On-site Non-potable Water Use

Guide for the collection, treatment, and reuse of alternate water supplies in San Francisco

City and County of San Francisco

San Francisco Department of Building Inspection
San Francisco Department of Public Health
San Francisco Public Utilities Commission

In September 2012, the City and County of San Francisco adopted an Ordinance allowing for the collection, treatment, and reuse of alternate water sources for non-potable applications, such as toilet flushing and irrigation. The alternate water sources include rainwater, stormwater, foundation drainage, graywater, and blackwater.

This guide describes the City's regulatory review program and processes for the development and operations of non-potable water systems. Each project's circumstances are different. Therefore, each project proponent must ensure that the project is designed and installed safely, complies with applicable laws and regulations, and is operated in a manner that causes no harm or damage to building occupants, or others.

More information about San Francisco's Non-potable Water Program is available at http://sfwater.org/np.

San Francisco Water Power Sewer
Services of the San Francisco Public Utilities Commission

SAN FRANCISCO DEPARTMENT OF BUILDING INSPECTION

SFDPH Environmental HEALTH
improving environments protecting health

Contents

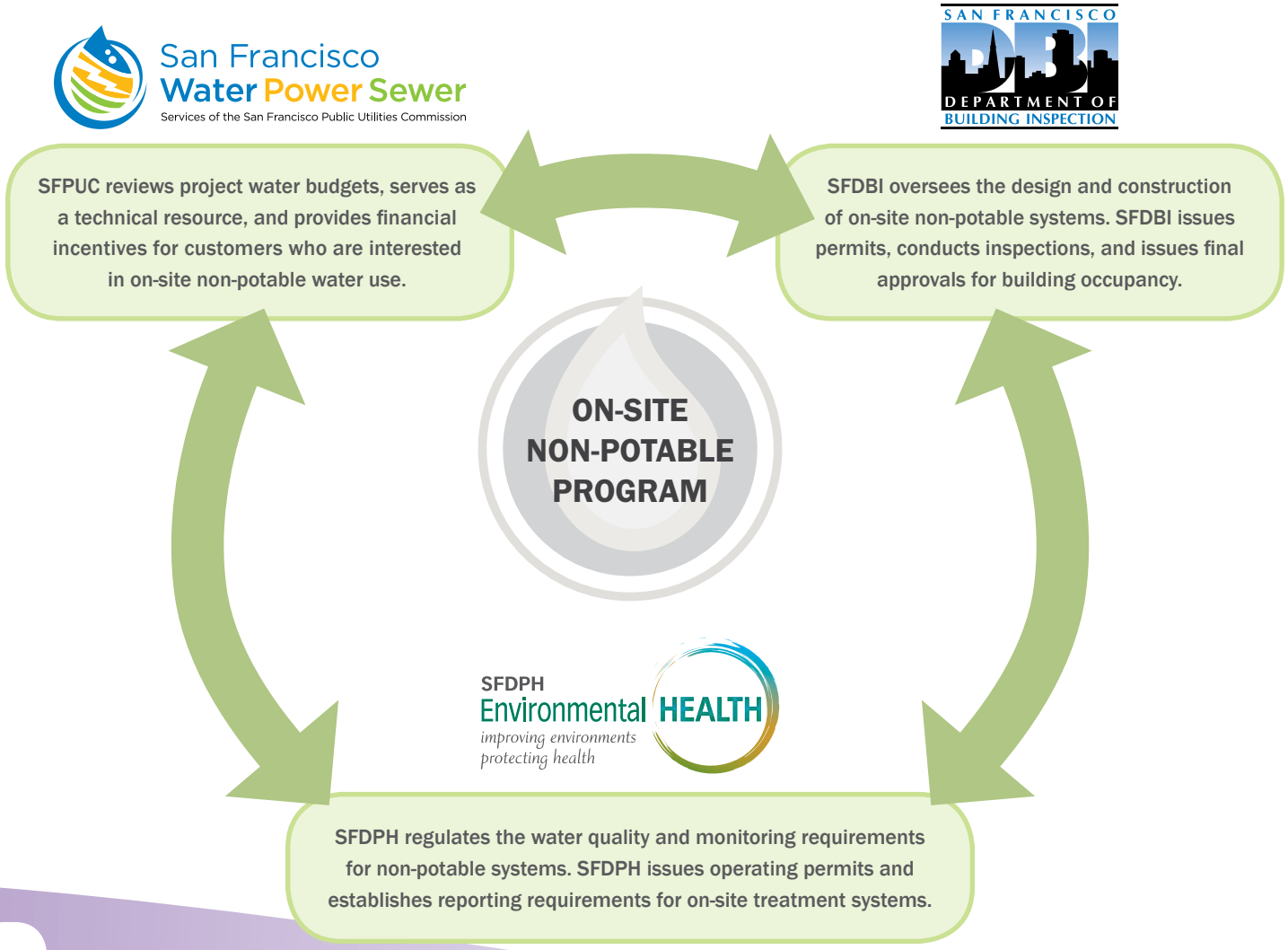
Introduction to the Non-potable Water Program

The City and County of San Francisco has long been a leader in water conservation and expanding local water supplies to protect against droughts and the effects of climate change. In a dense, urban center like San Francisco, the **capture, treatment, and reuse of water generated on-site** — from graywater (sinks, washers, and showers), rainwater, blackwater (graywater and toilets), and foundation drainage (water that floods basements) — can save 40–75% of water in new buildings.

On-site water treatment and reuse is being implemented in New York City, Portland, Seattle, and Sydney as a cutting edge green building strategy. Tokyo mandates it. Recognizing the environmental benefits and water savings that accrue, the new San Francisco Public Utilities Commission (SFPUC) headquarters at 525 Golden Gate Avenue is using on-site treated water for toilet flushing and irrigation.

This guide is designed to outline the steps necessary to collect, treat, and use water in commercial, mixed-use, and multi-family residential developments.

This guide describes the types of alternate water sources available and the potential on-site uses for treated alternate water sources. This guide also includes the steps that must be taken to construct an on-site treatment system.



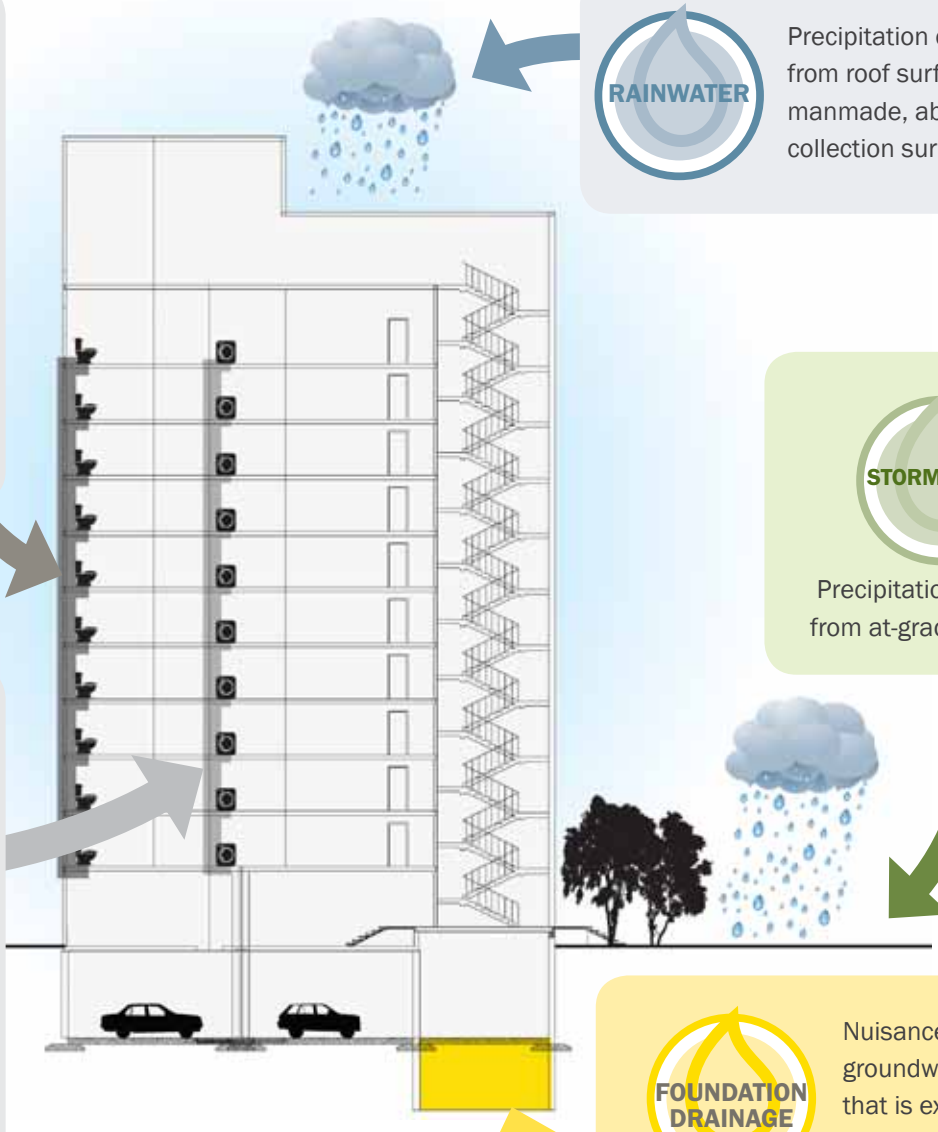
Alternate Water Sources Available On-site

BLACKWATER

Wastewater containing bodily or other biological wastes. This is discharge from toilets, dishwashers, kitchen sinks, and utility sinks.

RAINWATER

Precipitation collected from roof surfaces or other manmade, aboveground collection surfaces.



STORMWATER

Precipitation collected from at-grade surfaces.

GRAYWATER

Includes wastewater from bathtubs, showers, bathroom sinks, lavatories, clothes washing machines and laundry tubs. It does not include wastewater from toilets, utility sinks, kitchen sinks or dishwashers.

FOUNDATION DRAINAGE

Nuisance groundwater that is extracted to maintain the structural integrity of a building and would otherwise be discharged to the City's sewer system (a.k.a., dewatering or sump water).

Uses of Non-potable Water

On-site alternate water sources are considered non-potable water – water that is not fit for human consumption, but meets approved water quality standards set forth by SFDPH for other beneficial purposes after treatment. Allowed uses of treated non-potable applications include: **toilet flushing, irrigation, cooling/heating applications, process water, dust control and soil compaction, decorative fountains and water features, and washing of clothing.***

* Only rainwater is allowed for clothes washing.

Six Important Steps to Follow
for On-site Treatment System Construction

DESIGN

STEP 1
Water Budget Application

The water budget application provides a basic overview of the treatment system, including information on the alternate water source(s) and non-potable applications proposed and the estimated volumes. The application is submitted to the SFPUC Water Resources Division and will be distributed to SFDPH and SFDBI.

A sample form is provided at the end of this guidebook.

STEP 2
Non-potable Water Engineering Report

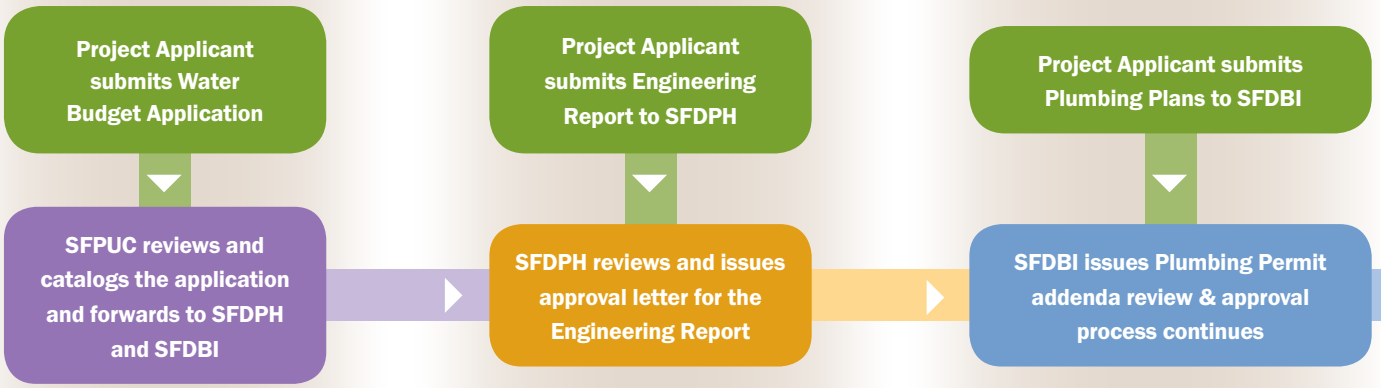
The project applicant must prepare a Non-potable Water Engineering Report that details the design and technical aspects of the non-potable water system and the means for compliance with the SFDPH Rules and Regulations, including water quality standards.

The elements of the Non-potable Water Engineering Report are listed on page 6.

STEP 3
Plumbing Permit

On-site non-potable projects are required to receive a plumbing permit from SFDBI. During the plumbing plan check, SFDBI will verify that there are no cross connections between the non-potable and potable water systems, and that there is a bypass that will allow the system to divert to the sewer.

Approval or waiver of the Engineering Report from SFDPH is required before SFDBI will issue a plumbing permit.



Applicant SFDBI SFPUC SFDPH

CONSTRUCTION

STEP 4
Construction Requirements

Specific construction requirements protect public health and the SFPUC water system. All projects must include appropriate back-flow protection, separation of potable and non-potable piping systems, and the ability to bypass the system and use City-supplied water if needed.

See pages 10-13 for an overview of the requirements.

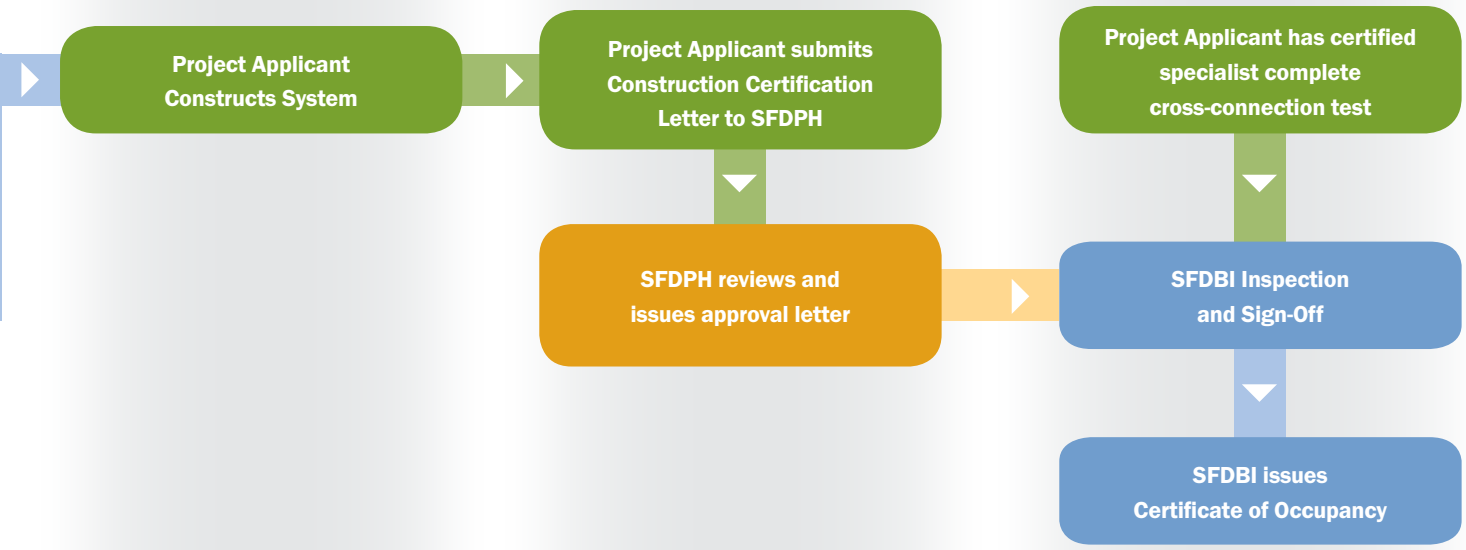
STEP 5
Construction Certification Letter

Post-construction, the project applicant must certify that the system was installed in accordance with the approved Non-potable Water Engineering Report or detail any changes made during construction in a Construction Certification Letter.

SFDPH approval is required prior to SFDBI issuance of a Certificate of Final Occupancy or Completion.

STEP 6
Initial Cross Connection Control Test

An initial cross connection test performed by a certified cross connection control specialist is required prior to the operation of the non-potable water system. Cross connection certification is required before SFDBI will issue a Certificate of Final Occupancy or Completion and before SFDPH will issue a Start-Up Permit to operate the on-site system.



See page 14 for operating requirements.

Non-potable Water Engineering Report

Each project must submit a Non-potable Water Engineering Report (Engineering Report) for review and approval to SFDPH. The report shall include information detailing the alternate water source and end use applications that are proposed as part of the building design. The report should also identify the ownership and operational arrangement for the system post-construction. Below is a general list of the all sections that should be included in the Engineering Report. The Engineering Report template is available on the SFDPH website and provides further instruction to help accurately compile a complete report for review.

SFDPH will respond to project applicants within 30 days indicating the Engineering Report is either approved, rejected, or must be revised and resubmitted.

Engineering Report Elements:

General
Provide a general overview of the non-potable water use project.

Rules and Regulations
Provide a description of the operator organization and personnel responsibilities.

Producer—Distributor—User
Identify and describe all entities that will be involved in the design, treatment, distribution, construction, operation, and maintenance of the on-site facilities.

Non-potable Supply Sources, Flows, Water Quality, and Characteristics
Describe in detail the source water that will be used for the non-potable purpose in the project.

Treatment Process
Describe the process that will be used to treat the non-potable water source for the end use on-site.

Reliability
Discuss each reliability feature and state under what conditions it will be actuated.

Supplemental Water Supply
Characterize the makeup water supply that is available to the project including a summary of the cross connection and backflow prevention controls.

Monitoring and Reporting
Describe the planned monitoring and reporting program.

Contingency Plan
Describe system features and operational procedures that will be employed to prevent spills, system malfunctions, and the delivery of inadequately treated water to the end use.

Public Access and Impact
Describes how public contact with untreated water and/or aerosols will be prevented, including the use area signage and markings that will be installed to inform the public of the use of non-potable water.

On-site Treatment Basics

The level of treatment depends upon the alternate water source and the end use.

RAINWATER: Precipitation is typically clean when it falls from the sky; however rainwater may become contaminated during collection or from particulate matter in the atmosphere. Rainwater systems typically require the least amount of treatment. In general, debris excluders, first flush diverters, and filtration provide adequate treatment to maintain a rainwater system. **Disinfection of rainwater is required for all uses with potential for human contact.**

STORMWATER: Stormwater treatment requirements are similar to rainwater requirements. However, precipitation collected at or below grade has a higher potential for contamination from various site-specific sources, including oil and grease, gasoline, and paint. These substances all contain volatile organic compounds (VOCs). **Monitoring of VOCs is required to ensure that stormwater supplies will not harm public health.**

FOUNDATION DRAINAGE: Like stormwater, foundation drainage quality varies by location. Foundation drainage water is considered to be of superior initial water quality compared to graywater and blackwater, but may still contain unacceptable levels of bacteria or VOCs. **Therefore, foundation drainage sources must be filtered and disinfected, and are required to be monitored for VOCs.**

GRAYWATER: The state of California allows graywater to be used for subsurface irrigation without treatment. Graywater used for any other purpose must be filtered and disinfected to protect public health. Graywater quality is highly variable and site specific. Graywater contains many of the same contaminants as blackwater, but in much lower quantities because it has not come into contact with food or human waste. **Filtration and disinfection is usually sufficient, without further treatment, to meet water quality criteria.**

BLACKWATER: Blackwater is the most contaminated source of water available on-site; however it is often one of the easiest to collect as it does not require a separate collection system and can typically be collected at a single location prior to discharge to the sewer. **In addition to the filtration and disinfection requirements for all other alternate water sources, blackwater systems also require biological treatment to lower the levels of organic material in the water.** This is typically achieved by introducing simple bacteria into the wastewater to digest the organic material. The bacteria are then filtered out in downstream treatment processes.

Water Quality Limits

The table below provides an overview of the water quality parameters and associated limits, as required by the SFDPH, for applying the alternate water sources to non-potable end uses.

	RAINWATER	STORMWATER	FOUNDATION DRAINAGE	
	Average	Average	Average	Maximum
Coliform[a] CFU[b] /100mL	100 (E. coli)	100 (E. coli)	2.2 (E. coli)	200 (E. coli)
Turbidity NTU[c]	10	10	5	10
$CBOD_5$ mg/L	n/a	n/a	n/a	n/a
TSS mg/L	n/a	n/a	n/a	n/a
pH	n/a	n/a	n/a	n/a
Chlorine residual mg/L	n/a	0.5 - 2.5	0.5 - 2.5	n/a
Odor	Non-offensive	Non-offensive	Non-offensive	n/a
VOC testing required?	If applicable[d]	Yes[e]	Yes[e]	n/a

Notes:

a May be measured as E. coli or total coliform as indicated in the table.

b CFU = colony forming units

c NTU = nephelometric turbidity units

d Rainwater collected where hydrocarbon-based fuels, hazardous materials, or fertilizers are stored or used may need to be sampled for VOCs prior to use.

e Stormwater or foundation drainage must be sampled for VOCs prior to use and quarterly as determined by SFDPH.

f Median concentration utilizing the results of the last seven samples.

g Not to exceed in more than one sample in a 30-day period.

h 5 NTU not to be exceeded more than 5% of the time in a 24-hour period.

GRAYWATER		BLACKWATER	
Average	Maximum	Average	Maximum
2.2 (E. coli)	200 (E. coli)	2.0 (Total Coliform)	23[f], 240[g] (Total Coliform)
2	10	2	5[h], 10
10	25	10	25
10	30	10	30
6.0 - 9.0	n/a	6.0 - 9.0	n/a
0.5 - 2.5	n/a	0.5 - 2.5	n/a
Non-offensive	n/a	Non-offensive	n/a
No	n/a	No	n/a

Key Water Quality Parameters

pH is a measure of the acidic or basic (alkaline) nature of a solution. pH can be used to gauge wastewater treatment efficacy and the corrosion potential of the water in the distribution system.

Total Suspended Solids (TSS) is a measurement of total solid materials, both organic and inorganic, that are suspended in water and one of the main indicators of the quantity of pollutants present.

Volatile Organic Compounds (VOCs) are emitted as gases from certain solids or liquids. VOCs include a variety of chemicals, some of which may have short- and long-term adverse health effects.

Total Coliform or E. Coli are indicators of microbial contamination (bacteria and viruses). UV, chlorine, and ozone disinfection are highly effective at removing microbes and the associated public health risk.

Carbonaceous biochemical oxygen demand (CBOD) is the amount of dissolved oxygen needed by biological organisms in a body of water in which the contribution from nitrogenous bacteria has been suppressed. CBOD can be used to gauge the effectiveness of biological wastewater treatment.

Turbidity is a measure of water clarity and is a useful indicator of the likelihood that the water may be contaminated with pathogens. Filtration processes are highly effective at removing turbidity.

Chlorine residual in the water indicates that: 1) a sufficient amount of chlorine was added to inactivate bacteria and some viruses; and, 2) the water is protected from recontamination during storage.

Design & Construction Basics

Getting Started with On-site Non-potable Water Systems

On-site non-potable water systems have four major components:

Alternate Water Source Collection System

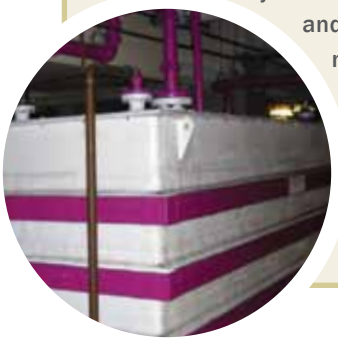
This includes infrastructure such as rainwater gutters, foundation drainage sump pumps, or graywater piping systems that are installed to collect an alternate water source on- site. This may also include equalization storage to help level flow prior to treatment as supplies vary throughout the day.

On-site Treatment System

Treatment is dependent on both the source of the water and the end use. Subsurface irrigation may not require treatment, while spray irrigation may require disinfection. Rainwater is relatively clean and requires little treatment, while blackwater requires biological treatment to remove bodily waste contaminants.

Treated Water Storage

Treated water storage is needed to meet the varying demands on the non-potable system. For example, in an office building that uses non-potable water for toilet flushing, most demands are during the day and water is usually stored at night when demands are low. When an on-site system cannot meet demands and needs additional makeup water from the City, the water is typically supplied to the treated water storage tank via an air gap.



Non-potable Distribution System

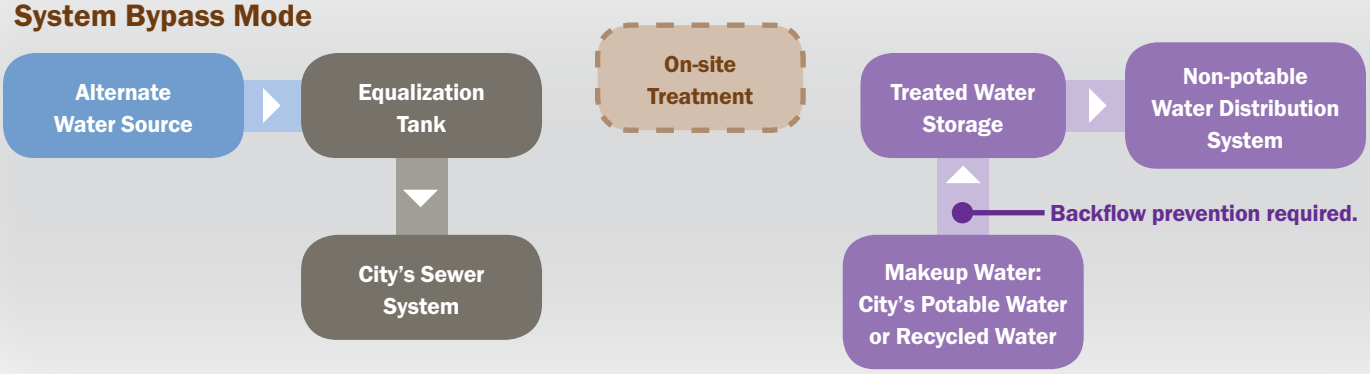
The distribution system is also commonly known as purple pipe or dual-plumbing. The term purple pipe refers to the requirement for non-potable piping to be colored or marked purple to distinguish it from the potable water system. This protects the fixtures that use potable water such as sinks and showers, as well as the public drinking water supply. Specific signage and labeling are required.

System Bypass

In the event of system malfunction, failure, or any condition that causes the system to exceed the water quality limits outlined by the SFDPH permit, the system will have to be bypassed. This means that potable water provided by the City would be supplied to the non-potable system and the on-site water would be stored or discharged to the sewer system as required.

Normal System Operation

System Bypass Mode



Makeup Water

City-supplied potable or recycled water is allowed as makeup water for a non-pressurized storage tank provided the connection is protected by an air gap or other physical device which prevents backflow. Typically, this water would be added through the treated water storage tank to avoid on-site treatment for water that already meets water quality criteria. Makeup water would be needed during system shutdown or bypass and may also be needed to meet peak demands, such as irrigation in the middle of September.

Cross Connection Control

A cross connection is a physical connection between the potable water system (drinking water) and a non-potable water system, which is not allowed. Cross connection tests are required to physically certify that the two water systems are separate. The SFPUC Water Quality Division, in conjunction with SFDPH, can coordinate and perform the initial cross connection test, which is required as part of final sign-off from SFDBI after the on-site system has been constructed.

Design & Construction Basics (continued)

Pipe Identification Requirements

Like recycled water, all non-potable water systems and their components must be properly identified in accordance with the requirements of the California Plumbing Code (CPC) (Section 601), SFDBI, and SFDPH Rules and Regulations. This information must be included in the system's design drawings and specifications, and all signage must be maintained as part of system operation after installation.

Alternate Water Source	Non-potable Application	Required Label
 Graywater Only	Subsurface irrigation only (when treatment is not required)	"CAUTION: UNTREATED GRAYWATER, DO NOT DRINK."
 Rainwater Only	All allowed uses	"CAUTION: NON-POTABLE RAINWATER WATER, DO NOT DRINK."
Rainwater, Graywater, Stormwater, Foundation Drainage, Blackwater, or any combination of sources treated prior to use 	All allowed uses	"CAUTION: ON-SITE TREATED NON-POTABLE WATER, DO NOT DRINK."

Piping

All on-site non-potable water system piping shall be purple (Pantone color No. 512, 522C, or equivalent) using the naming convention established above. Recycled water systems are identified using black lettering. On-site non-potable systems are identified using yellow lettering (Pantone 108 or equivalent).

Valves

All valves on a non-potable water system shall be tagged and identified using the naming convention established above.

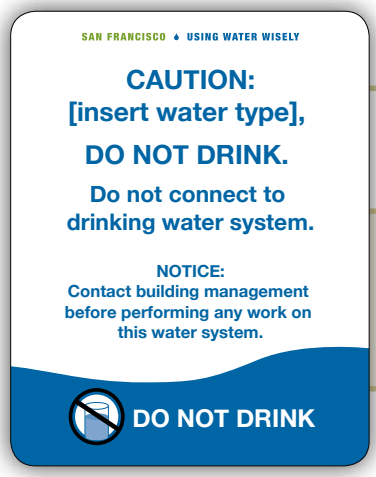
TECHNICAL ASSISTANCE

The SFPUC can provide technical assistance on how to label non-potable systems. Please contact nonpotable@sfwater.org.

Signage Requirements

Restrooms

A sign shall be installed in restrooms in commercial, industrial, and institutional occupancies using non-potable water for water closets, urinals, or both. Signs are not required in residential occupancies. The signs shall be visible to users and the location shall be approved by SFDPH. Signs are also required inside the tank of tank-type toilets as notification that the water in the tank is not a suitable emergency water supply.



Equipment Rooms and Valve Access Doors

Each room or access panel containing non-potable water system equipment or valves shall have a sign posted at a location that is visible to anyone working on or near the equipment or valves.

Irrigation Systems

Sites using alternate water sources for irrigation must post advisory signs at site entrances, at outdoor eating areas, along public pathways (e.g., crosswalks) and medians, or as otherwise determined by SFDPH.

Construction Certification Letter

After the on-site system construction is complete, project applicants must certify that the system construction is consistent with the approved Engineering Report. This letter must be on company letterhead, signed and sealed by the registered professional engineer, and submitted to SFDPH. The Construction Certification Letter is required prior to the issuance of a Certificate of Occupancy from SFDBI.

Ongoing Operation of On-site Systems

Permits for Operation

SFDPH issues **Start-Up Permit**

Non-potable water treatment system is operated in Start-Up Mode

During the **Start-Up Mode**, the on-site water is treated and sent to sewer while potable water is supplied to all end uses. The system must be operated in Start-Up Mode for at least 90 days to allow time for fine-tuning and troubleshooting of the system prior to full operation.

SFDPH issues **Temporary Use Permit**

Non-potable water treatment system is operated in Temporary Use Mode

During the **Temporary Use Mode**, the on-site water is treated and supplied to the approved non-potable end uses. Frequent monitoring is conducted during this period as system operations are initiated and further refined. The system must be operated in Temporary Use Mode for at least 9 months, and if it consistently meets all water quality requirements, a Final Permit will be issued.

SFDPH issues **Final Permit**

Non-potable water treatment system is operated in Final Use Mode

After satisfying all temporary use requirements, the system will be put into **Final Use Mode**. Once a Final Permit is issued by SFDPH, an annual license fee will be required to continue the operation and use of the non-potable system. The annual license fee is due by March 31st each year to the City and County of San Francisco Office of the Treasurer & Tax Collector.

Operator Requirements

The system owner must provide evidence of direct employment or a service contract with a qualified person or persons to supervise the operation of the on-site system. The required qualifications will vary by system type and complexity, and may range from a building engineer (simple or packaged systems) to a wastewater treatment plant operator (blackwater systems). The operator is required to sign and verify the information contained in all discharge monitoring reports and annual reports required by SFDPH.

Monitoring & Reporting Frequencies

The monitoring frequency listed below is most directly related to coliform testing which requires grab sampling and lab analyses. Monitoring requirements for additional individual water quality parameters may differ as some parameters are monitored intermittently and others are monitored continuously using electronic metering devices. The SFDPH Rules and Regulations provide detailed information on monitoring requirements.

Sumary of Bacteriologic Monitoring & Reporting Frequencies

Water Source	Start-Up Permit		Temporary Use Permit		Final Permit	
	Monitoring Frequency	Reporting Frequency	Monitoring Frequency	Reporting Frequency	Monitoring Frequency	Reporting Frequency
RAINWATER	n/a	n/a	n/a	n/a	Monthly	Annually
STORMWATER	n/a	n/a	n/a	n/a	Monthly	Annually
FOUNDATION DRAINAGE	Weekly	Weekly	Weekly	Monthly	Monthly	Annually
GRAYWATER	Weekly	Weekly	Weekly	Monthly	Monthly	Annually
BLACKWATER	Daily	Weekly	Daily	Monthly	Daily	Monthly

Ongoing Inspections

The on-site non-potable water system must be inspected and tested to verify proper separation from the potable water system.

Backflow Protection

Backflow preventers must be tested every year to certify that they are functioning properly. SFPUC has certified testers and SFDPH maintains a list of third-party certified testers who are available to perform this function.

On-going Cross Connection

Additional cross connection testing is required for buildings that have dual-plumbing for internal fixtures in accordance with the California Plumbing Code and SFDPH rules and regulations. Additionally testing is also required for any site using non-potable water that alters plumbing in any way. Contact SFPUC for information on certified cross connection control specialists.

Annual Visual System Inspection

A visual system inspection is required annually and will include checking for alterations to piping, equipment, and valves. In addition, the property must be inspected to ensure that proper non-potable signage is in place and that any irrigation is not causing overspray or ponding. The visual inspection is typically conducted by the building manager or site supervisor and reported to SFDPH.

SFDPH and/or SFPUC will provide all of the necessary forms for documenting visual inspections and certifying cross connection control tests.

Water Use Calculator

Estimate On-site Potential with SFPUC's Water Use Calculator!

The SFPUC has developed a Water Use Calculator to help project applicants estimate the potential volume of alternate water sources generated on-site as well as the potable and non-potable water demands. Applicants can input basic information, such as square footage of commercial space or number of residential units, to generate rough estimates. Applicants can also provide more detailed information to fine tune the calculations. The calculator includes default values for fixture flow rates based on the SFPUC's Water Conservation Model, San Francisco's Green Building Requirements, and Leadership in Energy and Environmental Design (LEED).

The Water Use Calculator is Available at http://sfwater.org/np.

NON-POTABLE WATER CALCULATOR

Step 4 of 7: Calculate Outdoor Water Demand (Landscape Irrigation, Outdoor Water Features)

Project Name:
ABC Building

Instructions:

Annual outdoor water demand is calculated based on landscape irrigation demand and demand associated with other outdoor features such as decorative fountains. **User input is required in Sections A and B.** This step also includes information on compliance with the City's landscape irrigation ordinance in Section C.

LEGEND:

User Input	
Linked from User Input	
Default Value	
Autogenerated Value	

A. LANDSCAPE IRRIGATION DEMAND

User Input Instructions:
Enter user-defined irrigation factors in the table below.

Turfgrass	5,000	ft^2
Crop Coefficient - Kc	0.7	*Cool season grasses = 0.8, Warm season grasses = 0.6*
Landscaped Area	5,000	ft^2
Species Factor - k_s	0.5	*<0.1 for very low, 0.1-0.3 for low, 0.4-0.6 for medium, 0.7-0.9 for high*
Density Factor - k_d	1	*0.5-0.9 for low, 1 for average, 1.1-1.3 for high.*
Microclimate Factor - k_{mc}	1	*0.5-0.9 for low, 1 for average, 1.1-1.4 for high.*
Landscape Coefficient - K_L	0.5	$K_L = k_s * k_d * k_{mc}$
Green Roof	20,000	ft^2
Species Factor - k_s	0.1	*<0.1 for very low, 0.1-0.3 for low, 0.4-0.6 for medium, 0.7-0.9 for high.*
Density Factor - k_d	1	*0.5-0.9 for low, 1 for average, 1.1-1.3 for high.*
Microclimate Factor - k_{mc}	1.2	*0.5-0.9 for low, 1 for average, 1.1-1.4 for high.*
Landscape Coefficient - K_L	0.12	$K_L = k_s * k_d * k_{mc}$
Other <Please Specify>	0	ft^2
Species Factor - k_s	0	*<0.1 for very low, 0.1-0.3 for low, 0.4-0.6 for medium, 0.7-0.9 for high.*
Density Factor - k_d	0	*0.5-0.9 for low, 1 for average, 1.1-1.3 for high.*
Microclimate Factor - k_{mc}	0	*0.5-0.9 for low, 1 for average, 1.1-1.4 for high.*
Landscape Coefficient - K_L	0	$K_L = k_s * k_d * k_{mc}$
Total Irrigation Area	**30,000**	ft^2
Average Coefficient	**0.28**	
Irrigation Efficiency	**0.90**	*Estimated efficiencies are 0.70 to 0.85 for spray, 0.9 for drip, 0.95 for subsurface drip.*
Site Location (ET_0 Zone)	**Eastern SF**	

Month	Ave. Monthly Rainfall	Reference Evapotranspiration	Actual Evapotranspiration	Irrigation Demand			% of Annual
	in/month	ET_0	ET_L	ft^3/month	gal/mo	gpd	
January	4.56	1.24	0.347	0			
February	3.85	1.68	0.470	0			
March	2.91	3.1	0.868	0			
April	1.41	3.9	1.092	0	0	0	0%
May	0.63	4.65	1.302	1,872	13,999	452	13%
June	0.22	5.1	1.428	3,355	25,093	836	24%
July	0.05	4.96	1.389	3,720	27,823	898	26%
August	0.11	4.65	1.302	3,318	24,817	801	23%
September	0.37	3.9	1.092	2,005	14,995	500	14%
October	1.03	2.79	0.781	0	0	0	0%
November	2.68	1.8	0.504	0			
December	4.08	1.24	0.347	0			
TOTAL	**21.91**	**39.01**	**10.92**	**14,268**	**106,727**		

Additional Resources

Grant Assistance for Large On-site Non-potable Water Projects

The SFPUC has developed a grant assistance program that will provide up to $250,000 for projects implementing on-site non-potable water use. To be eligible, a project must:

- Include 100,000 square feet or more of commercial or residential occupancy
- Complete the SFPUC's Water Use Calculator
- Supply all toilet flushing with on-site non-potable water, or
- Replace 40% of the project's total water use with on-site non-potable water

Applications are available at http://sfwater.org/np.

Manuals and Guidelines

The SFPUC is always developing resources to help customers improve water efficiency and design and implement different water and wastewater management systems. For information, please see the following resources, which are available at http://sfwater.org/reqs:

- Graywater Design Manual
- Stormwater Design Guidelines
- Recycled Water Customer Guide
- Cross Connection Control Manual
- Water Efficient Irrigation Ordinance Guidebook

Notes

San Francisco Water Power Sewer
Services of the San Francisco Public Utilities Commission

Water Resources Division
Non-Potable Water Program
525 Golden Gate, 10th floor, San Francisco, CA, 94102

ON-SITE NON-POTABLE PROJECT WATER BUDGET APPLICATION

In accordance with Article 12C of the San Francisco Health Code, any project that includes an alternate water source system, must submit water budget documentation to the SFPUC for review prior to issuance of a permit from any other City department. This includes a description of the proposed alternate water source system and the type and quantities of source water and non-potable applications proposed.
Please visit www.sfwater.org/np for additional information or contact nonpotable@sfwater.org.

Single family or duplex residential occupancies are not required to fill out water budget documentation.
Please visit www.sfwater.org to find out about other SFPUC programs for residential customers.

Project Information			
Construction Type (check one)	◯ New Construction	◯ Remodel/Major Alteration	◯ Re-plumbing only
Project Type (check one)	◯ Multi-Family Residential (3 units or more)	◯ Commercial (Non-residential)	◯ Mixed Use (includes commercial & residential)
Residential Occupancy Square Footage:	Commercial Occupancy Square Footage:	Date:	
Project Name:			
Service Address:			
Assessor's Block & Lot No./Parcel APN:	Site/Bldg Permit Number (if filed):		
Applicant/Customer Information			
Name:	Company:		
Address:			
Phone:	Email:		

Alternate Water Sources

- Rainwater – precipitation collected from roof surfaces or other manmade, aboveground collection surfaces
- Stormwater – precipitation collected from at-grade or below grade surfaces
- Graywater – untreated wastewater that has not been contaminated by any unhealthy bodily wastes of operating wastes. This includes, but is not limited to, wastewater from bathtubs, showers, bathroom sinks, lavatories, clothes washing machines, and laundry tubs, but does not include wastewater from kitchen sinks or dishwashers.
- Foundation Drainage –nuisance groundwater that is extracted ti maintain a building's or facility's structural integrity and would otherwise be discharged to the City's sewer system.
- Blackwater – wastewater containing bodily or other biological wastes, as from toilets, dishwashers, kitchen sinks and utility sinks.
- Other sources as approved by SFDPH

Submit to SFPUC

Continue to page 2 to provide system description and water budget information.

ON-SITE NON-POTABLE PROJECT WATER BUDGET APPLICATION

The SFPUC has developed an Excel-based calculator to help customers quantify available alternate water sources and non-potable water demands. Please visit www.sfwater.org/np to download.

On-site Water Sources to be Used Indicate volumes in gallons per year (gpy)	
☐ Rainwater	Qty: 0
☐ Stormwater	Qty: 0
☐ Graywater	Qty: 0
☐ Foundation Drainage	Qty: 0
☐ Blackwater	Qty: 0
☐ Other: _____	Qty: 0
TOTAL:	Qty: 0

Proposed On-site Non-potable Applications Indicate volumes in gallons per year (gpy)	
☐ Toilet/Urinal Flushing	Qty: 0
☐ Spray Irrigation	Qty: 0
☐ Subsurface Irrigation	Qty: 0
☐ Drip Irrigation	Qty: 0
☐ Decorative Fountain	Qty: 0
☐ Cooling Application	Qty: 0
☐ Trap priming	Qty: 0
☐ Other: _____	Qty: 0
TOTAL:	Qty: 0

Supplemental/Make-up Water Required to Meet Non-potable Demands If on-site water volumes are less than non-potable application demands, supplemental water from SFPUC will be required. In the future, this may be met with municipal recycled water.	
☐ Year-Round ☐ Summer (Apr-Oct) ☐ Other: _____	Qty (gpy):

On-site Non-potable System Description *(Please provide a brief description of on-site non-potable water system including: proposed conceptual design for non-potable water system - description of alternate water sources to be used, description of treatment, description of nonpotable applications.)*

FOR OFFICE USE ONLY
Application Received: