

**APPENDIX E
TO
SAN FRANCISCO INTERNATIONAL AIRPORT
RULES AND REGULATIONS**

POTABLE WATER SERVICE AND SUPPLY

I. CROSS CONNECTION CONTROL AND BACKFLOW PREVENTION PROGRAM

A. PURPOSE AND AUTHORITY

The purpose of this Cross Connection and Backflow Prevention Program (“Program”) is to establish regulations for backflow prevention, consistent with California Health and Safety Code sections 116800 and 116805 and Title 17 California Code of Regulations section 7584 *et seq.* and complementary to the County of San Mateo’s backflow prevention program (Chapter 4.72 San Mateo County Code of Ordinances), to protect the San Francisco International Airport’s potable water supply for the benefit of the Airport’s passengers, tenants, visitors and employees.

The San Francisco Airport Commission (“Airport Commission”) is responsible for the management, supervision, operation, maintenance and control of the San Francisco International Airport (“Airport” or “SFIA”). The Airport is a retail water customer of the San Francisco Public Utilities Commission and purchases water for distribution through the SFIA Water System (“SFIAWS”) to all users at the Airport. The SFIAWS operates under a permit issued by the State of California Water Resources Control Board, Division of Drinking Water.

In order to protect the potable water system at SFIA and provide the best quality potable water, the Airport Commission has determined that, in addition to other Airport rules and regulations addressing water use, water conservation and water metering, adoption of the Program as part of Rule 8.2 of the Airport Commission’s Rules and Regulation is prudent and necessary. The elements of the cross connection control and backflow prevention requirements, and the relationship of the Program to San Mateo County’s backflow prevention program, is described below.

B. RESPONSIBILITY FOR ADMINISTRATION

The Program generally shall be administered and enforced by the Airport’s Building Inspection and Code Enforcement (“BICE”), Plumbing Inspector and the Water Service Inspector. San Mateo County Environmental Health (“SMCEH”) has agreed to keep a record of all non-Airport Commission water users at SFIA, notify the water users when the required yearly testing is due and provide a current list of San Mateo County-certified Backflow Prevention Assembly Testers with the notification. SMCEH will evaluate for any inadequacies or follow up the testing results that are submitted to SMCEH by the water users as provided under this Program, update assembly records based upon testing results, notify water users of any failure or need for repair or replacement and follow up with any delinquent reporting of test results. The Airport Water Service Inspector and SMCEH will coordinate with respect to progressive enforcement of water users for non-compliance. Certain other actions relating to the Program, including but not necessarily limited to, inspections of and consultation regarding backflow prevention assemblies may be undertaken by SMCEH at the request of SFIA.

C. SCOPE AND APPLICATION

Backflow prevention requirements imposed by Title 17, California Code of Regulations are incorporated into the Program. The Program shall apply to all facilities at SFIA and to all SFIA tenants, subtenants, service providers, contractors, subcontractors and SFIA personnel, in addition to any applicable requirements of the County of San Mateo.

D. PROTECTION OF WATER SUPPLY

Backflow prevention devices shall be installed where internal cross connections exist unless cross connections are abated to the satisfaction of the Airport Plumbing Inspector and Airport Water Service Inspector.

E. DEFINITIONS

(1) "Air Gap (AG)" is a physical separation between a supply pipe and a receiving vessel. The air gap shall be at least double the diameter of the supply pipe, measured vertically above the flood line of the vessel, and in no case may be less than one (1) inch.

(2) "Certified tester" means a certified backflow prevention assembly tester certified by SMCEH.

(3) "Cross-Connection" means an unprotected actual or potential connection between the SFIAWS and any source or system containing unapproved water or a substance that is not or cannot be approved as safe, wholesome and potable. By-pass arrangements, jumper connections, removable sections, swivel or changeover assemblies, or other assemblies through which backflow could occur, shall be considered a cross-connection.

(4) "Double Check Valve Assembly (DC)" shall have the same meaning as defined in Title 17 California Code of Regulations Section 7583.

(5) "Double Check Detector Assembly (DCDA)" shall have the same meaning as defined in the most recent edition of the University of Southern California, Foundation for Cross-Connection Control and Hydraulic Research, Manual of Cross-Connection Control.

(6) "Graywater" means untreated wastewater that has not been contaminated by any toilet discharge, has not been affected by infectious, contaminated or unhealthy bodily wastes, and does not present a threat from contamination by unhealthy processing, manufacturing or operating wastes.

(7) "Inspection Tag" means a current calendar year backflow tag purchased from SMCEH in accordance with San Mateo County Ordinance Code requirements.

(8) "Lead Free" shall have the same meaning as defined in California Health and Safety Code Section 116875.

(9) "Pressure Vacuum Breaker Backsiphonage Prevention Assembly (PVB)" shall have the same meaning as defined in the most recent edition of the University of Southern California, Foundation for Cross-Connection Control and Hydraulic Research, Manual of Cross-Connection Control.

(10) "Rainwater Harvesting or Collecting" is the accumulation and deposition of rainwater for reuse (irrigation), on site rather than allowing it to runoff. Commercial applications for rainwater harvesting are unique for each application. For this reason, each rainwater

harvesting system proposed for use at each SFIA site must be engineered and site specific. [Note: All components of the system not addressed in this Program shall meet all applicable Uniform Plumbing Code requirements.]

(11) “Reclaimed Water” means water which, as a result of treatment of waste, is suitable for uses other than potable water.

(12) “Recycled Water” means water which, as a result of treatment of waste, is suitable for a direct beneficial use of a controlled use that would not otherwise occur and is, therefore, considered a valuable resource.

(13) “Reduced Pressure Principle backflow Prevention Assembly (RP)” shall have the same meaning as defined in the most recent edition of the University of Southern California, Foundation for Cross-Connection Control and Hydraulic Research, Manual of Cross-Connection Control.

(14) “Reduced Pressure Principle Detector Assembly (RPDA)” shall have the same meaning as defined in the most recent edition of the University of Southern California, Foundation for Cross-Connection Control and Hydraulic Research, Manual of Cross-Connection Control.

(15) “Spill-Resistant Pressure Vacuum Breaker Principle backsiphonage Prevention Assembly (SVB)” shall have the same meaning as defined in the most recent edition of the University of Southern California, Foundation for Cross-Connection Control and Hydraulic Research, Manual of Cross-Connection Control.

(16) “User Supervisor” means a supervisor who is trained and holds a Cross Connection Control Specialist certificate from CA-NV AWWA or equivalent certification as determined by SMCEH. In the case of the Airport, the User Supervisor is the Airport Plumbing Inspector or the Airport Water Service Inspector who are responsible for the implementation, maintenance and enforcement within the Airport and SFIAWS.

(17) “Water Supplier” shall have the same meaning as defined in Title 17, California Code of Regulations, Section 7583.

(18) “Water User” shall have the same meaning as defined in Title 17, California Code of Regulations, Section 7583.

F. MAINTENANCE OF CROSS CONNECTION PROHIBITED

It is unlawful and prohibited under the Program to have, keep, maintain or install a cross connection at the Airport.

G. CORRECTION OF CROSS-CONNECTIONS

Any assembly installed for the purpose of eliminating a cross connection shall conform to State law and this Program. The Airport will only accept for use backflow prevention assemblies tested and approved for use by University of Southern California, Foundation for Cross-Connection Control and Hydraulic Research (“USC Foundation”), or equivalent certification as determined and approved by SMCEH, at or before the time of installation of the assemblies. Assemblies shall be installed as indicated by USC Foundation, or other certification entity as determined and approved by SMCEH, and only with approval by the Airport Water Service Inspector.

H. TYPE OF BACKFLOW PROTECTION REQUIRED

The following table identifies the minimum type of backflow prevention required to be installed for uses at SFIA.

TYPE OF BACKFLOW PROTECTION REQUIRED/DEGREE OF HAZARD	MINIMUM TYPE OF BACKFLOW PREVENTION*
Sewage and Hazardous Substances	
(1) Premises where the public water supply is used to supplement the recycled water supply	AG
(2) Premises where there are wastewater pumping and/or treatment plants and there is no interconnection with the potable water system	AG
(3) Premises where recycled water is used and there is no interconnection with the potable water system	AG
(4) Premises where hazardous substances are handled in any manner in which the substances may enter the potable water system. This does not include a single lift pump.	AG
(5) Premises where there are irrigation systems into which fertilizers, herbicide or pesticides are or can be injected.	RP
Auxiliary Water Supplies	
(1) Premises where there is an unapproved auxiliary water supply which is interconnected with the public water system.	AG
(2) Premises where there is an unapproved auxiliary water supply and there are no interconnects with the public water system.	RP
Fire Protection Systems	
(1) Premises where the fire system is directly supplied from the public water system and there is an unapproved auxiliary water supply on to the premise (not interconnected)	DCDA
(2) Premises where the fire system is supplied from the public water system and interconnected with an approved auxiliary water supply.	AG
(3) Premises where the fire system is supplied from the public water system and where either elevated storage tanks or fire pumps, which take suction from the private reservoirs of tanks, are used.	DCDA
Premises where entry is restricted so that inspections for cross-connections cannot be made with sufficient frequency or at sufficiently short notice to assure that cross connections do not exist.	RP

Premises where there is a history of cross-connections being established or re-established.	RP
* An RP and/or DC may be installed in lieu of an AG or RP with approval from SMCEH and the Airport.	

I. TESTING OF BACKFLOW PREVENTION ASSEMBLIES

All testable backflow prevention assemblies, including but not limited to Double Check valve assemblies (DC), Double Check Detector Assembly (DCDA), Reduced Pressure Principle backflow prevention assembly (RP), Reduced Pressure principle Detector Assembly (RPDA), Pressure Vacuum Breaker backsiphonage prevention assemblies (PVB), and Spill-resistant Pressure Vacuum Breaker backsiphonage prevention assemblies (SVB), that have been installed to meet requirements of Title 17 of the California Code of Regulations and the Program shall be tested at the time of initial installation and once each year thereafter. The annual test shall occur within 30 days of the initial established anniversary date for the assembly, but never more than once every 395 days. Testing of any new or replacement assemblies shall be conducted only by a person certified as provided Section J. below. Records of the test(s) shall be submitted to SMCEH, with a copy to the Airport Water Service Inspector, within ten (10) days after the test is conducted. Test records shall be submitted on forms provided by, or mechanism specified by SMCEH, or on a similar form that includes the same equivalent data as determined by SMCEH.

Testable backflow prevention assemblies shall be tested using current USC Foundation test procedures. When a backflow prevention assembly is inspected and has passed the testing process, the certified tester shall immediately affix a numbered inspection tag to the assembly. When a backflow prevention assembly has failed the testing process, the certified tester shall affix a testing inspection tag that identifies the test failure. Records of any failed assembly test shall be submitted within ten (10) days to SMCEH with a copy to the Airport Water Inspector. The inspection tag identifying the test failure shall not be removed until the assembly is repaired and has passed a new testing process, and a new numbered inspection tag has been affixed to the assembly. Pursuant to California Health and Safety Code section 116875, any assembly that has failed the test and is not “lead free” must be repaired with approved “lead free” parts unless specifically exempted under section 116875.

J. CERTIFIED TESTERS

No person shall test or make reports on backflow prevention assemblies at SFIA unless he or she possesses a current certification issued by SMCEH in accordance with the requirements of Chapter 4.72, Section 4.72.080 of the San Mateo County Code of Ordinances. A copy of the certification or other documentation acceptable to the Airport Water Inspector demonstrating current certification from SMCEH shall be submitted to the Airport Water Inspector prior to conducting any tests or preparing any report on backflow prevention assemblies. Certified testers are solely responsible to comply with Airport and any applicable municipal requirements for additional permits or licenses (i.e., local business license, plumbing permit, etc.) to test or repair backflow prevention assemblies with the Airport.

K. DUTY TO MAINTAIN BACKFLOW PREVENTION ASSEMBLIES

All backflow prevention assemblies required by Title 17 of the California Code of Regulations and the Airport shall be in good repair. Assemblies found not to be in good repair, as determined by either SMCEH or the Airport, shall be repaired as soon as possible but within 72 hours of discovery unless an extended period is granted by the Airport. Any extension of the 72 hour period shall be at the sole discretion of the Airport. Once assemblies are repaired, the assemblies must be re-tested as provided in section 7 of the Program. A report shall be submitted to SMCEH with a copy to the Airport Water Inspector within ten (10) days after such test. If the tenant or contractor does not have the device repaired, the Airport shall have the right to repair or replace the assemblies and the tenant or contractor shall reimburse the Airport for the Time and Materials costs that the Airport has incurred.

L. LOCAL LAWS AND CODES

Nothing in this Program shall exempt any person from compliance with applicable requirements of any SFIA or other local laws, codes, rules and regulations, including but not limited to plumbing or business codes.

M. AUTHORITY TO INSPECT

Facilities may be subject to inspection by the California Water Resources Control Board, and shall be available for such inspections. All facilities also shall be available for inspection by the Airport or SMCEH, if requested by the Airport, to determine if protection of the public water supply is required and/or is threatened. The Airport Water Service Inspector shall determine the frequency of inspection as deemed necessary by the degree of hazard presented at each facility or facility type and may do so in consultation with SMCEH. Inspections will be performed by the Airport Water Service Inspector, except in areas where other BICE personnel has been so designated or the Airport requests SMCEH to conduct or to assist in conducting the inspection.

N. ENFORCEMENT

(a) Any person who violates any provision of this Program, or bypasses or renders inoperative any backflow prevention assembly installed under the provisions of this Program and SFIA regulations may, in addition to other penalties provided by law and the Airport's Rules and Regulations, have the potable water service to their facility discontinued. Water service shall not be reinstated until such violations have been corrected as determined by the Airport Plumbing Inspector or Airport Water Service Inspector.

(b) Failure to comply with the provisions of this Program may result in administrative fines under Rule 14 of the Airport Commission Rules and Regulations.

(c) In addition to administrative fines that may be imposed under Rule 14 as stated above, pursuant to California Health and Safety Code section 116820, any person who violates any provision of Article 2 of Chapter 5 of Part 12 of Division 104 of the California Health and Safety Code or who violates any order of SMCEH to the extent SMCEH has jurisdiction may be subject to criminal fines or imprisonment.

II. WATER METERS

A. APPLICATION

The tenant or authorized agent of the Airport facility to be served potable water shall fill out the application form provided by the Airport 30 days prior to the physical connection of the service

pipe to the tenant's or Airport-operated facility pipe. Information provided to the Airport shall include the desired location, size of service pipe and fixture count, and estimated required gallons per minute so that the Airport can properly size the water meter.

B. GENERAL

(1) All water acquired from the SFIAWS must be metered.

(2) The Airport reserves the right to determine the size and location of the water meter.

(3) Each individual tenant must have its own meter unless approved by the Airport Water Service Inspector.

(4) Service connections are to be installed by the tenant's contractor, and SFIA shall bear no cost for the service connection.

(5) Service charges are based upon meter size and water use and sewer charge rates as established by the Airport. Tenants pay service charges in accordance with the terms of their lease.

(6) Water meters shall be provided by the Airport, unless otherwise authorized by the Airport, and installed by the tenant's contractor. If a water meter is not provided by the Airport, then it must meet the following requirements:

(a) The meter must be made from Lead Free Bronze Alloy (5NSF/ANSI certified and compliant).

(b) The meter must be AMR/AMI compatible (compatible with future SFIA system).

(c) Water meters should register in cubic feet. SFIA reads and bills in 100 cubic feet) (1CCF=100 cubic feet/748 gallons).

(d) The meter must have a maximum operating pressure of at least 150 psi.

(c) Any meter provided by the tenant with Airport approval must be serviceable by the SFPUC's Meter Shop.

(d) The meter must meet all American Water Works Association (AWWA) specifications in the M-6 Manual.

C. INSTALLATION GUIDELINES

(1) Water meters shall be installed as close to the water supply as possible.

(2) Water meters shall be installed a minimum of 18 inches but no more than 60 inches from the floor. Meters may be installed below ground, in a meter box or vault, with approval of the Airport Water Service Inspector and/or Airport Plumbing Inspector.

(3) All meters must be readily accessible for reading and general maintenance. There shall be no need for ladders, special equipment, specialty tools, or the requirement to move any items or fixtures to access the meter.

(4) Services that are larger than two (2) inches shall have a bypass so that SFIA can service the meter without affecting the tenant. The bypass will include the piping and a lockable valve.

(a) One (1) inch and smaller meters require a minimum clearance of two (2) feet of working space on three (3) sides of the meter.

(b) One and one half (1 1/2) inch and larger meters require a minimum clearance of three (3) feet of working space on three sides of the meter.

(c) Three (3) inch and larger meters require a permanent strainer installed upstream of the meter.

(d) All meters will be installed in the following order:
Lockable Valve = Meter Spud = Meter = Meter Spud = Lockable Valve
(Upstream) (Meter Union) (Meter Union) (Downstream)

III. TEMPORARY WATER SUPPLY (CONSTRUCTION/HYDRANT METER)

Hydrant meters will be issued to contractors for construction water following submission of a completed application and deposit. Any use of a hydrant meter will require a minimum of a reduced pressure type backflow prevention (RP) device to protect the SFIAWS. Hydrants should be opened and closed slowly with a hydrant spanner wrench (NO PIPE WRENCHES). RPs are to be tested and tagged after being put into service. If the device is removed daily, it must be tested every day after it is used. Pressure Regulating Valves (PRV) are suggested for use in some areas of the Airport, as pressures may vary from 80 to 165 psi. Damage to the meter or the hydrant caused by the contractor may result in payment of time and materials to the Airport, as set forth in the Hydrant Permit that will be issued to the contractor.

IV. PROTECTION OF WATER SUPPLY

Services and meters shall conform to all Airport Rules and Regulations and all legal requirements of the State of California Water Resources Control Board. Backflow prevention devices shall be installed where internal cross connections exist unless cross connections are abated to the satisfaction of the Airport Plumbing Inspector and Airport Water Service Inspector.

V. PRESSURE AND SUPPLY

The Airport cannot and does not guarantee pressure or continuous water supply nor will it accept responsibility at any time for the maintenance of pressure on its lines for increases or decreases in pressure. The Airport reserves its right at any and all times without notice to shut off water for the purpose of making repairs, extensions, alterations or improvements and neither the Airport nor its officers, employees or agents shall have any liability for cessation in whole or part of water pressure or water supply. Customers who depend upon a continuous and uninterrupted supply shall provide emergency storage, oversize piping, tanks, pressure regulators, check valves or other means for continuous or adequate supply or to safeguard their facility.

VI. WATER CONSERVATION

All tenants, subtenants, service providers, permittees, and contractors shall take measures to reduce water usage in their operations at the Airport and shall comply with all water conservation measures instituted by the Airport Director. No tenants, subtenants, service

provider, permittee, or contractor shall waste or inefficiently use waters in their airport operations.