

San Francisco Public Utilities Commission
Rules and Regulations
Governing Water Service to Customers



Established by Resolution No. 19.786
Passed December 15, 1959
by the Public Utilities Commission

Effective January 1, 1960 with
Amendments to December 10, 2019



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

**San Francisco Water Enterprise
Public Utilities Commission**

Rules and Regulations Governing Water Service To
Customers

Established by Resolution No. 19.786

Passed December 15, 1959
by the Public Utilities Commission Effective January 1, 1960

With amendments to December 10, 2019

525 Golden Gate Avenue
San Francisco, CA 94102

Contents

	Rule	Page
Section A – Installation of Services		
Application for Service	1	1
Installation of Service	2	2
Standard Service	3	3
Non-Standard Service	4	4
Fire Service	5	4
Combination Fire Service	5A	5
Service Outside San Francisco	6	5
Basement Under Sidewalk	7	7
Change of Location or Size of Service or Meter	8	7
Protection of Public Water Supply	9	7
Control Valves, Ground Wires, Etc.	10	8
Mains and/or Services in Impaired Sub-Surface Areas	11	9
Section B – Extension of Mains		
Installation	1	10
Ownership Transfer	2	11
Financial Responsibilities	3	12
Cost Sharing by New Applicants	4	13
Section C – Application for Water		
Supply and Responsibility of Applicants		
Application for Supply	1	16
Establishing and Maintaining Credit	2	17
Return of Deposit	3	17
Charge for Turning on/Shutting off Water Supply	4	18
Water Used Without Regulation Application	5	18

Contents

	Rule	Page
Revised Section D – Meter Reading, Billing and Collection		
Billing Periods	1	19
Billing for Two or More Meters	2	19
Size of Meter for Billing	3	19
Presentation and Payment of Bills	4	20
Proper Charges – Time Limit	5	20
Allowances	6	20
Meter Tests	7	21
Non-Registering Meters	8	21
Section E – General		
Compliance with Emergencies	1	22
Application of San Francisco Rates	2	22
Improvement of Service	3	22
Pressure and Supply	4	23
Tampering with Department Property	5	23
Admission of Department's Employees	6	24
Abatement of Noises	7	24
Removal and Relocation of Facilities	8	25
Determination of Cost	9	25
Damage Claims	10	27
Applicability of Charges for Water Use Due to Noncompliance with Conservation Measures	11	27
Water Use Restrictions	12	28
Interpretation of Rules and Regulations	13	29

Contents

	Rule	Page
Section F - Water Efficient Irrigation		
Purpose		30
Applicability	1	31
Definitions	2	32
Tier 1 - Landscape Rehabilitation Projects	3	40
Tier 2 - New Construction Projects	4	41
Compliance Plans for Large Irrigated Landscapes	5	43
Water Efficient Landscape Design and Operation Elements	6	43
Maximum Applied Water Allowance	7	48
Landscape Documentation Package	8	49
Soil Management Report	9	49
Landscape Design Plan	10	50
Irrigation Design Plan	11	51
Grading Design Plan	12	52
Certificate of Landscape Completion	13	52
Irrigation Audits for Landscape Areas	14	53
Non-Potable Water	15	54
Water Water Waste Prevention	16	55
Appendix		56

Contents

	Rule	Page
Section G - CROSS-CONNECTION CONTROL		60
Applicability	1	60
Definitions	2	60
Backflow Prevention Requirements	3	64
Installation Requirements for Backflow Preventers	4	67
Inspection Requirements for New Water Services	5	68
Permits to Operate	6	68
Companies Employing Authorized Backflow Prevention Assembly Testers and Authorized Cross-Connection Control Specialists	7	71
Testing, Inspection and Repair Requirements for Backflow Preventers	8	71
Backflow Tag Sales	9	72
Inspection and Testing Requirements for Dual-Plumbed Systems	10	73
Emergency Cross-Connection Response Plan for Dual-Plumbed Systems	11	74
Emergency Cross-Connection Response Plan for Standard-Plumbed Systems	12	75
Water User Supervisor	13	75
Inspections and Notices	14	76
Enforcement, Violations and Penalties	15	76
Variances	16	77
Appendix		
Sample Calculations of Maximum Applied Water Allowance (MAWA) and Estimated Total Water Use (ETWU)		56

SECTION A – INSTALLATION OF SERVICES

Rule 1.

Application for Service

The owner or authorized agent of the property to be served shall make written application to the Water Enterprise (hereinafter referred to as "Water Department" or "the Department") for service before extending the house pipe to the curb. Applications shall include the desired location and size of service pipe and meter, fixtures to be supplied or quantity of water required in gallons per minute, the use or class of occupancy of the premises, the area to be supplied, and any other information which shall aid the Department in providing adequate service. Applications for fire service shall include any special requirements of the Fire Department or the Underwriters having jurisdiction. No application for service from an existing main will be considered where the meter(s) for the property to be supplied will be located at an elevation of less than 100 feet below the outlet level of the reservoir supplying the main, unless the applicant agrees to accept such existing water supply and service to the said property as constituting full performance by the Department of its obligation. The Department shall not be responsible for inadequate or improper installations resulting from lack of information in the application.

(Paragraph as amended August 16, 1966. Resolution No. 66-0662)

All standard and non-standard services two inches (2") and larger shall be for use in the area or premises as defined in the application which shall include a term agreement with the terms and conditions fully set forth in the application for such service.

All services of the Department are supplied with the understanding that the applicant agrees to abide by the Rules and Regulations and the Rate Schedules of the Department as they now exist or as they hereafter may be amended.

Rule 2.
Installation of Service

Service connections will be installed, at the expense of the applicant, from the Department's mains to the meter at the opposite curb line of public streets in which the mains are located and clear of driveways or other obstructions. The meter or meters will be installed on the service inside the curb line or as near thereto as possible. Where the main is in a right of way or easement owned or controlled by the Department, the service will not be extended beyond such right of way or easement.

Where the Department has no main installed, the applicant must arrange for main extension or extend his house piping to the curb of a street occupied by the Department's mains.

No service will be installed on any private road, lane, street, alley, court or place, or extended beyond the curb of the street in which the Department's mains are installed. Applicants desiring such service must extend their housepiping.

The Department reserves the right to determine the location and size of service and meter, to limit the number of houses or buildings and the area of land to be supplied by one service connection, and to refuse service if it considers such service to be detrimental to existing services or to the interests and operations of the Department or to the interests of the City and County of San Francisco. The Department shall determine the class of service, taking into consideration the type of structure, the use of the service, volume of water usage and other pertinent factors.

When more than one consumer is supplied through one service connection and meter, the Department will hold the accepted applicant responsible for the bills for all water supplied. If separate billing is desired, additional services or meters will be installed and bills rendered accordingly, provided the house piping is segregated and brought to the curb line of the property.

For the purposes of determining charges for installation of water services (Schedule W-41) under the established rate schedules, a service installation shall be understood to mean the connection to the main, the pipe from the main to the meter, appurtenant valves and fittings, and the meter box and appurtenances; and the size of the pipe from the main to the meter shall determine the amount of the installation charge. However, for service pipes normally 2 inches or smaller in size, the Department may, at its discretion, install a larger or smaller size pipe from the main to the meter than is normally required in which case the normally required size of pipe shall determine the amount of the installation charge. For service pipe installations over 2 inches in size or when in the opinion of the Department any unusual conditions may result in costs more than 15 percent higher than the charges in the rate schedule, the applicant shall pay the actual costs of installation. Service charges (Schedules W-1, W-21 and W-25) shall be predicated on the size of meters installed on the service connection.

All pipe, valves, fittings, equipment, materials, meters, etc., up to and including the outlet equipment from the meter or meters shall remain the property of the Department.

Rule 3.
Standard Service

Service for immediate and permanent use for standard residential, commercial or industrial purposes and complying in all respects with the provisions of the Department as to size, location and usage will be classed as standard service. The necessary meter or meters will be furnished and installed by the Department without charge.

Rule 4.

Non-Standard Service

Service for temporary or intermittent use or for purposes not deemed by the Department to comply with its requirements for standard service will be classed as non-standard service. The installation charge shall include the costs of the metering equipment and its installation.

The cost of the metering equipment, less removal costs, may be returned to the original applicant if, within two years of installation, service is terminated and the metering equipment recovered by the Department without damage. Non-standard service extending beyond two years that in fact becomes standard service as defined in Rule 3, Section A, may be declared by the Department to be standard service, and the costs of the metering equipment and its installation refunded to the original applicant, if such applicant so requests within ten years of installation and the total revenue from the service within the two years immediately prior to the request is equal to or greater than ten times the cost of the complete installation.

Rule 5.

Fire Service

Service for automatic fire sprinkler systems or for fire protection of any kind will be classed as fire service provided such service is required by or conforms to the regulations of the Fire Department or the Underwriters having jurisdiction and provided that if water is used for any purpose other than extinguishing accidental fires or for testing the system, the general use schedule of rates for service charge, water delivered and minimum billing shall apply and the Department shall have the right to place a standard meter or meters on the service, if not already installed, at the expense of the customer or to disconnect the entire water supply for the premises.

The installation charge shall include the costs of the metering equipment and its installation.

**Rule 5A.
Combination Fire Service**

Service for automatic fire sprinkler systems or for fire protection of any kind, when combined with a standard service, will be classed as a combination fire service subject to be the following provisions:

- (1) Such service is required by or conforms to the regulations of the Fire Department or the underwriters having jurisdiction.
- (2) The fire service size shall be determined by the San Francisco Fire Department or other proper authority having fire jurisdiction.
- (3) The domestic service shall be sized in accordance with Department Rules based on demand and/or unit count for the building or premises involved.
- (4) The combined fire and domestic service shall not be sized greater than two (meter) sizes larger than that required to satisfy domestic requirements.
- (5) Maximum size of a combined service shall be 2 inch.

(Rule as adopted, February 10, 1970, Resolution No. 70-0081).

**Rule 6.
Service Outside San Francisco**

It is the policy of the Department to give preference in the sale of water outside the limits of the City and County of San Francisco to municipalities, water districts and communities for distribution under their own operation and control. The Department will, however, consider applications for service from individuals or others located outside of the areas served by such local distributing systems and may within its discretion provide such service until such time as the premises supplied are included within the area served by an independent system, supplied by the Water Department, which independent system desires and is able to provide such service or until such time as it is no longer feasible for the Department to continue to provide such service.

Connections to the Department's transmission mains will be made only at points to be chosen by it. Non-standard service will not be provided from transmission mains except to meet an urgent requirement concerning the public welfare.

Fire service connections may be allowed provided that domestic service is also supplied by the Department to the same premises. Applications for water service for industrial and other purposes will be considered and may be accepted if not deemed detrimental to existing services or inimical to the interests and operations of the Department and such water service may be furnished under agreement fixing terms and conditions for such service.

In the event it becomes necessary for the Department to abandon a transmission main, the Department reserves the right to discontinue the existing services from such transmission main; and will thereafter supply service, if requested, from the most convenient then existing transmission main.

Wholesale service shall be by application and shall be restricted to the supply of water for distribution by the applicant for domestic and other municipal purposes of the applicant in the service area defined in the application. The application shall be a term agreement in which shall be set forth the area to be supplied, the size of the service, whether the service is for immediate and permanent use or for intermittent use.

Water service conducted pursuant to these Rules and Regulations shall be in accordance with that certain federal statute designated as the "Raker Act".

No new service or services for wholesale water will be installed, nor will any present service or services be increased in capacity; nor will the Department supply water for wholesale to any present service or services to supply any additional area than the area supplied by such present services as of January 1, 1960, unless written application as provided in this section has been properly signed, received and approved by the Department.

Unless written application as provided in this section has been signed, received and approved by the Department from the present wholesale customers the Department will notify each such customer for wholesale water that, effective January 1, 1960, the Department will not guarantee to supply water in excess of the safe plant capacity existing as of January 1, 1960.

All supply and distribution lines leading from the Department's meters shall be installed and maintained by the applicant at his expense and the applicant will be held responsible for payment for all water delivered whether beneficially used or lost through leakage.

Rule 7.
Basement Under Sidewalk

Where the basement of the property to be served extends under the sidewalk area, the owner or applicant shall provide, at a point approved by the Department, the necessary opening in the retaining wall to extend the service pipe, and the meter shall be installed on the service just inside such wall in a position convenient for reading or for making any repairs or changes necessary. Neither the Department nor its officers, employees or agents shall incur any liability of any kind whatever by reason of the installation or presence of Department's meter, service pipe or any other facility or facilities of Department in or near the said property to be served.

The owner, tenant or customer shall provide and maintain easy access to the meter for reading or any other purpose the Department may deem necessary. Failure to remove any obstruction within ten (10) days after notification by the Department, will be sufficient cause for removal of the meter, at the expense of the applicant, to a more accessible location or for discontinuance of service.

Rule 8.
Change of Location or Size of Service or Meter

Applicants desiring a change in the location, arrangement or size of the service or meter must bear all cost of such change.

(Rule as adopted, April 13, 1971. Resolution No. 71-0130).

Rule 9.
Protection of Public Water Supply

Services, meters and house piping shall conform to the rules of the Water Department, to the Building, Plumbing and Fire Ordinances and to any legal requirements of the State Department of Public Health or other authority having jurisdiction.

Where an auxiliary water supply exists in any building or premises connected to the system of the Department, approved backflow protection must be provided unless the auxiliary water supply is acceptable as an additional source of water by the Department. This requirement shall include the handling of process waters and waters originating from the Department which have been or may be subject to deterioration in sanitary quality. Backflow prevention devices shall be installed where internal cross connections exist unless such cross connections are abated to the satisfaction of the Department.

The Department will not supply water to any building or premises having an auxiliary water supply or where cross connections exist unless approval for such service is first obtained from the Department.

Approval may be granted under the following conditions:

(a) Premises With Auxiliary Water Supply

Where approved backflow prevention devices are installed and maintained by the customer to the satisfaction of the Department.

(b) Premises With Cross Connection

Where approved backflow prevention devices are installed and maintained by the customer to the satisfaction of the Department or where approved air-gap separation has been provided

(c) Sewage Treatment Plants or Sewage Pumping Stations

Where the Department's service line is protected by approved air-gap separation before the first fixture and where the piping between the service cock and the receiving tank is entirely visible.

The Department may require an affidavit at any time to the effect that no cross connection or auxiliary water supply exists or stating the size and location if any do exist.

Failure to comply with any requirements relative to the protection of public water supplies will be sufficient reason for immediate discontinuance of any service until such time as it is determined that the requirements of the Department have been met.

Rule 10.

Control Valves, Ground Wires, Etc.

The owner or accepted applicant of the property to be or being supplied shall, if not already provided, install a gate type control valve on the house pipe between the Department's meter and the first fixture outlet.

Neither the Department nor its officers, employees or agents shall incur any liability of any kind whatever by reason of water running from open or faulty fixtures or from broken or damaged house pipes, i.e. for pipes beyond the Department's meter.

No one may attach any ground wire or wires to any plumbing which is or may be connected to any service pipe or main belonging to the Department unless such plumbing is adequately connected to an effective driven ground installation on the premises. Neither the Department nor its officers, employees or agents shall incur any liability of any kind whatever by reason of the use of any facility for grounding purposes which is or may be connected to the system of the Department.

The owner or accepted applicant will be held liable for any damage to the property of the Department which may be willfully caused by him or result from carelessness or negligence on his part or on the part of any person or entity acting for or on behalf of such owner or accepted applicant and in particular, without limiting the foregoing, for damage occasioned by operating the Department's stop cock in lieu of a control valve, for damage due to ground wire attachments and for damage to the meter caused by hot water or steam from the premises. In the event payment for such damage is not promptly made, the Department reserves the right to disconnect service to the premises until all claims are satisfied.

Rule 11.

Mains and/or Services in Impaired Sub-Surface Areas

Where mains and/or services are installed in streets where new installations or maintenance work will be impaired because of Redevelopment, Subways or similar public projects, the Department's policy is to remove such mains and/or services wherever feasible and to make no new installations in such streets.

Properties presently being served from such streets and abutting another street in which the Department has distribution mains will, if any changes in present service or any new service are required, be served only from such other street and the owner, agent, lessee or applicant shall extend his existing pipe to such other street to meet the new service location.

Where property presently abuts a side street, and is later subdivided so that any parcel will no longer have access to the side street, the owner, agent or lessee shall make the necessary arrangements to insure that such parcel or parcels shall be served from the appropriate side street.

If an owner, agent or lessee of property is unwilling to so extend a connection to such side street, the Department may refuse service to such property upon a determination that such service would be detrimental to existing services or detrimental to the interests of the Department or of the general public.

(Rule as adopted August 16, 1966. Resolution No. 66-0664).

SECTION B – EXTENSION OF MAINS

(Section Revised January 16, 2001, effective February 13, 2001, Resolution No. 01-0035).

In the context of this Section B, the term "extension" shall mean the installation of a new water main to an area that has no existing main referred to as "new extension", or to the upgrade to an existing main referred to as "extension upgrade" to meet new demand of the applicant. Extension upgrade includes the changeover of service lines from the existing main to the new main. Rules established for "extension" without any specific "new" or "upgrade" shall apply for both cases.

The term "facility" shall mean any new installation besides the main extensions. Typical facilities include pump stations, hydro-pneumatic stations, reservoirs, water tanks, and pressure regulator stations.

Rule 1. Installation

The Department will determine if a main or mains extension or modifications to existing Department facilities or new facilities are required based on the applicant's water demands.

The Department will specify characteristics of the extension such as size, location of the mains and any facilities that are required or approve extension or facility characteristics proposed by the applicant.

The Department will be responsible for the design of the extension or facility or approve the applicant's design.

The Department will do the installation, hire a contractor or approve a contractor hired by the applicant to do it.

No extension or facilities shall be installed until such time as roadways are completed to sub-grade and construction of curbs and gutters are completed.

Installation by a contractor shall be inspected either by SFPUC inspectors or by inspectors selected or approved by the Department.

Rule 2. Ownership Transfer

a) Installations in streets already accepted by the City Board of Supervisors (BOS)

- Installation done by the Department

The ownership of the installation is with the Department

- Installation done by others

The ownership of the installation is transferred to the Department on the day the installation is put into service or the day the applicant provides to the Department a 5-year warranty as to workmanship, whichever is later. The 5-year workmanship warranty shall be in the form of a warranty bond or other financial instrument acceptable to the Department.

b) Installation in streets not accepted by BOS or in private properties.

Ownership of the installation remains with the applicant. The Department will install appurtenances (valves, meters) in the system that delineate the ownership boundary change.

The Department may assume the ownership of the installation if certain conditions are met. Conditions include but are not limited to:

- Pipeline right-of-way, facility access roads, and facility sites, as determined by the Department, have been provided to the Department.
- Design plans and specifications have been approved by the Department prior to construction.
- The installation met the Department standards. The Department may make a field investigation to insure the conformance to Department standards and require modifications as necessary before considering the ownership transfer.
- The inspection has been performed by SFPUC inspector or inspector approved by the Department.
- As-built drawings, acceptable to the Department, have been provided to the Department.
- A 5-year warranty as to workmanship, from the construction completion date of the installation or repairs/modification work has been provided to the Department.

If the Department satisfies all its requirements and accepts the ownership of the installation, the Department will issue a Certificate of Ownership Change. The effective date of the ownership transfer will be the date on the certificate.

Rule 3.

Financial Responsibilities

Unless otherwise indicated, the applicant is responsible for all costs of the installations required to meet new demands and costs related to the ownership transfer.

Costs of the installations include, but are not limited to, costs for project management planning, design, materials, equipment, installation, inspection, system disinfection, and land acquisition (as applicable).

For the service or work to be performed by the Department, the applicant shall make a deposit equal to the estimated cost, as determined by the Department. At the completion of the installation, the Department will determine the actual costs. Refund or additional charges shall be made to or requested from the applicant should the estimated costs differ from the actual costs.

If any of the costs have been paid to a party besides the Department, at the completion of the installation, the applicant shall submit to the Department these costs incurred by him/her for each extension and each facility. The applicant shall provide all supporting documents to the Department for these costs. The Department will review the expenditures and determine the reasonable costs that will be applied for future refunds, if any. If the applicant fails to submit the costs to the Department within 60 calendar days after the day when the installation is put into service, the Department will unilaterally determine the reasonable costs.

Where the Department, in the anticipation of future development, specifies an extension system that is beyond and above the need of the applicant, the applicant is only responsible for the system that satisfies existing customers' and the applicant's demands.

The Department will, at its own expense and without deposit, install the first 150 feet and street crossings of a new extension required to provide exclusively standard service. If the new extension for standard service is longer than 150 feet, the applicant is only responsible for the portion of the extension in excess of the first 150 feet and street crossings. For a new extension required for fire or other services (besides standard service), or an extension upgrade for any service, the applicant is responsible for the entire cost of the extension.

Rule 4. Cost Sharing by New Applicants

a) Cost Sharing Requirements

New applicants, who need the service from an extension or a facility, shall be required at the time of application for service to pay through the Department their shares of the installation cost paid by the previous applicant(s), if the dates of the new applications are within 10 years of the date when the extension or the facility is put into service. The Department will determine the costs as determined hereinafter. The Department will make the request to the new applicants, collect monies from them and pay to previous applicant(s).

The Department will make refund payments to the previous applicant(s) who actually paid for the installation or part of it. The right of collecting refunds is not transferable. Previous applicant(s) who are entitled to refunds shall notify the Department of any address change. If the Department cannot contact an applicant to send a refund, the Department will retain the fund.

No service hook-up for new applicants shall be made before the sharing costs are deposited to the Department.

No cost sharing is required for applications submitting after the 10-year period.

The Department will retain 5% of the refund monies to administer the refund program.

b) Cost Sharing for Main Extensions

The cost of a main extension will be shared on a proportional basis among all customers connecting to the main extension. The share of cost assigned to each new connection will be calculated using information available from Customer Service Bureau records and the following formula:

$$S = \frac{M \times L}{T} \times C$$

Where:

S: Cost share of the connection.

M: Meter size in inches

L: Distance in feet from the beginning of the extension to the point of the new connection.

C: Total cost of the extension paid by the original (first) applicant.

T: The sum of $M \times L$ terms of all connections to the extension. Changeover, connections for extension upgrade are excluded.

Every time there is an application for a new connection to the extension, term "T" will increase and the cost share of all previous connections will be reduced. Applicants of previous connections will receive a refund, which is the difference of their previous cost share and the new cost share.

In case of an extension upgrade, all existing services that need to be connected to the new main (changeover) shall not be considered as new connections and consequently will not be included in the cost sharing calculation.

The applicant shall not receive any refund if he/she asks for disconnection of a service that was part of the cost sharing calculation.

An applicant, who needs an extension from an existing extension, shall share the cost for the entire length of the existing extension (the total length of the extension will be used to calculate his/her share). Besides, he/she will be responsible for the entire cost of the new extension.

c) Cost Sharing for Facility

- Facility can accommodate additional demand of the new applicant

If the Department determines that the facility can accommodate the new applicant's demand, the cost sharing is proportional to the ratio of the new demand over the total capacity of the facility. The ratio shall be determined by the Department.

The cost share S of the new applicant will be:

S: Cost share of facility

d: New applicant demand in gallons per minute (gpm)

$$S = \frac{d}{D} \times C$$

D Total capacity of facility in gallons per minute (gpm)

C: Total cost of the facility excluding main extension paid by the original applicant

- Facility cannot accommodate additional demand of the new applicant

If the Department determines that the facility cannot accommodate the new applicant's demand and it needs to be upgraded to satisfy new demand; the cost sharing shall be through an agreement between the original and new applicants with the approval of the Department. If no agreement can be reached within 90 calendar days from the date of the new application, the Department shall unilaterally determine the cost sharing based on modifications to the facility that best suit the Department's operation. Besides the cost share for the existing facility, the new applicant shall be responsible for all modifications as determined by the Department.

d) Cost Sharing Paid to the Department

The Department may also decide to install an additional extension or oversize an extension or a facility needed by an applicant to satisfy anticipated future demands. The Department will be responsible for what is above and beyond the applicant demand. However, any new applicant who needs the service of the additional or upgraded extension or facility will be requested to share the cost paid by the Department in the same way as outlined in b) and c) above.

Under no circumstances shall customers be requested to pay any cost share for connecting to a new main that has been installed as part of the Department's systematic Ductile Iron Main Replacement Program.

SECTION C – APPLICATION FOR WATER SUPPLY AND RESPONSIBILITY OF APPLICANTS

Rule 1.

Application for Supply

An applicant for water supply shall furnish such information as the Department requires to establish the account and shall establish credit as provided in Rule 2 of this Section. When a guarantee deposit is required the application shall be in writing. The responsible applicant, person or firm being supplied will be held liable for payment for all water delivered from the time service begins until the Department is notified in writing and discontinues service pursuant to such notification.

Where changes have been made in the house piping which affect the supply area as shown on the records of the Department, and the Department has not been afforded an opportunity to inspect such changes, the accepted applicant will also be held liable for payment of the bills as issued.

If water is desired through fire hydrants, permit must first be obtained from the Fire Department having jurisdiction. The permit shall then be filed with the Department together with the application for water supply.

All services of the Department are supplied with the understanding that the applicant agrees to abide by the Rules and Regulations and the Rate Schedules of the Department as they now exist or as they hereafter may be amended.

Rule 2. Establishing and Maintaining Credit

Customers are required to establish and maintain credit to the satisfaction of the Department. A regulation guarantee deposit may be required before granting, continuing, or re-establishing service.

When a guarantee deposit is required for a metered water supply, such deposit shall be approximately twice the estimated monthly water and sewer service charge bill but in no case shall it be less than \$50.00. The deposit for temporary unmetered usage or for special shipping service may be equal to the estimated maximum bills for service to be rendered.

(Paragraph as amended May 25, 1999. Resolution No. 99-0138)

When service has been given with the understanding that a guarantee deposit is to be made and such deposit is not made within ten (10) days, the Department may discontinue service.

At time of application for service, the Department will require a form of verifiable identification from the customer. Failure to provide such identification will result in not providing water service to the applicant.

(Paragraph as adopted May 25, 1999. Resolution No. 99-0138)

If an applicant has failed to pay the amount billed for all services rendered, the Department may discontinue or refuse to furnish service until the outstanding bills are paid and may apply any deposit to liquidate the bills. The Department may then require that the deposit be restored or, if none, may require that a regulation guarantee deposit be made before service will be granted, continued or re-established.

A guarantee deposit will be required in the amount of the estimated replacement cost of the metering equipment for portable meters issued for the drawing of Department water from fire hydrants.

(Rule as adopted, April 13, 1971. Resolution No. 71-0130).

Rule 3. Return of Deposit

A guarantee deposit shall be returned to the depositor at the expiration of twelve months provided credit has been maintained to the satisfaction of the Department. The Department may extend the twelve – month period for holding a guarantee deposit to twenty – four months if the customer's payment record so warrants. Refund of a deposit held beyond the twelve-month period will be made on application therefore

provided that credit has been maintained to the satisfaction of the Department. Upon closing an account the balance of any deposit remaining after settlement of the closing bill will be returned promptly to the depositor. Interest will be paid on guarantee deposits based on recommendations from time to time from the Public Utilities Commission's Bureau of Finance.

(Rule as amended May 25, 1999. Resolution No. 99-0138)

Rule 4.

Charge for Turning On/Shutting Off Water Supply

Service charges will be assessed for a service turn-on or shut-off during normal business hours (eight a.m. to four-thirty p.m. daily except Saturday, Sunday and holidays) and at times other than normal business hours. For applicable fees, refer to current Rates Schedules and Fees for Water, Power and Sewer Service (Schedule W-44).

Rule 5.

Water Used Without Regulation Application

A person or firm taking possession of premises and using water without having made application to the Department for service, shall be liable for the charges from the date of the last recorded meter reading. If such use has not been metered the Department will install a meter and may render a bill based on the use of water as estimated by the Department and for as long as the consumer has been occupying or in possession of the premises without paying bills.

If proper application is not made upon notification by the Department to do so and if accumulated bills for service are not paid on presentation, service will be discontinued without further notice.

REVISED SECTION D – METER READING, BILLING AND COLLECTION

Rule 1.

Billing Periods

Under ordinary conditions meters will be read either monthly or bi-monthly as determined by the Department on approximately the same day of the month and bills will be issued showing the period covered by the meter readings, the quantity of water delivered and the total charge for the service rendered. Bills will also be rendered upon termination of service.

Service periods up to 40 days will be considered as one month and those up to 70 days will be considered as two months when computing charges.

Rule 2.

Billing for Two or More Meters

For the purpose of making charges, all meters will be billed separately and the readings will not be combined except that where the Department shall, for operating necessity, install two or more meters in place of one meter, then the readings of such meters will be combined for billing purposes.

Where the Department, for operating necessity, decides to supply a customer taking water for wholesale through more than one connection at different points on the same transmission main instead of at one point, the readings of the meters at the several connections may be combined for billing purposes. Such combinations will not be made unless the water is for use within the limits of a single municipality or well-defined community and the Department's system is the sole source of supply, and will be limited to three in number each not less than four inches in size.

Rule 3.

Size of Meter for Billing

The scheduled rate for service charge based on the size of the meter shall apply to disc or other displacement type meters, and to compound meters. Where current, velocity or magnetic meters are installed, the service charge shall be based on the size of compound meter or meters of equivalent delivery capacity.

**Rule 4.
Presentation and Payment of Bills**

Unless the applicant specifies otherwise, bills will be mailed to the premises.

Bills are due and payable on presentation, i.e., when mailed or upon delivery in any manner and become delinquent fifteen days thereafter. Service may be discontinued for non-payment of a delinquent bill or for any other infraction of the rules. Discontinuation of residential water service for nonpayment shall be conducted in accordance with the SFPUC's "Policy on Discontinuation of Residential Water Service for Nonpayment," a copy of which shall be available on the SFPUC's website.

(Rule as amended December 10, 2019. Resolution No. 19-0237)

**Rule 5.
Proper Charges – Time Limit**

Any bill for water supplied or service rendered will be considered a proper charge unless protest is made to the Department within fifteen (15) days after presentation.

In the event that a customer receives a notice of discontinuation of residential water service for nonpayment, the customer may contest or appeal a bill in accordance with the procedures set forth in the SFPUC's "Policy on Discontinuation of Residential Water Service for Nonpayment," a copy of which shall be available on the SFPUC's website.

In case of dispute as to payment of a bill, the customer will be required to present the receipted bill, cancelled check or other evidence of payment.

The Department will, upon request of the customer or for other reason, make an inspection of the premises on account of apparently excessive bills. After the Department has made a complete inspection, no further inspection will be made for a period of six (6) months provided, however, the Department may order an inspection at any time if conditions warrant.

(Rule as amended on December 10, 2019. Resolution No. 19-0237)

**Rule 6.
Allowances**

The customer has sole control of the water delivered beyond the Department's meter and the Department is not responsible for maintenance and repairs of the pipes and fixtures beyond the meter. In order to encourage prompt repairs of leaking pipes or fixtures the Department may, under certain conditions, grant allowances for apparently excessive bills resulting from leakage beyond the meter. All risk of loss beyond the point of delivery shall be borne by the customer, except as otherwise provided herein.

- a) Allowance may be granted only when claim has been received as provided in Rule of this Section and evidence clearly shows that the apparently excessive bill is due to leaking pipes or fixtures and not wasteful use and then only when repairs have been promptly made and reported to the Department. The allowance, if granted, will be for not more than two billing periods including that in which the claim was made.

- b) Allowance ordinarily may be granted on the basis of one-half of the excess delivery due to leakage but in the case of concealed leaks in underground or unexposed pipes, full excess may be allowed.
- c) Outside San Francisco no allowance will be made on account of leakage except when in the judgment of the Department exceptional conditions justify allowance and then only for concealed leaks in underground or unexposed pipes. In that event allowance may be granted based on from fifty to one hundred percent of the excess delivery. No allowance shall apply to customers taking water for wholesale.

The Department shall be the sole judge in determining the excess delivery due to leakage.

(Rule 6 as amended April 8, 1997. Resolution No. 97-0090)

Rule 7. Meter Tests

If the customer questions the accuracy of a meter the Department will, upon written request, test the meter. The customer should be present to witness such meter test.

If the customer requests a meter test they will be charged for the first test and for any subsequent test within a 24-month period. For applicable fees, refer to current Rates Schedules and Fees for Water, Power and Sewer Service (Schedule W-44).

If the meter is found to register more than two percent fast the testing fee, if deposited, will be returned together with any overcharge based on correct meter readings. Such overcharge may be allowed for the twelve months next preceding the test or as much of the twelve months as the customer had been paying bills on the fast meter.

If the meter registers within the limit of error specified above, the testing fee, if deposited, will be applied by the Department to partially offset the costs of making the test.

Rule 8. Non-Registering Meters

If a meter fails to register or to properly indicate the flow of water, a bill will be rendered on the basis of the average consumption of three preceding billing periods during which the meter was presumed to be functioning properly.

Bills rendered under the provisions of this rule will be subject to adjustment to give consideration to volume of business, seasonal demand, subsequent reading of a new meter, or other factors which may aid in making a proper charge.

SECTION E – GENERAL

Rule 1.

Compliance With Emergencies

In order to comply with any laws of the United States, the State of California or the City and County of San Francisco with respect to any National, State or Local Emergency and any executive and administrative proclamations and orders made thereunder, each rule or regulation of the Department affected by such emergency shall be suspended or modified to the extent necessary to permit the Department to comply with any such laws, proclamations and orders during the period they are in effect.

Rule 2.

Application of San Francisco Rates

Where the Rate Schedules provide different rates for water service “within” and “outside” the limits of the City and County of San Francisco, rates applicable within the limits of San Francisco shall apply to all water service to premises served through a connection to the Department’s mains which, together with the meter or meters, is located within the boundaries of the City and County of San Francisco.

All other services shall be considered outside services.

Rule 3.

Improvement of Service

The Department may, as a part of its routine operations, enlarge, extend or replace its mains, services or other facilities and perform necessary work incidental thereto to whenever the Department head shall determine that such work is necessary.

**Rule 4.
Pressure and Supply**

The Department does not guarantee pressure or continuous supply nor will it accept responsibility at any time for the maintenance of pressure on its lines nor for increases or decreases in pressure. It reserves the right at any and all times, without notice, to shut off water for the purpose of making repairs, extensions, alterations or improvements and to increase or reduce pressure as a part of its operations. Neither the Department nor its officers, employees or agents shall incur any liability of any kind whatever by reason of the cessation in whole or in part of water pressure or water supply. Customers depending upon a continuous and uninterrupted supply shall provide emergency storage, oversize piping, pumps, tanks, pressure regulators, check valves or other means for a continuous or adequate supply or to safeguard their facilities.

**Rule 5.
Tampering With Department Property**

No one except an employee or representative of the Department shall at any time in any manner operate the main cocks, gates or valves of the Department's system, nor connect or disconnect the service pipe, nor interfere with meters or their connections, street mains or other property of the Department. Where the stop cock is operated in lieu of a control valve on the house pipe the Department will not be responsible for any damage resulting from the malfunction or breaking of the service pipe, stop cock, meter, house pipe or any connections.

The Department reserves the right to recover for damage to any of its facilities caused by the acts of others and will not be responsible for water damage occasioned by such acts of others.

Rule 6.

Admission of Department's Employees

Employees or representatives of the Department shall be admitted during reasonable hours to customers' premises to perform the various functions required in the performance of their regular duties. Those engaged in such work will be furnished with badges or other means of identification.

Rule 7.

Abatement of Noises.

Where it has been determined that noises or other disturbances are originating from a customer's premises caused by apparatus attached to the water pipes or fixtures and are resulting in annoyance to other water users or may damage the Department's facilities, the Department may issue a notice to such customer or to the owner or agent of the property requesting removal or correction of the cause of complaint. Failure to properly abate the nuisance will be sufficient reason for discontinuing water service.

**Rule 8.
Removal and Relocation of Facilities**

Property owners or others desiring the removal or relocation of fire hydrants, water mains, services, meters or other facilities of the Department must bear all costs of such removal or relocation.

In the case of any work involving a fire hydrant, the applicant will be required to present a written permit authorizing such work from the Fire Department having jurisdiction.

**Rule 9.
Determination of Cost**

In determining the actual cost of any work to be done by the Department at the expense of others, such cost shall include labor, material, engineering, inspection, contractual service, administrative service, and any other proper element of cost. Ten percent shall be added to all other costs for administrative services, except where work is performed for this Department by others, under contract, in which case five percent shall be added for administrative services.

(Paragraph as amended August 16, 1966. Resolution No. 66-0666)

The applicant shall make written request of the Department for the estimated cost of the proposed work following which such estimated cost, or the charge if listed in these rules or in the rate schedules, must be deposited before the Department can proceed. If the work has been done on an estimated cost basis, any difference between the amount deposited and the actual cost shall be adjusted by the Department or the depositor as required.

The requirement for a deposit shall not apply to work to be performed for a governmental agency or a public utility where satisfactory written authorization has been received covering agreement to pay for such work.

Any fees, deposits or payments imposed by and paid to the Department for installation charges, estimated costs, deposits or penalties may be refunded after adjustment for service and deduction for expenses of the Department, if any, as determined by the Department as hereinafter set forth: Provided, that such payment was made by reason of:

1. Duplicate payment.
2. Payment made in excess of actual amount due.
3. Payment erroneously imposed or collected by reason of error.
4. Payment for installation where no installation has been made.
5. In the case of deposits for service connection charges and where no work or partial work has been performed, and where the applicant notifies the Department of the abandonment of its application for service connection in whole or in part, or where such application has been canceled or denied by the Department.

The provisions of this rule relating to the right of refund of money shall apply to all claims for refunds of any kind heretofore presented, approved and transmitted to the Controller, on or subsequent to November 1, 1963; and the payment of all such claims made prior to November 1, 1963 is hereby ratified and approved.

(Paragraphs as adopted August 16, 1966. Resolution No. 66-0667)

Rule 10.
Damage Claims

Claims for damage which may be caused by, or result from, the Department's operations should be made pursuant to Section 87 of the Charter of the City and County of San Francisco, if said section is applicable, or pursuant to applicable provisions of the statutes of the State of California. In addition, prompt notice of any damage caused by or resulting from the Department's operations should be given by telephoning the City Attorney's Office, Claims Division at (415) 554-3900 to obtain a claim form and instructions. Evidence of damage involved in such claims shall not be destroyed before the Department has been given opportunity to inspect such damage.

Rule 11.
Applicability of Charges for Water Use Due to Noncompliance with Conservation Measures

All retail paying and nonpaying customers within and outside of the City and County of San Francisco, including but not limited to Federal, state and local governments, shall be subject to any charges for water resulting from noncompliance with various conservation measures imposed under the rate-setting authority of the Public Utilities Commission. These conservation measures include, but are not limited to the following:

- (1) retrofitting of showerheads;
- (2) installation of water-conserving plumbing fixtures such as aerators with restrictors on all faucets and permanent devices to reduce the amount of water used per flush by toilets using more than 3.5 gallons per flush;
- (3) excess use charges in the event of mandatory rationing; and
- (4) such other water conservation measures as may in the future be adopted by the Public Utilities Commission.

(Paragraph as adopted July 9, 1996. Resolution No. 96-0137)

Rule 12.

Water Use Restrictions

(Per Resolution 16-0127 approved June 28, 2016 that updated previous SFPUC Resolution 19.786)

The customer will be in violation of the SFPUC's Water Waste Restrictions if the customer is found to be using water in the following ways:

- a) Application of potable water to outdoor landscapes in a manner that causes runoff such that water flows onto adjacent property, non-irrigated areas, private and public walkways, roadways, parking lots or structures
- b) Use of hoses for any purpose without a positive shut-off valve
- c) Use of potable water to wash sidewalks, driveways, plazas and other outdoor hardscapes for reasons other than health, safety, or to meet City of San Francisco standards for sidewalk cleanliness and in a manner that causes runoff to storm drains and sewer catch basins
- d) Use of single pass cooling systems, fountains and decorative water features, and commercial car washes
- e) Application of potable water to outdoor landscapes during and within 48 hours after measurable rainfall
- f) Irrigation with potable water of ornamental turf on public street medians
- g) Use of potable water for consolidation of backfill, dust control, or other nonessential construction purposes if foundation drainage or recycled water is available and approved by the Department of Public Health
- h) Serving drinking water other than upon request at eating or drinking establishments, including restaurants, hotels, cafes, cafeterias, bars or other public places where food or drink are served
- i) To promote conservation, hotels and motels shall provide guests with the option of choosing not to have towels and linens laundered daily and display notice of this option in guestrooms

The SFPUC will notify customers it observes or are publicly reported to be violating a water waste restriction and advise them of corrective action. Notification methods may include letter, phone call, and dispatch of an inspector. Customers may be subject to enforcement that could include fines on their water bill, installation of flow restriction devices, or other actions.

Rule 13.
Interpretation of Rules and Regulations

In the event of any question as to interpretation or application of any of these Rules and Regulations, the Department shall make such interpretation or application. In event of appeal, the ruling of the Public Utilities Commission shall be final.

SECTION F - WATER EFFICIENT IRRIGATION

(As amended per Resolution 15-0221 that was approved on October 27, 2015.)

Purpose

Section F - Water Efficient Irrigation Rules will:

- a) Promote the values and benefits of landscapes while recognizing the need to invest water and other resources as efficiently as possible;
- b) Establish a structure for planning, designing, installing, maintaining, and managing water efficient landscapes in new construction and rehabilitated projects;
- c) Establish provisions for water management practices and water waste prevention for existing landscapes;
- d) Promote using water efficiently without waste by setting a Maximum Applied Water Allowance, using state mandated formulas and accounting for local climatic conditions, that will serve as an upper limit for water use by irrigated landscapes;
- e) Comply with the requirements of Article 10.8 of the California Government Code, enacted by the State as the Water Conservation in Landscaping Act;
- f) Comply with the requirements of the California Green Building Standards Code (California Code of Regulations, Title 24, Part 11) and the State Model Water Efficient Landscape Ordinance (California Code of Regulations, Title 23, Chapter 2.7); and
- g) Delineate the conditions under which the San Francisco Public Utilities Commission provides water for landscape irrigation uses.

**Rule 1.
Applicability**

- a) Section F shall apply to all of the following projects and activities.
 - i. Tier 1: All public agency, residential, and commercial rehabilitated landscape projects with an aggregate modified landscape area equal to or greater than 1,000 square feet and less than 2,500 square feet.
 - ii. Tier 2: All public agency, residential, and commercial new construction projects with an aggregate landscape area equal to and greater than 500 square feet and rehabilitated landscape projects with an aggregate modified landscape area equal to or greater than 2,500 square feet.
 - iii. The irrigation and maintenance of any landscape irrigation system.
- b) Section F does not apply to:
 - i. Registered local, state or federal historical sites where the landscape is maintained as part of the historical integrity of the site;
 - ii. Ecological restoration projects that do not require a permanent irrigation system; and
 - iii. Plant collections or animal habitat areas, as part of botanical gardens, zoological gardens, and arboretums open to the public.
- c) The General Manager may waive some or all of the requirements of Section F for landscape rehabilitation projects proposed by San Francisco Public Utilities Commission's retail water customers located outside the boundaries of the City and County of San Francisco, if after consultation with the local agency having jurisdiction pursuant to California Government Code sections 65591, et. seq., the General Manager determines that the retail water customer must comply with the local agency's ordinance requirements. If the General Manager determines that the retail water customer is not required to comply with the local agency's ordinance requirements, the retail water customer must comply with Section F of the San Francisco Public Utilities Commission Rules for Water Service Customers.
- d) The General Manager may waive some or all of the requirements of Section F if, after a site inspection, the General Manager determines that compliance is not feasible due to one or more of the following conditions.

- i. Wet soil conditions stemming from proximity to naturally occurring water features such as a high water table, springs, ponds, lakes, creeks, and wetlands.
 - ii. Substantial health or safety related risk of injury or harm to property owner, users or workers.
 - iii. Disproportionately high costs for achieving minor or minimal water savings.
- e) A process for document submissions and approvals pursuant to Section F will be developed by the General Manager in conjunction with the Department of Building Inspection, with the purpose of administrative efficiency and effective customer service.

Rule 2. Definitions

The terms used in this section have the following meanings.

- a) **Applied water:** the portion of water supplied by the irrigation system to the landscape.
- b) **Automatic irrigation controller:** a timing device used to remotely control valves that operate an irrigation system. Automatic irrigation controllers are able to self-adjust and schedule irrigation events using either evapotranspiration (weather-based) or soil moisture data.
- c) **Backflow prevention device:** a safety device used to prevent pollution or contamination of the water supply due to the reverse flow of water from the irrigation system.
- d) **Certificate of Landscape Completion:** the document required under Rule 13.
- e) **Certified irrigation designer:** a person certified to design irrigation systems by an accredited academic institution, a professional trade organization, or other program such as the US Environmental Protection Agency's WaterSense Partners irrigation designer certification program and the Irrigation Association's Certified Irrigation Designer program.
- f) **Certified landscape irrigation auditor:** a person certified to perform landscape irrigation audits by an accredited academic institution, a professional trade organization, or other program such as the US Environmental Protection Agency's WaterSense irrigation auditor certification program and the Irrigation Association's Certified Landscape Irrigation Auditor program.
- g) **Check valve or anti-drain valve:** a valve located under a bubbler and sprinkler head, or other location in the irrigation system, to hold

water in the system to prevent low head drainage from sprinkler heads when the sprinkler is off.

- h) **Common interest developments:** community apartment projects, condominium projects, planned developments, and stock cooperatives per California Civil Code Section 1351.
- i) **Compost:** the safe and stable product of controlled biologic decomposition of organic materials that is beneficial to plant growth.
- j) **Conversion factor of 0.62:** the number that converts acre-inches per year to gallons per square foot per year.
- k) **Distribution uniformity:** the measure of the uniformity of irrigation water over a defined area.
- l) **Drip irrigation:** any non-spray low volume irrigation system utilizing emission devices with a flow rate measured in gallons per hour.
- m) **Ecological restoration project:** a project where the site is intentionally altered to establish a defined, indigenous, historic ecosystem.
- n) **Emitter:** a drip irrigation emission device that delivers water slowly from the system to the soil.
- o) **Established landscape:** the point at which plants in the landscape have developed significant root growth into the soil. Typically, most plants are established after 1 or 2 years of growth while native habitat mitigation areas and tree may need 3 to 5 years.
- p) **Estimated Total Water Use (ETWU):** the total water used for the landscape.
- q) **ET adjustment factor (ETAF):** a factor of 0.55 for residential areas and 0.45 for non-residential areas, that, when applied to reference evapotranspiration, adjusts for plant factors and irrigation efficiency, two major influences upon the amount of water that needs to be applied to the landscape. ETAF for a Special Landscape Area shall not exceed 1.0. ETAF for existing non-rehabilitated landscapes is 0.8.
- r) **ETo or reference evapotranspiration:** a standard measurement of environmental parameters which affect the water use of plants. ETo is expressed in inches per day, month, or year and is an estimate of the evapotranspiration of a large field of four- to seven-inch tall, cool-season grass that is well watered. Reference evapotranspiration is used as the basis of determining the Maximum Applied Water Allowance so that regional differences in climate can be accommodated.

- s) **Evapotranspiration rate:** the quantity of water evaporated from adjacent soil and other surfaces and transpired by plants during a specified time.
- t) **Existing landscape area:** a landscape area of any size that has not been rehabilitated or constructed within the previous 12 months.
- u) **First construction document:** the first building permit issued for a project or, in the case of a site permit, the first building permit addendum issued or other document that authorizes construction of the project. "First construction document" shall not include permits or addenda for demolition, grading, shoring, pile driving, or site preparation work.
- v) **Flow rate:** the rate at which water flows through pipes, valves, and emission devices, measured in gallons per minute, gallons per hour, or cubic feet per second.
- w) **Flow sensor:** an inline device installed at the supply point of the irrigation system that produces a repeatable signal proportional to the flow rate. Flow sensors must be connected to an automatic irrigation controller, or flow monitor capable of receiving flow signals and operating master valves.
- x) **Friable:** a soil condition that is easily crumbled or loosely compacted down to a minimum depth per planting material requirements, whereby the root structure of newly planted material will be allowed to spread.
- y) **General Manager:** the General Manager of the Public Utilities Commission, or his or her designee.
- z) **Hardscape:** any durable material (pervious and non-pervious).
- aa) **Hydrozone:** a portion of the landscaped area having plants with similar water needs. A hydrozone may be irrigated or non-irrigated.
- bb) **Infiltration rate:** the rate of water entry into the soil expressed as a depth of water per unit of time (e.g., inches per hour).
- cc) **Invasive plant species:** species of plants not historically found in California that spread outside cultivated areas and can damage environmental or economic resources. Invasive species may be regulated by county agricultural agencies as noxious species. "Noxious weeds" means any weed designated by the Weed Control Regulations in the Weed Control Act and identified on a Regional District noxious weed control list. Lists of invasive plants are maintained at the California Invasive Plant Inventory and USDA invasive and noxious weeds database.

- dd) **Irrigation audit:** an in-depth evaluation of the performance of an irrigation system conducted by a Certified Landscape Irrigation Auditor. An irrigation audit includes, but is not limited to: inspection, system test with distribution uniformity or emission uniformity, precipitation rates, reporting deficiencies in the system, reporting overspray or runoff that causes overland flow, and preparation of an irrigation schedule. An irrigation audit may include suggested upgrades, current estimated water usage, and suggested system upgrades.
- ee) **Irrigation efficiency (IE):** the measurement of the amount of water beneficially used divided by the amount of water applied. Irrigation efficiency is derived from measurements and estimates of irrigation system characteristics and management practices. The irrigation efficiency for purposes of this ordinance is 0.75 for overhead spray devices and 0.81 for drip systems.
- ff) **Landscape Application:** the documents required under Rule 3 for Tier 1 compliance.
- gg) **Landscape architect:** a person who holds a license to practice landscape architecture in the state of California pursuant to California Business and Professions Code.
- hh) **Landscape area:** all the planting areas, turf areas, and water features in a landscape design plan subject to the Maximum Applied Water Allowance calculation, including any adjacent planted areas in the public right-of-way for which the property owner is responsible pursuant to the Section 400.1 or Section 805 of the Public Works Code. The landscape area does not include footprints of buildings or structures unless the footprints include planted areas such as living roofs. The landscape area also does not include sidewalks, driveways, parking lots, decks, patios, gravel or stone walks, other pervious or non-pervious hardscapes, and other non-irrigated areas designated for non-development such as open spaces and existing native vegetation.
- ii) **Landscape contractor:** a person licensed by the State of California to construct, maintain, repair, install, or subcontract the development of landscape systems.
- jj) **Landscape Documentation Deadline:** the date by which Tier 1 or Tier 2 documentation must be submitted for approval by the General Manager. This date shall be not more than 100 days after the issuance of the first construction document, or as determined by the General Manager in consultation with the Director of Department of Building Inspection.
- kk) **Landscape Documentation Package:** the documents required under Rule 8 for Tier 2 compliance.

- ll) **Landscape water meter:** an inline device installed as a separate utility water meter that measures the flow of water into the irrigation system.
- mm) **Landscape rehabilitation project or rehabilitated landscape:** includes any modifications to landscape areas over a 12-month period at a site that cumulatively exceeds 1,000 square feet. A landscape rehabilitation project or rehabilitated landscape does not include turf replacements on sports fields where the turf replaced provides a playing surface, routine weeding, brush removal where no new plant materials are installed, seasonal plantings, and areas dedicated solely to edible plants. A rehabilitated landscape does not include landscape areas where only the irrigation system is retrofitted for the use of recycled water and only plantings that restore areas disturbed by the recycled water retrofits are installed. Recycled water irrigation retrofit projects shall employ best management practices to prevent runoff, ponding and overspray as directed in their recycled water use permit and comply with all applicable local and state regulation.
- nn) **Lateral line:** the water delivery pipeline that supplies water to the emitters or sprinklers from the valve.
- oo) **Low volume irrigation:** the application of irrigation water at low pressure through a system of tubing or lateral lines and low-volume emitters such as drip, drip lines, and bubblers. Low volume irrigation systems are specifically designed to apply small volumes of water slowly at or near the root zone of plants.
- pp) **Low water use plants or climate appropriate plants:** plants, shrubs, groundcovers or tree species that meet at least one of the following conditions.
- i. The species has a water use ranking of "low" or "very low" in Region 1 (North-Central Coast) as established in the California Department of Water Resources 2014 publication "Water Use Classification of Landscape Species" or subsequent editions as it may be updated.
 - ii. The species has a water use ranking of "no water", "little water," or "little to moderate water" in the climate zone for the planting location as established in the Sunset Western Garden Book, Ninth Edition, published by Oxmoor House on February 7, 2012 or subsequent editions as it may be updated.
 - iii. The plantings are part of an engineered stormwater management feature approved by the General Manager pursuant to the San Francisco Stormwater Design Guidelines established by the Public Utilities Commission.

- iv. The Department of Public Works, the Recreation and Park Department, or the General Manager has determined that the species, when watered for sufficient plant health and appearance, is low water use based on the agency's experience with the species, and the agency has added the species to the Low Water Use and Climate Appropriate Plant List maintained by the General Manager.
 - v. The species appears on the San Francisco Street Tree Species List established by the Department of Public Works Bureau of Urban Forestry.
 - vi. The planting is part of a species test approved by the Department of Public Works or the Recreation and Park Department.
 - vii. The species has been permitted at the site by the Department Public Works or the General Manager based on wet soil conditions stemming from proximity to naturally occurring water features such as a high water table, springs, ponds, lakes, creeks, and wetlands.
- qq) **Master shut-off valve:** is an automatic valve installed at the irrigation supply point which controls water flow into the irrigation system. When this valve is closed, water will not be supplied to the irrigation system, greatly reducing any water loss due to a leaky station valve.
- rr) **Maximum Applied Water Allowance (MAWA):** the amount of annual applied water established by the San Francisco Public Utilities Commission for a landscaped area, using state mandated formulas and accounting for local climatic conditions, that serves as an upper limit for lawful water use for irrigating landscaped areas. The MAWA is based upon the area's reference evapotranspiration, the ET Adjustment Factor, and the size of the landscape area. The Estimated Total Water Use shall not exceed the Maximum Applied Water Allowance. Special Landscape Areas, including recreation areas, areas permanently and solely dedicated to edible plants such as fruit and nut trees and vegetable gardens, and areas irrigated with non-potable water, are subject to the MAWA with an ETAF not to exceed 1.0.
- ss) **Mulch or mulching product:** any organic material such as leaves, bark, straw, compost, or inorganic mineral materials such as rocks, gravel, and decomposed granite left loose and applied to the soil surface for the beneficial purposes of reducing evaporation, suppressing weeds, moderating soil temperature, and preventing soil erosion.

- tt) **New construction:** a new building or structure with a landscape, or other new landscape, such as a park, playground, median strip, or greenbelt without an associated building or structure.
- uu) **New construction landscape project:** the total area of landscape in the project as defined in "landscape area," and the modified landscape area for a landscape rehabilitation project.
- vv) **Non-potable water:** includes recycled water, blackwater, graywater, foundation drainage, or harvested rain water. Non-potable water is suitable for uses such as landscape irrigation or water features. This water is not intended for human consumption.
- ww) **Non-residential landscape:** landscapes in commercial, institutional, industrial, mixed use residential and public settings that may have areas designated for recreation or public assembly.
- xx) **Operating pressure:** the pressure at which the parts of an irrigation system are designed by the manufacturer to operate.
- yy) **Overhead sprinkler irrigation systems:** systems that deliver water through the air (e.g., spray heads and rotors).
- zz) **Overspray:** the irrigation water which is delivered beyond the landscape area.
- aaa) **Permit:** an authorizing document issued by the General Manager or Department of Building Inspection.
- bbb) **Pervious:** any surface or material that allows the passage of water through the material and into the underlying soil.
- ccc) **Plant factor or plant water use factor:** a factor that, when multiplied by ETo, estimates the amount of water needed by plants. The plant factor range for very low water use plants is 0 to 0.1, low water use plants is 0.1 to 0.3, the plant factor range for moderate water use plants is 0.4 to 0.6, and the plant factor range for high water use plants is 0.7 to 1.0. Plant factors for any plant shall be as established in the publication "Water Use Classification of Landscape Species" or subsequent additions. Plants used in the landscape project that are not found in WUCOLS shall use the plant factor of a similar species included on WUCOLS.
- ddd) **Project applicant:** the person or entity applying for approval of a landscape project for a new construction project or a landscape rehabilitation project. A project applicant may be the property owner or his or her designee.
- eee) **Property owner:** the legal owner of a property.

- fff) **Rain sensor:** a rain sensing shutoff device that automatically suspends an irrigation event when it rains.
- ggg) **Recreational area:** areas dedicated to active play or public assembly such as parks, sports fields, and golf courses where turf provides a playing surface.
- hhh) **Residential landscape:** landscape surrounding a single or multi-family home.
- iii) **Runoff:** water which is not absorbed by the soil or landscape to which it is applied and flows from the landscape area. For example, runoff may result from water that is applied at too great a rate (application rate exceeds infiltration rate) or when there is a slope.
- jjj) **Soil moisture sensor:** a device that measures the amount of water in the soil. The device may also suspend or initiate an irrigation event.
- kkk) **Soil texture:** the classification of soil based on its percentage of sand, silt, and clay.
- lll) **Special Landscape Area (SLA):** an area of the landscape dedicated solely to edible plants, recreational areas, and water features and irrigated areas using all or part of non-potable water.
- mmm) **Sprinkler head:** a device which delivers water through a nozzle.
- nnn) **Static water pressure:** the pipeline or municipal water supply pressure when water is not flowing.
- ooo) **Station:** an area served by one valve or by a set of valves that operate simultaneously.
- ppp) **Submeter:** a metering device to measure water applied to the landscape that is installed after the primary utility water meter.
- qqq) **Swing joint:** an irrigation component that provides a flexible, leak-free connection between the emission device and lateral pipeline to allow movement in any direction and to prevent equipment damage.
- rrr) **Turf:** a ground cover surface of mowed grass, including but not limited to Annual bluegrass, Kentucky bluegrass, Perennial ryegrass, Red fescue, Tall fescue, Bermudagrass, Kikuyugrass, Seashore Paspalum, St. Augustinegrass, Zoysiagrass, and Buffalo grass.
- sss) **Valve:** a device used to control the flow of water in the irrigation system.
- ttt) **Water feature:** a design element where open water performs an aesthetic or recreational function. Water features include artificial

ponds, lakes, waterfalls, and streams, and fountains, spas, and swimming pools. The surface area of water features is included in the high water use hydrozone of the landscape area. Constructed wetlands used for on-site wastewater treatment or stormwater best management practices that are not irrigated and used solely for water treatment or stormwater retention are not water features and, therefore, are not subject to the water budget calculation.

- uuu) **WUCOLS:** the Water Use Classification of Landscape Species published by the University of California Cooperative Extension, the Department of Water Resources 2014, or subsequent editions as it may be updated.

Rule 3.

Tier 1 - Landscape Rehabilitation Projects with 1,000 – 2,500 square feet of landscape area

Beginning January 1, 2016, project applicants for all public agency, commercial, and residential landscape rehabilitation projects, with a modified landscape area equal to or greater than 1,000 square feet and less than 2,500 square feet, shall comply with the following.

- a) Landscape irrigation shall not exceed the applicable Maximum Applied Water Allowance (MAWA) established in Rule 7.
- b) Any turf area, planned or installed, shall not exceed 25 percent of the landscape area. Landscape projects exceeding the 25 percent turf limit shall be considered a Tier 2 landscape project and must follow the requirements for Tier 2 as described in Rule 4.
- c) At least 75 percent of the landscape area shall consist of low water use plants or climate appropriate plants as defined in Rule 2. Landscape projects with less than 75 percent of the landscape area consisting of low water use plants or climate appropriate plants shall be considered a Tier 2 landscape project and must follow the requirements for Tier 2 as described in Rule 4.
- d) Prior to commencing installation or modification of landscape that is not an edible plant, and prior to the issuance of the first construction document, if applicable, the project applicant shall:
 - i. Submit and have approved by the General Manager a Tier 1 Landscape Application including:
 - A. Tier 1 landscape project checklist, which serves as a preliminary summation of selected landscape components to determine whether a proposed landscape is consistent with the applicable MAWA established in Rule 7; and

- B. List of plants, trees, shrubs, or other vegetation that are to remain or be installed in the landscape area.
 - ii. For landscape projects installed as part of the construction or renovation of a building, the Tier 1 Landscape Application shall be submitted prior to the Landscape Documentation Deadline; and
 - iii. In the case of project applicants or property owners that are not required to obtain permits and approvals from the City's Department of Building Inspection, a Tier 1 Landscape Application shall be submitted to and approved by the General Manager prior to commencing installation or modification of landscape.
- e) Following the installation of the landscape and any irrigation system, the project applicant shall submit a Certificate of Landscape Completion which certifies that the installed landscape and/or irrigation area does not consume water at a rate that exceeds the applicable MAWA established in Rule 7.
- f) Landscape areas that are part of a compliance plan pursuant to Rule 5 shall be required to provide Tier 1 compliance documents as set forth in the provisions of the compliance plan.
- g) If complete documentation for Tier 1 compliance has not been submitted to the General Manager on or before the Landscape Documentation Deadline, the General Manager shall request to the Director of Department of Building Inspection that an address restriction shall be placed on the property such that no further construction permits or addenda shall be issued and no further inspections by the Department of Building Inspection shall occur, unless and until all landscape documentation, developed in accordance with the provisions of this chapter and the Public Utilities Commission's rules and regulations has been submitted to the General Manager for approval.

Rule 4.

Tier 2 - New construction projects with 500 square feet or more of landscape area and rehabilitation landscape projects with more than 2,500 square feet of landscape area

Beginning January 1, 2016, project applicants for all public agency, commercial, and residential new construction landscape projects with a landscape area equal to or greater than 500 square feet; and landscape rehabilitation projects with a modified landscape area equal to or greater than 2,500 square feet; or a project under Tier 1 with a turf limitation exceeding 25 percent of the landscape area or with less than 75 percent of the landscape area consisting of low water use plants or climate appropriate plants, shall comply with the following.

Section F

- a) Prior to commencing installation or modification of landscape, the project applicant shall submit and have approved by the General Manager, a Landscape Documentation Package consistent with the Water Efficient Design and Operation Elements in Rule 6.
- b) For landscape projects installed as part of the construction or renovation of a building, the Tier 2 Landscape Documentation Package shall be submitted prior to the Landscape Documentation Deadline.
- c) In the case of project applicants or property owners that are not required to obtain permits and approvals from the City's Department of Building Inspection, a Tier 2 Landscape Documentation Package shall be submitted to and approved by the General Manager prior to commencing installation or modification of landscape.
- d) Submit and have approved by the General Manager, prior to the submittal date of a first certificate of occupancy or prior to sign off on a landscape project authorization, the Landscape Documentation Package and a Certificate of Landscape Completion. The General Manager may authorize issuance of a first certificate of occupancy prior to approval of a Certificate of Landscape Completion, subject to conditions determined by the General Manager.
- e) Landscape areas that are part of a compliance plan pursuant to Rule 5 shall be required to provide Tier 2 compliance documents as set forth in the provisions of the compliance plan.
- f) If complete documentation for Tier 2 compliance has not been submitted to the General Manager on or before the Landscape Documentation Deadline, the General Manager shall request to the Director of Department of Building Inspection that an address restriction shall be placed on the property such that no further construction permits or addenda shall be issued and no further inspections by the Department of Building Inspection shall occur, unless and until all landscape documentation, developed in accordance with the provisions of this chapter and the Public Utilities Commission's rules and regulations has been submitted to the General Manager for approval.

**Rule 5.
Compliance Plans for Large Irrigated Landscapes**

Property owners maintaining a total irrigated landscape of 10 acres or greater may submit compliance plans for approval by the General Manager that support a programmatic approach to compliance with Section F, rather than through the review and approval of individual landscape rehabilitation projects.

- a) The General Manager shall establish a deadline for each property owner to develop and submit a compliance plan, which shall not exceed 3 years following the date of the property owner's initial request for review and approval of a compliance plan.
- b) The property owner shall comply with all the terms of the approved compliance plan. The property owner's failure to comply with provisions of the compliance plan is a violation of Section F and subject to enforcement under the provisions of these rules or any other remedy available to the General Manager.
- c) The compliance plan shall prioritize the phased implementation of landscape projects, beginning with the projects with the greatest water savings, to the extent feasible when balanced with other project objectives.
- d) The compliance plan, if authorized by the General Manager, supersedes the process and procedures set forth in Rules 3 and 4.
- e) The compliance plan shall ensure compliance with the requirements of Rule 6 and shall include a date or dates by which the components of the compliance plan shall be completed.

**Rule 6.
Water Efficient Design and Operation Elements**

The elements of a landscape shall be designed to achieve water efficiency. Tier 1 projects shall demonstrate water efficiency and compliance with this rule by providing appropriate responses to specific checklist items and certification pursuant to Rule 3.

Tier 2 projects require a complete Landscape Documentation Package and shall comply with all applicable criteria of this rule.

- a) Plant Material
 - i. Plants shall be chosen and arranged appropriately based upon the site's climate, soil characteristics, sun exposure, wildfire susceptibility and other factors. Plants with similar water needs shall be grouped within hydrozones.
 - ii. Turf is not allowed on slopes greater than 25 percent.

Section F

- iii. Turf areas shall not be less than 10 feet wide.
- iv. The turf grass limitation excludes parklands or public recreation areas, sports fields, golf courses, cemeteries, or public areas, and areas irrigated with non-potable water.
- v. The use of invasive plant species or noxious weeds is prohibited.
- vi. The use of local California native plant species is encouraged in order to reduce water use and promote wildlife habitat.
- vii. The architectural guidelines of a common interest development, which include community apartment projects, condominiums, planned developments, and stock cooperatives, shall not prohibit or include conditions that have the effect of prohibiting the use of low-water use plants as a group.

b) Irrigation System

- i. Landscape water meters are required for landscape areas greater than 1,000 square feet to facilitate water management.
 - A. Non-residential projects with 1,000 to 5,000 square feet of landscape area shall install a privately owned submeter or a utility landscape water meter.
 - B. Any project with a landscape area greater than 5,000 square feet shall install a utility landscape water meter.
- ii. Automatic irrigation controllers utilizing either evapotranspiration or soil moisture sensor data utilizing non-volatile memory shall be required.
- iii. Rain sensors either integral or auxiliary, which suspend or alter irrigation operation during unfavorable weather conditions, shall be required on all irrigation systems.
- iv. Master shut-off valves are required on all projects except landscapes that make use of technologies that allow for the individual control of sprinklers that are individually pressurized in a system equipped with low pressure shut down features.

Section F

- v. Flow sensors are required for all non-residential landscapes and residential landscapes 5,000 square feet or larger.
- vi. The irrigation hardware for each hydrozone shall include a separate valve.
- vii. The irrigation systems shall be designed to prevent runoff, low head drainage, overspray and other similar conditions.
- viii. Low volume irrigation shall be required in mulched areas, in areas with slope greater than 25 percent, within 24 inches of a non-permeable surface or in any irregularly shaped areas that are less than eight (8) feet in width. These restrictions do not apply if:
 - A. The landscape area is adjacent to permeable surfacing and no runoff occurs; or
 - B. The adjacent non-permeable surfaces are designed and constructed to drain entirely to landscaping.
- viii. Irrigation systems shall be designed, maintained, and managed to meet or exceed an average landscape irrigation efficiency of 81 percent for drip irrigation and 75 percent for overhead spray.
- ix. Irrigation emission devices must meet the requirements set in the American National Standards Institute (ANSI) standards, American Society of Agricultural Biological Engineers'/International Code Council's (ASABE/ICC) 802-2014 "Landscape Irrigation Sprinkler and Emitter Standard," All sprinklers in the landscape must document a distribution uniformity low quarter of 0.65 or higher using the protocol defined in ASABE/ICC 802-2014.

c) Hydrozones

- i. Each valve shall irrigate only hydrozones with similar plant factors or site conditions such as: slope, sun exposure, and soil conditions.
- ii. Sprinkler heads and other emission devices shall be selected based on what is appropriate for the plant type within that hydrozone.
- iii. Where feasible, trees shall be placed on separate valves from shrubs, groundcovers, and turf.

Section F

- iv. Individual hydrozones that mix plants of moderate and low water use shall use the higher water using plant factor. High water use plants shall not be mixed with low or moderate water use plants.
- v. On the landscape design plan and irrigation design plan, hydrozone areas shall be designated by number, letter, or other designation. On the irrigation design plan, designate the areas irrigated by each valve, and assign a number to each valve.

d) Soil Preparation, Mulch and Amendments

- i. Prior to the planting of any materials, compacted soils shall be transformed to a friable condition. On engineered slopes, only amended planting holes need to meet this requirement.
- ii. A minimum three-inch (3") layer of mulch shall be applied on all exposed soil surfaces of planting areas except in direct seeding applications (i.e. hydro-seed).
- iii. Compost at a rate of a minimum of four cubic yards per 1,000 square feet of permeable area shall be incorporated to a depth of six inches (6") into the soil for planting areas. Soils with greater than 6 percent organic matter in the top six inches (6") of soil are exempt from adding compost and tilling.
- iv. Stabilizing mulching products shall be used on slopes.
- v. Soil amendments shall be incorporated according to recommendations of the soil report and what is appropriate for the plants selected.

e) Water Features

- i. Recirculating water systems shall be used for water features.
- ii. Where available, non-potable water shall be used as a source for decorative water features.
- iii. Surface area of a water feature shall be included in the high water use hydrozone area of the water budget calculation.

f) Irrigation Scheduling

Irrigation schedules shall be developed, managed, and evaluated to utilize the minimum amount of water required to maintain plant health. Irrigation schedules shall meet the following criteria.

- i. Irrigation scheduling shall be regulated by automatic irrigation controllers.
- ii. Overhead irrigation shall be scheduled between 8:00 p.m. and 10:00 a.m. unless weather conditions prevent it.
- iii. Irrigation schedules for each station shall consider:
 - A. Irrigation interval (days between irrigation);
 - B. Irrigation run times (time period per irrigation event to avoid runoff);
 - C. Number of cycle starts required for each irrigation event to avoid runoff;
 - D. Application rate setting;
 - E. Plant type setting;
 - F. Soil type; and
 - G. Slope factor setting.

g) Landscape and Irrigation Maintenance Schedule

Landscapes shall be maintained to ensure water use efficiency. A regular maintenance schedule shall be submitted with the Certificate of Landscape Completion and shall include the following.

- i. Routine inspection; adjustment and repair of the irrigation system and its components; aerating and de-thatching turf areas; replenishing mulch; fertilizing; pruning; weeding in all landscape areas; replacement of failed plants with same or equivalent plants; and removing obstruction to emission devices.
- ii. Repair of all irrigation equipment shall be done with the originally installed components or their equivalents.

h) Irrigation Audits

Landscape and irrigation assessments for new or rehabilitated landscapes shall be conducted after the landscaping and irrigation system have been installed. The findings of the assessment shall be consolidated into the Certificate of Completion submittal and may include, but are not limited to inspection, system tune-up, system test with distribution uniformity, reporting overspray or runoff that causes overland flow, and preparation of an irrigation schedule.

- i. For Tier 1 projects, the audit shall be conducted by the project applicant, a designated PUC water service inspector, or by a certified landscape irrigation auditor.
- ii. For Tier 2 projects, the irrigation audit shall be conducted by a PUC water service inspector or by a certified landscape irrigation auditor.
- iii. The General Manager shall administer programs that may include, but not be limited to, irrigation water use analysis, irrigation audits, and irrigation surveys for compliance with the Maximum Applied Water Allowance.

Rule 7.

Maximum Applied Water Allowance (MAWA)

The operation of irrigation systems in new construction landscapes and landscape rehabilitation projects subject to Rules 3, 4, and 5 shall adhere to a Maximum Applied Water Allowance which shall be the upper limit of water that may be lawfully applied through the irrigation system. The MAWA for an irrigation system installed for a new construction landscape or landscape rehabilitation project shall be calculated using the following equation and the corresponding ET Adjustment Factor (ETAF) of 0.55 for residential areas and 0.45 for non-residential areas.

$$\text{MAWA} = (35.1) (0.62) [(\text{ETAF} \times \text{LA}) + ((1-\text{ETAF}) \times \text{SLA})]$$

Where:

- MAWA = Maximum Applied Water Allowance (gallons per year)
- 35.1 = ETo or Reference Evapotranspiration for San Francisco (inches per year)
- 0.62 = Conversion Factor (to gallons)
- ETAF = ET Adjustment Factor for residential (0.55), non-residential (0.45) landscapes
- LA = Landscape Area including SLA (square feet)
- 1-ETAF = Additional Water Allowance for SLA for new or modified landscapes
- SLA = Special Landscape Area (square feet)

**Rule 8.
Landscape Documentation Package**

Tier 2 projects applications shall include at a minimum:

- a) Project information sheet;
- b) Water Efficient Landscape Worksheets which establish the project's MAWA and ETWU;
- c) Soil management report;
- d) Landscape design plan;
- e) Irrigation design plan; and
- f) Grading design plan.

**Rule 9.
Soil Management Report**

- a) In order to reduce runoff and encourage healthy plant growth, a soil management report shall be completed by all Tier 2 project applicants where significant mass grading is planned. The soil management report or other documentation approved by the General Manager, shall document the various soil characteristics such as:
 - i. Soil texture;
 - ii. Infiltration rate determined by laboratory test or soil texture infiltration rate table;
 - iii. pH;
 - iv. Total soluble salts;
 - v. Sodium;
 - vi. Percent organic matter; and
 - vii. Recommendations.
- b) The project applicant shall comply with one of the following:
 - i. If project includes podium plantings using all imported soil, the project applicant shall submit a copy of the soil specification as part of the Landscape Documentation Package; or

- ii. If significant mass grading is not planned, the soil analysis shall be submitted as part of the Landscape Documentation Package; or
- iii. If significant mass grading is planned, the soil analysis report shall be submitted as part of the Certificate of Landscape Completion.

The soil analysis report shall be made available, in a timely manner, to the designers preparing the landscape design plans and irrigation design plans to make any necessary adjustments to the design plans.

The project applicant shall submit documentation verifying implementation of soil analysis report recommendations to the General Manager with the Certificate of Landscape Completion.

**Rule 10.
Landscape Design Plan**

Tier 2 landscapes shall be carefully designed for the intended function of the project. A landscape design plan shall meet the following design criteria and shall be submitted as part of the Landscape Documentation Package. The landscape design plan, at a minimum, shall:

- a) Include all applicable elements of Rule 6: Water Efficient Landscape Design and Operation Elements;
- b) Identify all plants to be installed as part of the landscape project including: common name, botanical name, quantity, type (e.g. grass, succulent, vine, shrub, and tree), and plant factor as defined in Rule 2;
- c) Delineate and label each hydrozone by number, letter, or other method;
- d) Identify each hydrozone as low, moderate, high water, or mixed (low/moderate) water use, as defined by WUCOLS;
- e) Include temporarily irrigated areas of the landscape in a low water use hydrozone for the purpose of water budget calculation;
- f) Identify recreational areas;
- g) Identify areas permanently and solely dedicated to edible plants or edible fruit or nut trees;
- h) Identify areas irrigated with gray water or harvested rain water;
- i) Identify type of mulch and application depth;

- j) Identify soil amendments, type, and quantity;
- k) Identify type and surface area of water features;
- l) Identify hardscapes (pervious and non-pervious);
- m) Identify location and installation details of any applicable stormwater best management practices that demonstrate compliance with the San Francisco Stormwater Design Guidelines for on-site retention and infiltration of stormwater. Examples include, but are not limited to: rain gardens, bioretention areas, infiltration basins, constructed wetlands, pervious pavements, and rain water harvesting systems;
- n) Contain the following statement: "I have complied with the requirements of the Water Efficient Irrigation Ordinance and Section F of the San Francisco Public Utilities Commission Rules and Regulations Governing Water Service Customers, and I have applied the requirements for the efficient use of water in this landscape design plan;" and
- o) Bear the signature of a licensed landscape architect, licensed landscape contractor, or other person authorized by the General Manager.

**Rule 11.
Irrigation Design Plan**

Irrigation systems shall meet all the requirements listed in this section and the manufacturers' recommendations. The irrigation system and its related components shall be planned and designed to allow for proper installation, management, and maintenance. An irrigation design plan meeting the following design criteria shall be submitted as part of the Landscape Documentation Package. The irrigation design plan, at a minimum, shall contain:

- a) Include all applicable elements of Rule 6: Water Efficient Landscape Design and Operation Elements;
- b) Location and size of separate water meters for landscape (if applicable);
- c) Location, type and size of all components of the irrigation system, including controllers, main and lateral lines, valves, sprinkler heads, moisture or rain sensing devices, quick couplers, pressure regulators, and backflow prevention devices;
- d) Static water pressure at the point of connection to the public water supply. If a booster pump is used, include the operating pressure downstream from the pump;

- e) Flow rate (gallons per minute), application rate (inches per hour), and design operating pressure (pressure per square inch) for each station;
- f) Indication of where any non-potable water irrigation systems are used;
- g) The following statement: "I have complied with the requirements of the Water Efficient Irrigation Ordinance and Section F of the San Francisco Public Utilities Commission Rules and Regulations Governing Water Service Customers, and I have applied the requirements for the efficient use of water in this landscape design plan;" and
- h) The signature of a licensed landscape architect, certified irrigation designer, licensed landscape contractor, or other person authorized by the General Manager to design an irrigation system.

**Rule 12.
Grading Design Plan**

If the Tier 2 landscape project area will be graded, the grading shall be designed to minimize soil erosion, runoff, and water waste; and a grading plan shall be submitted as part of the Landscape Documentation Package.

The project applicant shall submit a landscape grading plan that indicates finished configurations and elevations of the landscape area including:

- a) Height of graded slopes;
- b) Drainage patterns;
- c) Pad elevations;
- d) Finish grade; and
- e) Stormwater retention improvements, if applicable.

The grading design plan shall contain the following statement: "I have complied with the requirements of the Water Efficient Irrigation Ordinance and Section F of the San Francisco Public Utilities Commission Rules and Regulations Governing Water Service Customers, and I have applied the requirements for the efficient use of water in this landscape design plan;" and shall bear the signature of a licensed civil engineer or landscape architect as authorized by law.

**Rule 13.
Certificate of Landscape Completion**

For all Tier 1 and Tier 2 projects, the project applicant shall submit to the General Manager the Certificate of Landscape Completion. The Certificate of Landscape Completion shall include the following elements.

- a) For Tier 1, certification by the project applicant that the landscape project has been installed per the approved Tier 1 Landscape Application. For Tier 2, certification by the signer of the landscape design plan, the signer of the irrigation design plan, or the licensed landscape contractor that landscape project has been installed per the Landscape Documentation Package.
- b) Irrigation scheduling parameters used to set the controller.
- c) Landscape and irrigation maintenance schedule.
- d) For Tier 2, irrigation audit report.

**Rule 14:
Irrigation Audits for Landscape Areas**

The General Manager may require irrigation audits to evaluate water use on landscape areas. Such audits may be initiated as a coordinated effort between the General Manager and the water service customer as part of the General Manager's Landscape Conservation Program, or if violation is reported to or discovered by the General Manager. When such audit is required, it must be completed by a certified landscape irrigation auditor.

- a) Following the findings and recommendations of the certified landscape irrigation auditor, the General Manager may require adjustments to the irrigation usage, irrigation hardware, and/or landscape materials to reduce irrigation water use.
- b) The landscape shall comply with the Maximum Applied Water Allowance for landscapes. The ET Adjustment Factor for existing landscapes is 0.8 and the ET Adjustment Factor for new construction landscapes and rehabilitated landscapes is 0.55 for residential areas and 0.45 for non-residential areas.
- c) The MAWA for an irrigation system for an existing landscape area of any size shall be calculated using the following equation.

$$\text{MAWA} = (35.1) (0.62) [(0.8 \times \text{LA}) + (0.2 \times \text{SLA})]$$

Where: MAWA = Maximum Applied Water Allowance (gallons per year)

- 35.1 = ET_o or Reference Evapotranspiration (inches per year)
- 0.62 = Conversion Factor (to gallons)
- 0.8 = ET Adjustment Factor (ETAF) for existing landscapes
- LA = Landscape Area including SLA (square feet)
- 0.2 = Additional Water Allowance for SLA for existing landscapes
- SLA = Special Landscape Area (square feet)

- d) The MAWA for an irrigation system for a new construction landscape or rehabilitated landscape shall be as defined in Rule 7.

Rule 15.

Non-Potable Water

- a) For purposes of Section F, a rehabilitated landscape does not include landscape areas where only the irrigation system is retrofitted for the use of recycled water and only plantings that restore areas disturbed by the recycled water retrofits are installed. Recycled water irrigation retrofit projects shall employ best management practices to prevent runoff, ponding and overspray as directed in their recycled water use permit and comply with all applicable local and state regulation. The installation of recycled water irrigation systems shall be required if the General Manager finds that recycled water meeting all applicable requirements is available for irrigation uses.
- b) The San Francisco Public Utilities Commission encourages the installation of non-potable water irrigation systems for current and future use. New, rehabilitated and existing landscapes using non-potable water shall be considered Special Landscape Areas. An ET Adjustment Factor for the total landscape shall not exceed 1.0. Existing Special Landscape Areas shall be allowed more water by using an ET Adjustment Factor of 0.8 and additional water allowance of 0.2 or 20 percent. New or rehabilitated Special Landscape Areas shall be allowed more water by using an ET Adjustment Factor of 0.55 for residential areas and 0.45 for non-residential areas and additional water allowances of 0.45 or 45 percent and 0.55 or 55 percent respectively.
- c) Landscapes using non-potable water are exempt from the turf limitations subject to Rule 6, but shall comply with the Maximum Applied Water Allowance of the landscape.
- d) Irrigation systems and decorative water features shall use non-potable water as permitted by local regulations, codes and standards.
- e) All non-potable water systems shall be designed and operated in accordance with all applicable local and State laws.

Rule 16.
Water Waste Prevention

- a) For landscaped areas of any size in the City and County of San Francisco, water runoff leaving the landscape area due to low head drainage, overspray, broken irrigation hardware, or other similar conditions where water flows onto adjacent property, walks, roadways, parking lots, structures, or non-irrigated areas, is prohibited.
- b) In the event this rule or any other rule is violated, the General Manager may issue a written warning, entered on the user's water service record and delivered to customer via mail, personal service, or other reasonable means. The letter will include information regarding the violation, education information on the restrictions, resources available from the General Manager to assist in complying with regulations, and a deadline for correcting the violation.
- c) If the violations are not corrected to the satisfaction of the General Manager, the property owner, and project applicant where appropriate, shall be subject to enforcement in accordance with San Francisco Public Utilities Commission rules for limitation or termination of service, Chapter 100 of the San Francisco Administrative Code with respect to administrative penalties, and any other available legal remedies, at the sole discretion of the General Manager.

APPENDIX - SAMPLE CALCULATIONS OF MAWA AND ETWU

MAXIMUM APPLIED WATER ALLOWANCE (MAWA): The example calculations below are hypothetical to demonstrate proper use of the MAWA equation pursuant to Rule 7 and required water budget calculations.

Example 1: A hypothetical residential landscape rehabilitation project in San Francisco with a modified landscape area of 2,500 square feet without any Special Landscape Area (SLA= 0, no edible plants, recreational areas, or use of non-potable water). To calculate MAWA, the annual reference evapotranspiration for San Francisco is 35.1 inches. The ETAF for a residential landscape project is 0.55.

$$\text{MAWA} = (35.1) (0.62) [(0.55 \times \text{LA}) + (0.45 \times \text{SLA})]$$

$$\text{MAWA} = (35.1) (0.62) [(0.55 \times 2,500 \text{ square feet}) + (0.45 \times 0)] = 29,920 \text{ gallons per year}$$

To convert from gallons per year to gallons per day: $29,920/365 = 82$ gallons per day

Water meters measure flow in hundred-cubic-feet (CCF). 1 CCF = 748 gallons, so in this example the MAWA is 40 CCF per year

Example 2: A new construction project to build a recreation center in San Francisco has a total landscape area of 100,000 square feet. Within the 100,000 square foot project, there is a 75,000 square foot area to be planted with turf for a soccer field. This 75,000 square foot area is considered to be a Special Landscape Area. The ETAF for a non-residential landscape project is 0.45.

$$\text{MAWA} = (35.1) (0.62) [(0.45 \times \text{LA}) + (0.55 \times \text{SLA})]$$

$$\begin{aligned} \text{MAWA} &= (35.1) (0.62) [(0.45 \times 100,000 \text{ square feet}) + (0.55 \times 75,000 \text{ square feet})] \\ &= 21.76 \times [45,000 + 41,250] \\ &= 21.76 \times 86,250 \\ &= 1,876,800 \text{ gallons per year, or } 5,142 \text{ gallons per day, or } 2,509 \text{ CCF per year} \end{aligned}$$

ESTIMATED TOTAL WATER USE (ETWU): The example calculations below are hypothetical to demonstrate proper use of the Estimated Total Water Use. The sum of the ETWU calculated for all hydrozones shall not exceed the MAWA.

$$\text{ETWU} = (35.1) \left[(0.62) \frac{\text{PF} \times \text{HA} + \text{SLA}}{\text{IE}} \right]$$

Where:

- ETWU = Estimated Total Water Use per year (gallons)
- 35.1 = ETo or Reference Evapotranspiration (inches per year)
- 0.62 = Conversion Factor
- PF = Plant Factor from WUCOLS
- HA = Hydrozone Area [high, medium, and low water use areas] (square feet)
- IE = Irrigation Efficiency (0.75 for overhead spray and 0.81 for drip systems)
- PF/IE = ET Adjustment Factor (ETAF)
- SLA = Special Landscape Area (square feet)

Section F

Example 1: A new construction residential landscape project has 50,000 square feet of landscape area; the plant water use type, irrigation type, plant factor, and hydrozone area are shown in the table below. In San Francisco, the ETo value is 35.1 inches per year. There are no Special Landscape Areas (recreational area, area permanently and solely dedicated to edible plants, or area irrigated with non-potable water) in this example.

Regular Landscape Areas								
Hydro-zone	Water Use Type(s)	Plant Factor (PF)	Irrigation Method	Irrigation Efficiency (IE)	ETAF (PF/IE)	Hydrozone Area (HA)	ETAF x HA	Est. Total Water Use (ETWU)
1	High	0.8	Spray	0.75	1.07	6,000	6,400	139,277
2	High	0.7	Spray	0.75	0.93	7,000	6,533	142,178
3	Medium	0.5	Drip	0.81	0.62	13,000	8,025	174,633
4	Low	0.3	Drip	0.81	0.37	10,000	3,704	80,600
5	Low	0.2	Drip	0.81	0.25	14,000	3,457	75,227
Sum						50,000	28,119	
Special Landscape Areas								
--					1	--	--	--
--					1	--	--	--
Sum								
							ETWU Total	611,915
							MAWA Total	598,455

Compare ETWU with MAWA. For this example:

$$\text{MAWA} = (35.1) (0.62) [(0.55 \times 50,000) + (0.45 \times 0)] = 598,455 \text{ gallons per year.}$$

ETWU (611,915 gallons per year) is more than MAWA (598,455 gallons per year).

For this example, the project's estimated water use does not comply with the MAWA.

Section F

Example 2: A new construction non-residential landscape project has 32,000 square feet of landscape area, with 2,000 square feet planted with edible plants. The edible plant area is considered a Special Landscape Area (SLA). In San Francisco, ETo is 35.1 inches per year. The plant type, plant factor, irrigation type, and hydrozone areas are shown in the table below.

Regular Landscape Areas								
Hydro-zone	Water Use Type(s)	Plant Factor (PF)	Irrigation Method	Irrigation Efficiency (IE)	ETAF (PF/IE)	Hydrozone Area (HA)	ETAF x HA	Est. Total Water Use (ETWU)
1	High	0.8	Spray	0.75	1.07	1,500	1,600	34,819
2	High	0.7	Spray	0.75	0.93	1,000	933	20,311
3	Medium	0.5	Spray	0.75	0.67	2,500	1,667	36,270
4	Low	0.3	Drip	0.81	0.37	12,000	4,444	96,720
5	Low	0.2	Drip	0.81	0.25	15,000	3,704	80,600
Sum						32,000	12,348	
Special Landscape Areas								
6					1	2,000	2,000	43,524
Sum						2,000	2,000	
ETWU Total								312,244
MAWA Total								337,311

Compare ETWU with MAWA. For this example:

$$\text{MAWA} = (35.1) (0.62) [(0.45 \times 32,000) + (0.55 \times 2,000)] = 337,311 \text{ gallons per year.}$$

The ETWU (312,244 gallons per year) is less than MAWA (337,311 gallons per year).

For this example, the project's estimated water use complies with the MAWA.

SECTION G – CROSS-CONNECTION CONTROL

(As amended per Resolution 19-0191 that was approved on October 8, 2019)

Rule 1.

Applicability

- a) As a condition of receiving water service from the public water system, all property owners shall comply with Section G. This section is promulgated in conformance with the California Code of Regulations, Title 17, Division 1, Chapter 5, Subchapter 1, Group 4; California Health and Safety Code Division 104, Part 12, Chapter 5, Article 2, section 116800; and San Francisco Health Code, Article 12A.
- b) Property owners shall install an approved backflow preventer at the service connection wherever any of the following conditions exists:
 - i. Wastewater pumping and/or treatment plants.
 - ii. Hazardous substances handled in any way the substances could enter the potable water system.
 - iii. Auxiliary water supply.
 - iv. Dual-plumbed property.
 - v. Intricate plumbing and piping arrangements.
 - vi. Repeated history of cross-connections being established or re-established.
 - vii. Dockside watering points or marine facilities.
 - viii. Dedicated irrigation service.
 - ix. Fire protection systems.
 - x. Buildings whose highest point is equal to or greater than 40 feet in height above the point of connection.
 - xi. Inadequate backflow prevention for any on-site processes that the General Manager identifies as requiring additional protection from backflow.
 - xii. Entry to a property or parts of a property is restricted so that cross-connection inspections cannot be made with sufficient frequency or at sufficiently short notice to assure that cross-connections do not exist.
 - xiii. Multiple standard service connections, at least one of which requires backflow protection for containment.
 - xiv. Water storage facility not under control of the public water system.
 - xv. Any other on-site hazard that the General Manager identifies as requiring abatement for the protection of the public water system.

Rule 2.

Definitions

The terms used in this section have the following meanings.

- a) **Annual License Fee:** License fee paid annually to the Tax Collector pursuant to as provided in the San Francisco Business and Tax Regulations Code, Section 249.24.
- b) **Applicant:** A person who seeks to obtain a permit to operate from the General Manager, or his or her designee, under San Francisco Health Code Article 12A.

- c) **Approved Air Gap separation (AG):** a physical break between the water supply line and a receiving vessel that has been approved for such use by the General Manager and is in proper working order. The air gap must be located outside of the receiving vessel, be above grade, and be visible for inspection. The air gap must meet all requirements set forth in the California Plumbing Code, Chapter 6, section 603.
- d) **Approved backflow prevention assembly:** an assembly used to prevent the backflow of substances into the public water system. The assembly must be approved for such use by the University of Southern California Foundation for Cross-Connection Control and Hydraulic Research, or comparable organization approved by the General Manager, and be in proper working order.
- e) **Authorized Backflow Prevention Assembly Tester:** any person who possesses a valid certification to test, repair and maintain backflow prevention assemblies and is authorized by the General Manager to do such work in the City in accordance with these rules and regulations.
- f) **Authorized Cross-Connection Control Specialist:** any person who possesses a current certification to administer a cross-connection control test and to conduct site surveys to assess cross-connection control requirements and is authorized by the General Manager to do such work in the City in accordance with these rules and regulations.
- g) **Authorized Representative:** a person designated by a company employing Authorized Backflow Prevention Assembly Testers or Authorized Cross-Connection Control Specialists to purchase backflow tags on behalf of the company.
- h) **Auxiliary water:** any water other than potable water received from the public water system. This category includes, but is not limited to, municipally supplied recycled water, wastewater, graywater, groundwater, rainwater, foundation drainage, black water, and alternate water sources as defined in San Francisco Health Code Article 12C and accompanying rules and regulations.
- i) **Backflow:** the flow, from any source or sources, of water that is of unknown or questionable safety for human consumption or of other liquids, gases, mixtures or other substances into the public water system.
- j) **Backflow preventer:** approved backflow prevention assembly or approved air gap separation.
- k) **Backflow tag:** tag provided by the General Manager to be affixed to a backflow preventer after it has passed testing by an Authorized Backflow Prevention Assembly Tester.
- l) **CCAMS:** San Francisco Public Utilities Commission's Cross-Connection Assembly Management System database.
- m) **City:** City and County of San Francisco.

- n) **Containment:** Protection from backflow at the service connection.
- o) **Cross-connection:** any unprotected actual or potential connection between any part of a potable water system used or potentially used to supply water for drinking purposes and any source or system containing water or any other substance that is not or cannot be approved as safe, wholesome and potable.
- p) **Cross-connection control survey:** an inspection of all parts of a property served by the public water system to identify potential cross-connections.
- q) **Cross-connection test:** a test administered by an Authorized Cross-Connection Control Specialist to verify that no physical uncontrolled connection exists between the potable water piping and any auxiliary water piping system.
- r) **Customer:** The person or entity listed as the customer of record in the Customer Services Bureau database.
- s) **Customer Services Bureau:** Customer Services Bureau of the San Francisco Public Utilities Commission.
- t) **Department of Building Inspection:** San Francisco Department of Building Inspection.
- u) **Double-Check valve backflow prevention assembly (DC):** an assembly of at least two independently acting check valves including tightly closing shut-off valves on each side of the check valve assembly and test cocks available for testing the water-tightness of each check valve.
- v) **Double-Check Detector backflow prevention Assembly (DCDA):** an assembly consisting of a line-sized approved double-check valve assembly with a bypass containing a specific water meter and an approved double-check valve assembly.
- w) **Double-Check Detector backflow prevention Assembly type II (DCDA-II):** an assembly consisting of a line-sized approved double-check valve assembly with a bypass around the second check containing a specific water meter and a check valve.
- x) **Dual-plumbing:** a system that utilizes separate piping systems for auxiliary water and potable water within a property.
- y) **First certificate of occupancy:** either a temporary certificate of occupancy or a Certificate of Final Completion and Occupancy as defined in San Francisco Building Code Section 109A, whichever is issued first.
- z) **General Manager:** General Manager of the San Francisco Public Utilities Commission, or any individual or City agency designated by the General Manager to act on his or her behalf. The Water Quality Division Director is designated to act for the General Manager in relation to Section G of these rules and regulations.
- aa) **On-site hazard:** any actual or potential hazard to the public water supply that may be created as a result of conditions existing on a property.

- bb) **Permit to Operate:** permit to work as an Authorized Backflow Prevention Assembly Tester or Authorized Cross-Connection Control Specialist.
- cc) **Permittee:** Someone who holds a valid permit to operate under San Francisco Health Code Article 12A granted by the General Manager or his or her designee. Permittees are responsible for maintaining their permits and complying with all City rules and regulations related to cross-connection control.
- dd) **Point of connection:** the customer's water meter, except for dedicated fire services, for which the point of connection is the junction of the water supply lateral and the customer's fire protection system.
- ee) **Pressure Vacuum Breaker (PVB):** an assembly containing an independently operating, internally loaded check valve and an independently operating loaded air inlet valve located on the discharge side of the check valve. The assembly must be equipped with properly located resilient seated test cocks and tightly closing resilient seated shutoff valves attached at each end of the assembly.
- ff) **Property:** parcel, premises, building, or other structure that receives potable water from the public water system.
- gg) **Property owner:** the legal owner of a property with a water service connection.
- hh) **Public Water System (PWS):** the potable water system operated and maintained by the San Francisco Public Utilities Commission.
- ii) **Reduced Pressure principle backflow prevention assembly (RP):** a backflow prevention assembly incorporating not less than two check valves, an automatically operated differential relief valve located between the two check valves, a tightly closing shut-off valve on each side of the check valve assembly, and that is equipped with necessary test cocks for testing.
- jj) **Reduced Pressure principle Detector Assembly (RPDA):** a backflow prevention assembly composed of a line-size approved reduced pressure principle backflow prevention assembly with a specific bypass containing a specific water meter and an approved reduced pressure principle backflow prevention assembly.
- kk) **Reduced Pressure principle Detector Assembly type II (RPDA-II):** a backflow prevention assembly composed of a line-size approved reduced pressure principle backflow prevention assembly with a specific bypass around the second check valve containing a specific water meter and an approved check valve.
- ll) **SFDPH-EHB:** San Francisco Department of Public Health, Environmental Health Branch.
- mm) **SFPUC:** San Francisco Public Utilities Commission.
- nn) **USC FCCCHR:** University of Southern California Foundation for Cross-Connection Control and Hydraulic Research.

- oo) **Water Quality Division:** Water Quality Division of the San Francisco Public Utilities Commission.
- pp) **Water service connection:** a connection to the public water system.
- qq) **Water user supervisor (site supervisor):** A person designated to be responsible for the avoidance of cross-connections during the installation, operation and maintenance of a property's pipelines and equipment.

Rule 3.

Backflow Prevention Requirements

- a) All backflow preventers and associated pipe, fittings, solder and flux must be "lead-free" as defined in the California Health and Safety Code, section 116875. This requirement does not apply to dedicated fire services, the fire service line on combination services, or irrigation and industrial systems.
- b) The types of backflow protection that may be used for containment at permanent connections to the public water system, listed according to increasing level of protection, are double-check valve backflow prevention assembly (DC), reduced pressure principle backflow prevention assembly (RP), and air gap separation (AG). The minimum level of backflow protection by hazard criterion shall be as described in Table 1.
 - i. If more than one of the hazard criteria applies to a property, the criterion requiring the greatest degree of protection shall apply.
 - ii. If an assessment of a property cannot be made to determine the type of hazard present, the San Francisco Public Utilities Commission (SFPUC) shall ensure that an air gap separation is installed.
- c) For isolation of a hazard within a property, the minimum level of backflow protection shall be as set forth in Chapter 6 of the California Plumbing Code, except that an RP is required in the situations listed in Table 1. The requirement for an RP is at the direction of the San Francisco Department of Public Health, Environmental Health Branch (SFDPH-EHB) under its authority set forth in California Health and Safety Code Division 104, Part 12, Chapter 5, Article 2, section 116800.

Table 1: Hazard Criteria and Required Backflow Protection

(Some requirements are more stringent than those in the California Plumbing Code)

Attention: See footnotes for important information

Hazard Criteria	Required Level of Protection
Part I: Containment	
Sewage and Hazardous or Potentially Hazardous Substances	
Properties where there are wastewater treatment processes, handling and/or pumping equipment (see Part II of this table for isolation requirements)	AG or RP ¹
Properties where hazardous substances are handled in any manner in which the substance may enter the public water system (PWS) (see Part II of this table for isolation requirements)	AG or RP ¹
Properties with a piping system conveying a fluid not from an approved water supply that is interconnected with the PWS (see Part II of this table for isolation requirements)	AG or RP ¹
Piping system conveying a fluid not from an approved water supply that is not interconnected with the PWS	RP
Properties with a recreational vehicle dump station that is interconnected with the PWS (see Part II of this table for isolation requirements)	AG or RP ¹
Auxiliary Water Supplies (Nonpotable)	
Properties where there is an auxiliary supply that is interconnected with the PWS (see Part II of this table for isolation requirements)	AG or RP ¹
Fire Protection Systems	
Properties where the fire protection system is supplied from the PWS and interconnected with an onsite auxiliary water supply	AG
Properties where the fire protection system is supplied from the PWS with no interconnections with auxiliary water supplies	DCDA or DCDA-II
Properties where chemicals are injected into the fire system	RPDA or RPDA-II
Properties under the jurisdiction of the San Francisco Port Authority	RPDA or RPDA-II
Marina and Port Facilities Under Jurisdiction of Port Authority	
Standard, irrigation, or combination services	RP
Properties with Multiple Service Connections to the PWS	
Properties with multiple standard service connections, at least one of which requires backflow protection for containment	Varies ²
Irrigation Systems	
Properties with dedicated irrigation meters	RP
Properties with irrigation systems into which fertilizers, herbicides, or pesticides are or can be injected	RP

Hazard Criteria	Required Level of Protection
Water Storage Facility Not under Control of the PWS	
Water storage facility not under control of the PWS	AG
Repeated History of Cross-Connections	
Properties where there is a repeated history of cross-connections being established or re-established	RP or AG ^{1,3}
Restricted Entry	
Properties where entry is restricted so that inspections for cross-connections cannot be made in accordance with these rules and regulations	RP
Unabated Internal Cross-Connections	
Properties where internal cross-connections are not abated in accordance with these rules and regulations	RP or AG ¹
Buildings Higher than 40 Feet	
Properties where there are buildings with a highest point equal to or greater than 40 feet in height above the point of connection	DC
Temporary Construction Meter, Non-Standard Service	
Connection to existing water service line during construction	RP
Temporary (Non-Fire) Connections to Fire Hydrants	
Connections for temporary uses, such as for construction, street sweeping, or water supply for events	RP or Single swing-check valve ^{1,4}
Temporary Connections to Fire Hydrants for Firefighting	
Fire trucks that are connected to potable hydrants may not also be connected to the Auxiliary Water Supply System	Spring-loaded check valve
Part II: Isolation	
Sewage and Hazardous or Potentially Hazardous Substances: at the connection of potable water piping within a facility to a system conveying a fluid that is not potable	AG
Auxiliary Water Supplies (Nonpotable): All auxiliary water except rainwater	AG
Auxiliary Water Supplies (Nonpotable): Rainwater	RP
Carbonators in systems with upstream copper pipe	AG or RP
Industrial water chillers	RP

Notes for Table 1:

¹ To be determined by the Water Quality Division based upon the level of hazard.

² The same level of protection must be provided for all standard service connections; the level of protection must address the highest degree of hazard on the property that cannot be isolated.

³ A water user supervisor might also be required.

⁴ All customer plumbing must be downstream of the meter and valve attached to a hydrant.

- d) Backflow prevention assembly requirements for permanent installations:
 - i. All backflow prevention assemblies must be testable and have passed laboratory and field evaluation tests performed by the University of Southern California Foundation for Cross-Connection Control and Hydraulic Research (USC FCCCHR) or comparable organization approved by the General Manager.
 - ii. Assemblies may not be modified in any way or installed in a manner that differs from the configuration tested and approved by the recognized testing organization.
 - iii. Assemblies, as installed, shall be field tested to ensure they are functioning properly before being placed into service.
- e) Air gaps shall meet the requirements set forth in the California Plumbing Code, Chapter 6, section 603.

Rule 4.

Installation Requirements for Backflow Preventers

- a) All backflow preventers that are installed, replaced or relocated shall be under permit from the Department of Building Inspection, Plumbing Inspection Division, unless the facility falls under a different jurisdiction (Port of San Francisco, Office of Statewide Health Planning and Development, or state Fire Marshal).
- b) All backflow preventers for containment shall be installed as close as practical but in any case within 25 feet of the downstream side of the point of connection to the public water system. If any part of a service line extends over bay or ocean waters, assemblies must be installed upstream of the seawall (and within 25 feet of the point of connection).
- c) No water connections may be made between the point of connection and a backflow prevention assembly. Similarly, no appurtenances may be installed between the point of connection and a backflow prevention assembly, except that a Y strainer may be attached directly to the number 1 shutoff valve.
- d) Assemblies must be installed in the orientation intended by the manufacturer and approved by the USC FCCCHR or comparable organization approved by the General Manager.
- e) All backflow preventers shall be accessible for field testing and maintenance.
- f) RPs must be a maximum of 36 inches above grade as measured from the bottom of the assembly.
- g) RPs and DCs must have their lowest points at least 12 inches above grade.
- h) RPs and DCs must have side clearances of at least 12 inches. On the side of the assembly that contains the test cocks, a side clearance of at least 24 inches is recommended.

Section G

- i) Assemblies must be installed so that the make and serial number are visible in a readily accessible location. These identifiers must not be painted over or otherwise made illegible.
- j) Assemblies may not be installed below grade in pits or vaults.
- k) If an enclosure is used, the enclosure must be large enough or removable to allow for testing/servicing.
- l) When an RP is installed indoors, a drain funnel must also be installed to prevent flooding.

Rule 5.

Inspection Requirements for New Water Services

- a) All new water services that require a backflow prevention assembly or air gap at the connection to the public water system must receive an initial and final inspection by the Water Quality Division. The property owner or designee must call (650) 652-3199 to schedule these inspections. The inspections are separate from those required by other San Francisco agencies.
- b) An initial inspection is required after a backflow prevention assembly or air gap has been installed at the connection to the public water system. A water service line and meter will not be provided until the backflow preventer has passed this inspection.
- c) A final inspection is required within 48 hours of receiving water service. If this inspection is not conducted, water service will be turned off and will not be restored until the final inspection has been passed and necessary fees have been paid.

Rule 6.

Permits to Operate

- a) A valid backflow prevention assembly tester permit to operate is required for anyone testing backflow prevention assemblies in the City and County of San Francisco.
- b) A valid cross-connection control specialist permit to operate is required for anyone who administers a cross-connection control test or performs a site survey to assess cross-connection control requirements in the City.
- c) To apply for a permit to operate as an Authorized Backflow Prevention Assembly Tester, an applicant must:
 - i. Submit a completed application form and application fee.
 - ii. Provide a current certification as a backflow prevention assembly tester from one of the following organizations:

Section G

- American Backflow Prevention Association
 - American Society of Sanitary Engineers
 - American Water Works Association
 - Northern California Backflow Prevention Association
 - Other organization approved by the General Manager
- iii. Provide a certificate of general liability insurance in full force and effect, at his or her expense, for all activities performed under the permit to operate, unless the applicant is a City employee. Such insurance shall include coverage for bodily injury, personal injury, including death resulting therefrom, and property damage insurance, with limits not less than \$1 million each occurrence combined single limit. The City, its officers and employees shall be named as additional insureds under the policy, and a cross-liability clause shall be attached. Such insurance shall provide 10-day prior written notice of cancellation, non-renewal, or material change to the General Manager or his or her designee.
- iv. Complete a written examination administered by the General Manager, or his or her designee, with a passing grade of at least 70 percent.
- d) To apply for a permit to operate as an Authorized Cross-Connection Control Specialist, an applicant must:
- i. Submit a completed application form and application fee.
 - ii. Provide a current certification as a cross-connection control specialist from one of the following organizations:
 - American Backflow Prevention Association
 - American Society of Sanitary Engineers
 - American Water Works Association
 - Northern California Backflow Prevention Association
 - Other organization approved by the General Manager
 - iii. Provide a certificate of general liability insurance in full force and effect, at his or her expense, for all activities performed under the permit to operate, unless the applicant is a City employee. Such insurance shall include coverage for bodily injury, personal injury, including death resulting therefrom, and property damage insurance, with limits not less than \$1 million each occurrence combined single limit. The City, its officers and employees shall be named as additional insureds under the policy, and a cross-liability clause shall be attached. Such insurance shall provide 10-day prior written notice of cancellation, non-renewal, or material change to the General Manager or his or her designee.
- e) Permit issuance: Applicant information is forwarded to the Office of the Treasurer and Tax Collector for payment of the annual license fee. The permit is issued upon payment of the license fee.
- f) Annual renewal: To maintain a permit in good standing, the permittee must:

Section G

- i. Follow all procedures in the SFPUC's Manual for Cross-Connection Control and the Instructions for Authorized Backflow Assembly Testers (testers only). These documents may be periodically updated and specify current policies and procedures for testers and specialists.
 - ii. Maintain all documentation required under these rules and any other state or local law; such documentation must be made available for inspection at the request of the General Manager.
 - iii. Annually pay to the Office of the Treasurer and Tax Collector of the City and County of San Francisco the annual license fee set forth in Section 249.24 of the San Francisco Business and Tax Regulation Code. Upon the failure of the permittee to pay such fees, the permit to operate shall be considered null and void until the permittee pays the fees and any penalties that might be assessed by the General Manager or his or her designee.
 - iv. Provide to the General Manager or his or her designee:
 - Current and updated original certificate of general liability insurance
 - Copy of a renewed certificate of competency (if the previous certificate has expired)
 - v. Authorized Backflow Assembly Testers: Attend the annual tester meeting in person or complete training approved or provided by the General Manager or his or her designee.
- g) Permit transfer: Permits are issued to individual persons and are not transferable. If a permittee ceases working for an employer that held the permittee's certificate of liability insurance, the permittee must submit valid evidence of liability insurance, as described in c(iii) above, to continue working in the City.
- h) Enforcement, suspension and revocation of permits: Any permit issued under these rules may be revoked or suspended by the General Manager, or his or her designee, if it is determined that the permittee has:
- i. Not paid the annual license fee
 - ii. Violated any provision of San Francisco Health and Safety Code Article 12A or regulation issued pursuant to Article 12A
 - iii. Engaged in conduct in connection with activities covered by the permit to operate that violates state or local laws
 - iv. Engaged in a material misrepresentation when applying for a permit
- i) The General Manager, or his or her designee, may not suspend or revoke a permit issued pursuant to San Francisco Health Code Article 12A or take other enforcement action against a permittee until a notice of violation has been issued and the permittee is provided an opportunity to be heard and respond as provided in these Rules and Regulations. Notwithstanding, the General Manager, or his or her designee, may immediately suspend any permit issued under Article 12A pending a noticed hearing on revocation or suspension when, in the opinion of the General Manager or his or her designee, the public health or safety requires such immediate suspension. Any affected permittee shall be given notice of such immediate suspension in writing delivered to the permittee in person or by registered letter.

- j) Violations and administrative penalties: Any permittee who violates any provision of San Francisco Health Code Article 12A or these Rules and Regulations may be subject to suspension or revocation of the permittee's permit to operate. Citations will be served to the permittee in a manner consistent with Chapter 100 of the San Francisco Administrative Code, which will govern the procedures for imposition, enforcement, and administrative review of administrative citations issued.
- k) Appeals: The final decision of the General Manager, or his or her designee, to grant, deny, suspend, or revoke a permit, as provided in San Francisco Health Code Article 12A, may be appealed to the Board of Appeals in the manner prescribed in San Francisco Business and Tax Regulations Code Article 1.

Rule 7.

Companies Employing Authorized Backflow Prevention Assembly Testers and Authorized Cross-Connection Control Specialists

- a) Companies that employ Authorized Backflow Prevention Assembly Testers and Authorized Cross-Connection Control Specialists must register with the General Manager or his or her designee.
- b) Companies must maintain general liability insurance in full force and effect, at company expense, for all activities performed by their testers and specialists. Such insurance must include coverage for bodily injury, personal injury, including death resulting therefrom, and property damage insurance, with limits not less than \$1 million each occurrence combined single limit. The City, its officers, and employees must be named as additional insureds under the policy, and a cross-liability clause must be attached. The insurance must provide 10-day prior written notice of cancellation, non-renewal, or material change to the General Manager or his or her designee.
- c) Companies must provide the General Manager, or his or her designee, with the names of testers and cross-connection control specialists working for them and provide notification when a tester or specialist leaves the company.
- d) Companies must maintain a continuous record of the dates and locations of all activities performed in relation to backflow prevention (e.g., tests, repairs, inspections, surveys, cross-connection tests) for three years. The records must be made available at the request of the General Manager or his or her designee.

Rule 8.

Testing, Inspection and Repair Requirements for Backflow Preventers

- a) All testing, inspections, and repairs shall be at the sole expense of the property owner.
- b) Property owners shall inspect and/or test their backflow preventers at least annually and in any case within 30 days of receiving notice from the Water Quality Division to do so.
- c) Air gap separations shall be visually inspected annually by an Authorized Cross-Connection Control Specialist.

- d) Backflow prevention assemblies:
 - i. An Authorized Backflow Prevention Assembly Tester shall test all backflow prevention assemblies following installation, repair, or re-location and at least annually thereafter. The General Manager may require more frequent testing if determined to be necessary.
 - ii. All backflow prevention assemblies that fail the field test shall be repaired, overhauled or replaced, and immediately retested before being placed into service. If an assembly cannot be repaired or otherwise made functional on the same day as the initial test, the tester must enter the test data into CCAMS by close of business of the day of the initial test.

Rule 9.

Backflow Tag Sales

- a) Backflow tags are available for sale from the Customer Services Bureau of the SFPUC, located on the first floor at 525 Golden Gate Avenue, San Francisco. Tags may be obtained in person or by mail. Payments may be made by cash (in person only), company or cashier's check (no personal checks), and money order. Checks should be made out to SF Water Department.
- b) Tags may be purchased by Authorized Backflow Prevention Assembly Testers, Authorized Cross-Connection Control Specialists, test company supervisors, and Authorized Representatives of testing companies. Companies may designate up to two people to act as Authorized Representatives for the purchase of backflow tags on behalf of the company.
- c) To purchase tags in person, the buyer must provide official identification (e.g., driver's license), name of the company being represented, and payment.
- d) To purchase tags by mail, buyers must go online to sfwater.org/backflow, scroll down to "Backflow Prevention Assembly Testers and Test Companies," and click on "Request to Purchase Backflow Tags." Buyers must fill out the PDF form, print it out, and mail it with payment to Customer Services Bureau, SFPUC, 525 Golden Gate Avenue, 2nd Floor, San Francisco, CA 94102. The bureau will mail the tags by certified mail within five business days of receiving the request.
- e) The cost of backflow tags is set forth in the SFPUC's *Rates Schedules & Fees for Water Power and Sewer Service*.

Rule 10.**Inspection and Testing Requirements for Dual-Plumbed Systems**

- a) All inspections, testing and repairs shall be at the sole expense of the property owner.
- b) Before being put into service, all systems must pass an initial shutdown test.
- c) After the initial shutdown test, dual-plumbed systems shall be tested for cross-connections as set forth in Table 2 below. At the discretion of the General Manager, a pressure differential test might be accepted in lieu of a shutdown test.

Table 2: Inspection and Testing Requirements for Auxiliary Water Supplies

Type	Initial Inspection and Shutdown Test	Annual Inspection ¹	Subsequent Cross-Connection Test
Municipally supplied recycled water	Yes	Yes	Every four years ¹ (need not be shutdown test)
Blackwater	Yes	No ²	Every four years ¹ (need not be shutdown test)
Other auxiliary supply (graywater, rainwater, groundwater, etc.)	Yes	No ²	No

Notes for Table 2:

¹ The General Manager may reduce testing frequency if the property owner can document to the General Manager's satisfaction that there have been no plumbing changes in the dual-plumbed system.

² Although the Cross-Connection Control Program does not require annual inspections, all operators of auxiliary water systems in the City are subject to monitoring and reporting requirements under Article 12C of the San Francisco Health Code, which is administered by the SFDPH.

- d) All shutdown or other cross-connection tests must be administered by an Authorized Cross-Connection Control Specialist in the presence of a representative of the Water Quality Division and the water user supervisor for the property. Tests must be conducted in accordance with the City's Manual for Cross-Connection Control, available at sfwater.org/backflow. A written report documenting the test must be submitted to the Water Quality Division within five days following completion of the test.
- e) In addition to tests every four years, a cross-connection test is always required in these circumstances:
 - i. When there is material reason to believe that the separation between the potable and non-potable systems has been compromised, for example, based on a visual inspection or following complaints.
 - ii. After remediation of a discovered cross-connection.

Section G

- f) Fees for cross-connection tests are set forth in the SFPUC's Rates Schedules & Fees for Water Power and Sewer Service. Payment must be made to the Customer Services Bureau, located on the first floor at 525 Golden Gate Avenue, San Francisco (in person or by mail). Payments may be made by cash (in person only), company or cashier's check (no personal checks), and money order. Checks should be made out to SF Water Department. Payments by mail should be sent to Customer Services Bureau, SFPUC, 525 Golden Gate Avenue, 2nd Floor, San Francisco, CA 94102. Payment must be received at least 30 days before the desired test date.
- g) Property owners shall inspect and/or test their dual-plumbed systems within 30 days of receiving a notice from the General Manager to do so.
- h) Any changes made to auxiliary water systems must be done under permit from the San Francisco Department of Building Inspection and in conformance with the requirements of San Francisco Health Code Article 12C and the California Plumbing Code. If the degree of hazard changes (e.g., a blackwater treatment system is installed), the required level of protection must conform with Table 1, and the Water Quality Division must be informed at least 30 days before the change is made.
- i) Recordkeeping. Property owners shall maintain cross-connection testing for their properties in accordance with these rules and regulations for a period of three years. The records shall be made available at the request of the General Manager.

Rule 11.

Emergency Cross-Connection Response Plan for Dual-Plumbed Systems

- a) All emergency response activities and repairs shall be at the sole expense of the property owner.
- b) The customer and property owner shall immediately notify the Water Quality Division upon discovery of the incident.
- c) The customer and property owner shall submit written notification within 24 hours of the incident and include an explanation of the nature of the cross-connection, date and time discovered, and the contact information of the person reporting the cross-connection.
- d) The customer and property owner shall provide potable drinking water for building occupants, if applicable, until the potable water system is deemed safe to drink.
- e) The customer and property owner shall shut down the auxiliary water piping to the building and drain the auxiliary water riser.
- f) The General Manager shall shut down the potable water supply at the point of connection.
- g) The customer and property owner shall locate and disconnect the cross-connection.
- h) After the cross-connection has been remediated, the customer and property owner shall conduct a visual inspection and cross-connection test, as described in Rule 10.

Section G

- i) The property's internal potable water system shall be disinfected in accordance with the California Plumbing Code, Chapter 16A, section 1620A.
- j) After 24 hours, the customer and property owner shall flush the building's potable water system and conduct a standard bacteriological test.
- k) After approval by the General Manager, the customer and property owner may recharge the property's internal potable water system.

Rule 12.

Emergency Cross-Connection Response Plan for Standard-Plumbed Systems

- a) All emergency response activities and repairs on the customer side of the water meter shall be at the sole expense of the property owner.
- b) The customer or property owner shall immediately notify the Water Quality Division upon discovery of a cross-connection incident and describe the nature of the cross-connection, date and time discovered, and the contact information of the person reporting the cross-connection.
- c) The customer or property owner shall provide potable drinking water for building occupants, if applicable, until the potable water system is deemed safe to drink.
- d) The customer or property owner shall locate and disconnect the cross-connection.
- e) The property's internal potable water system shall be disinfected in accordance with the California Plumbing Code, section 609.9.
- f) After 24 hours, the customer or property owner shall flush the building's potable water system and conduct a standard bacteriological test.
- g) After approval by the General Manager, water service will be restored, if necessary.

Rule 13.

Water User Supervisor

- a) For properties that have a multi-piping system that conveys various types of fluids, some of which may be hazardous, and where changes in the piping system are frequently made, the Water Quality Division may require the property owner to designate a water user supervisor.
- b) The water user supervisor shall be responsible for the avoidance of cross-connections during the installation, operation and maintenance of the water user's pipelines and equipment.
- c) If a cross-connection is discovered, the water user supervisor shall follow the emergency response plan described in Rule 11 or 12, as applicable.

Rule 14.

Inspections and Notices

- a) Upon notification by the General Manager, a property owner shall eliminate any unprotected cross-connections within seven calendar days, unless the General Manager authorizes an alternate deadline for remediation.
- b) If a property owner refuses or fails to eliminate a cross-connection within the allotted time, the General Manager may proceed with enforcement activities in accordance with Rule 15 of these rules and regulations.
- c) Right of Entry: The General Manager may inspect any property to determine compliance with the provisions of San Francisco Health Code Article 12A and applicable laws and regulations. The right of entry may be exercised during normal business hours in the absence of advance notice.
- d) High Risk of Hazard: Whenever an existing or potential unprotected cross-connection poses a high risk of hazard to the public water system and requires immediate abatement, as determined by the General Manager, the General Manager may immediately terminate water service without initial or final notification until the cross-connection has been eliminated and necessary payments have been made, including but not limited to fines in accordance with Rule 15 of these rules and regulations and service shut-off and service turn-on fees.

Rule 15.

Enforcement, Violations and Penalties

- a) If any rule is violated, the General Manager may issue written notices establishing a deadline for compliance and modify or terminate service.
- b) Modification or termination of water service: The General Manager shall implement one or more of the following alternatives and notify the customer or property owner.
 - i. Install a flow restrictor on all non-fire service lines to the property to minimize the backflow hazards until they have been corrected.
 - ii. Disconnect the noncompliant water service(s) until the cross-connection has been eliminated.
 - iii. If the noncompliant water service is a fire service, disconnect the associated domestic water service until the cross-connection has been eliminated.
 - iv. Any other action deemed necessary by the General Manager to protect the public water system.

Section G

- c) Any customer or property owner who violates any provision of San Francisco Health Code Article 12A or any rule or regulation adopted pursuant to Article 12A may be subject to an administrative penalty of up to \$1,000 per violation per day. Citations will be served to both the customer and the property owner in a manner consistent with Chapter 100 of the San Francisco Administrative Code.
- d) Fees and penalties related to this rule—including but not limited to posting fees, service shut-off and service turn-on fees, and penalties for violations—will be applied to the customer's water bill.
- e) The General Manager may recover any costs and fees, including but not limited to attorney fees, for enforcement initiated through and authorized under San Francisco Health Code Article 12A.
- f) Parties may have the right to petition the Superior Court of San Francisco for judicial review or appropriate relief pursuant to Section 1094.6 of the California Code of Civil Procedures if they disagree with the final decision of the General Manager to impose administrative penalties, as provided in San Francisco Health Code Article 12A.

Rule 16. Variances

Any request for variance shall be made in writing and submitted to the General Manager. The General Manager may grant variances from specific requirements of these rules and regulations for existing buildings or facilities on a limited basis provided that the variances do not pose a threat to the public water system. All variances are subject to additional mitigation that the property owner/customer will be required to implement and maintain.

