here as not effective against protozoa.

Additional Considerations For Secondary Disinfection

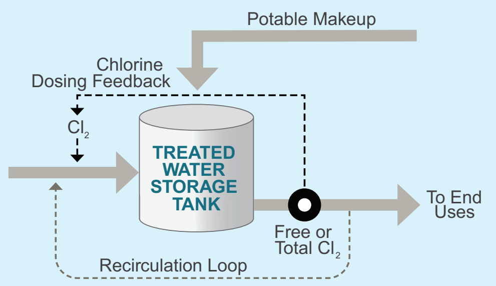
Compatibility of Chlorine and Chloramine

AW potable water has a chloramine residual. This needs to be accounted for in the secondary disinfection design; chloramine reacts with free chlorine in what is called a breakpoint reaction. The net result is an overall lowering of the total chlorine residual. Consider using chloramine as a secondary disinfectant to simplify blending with makeup water and avoid the breakpoint reaction. The two panels on this page illustrate examples of secondary disinfection with free chlorine and chloramine.

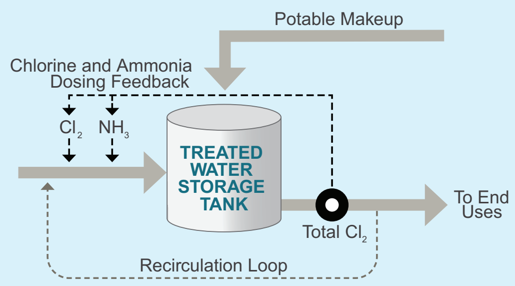
Water Storage and Recirculation

- Because demands may not be constant for these systems, there may be times when water sits in a treated water storage tank (e.g. overnight and weekends in commercial buildings).
- Recirculation is an effective strategy for maintaining the concentration of secondary disinfectant, especially when linked to a disinfectant dosing control system. Such a system would use the chlorine residual measurement to determine whether recirculation and/or changes to chemical dosing are needed to meet the chlorine target (see example treatment trains on pages 26-27).

Secondary Disinfection with Free Chlorine



Secondary Disinfection with Chloramine



Overflow and Bypass

Each OWRS must be designed to allow for both system overflow and system bypass to either the sanitary sewer system or storm sewer system, depending on the source water. Overflow allows an operator to take the system off-line for maintenance, and bypass allows an operator to divert improperly treated water.

Rainwater, Stormwater and Foundation Drain Water Systems

- Overflow is piped to the storm sewer through an approved backwater valve or air gap
- Bypass is diverted to the storm sewer

Condensate and Graywater Systems

- Overflow is piped to the sanitary sewer through an approved backwater valve or air gap
- Bypass is diverted to the sanitary sewer

Piping and Other Identification

Piping

All exposed piping and piping carrying alternative onsite reuse water within a building must be either purple pipe or painted purple; all buried piping must be either manufactured in purple, painted purple, taped with purple metallic tape, or bagged in purple; and all exposed piping must be stenciled in yellow with a warning reading "NON-POTABLE WATER."

Signage

Signage for tanks, hose bibbs, restrooms and equipment rooms must be clearly labeled and visible to indicate that a facility uses "NON-POTABLE WATER."

SPECIAL REQUIREMENTS FOR **INDUSTRIAL CONDENSATE REUSE SYSTEMS**

The Texas Commission on Environmental Quality (TCEQ) has adopted special requirements for industrial condensate reuse systems that are not covered in this guide. These industrial condensate reuse guidelines can be found in 30 TAC Chapter 210 Subchapter E. Authorization to reuse industrial wastewater under this subchapter may be obtained from the TCEQ, but is not needed for: internal recycling systems, closed loop systems, or makeup water within a facility.

06

ADDITIONAL CONSIDERATIONS FOR **STORMWATER CREDITING**

Stormwater Management and Reuse

The City of Austin requires new developments to manage stormwater through its Watershed Protection Ordinance by installing Stormwater Control Measures (SCMs). OWRS that collect and use rainwater provide some of the functionality that a SCM does. However, because rainwater harvesting OWRS are designed to hold water until it is needed, rather than emptying storage tanks within a few days, they do not provide the full functionality of a SCM. The City's Watershed Protection department considers OWRS that use rainwater "Type II" Rainwater Harvesting systems, and allow partial water quality volume credit to be granted to projects that implement them. The Water Balance Calculator automatically produces the documentation needed to receive this credit. The documentation (Appendix R7B) should be included in the Water Quality and Drainage sheets during Site Plan Application.

07

INCENTIVES FOR ONSITE WATER REUSE SYSTEMS

Austin Water Onsite Water Reuse System Pilot Incentive Program (GoPurple Program)

The Austin Water (AW) Onsite Water Reuse System (OWRS) Pilot Incentive Program provides funding to incentivize the installation of OWRS in the City of Austin to offset potable demands, and to help develop local water supplies using technologies that are new and innovative to the water industry. This program is subject to reauthorization by Austin City Council each year so is subject to change.

Applications are accepted and reviewed in the order received. Program funding is available on a first come, first served basis subject to funding availability.

1. Eligibility

Program funds are available for building-scale or district-scale OWRS projects in the multifamily and commercial sectors undertaken voluntarily by AW customers. Eligible projects that meet the program guidelines will be considered for program funding if they can demonstrate augmentation of AW potable water supply by collecting, treating, and using alternative water supplies onsite through the utilization of an OWRS.

2. Funding Levels

Projects must demonstrate the ability to achieve at least one of the following thresholds for AW Potable Offset to be eligible for program funding:

Estimated AW Potable Water Offset (gallons per year for 10 years)	Funding Level
≥ 450,000	$200,000
≥ 1,000,000	$500,000

The program guidelines and application are posted on www.austintexas.gov/department/onsite-water-reuse-systems.

Other GoPurple Program Incentives

Austin Water is currently offering additional incentives through its GoPurple program.
Check the OWRS program webpage for the most up to date information on how to apply for available incentives.

Incentive	**Funding Level**
Capacity charge adjustments on meter fees	Up to $7,528 per year per project
AW funded expedited building permit review	Up to $36,000 per project
Assistance with PACE Program	Up to cost of energy/water efficiency measures

Austin Water Conservation Rebates

Through its Water Conservation Program, Austin Water currently offers a number of rebates to incentivize customers to install onsite water reuse systems on their property. Projects that do not meet the 500,000 gallon offset threshold amount for the Onsite Water Reuse System Pilot Incentive Program may still qualify for the AW's Bucks for Business rebate.

1. Eligibility

To qualify for an Austin Water rebate you must be a customer of Austin Water or a qualifying water provider, and you must either be the property owner or the utility account holder (with written permission from the property owner). Additional criteria apply for each rebate program, and specific information can be found on Austin Water's Water Conservation webpage at the following address: www.austintexas.gov/department/water-conservation-rebates.

2. Qualifying Rebate Programs

At the time of publication, the following rebate programs are available to multifamily residential and commercial customers for onsite water reuse system installations through Austin Water.

- Rainwater Harvesting
- Bucks for Business

These rebates are subject to change, and pre-approval is typically required before purchasing or installing any of the materials that are covered by the rebates. For the most up-to-date program information, customers are encouraged to check Austin Water's Water Conservation webpage prior to submitting a rebate application: www.austintexas.gov/department/water-conservation-rebates.

RESOURCES

Important Contact Information

Austin Water – Onsite Water Reuse Program

Oversees review, approval, and ongoing operation of Onsite Water Reuse Systems.
www.austintexas.gov/department/onsite-water-reuse-systems
AW_OnsiteReuse@austintexas.gov

Email: AW_OnsiteReuse@austintexas.gov

Austin Water – Water Conservation Division

Provides guidance and resources related to onsite water reuse systems as well as rebates to incentivize the installation of certain systems.
www.austintexas.gov/department/water-conservation
512-974-2199

Austin Water – Special Services Division

Administers the Cross Connection/Water Protection Program to protect the health and safety of the public water supply from auxiliary water sources including onsite water reuse systems.
www.austintexas.gov/department/cross-connection-control-water-protection-program
512-972-1060

Development Services Department – Building Permits Service Center

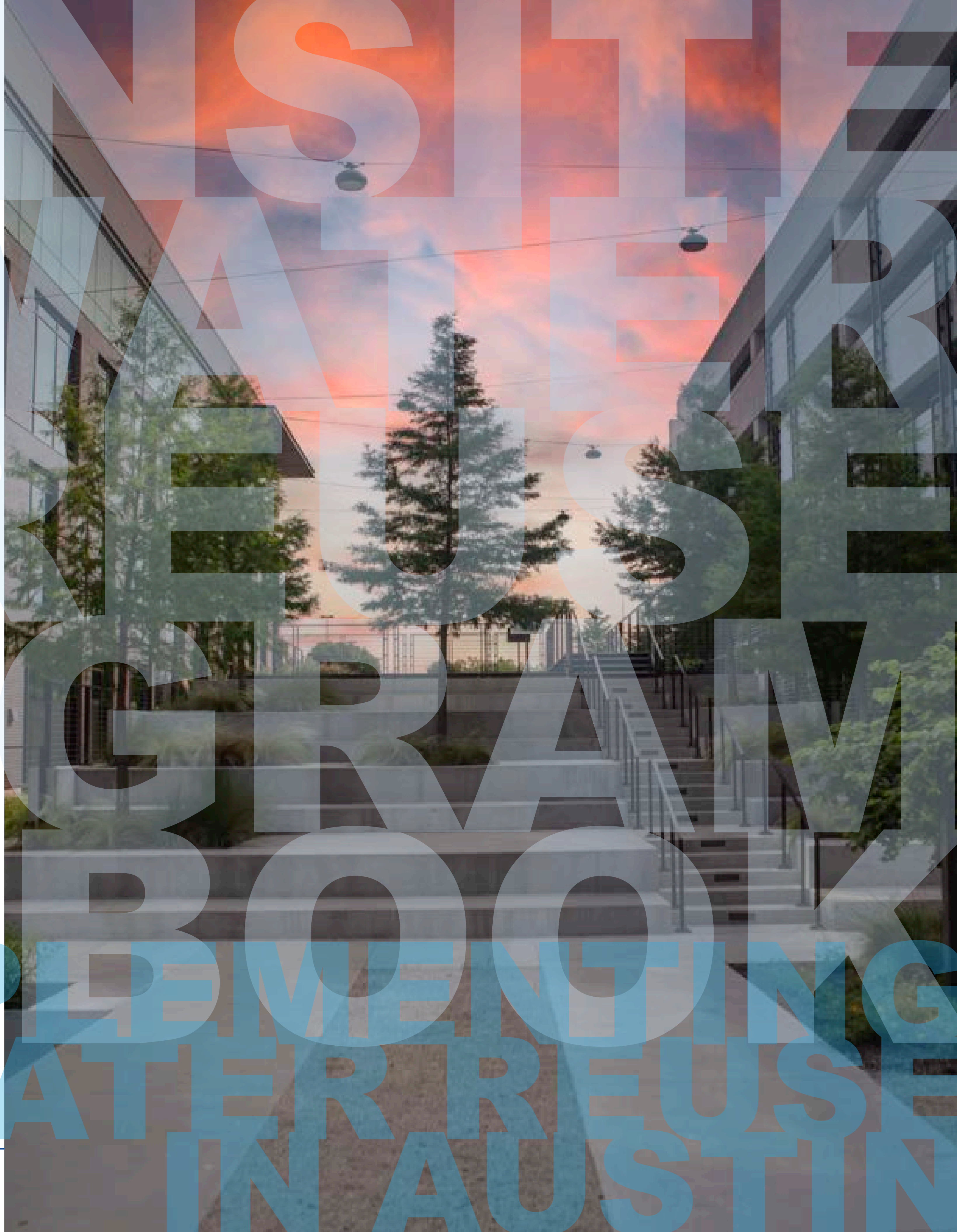
Issues permits to construct and performs installation inspections related to onsite water reuse systems.
www.austintexas.gov/dsd

Austin Watershed Protection Department – Stormwater Management

Oversees implementation of the Watershed Protection Ordinance.
www.austintexas.gov/department/stormwater-management
512-974-3358

Land Management

Issues encroachment agreements.
www.austintexas.gov/department/land-management
LandManagement2@austintexas.gov



ONSITE WATER REUSE PROGRAM GUIDEBOOK

IMPLEMENTING ONSITE WATER REUSE IN AUSTIN

Austin WATER

CITY OF AUSTIN FOUNDED 1839

AustinWater.org | AW_onsitereuse@austintexas.gov