



National Blue Ribbon Commission
for Onsite Non-potable Water Systems

A Guidebook for Developing and Implementing Regulations for Onsite Non-potable Water Systems

Model Local Ordinance

A large, decorative graphic at the bottom of the page consisting of overlapping, curved shapes in various shades of blue, creating a wave-like effect.

How to Use This Template

This model local ordinance was developed in conjunction with *A Guidebook for Developing and Implementing Regulations for Onsite Non-potable Water Systems*. Onsite non-potable water system programs can be developed and implemented through regulation at the state level, an ordinance at the local level, or a combination of the two. Pathways to implementation may look like:

- **States Develop Regulation, Local Authority Implements:** States establish regulation for the treatment, monitoring, and reporting requirements for ONWS. Local authorities establish oversight and management programs by adopting a local ordinance and accompanying rules.
- **States Develop Regulation and Implements:** States establish regulation for the treatment, monitoring, and reporting requirements for ONWS as well as provide oversight and management of ONWS.
- **Local Authority Develops Regulation and Implements:** Local authorities establish a local ordinance to regulate the treatment, monitoring, and reporting requirements for ONWS as well as provide all regulatory oversight.

The appropriate implementation structure will depend on the particular circumstances in each state and locality. The model local ordinance provided here is based on the approach that the state develops the regulation and the local authority implements the oversight and management program that complies with the state regulation. However, it should be noted that the local ordinance can also stand alone as sufficient regulation in the absence of a state regulation. At the time of this publication, San Francisco, CA is the only jurisdiction that has developed and implemented a local ordinance to regulate ONWS.

A Guidebook for Developing and Implementing Regulations for Onsite Non-potable Water Systems, along with a model state regulation, model program rules, and the appendix, can be downloaded at: <http://uswateralliance.org/initiatives/commission>.

Model Local Ordinance for Onsite Non-potable Water Systems

This model ordinance may be used by local regulators to establish a local ordinance to regulate the treatment, monitoring, and reporting requirements for ONWS.

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Section LO.1 Findings

The Local Agency finds that:

- a. All water users are responsible for making effective use of the available water resources.
- b. The development of ONWS will assist in meeting future water demand requirements of the local agency and lessen the impacts on the sewer system.
- c. Establishing a regulatory structure that provides administrative efficiency and a streamlined project approval process will assist developers who opt to design, install, operate, and maintain ONWS.

Section LO.2 Definitions

The terms used in this ordinance have the meaning set forth below:

Alternate Water Source: a source of non-potable water that may include any of the following: graywater, roof runoff, stormwater, blackwater, and any other source approved by the local agency.

Blackwater: wastewater originating from toilets, urinals, and/or kitchen counters (e.g., kitchen sinks and dishwashers).

Commercial Building: a building that is used for commercial purposes.

Continuous Verification Monitoring: ongoing confirmation of system performance using sensors for continuous observation of selected parameters, including surrogate parameters that are correlated with pathogen log reduction target requirements.

Cross-connection: when a plumbing system allows water from one system (e.g., non-potable) to enter into another system (e.g., potable), resulting in a contamination of potable water.

District-scale Project: an ONWS for a defined service area that covers two or more properties and may cross public rights-of-way.

Domestic Wastewater: wastewater collected from residential uses.

Field Verification: performance confirmation study conducted using challenge testing, including surrogate microorganisms and/or other non-biological surrogates, usually during startup and commissioning and may be repeated as needed. The need for, duration, and extent of the field verification procedure will depend on characteristics of the ONWS.

Graywater: wastewater collected from non-blackwater sources, such as bathroom sinks, showers, bathtubs, clothes washers, and laundry sinks.

Indoor Use: toilet and urinal flush water and clothes washing.

Local Agency: any city, county, town, parish, or city and county with the jurisdictional authority to permit use of an ONWS.

Log₁₀ Reduction: the removal of a pathogen or surrogate in a unit process expressed in log₁₀ units. A 1-log reduction equates to 90% removal, 2-log reduction to 99% removal, 3-log reduction to 99.9% removal, and so on.

Log₁₀ Reduction Target (LRT): the log₁₀ reduction target for the specified pathogen group (e.g., viruses, bacteria, or protozoa) to achieve the identified level of risk to individuals (e.g., 10⁻⁴ infection per year).

Mixed-use Building: a building that contains residential and commercial uses.

Multi-family Building: a residential building containing three or more dwelling units.

Multi-user Building: any building that is not a single residence (e.g., multi-residential apartment, commercial, mixed-use, and others).

Non-potable Water: water collected from alternate water sources, treated, and intended to be used on the project applicant's site or district-scale project and is suitable for direct beneficial use.

Onsite Non-potable Water System (ONWS): a system in which water from local sources is collected, treated, and used for non-potable uses at the building to district/neighborhood scale, generally at a location near the point of generation.

ONWS Engineering Report (Engineering Report): report submitted by project applicant to the local agency describing the ONWS in accordance with the program rules adopted by the local agency.

Operations and Maintenance Manual: document providing comprehensive information on the ONWS operation, maintenance, and repair.

Permit: permit to operate an ONWS issued and enforced by the local agency.

Permittee: the person(s) who holds a valid permit granted by the local agency to operate an ONWS. The permittee is responsible for maintaining a permit, assuring that water collection, treatment, use, and water quality monitoring and reporting are consistent with the approved engineering report, the operations and maintenance manual, the program rules, and applicable state and local laws. A permittee may also be the supplier and/or user.

Project Applicant: The person(s) or entity(s) applying for initial authorization to install an ONWS, typically the property owner or lessee. The project applicant is responsible for applying for the permit, assuring that the ONWS is installed consistent with the approved engineering report, the operations and maintenance manual, the program rules, and applicable state and local laws. The project applicant becomes the permittee upon issuance of the first permit to operate.

Residential building: a building that contains only dwelling units.

Roof Runoff: precipitation from rain or snowmelt events that is collected directly from a roof surface not subject to frequent public access.

Stormwater: precipitation runoff from rain or snowmelt events that flows over land and/or impervious surfaces (e.g., streets and parking lots). Stormwater also includes runoff from roofs with frequent public access.

Supplier: an entity that supplies an untreated alternate water source to the ONWS for treatment and reuse. A supplier may also be a permittee and/or user.

Treatment System Manager: the qualified person or entity responsible for the daily management and oversight of the ONWS.

Unrestricted Irrigation: irrigation of ornamental plants (e.g., non-food) and dust suppression.

User: an entity that accepts treated water from an ONWS for beneficial purposes within its area of occupancy. A user may also be a permittee and/or supplier.

Validation Report: report documenting a detailed technology evaluation study that was conducted to challenge the treatment technology over a wide range of operational conditions. The validation report shall include evidence of the treatment technology's ability to reliably and consistently achieve the log reduction value, including information on the required operating conditions and surrogate parameters that require continuous monitoring.

Section LO.3 **Applicability**

Under this ordinance, the following alternate water sources may be used to supply an ONWS:

- a. Roof Runoff
- b. Stormwater
- c. Graywater
- d. Domestic Wastewater or Blackwater

Under this ordinance, the following non-potable end uses may be met by an ONWS:

- a. Indoor Use:
 - i. Toilet and urinal flushing
 - ii. Clothes washing
- b. Unrestricted Irrigation:
 - i. Ornamental plant irrigation
 - ii. Dust suppression

This ordinance is limited to ONWS that serve the following implementation scales:

- a. Multi-Family Buildings
- b. Commercial Buildings
- c. Mixed-Use Buildings
- d. District-Scale Projects

This ordinance does not apply to ONWS that serve a single residential dwelling.

Section LO.4 **Regulation of Alternate Water Sources**

- a. Any person or entity who installs and operates an ONWS shall comply with this ordinance, the program rules adopted by the Local Agency, and all applicable local, state, and federal laws.
- b. Within 90 days after passage of this ordinance, the Local Agency shall issue program rules regarding the operation of ONWS systems necessary to effectuate the purposes of this ordinance to protect public health and safety. These program rules shall address, at a minimum:
 - i. Operation of an ONWS to achieve the mandatory minimum treatment performance standards for blackwater, graywater, and roof runoff as set forth in Table 1 that represent ninety-fifth percentile log reduction targets (Log_{10}) based on three reference pathogens (enteric viruses, enteric bacteria, parasitic protozoa) and Table 2 for stormwater;
 - ii. Validation report and field verification requirements;
 - iii. Continuous verification monitoring and reporting requirements and frequencies; and,
 - iv. Operation and maintenance requirements.
- c. The Local Agency shall review applications for ONWS and may issue or deny such applications, in accordance with applicable laws and regulations.
- d. The Local Agency shall review plans and issue or deny plumbing permits for the construction, installation, or modification of ONWS, in accordance with applicable laws and regulations.

Table 1. Log reduction targets for 10^{-4} per person per year benchmarks for ONWS using blackwater, graywater, or roof runoff

Water Use Scenario	Enteric Viruses	Parasitic Protozoa	Enteric Bacteria
Domestic Wastewater or Blackwater			
Unrestricted Irrigation	8.0	7.0	6.0
Indoor Use	8.5	7.0	6.0
Graywater			
Unrestricted Irrigation	5.5	4.5	3.5
Indoor Use	6.0	4.5	3.5
Roof Runoff			
Unrestricted Irrigation	Not applicable	No data	3.5
Indoor Use	Not applicable	No data	3.5

Table 2. Log reduction targets for 10^{-4} per person per year benchmarks for ONWS using stormwater

Water Use Scenario	Enteric Viruses	Parasitic Protozoa	Enteric Bacteria
Stormwater (10^{-1} dilution)			
Unrestricted Irrigation	5.0	4.5	4.0
Indoor Use	5.5	5.5	5.0
Stormwater (10^{-3} dilution)			
Unrestricted Irrigation	3.0	2.5	2.0
Indoor Use	3.5	3.5	3.0

Section LO.5 Project Applicant and/or Permittee Design and Construction Requirements

- a. Prior to initiating installation of any ONWS, project applicants shall submit to the Local Agency an application for a permit to operate an ONWS. Such applications shall comply with the requirements of this ordinance and any program rules the Local Agency has issued. Project applicants shall pay a non-refundable permit application fee to cover the costs of investigation and processing the application and issuing the permit. Each application submitted to the Local Agency shall include an engineering report that provides project information the Local Agency determines to be necessary for complete review of the proposed project. Local agencies may not approve or issue permits for any site installing an ONWS unless and until the Local Agency has approved the engineering report. The engineering report for district-scale projects must include information on the permanent legal agreements between property owners, and provide documentation that each party is a willing and responsible participant in the district-scale project.
- b. All buildings using non-potable water from ONWS shall include:
 - i. A flow meter on the non-potable distribution system to account for non-potable water use;
 - ii. Signage that state law and the local agency’s program rules require;
 - iii. Cross-connection control in accordance with the requirements of the local agency; and;
 - iv. Any other requirements the local agency determines are necessary to protect public health.
- c. A project applicant shall obtain an appropriate plumbing permit and any other building or installation permit required to construct, install, or alter, an ONWS. Each parcel within a district-scale project shall obtain appropriate plumbing and any other building or installation permits required.
- d. A project applicant shall obtain appropriate authorization for placement of any piping or other portions of an ONWS within the public right-of-way.
- e. Project applicants shall certify to the local agency that ONWS construction is complete and consistent with the approved engineering report in accordance with the provisions of this ordinance and any implementing program rules.

Section LO.6 Fees

- a. The non-refundable application fees for ONWS permits are:

Roof Runoff	\$X,XXX
Stormwater	\$X,XXX
Graywater	\$X,XXX
Blackwater	\$X,XXX
Transfer of any permit	\$XXX

District-scale The applicable amount above, plus \$XXX per hour for plan review and/or onsite inspection

- b. The fees set forth in this ordinance may be adjusted each year.
- c. Every permittee shall also pay an annual license fee. The annual license fees for ONWS permits are:

Roof Runoff	\$XXX
Stormwater	\$XXX
Graywater	\$X,XXX
Blackwater	\$X,XXX
District-scale	The applicable amount above, plus \$XXX per hour for plan review and/or onsite inspection

Section LO.7 Operating Requirements

When the Local Agency determines the project applicant has satisfied all the requirements of this ordinance, the Local Agency may issue a permit to operate the ONWS. Permittees shall timely submit all water quality monitoring information required by the provisions of this ordinance and the Local Agency's program rules. Permittees shall conduct ongoing backflow prevention and cross-connection testing in accordance with this ordinance, the program rules of the Local Agency, and all applicable local and state laws.

Section LO.8 Non-potable Water Use Audits

When required, the permittee shall conduct a non-potable water use audit describing the extent of non-potable water use based on flow meter data.

Section LO.9 Sale or Transfer

Permittees shall notify the Local Agency of any intent to sell or transfer the building or facility containing an ONWS within 30 days following the sale or transfer of property, in accordance with regulations adopted by the Local Agency.

Section LO.10 Inspection and Notices of Violation

The Local Agency may inspect any ONWS subject to the requirements of this ordinance to determine compliance with the provisions of this ordinance and applicable regulations.

Section LO.11 Violation and Penalties

The Local Agency may impose administrative penalties on any permittee, or person otherwise subject to the requirements of this ordinance, who violates any provision of this ordinance or any applicable rule or regulation shall be subject to enforcement with respect to administrative penalties, and may pursue any other available legal remedies for such violations.

Section LO.12 Revocation and Suspension of Permit

The local agency may order a permittee to cease operation of an ONWS, or may revoke or suspend the permit to operate if the Local Agency determines that:

- a. The manager, treatment system manager, or any employee has violated any provision of this ordinance or any regulation issued pursuant to this ordinance; or
- b. The ONWS is being operated or maintained in a manner threatening the public health or health of patrons and/or residents.