

State Water Resources Control Board

Division of Drinking Water

August 5, 2016

Kevin Day
Staff Services Manager
California Building Standards Commission
916-263-0355

Subject: SWRCB Division of Drinking Water Comments to Draft Changes to the 2016 California Plumbing Code per AB 2282

Dear Kevin,

The Division of Drinking Water's (DDW) Recycled Water Unit has been involved in subcommittee meetings regarding the proposed changes to the 2016 version of the California Plumbing Code (CPC) required by AB 2282. On July 28, 2016 DDW attended three subcommittee meetings. The following are the comments DDW has regarding the draft proposed changes.

General Comments

1. Parts of AB 2282, now H&SC sections 17921.5(b)(3)(B) and 18940.6(b)(3)(B) state the need to conduct research that includes "potential indoor applications for recycled water, consistent with the recycled water use criteria specified in Chapter 3 (commencing with Section 60301.100) of Division 4 of Title 22...", in order to propose building standards.

Title 22, section 60313(b) states recycled water shall not be delivered for internal use at any individually-owned residential units (except condominiums per Water Code 16553).

Please provide DDW your research and how that research indicated that the installation of dual-plumbed piping for individually-owned residential units (other than condos) would be consistent with Title 22, since Title 22 prohibits the delivery of RW by RW agencies to individually-owned residential units. If research does not show consistency, then DDW requests that the CPC not require new individual residences to be internally plumbed with recycled water to be consistent with current Title 22 regulations.

2. A more comprehensive review needs to be done by DDW. Currently, a complete review could not be completed due to the three different draft proposed changes from three different organizations. Future review versions should be one document that includes the track changes to make it easier to see what is being proposed.

3. Attached are basic graywater and recycled water backflow device requirement scenarios requested during the subcommittee meetings. The drawings are only to illustrate possible scenarios.

Green Building Code Comments

4. Section 202, the definition should read:
Disinfected Tertiary Recycled Water: Filtered and subsequently disinfected wastewater that meets the approved method of treatment and minimum level of quality specified in California Code of Regulations, Title 22, Division 4, Chapter 3 for the purpose of direct beneficial use.
5. Section 220, the definition should read:
Recycled Water: For the purposes of this Code, sections 202-A5.305 recycled water means nonpotable water that meets State Water Quality Control Board's Division of Drinking Water statewide uniform criteria for disinfected tertiary recycled water.
6. Section 202, the definition should read:
Recycled Water System: A system designed to convey recycled water which is separated, by appropriate backflow protection devices per Title 17, from any potable water supply....
7. Section 5.305.1: Under Exceptions #3. The term "providing recycled water as potable water" is not clear. What does this mean?

CA Plumbing Code Comments

8. Is Section 206.0 necessary since "disinfected tertiary recycled water" is included in section 220.0?
9. Section 220.0 Recycled Water definition:
 - a. Should update CDPH with State Water Resources Control Board's Division of Drinking Water.
 - b. This definition is different than that used in the Green Building Code updates. All definitions should be consistent.
 - c. This definition uses the term "premises". This term should be defined also.
 - d. Title 22, section 60301.230 should be included as a reference in the definition.
10. Section 601.2, Exception 3 should not include individual residences. See general comment #1 above.
11. Section 602.3 only addresses cross connections between potable water and recycled water. Since the CPC is being updated to address various alternative water sources, this section should prohibit cross connections with all the various alternative water sources.
12. For Chapter 15 (sections 1501.10, 1501.10.1, 1501.10.2, etc) : If a building is using a mix of sources, for example, graywater, rainwater and tertiary recycled water, identification of piping, etc shall indicate recycled water. If a mix of graywater and rainwater are used, identification of piping, etc shall indicate gray water. This has been an issue with some projects using a mix of water. For example, one project labelled all piping as "harvested rainwater" despite also using recycled water and the County/DDW required the project change out all of the labelling.

13. Section 1501.3 states that HSC 17921.5 and 18940.6 are the correct authority for allowing local authorities to issue permits for RW systems, but no information about permitting is included in either section. CWC 14877.3 more clearly mentions graywater permitting.
14. Sections 1501.11, 1501.5 Exception, 1504.4, and 1602.4: should also refer to inspections and testing required in Title 22, section 60316.
15. Section 1501.11.2.2 Cross Connection Test: the temporary connection to the potable water supply will be required to have a backflow prevention device in accordance with Title 17 when connecting the potable water system to the graywater or recycled water system.
16. Section 1501.11.2.3: authority having jurisdiction is being removed from this section. While the authority may not need to be present for some of the items, the authority needs to be informed of the cross connection and be involved in the decision making. It is not clear from 1501.11.2.2 whether the authority is also required to be involved in 1501.11.2.3.
17. Section 1502.3 uses the term "reclaimed". Everywhere else in the Code, the term has been replaced with "recycled".
18. Sections 1502.3 and 1503.4 allow potable makeup water to a recycled water storage tank via an airgap, RP, or other device. Title 17 is the regulation that specifies what backflow prevention devices are allowed to protect public drinking water systems, not the CPC.
19. Section 1503.1 quotes Title 22, section 60303. This section in Title 22 does not have anything to do with what CPC section 1503.1 is addressing.
20. Section 1503.1.1 should not include individual residences. See general comment #1 above.
21. Section 1503.4: DDW does not require backflow prevention on recycled water systems in Title 17. However, on a case-by-case basis, for example, where chemicals are added to the recycled water, the recycled water purveyor, county and/or DDW may recommend or require backflow prevention on the recycled water connection.
22. Section 1503.11 allows recycled water pipes and potable water pipes in the same trench with only a 12-inch separation. Title 22, section 64572(b)(1) requires a 4-foot minimum separation and does not allow piping in the same trench. This requirements is intended for distribution piping, thus DDW does not enforce this requirement after the water meter. The CPC, section 1503.11 should either follow the requirements of Title 22 stated above for consistency or state that it only applies after the water meter on the private side of the water system.

If you have any questions regarding this letter, please contact Randy Barnard at (619) 525-4022 or via email at Randy.Barnard@waterboards.ca.gov.

Sincerely,



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Recycled Water Unit
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State Water Resources Control Board
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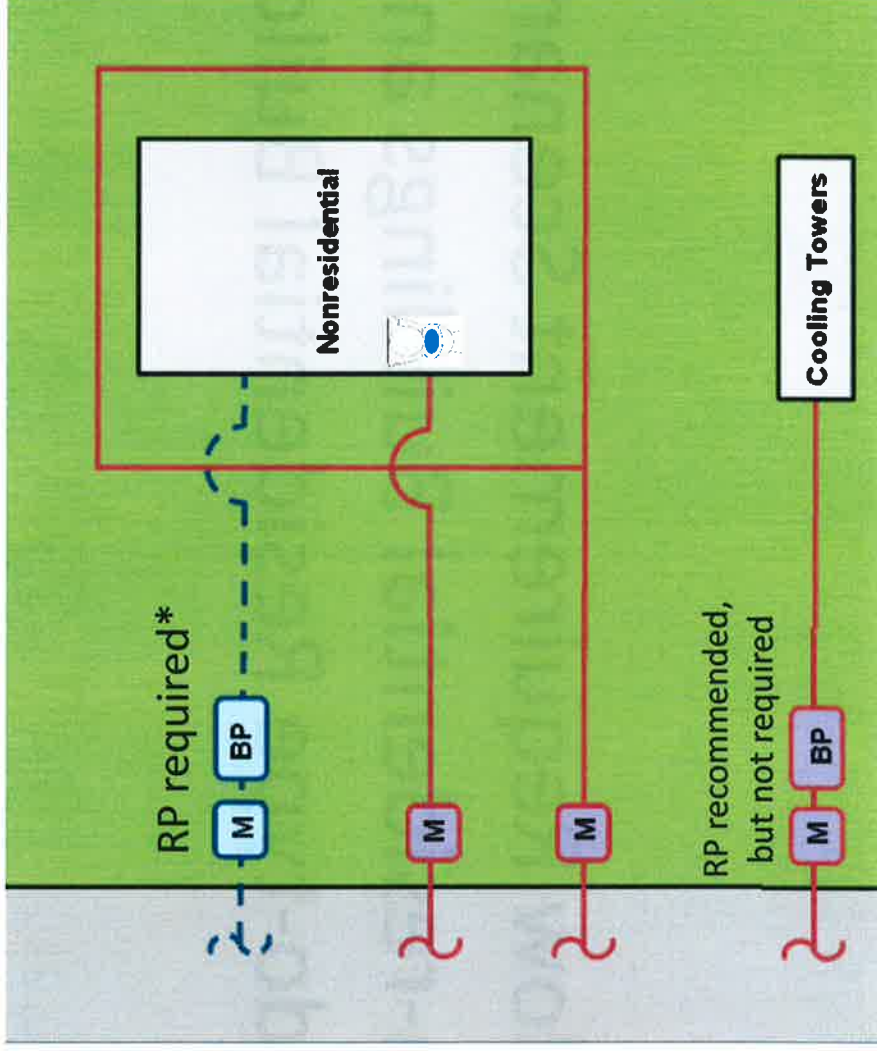
Enclosure:

(1) Basic graywater and recycled water backflow device scenarios requested during the meetings.

**Backflow Requirement Scenarios for
Non-residential Buildings and/or
Condo-type Residential Buildings**

Non-Residential or Residential Condo-type Building
Recycled Water not interconnected with Potable Water

Recycled water for: landscaping, internal building use and/or cooling towers
Recycled water supplied by: Off-site purveyor

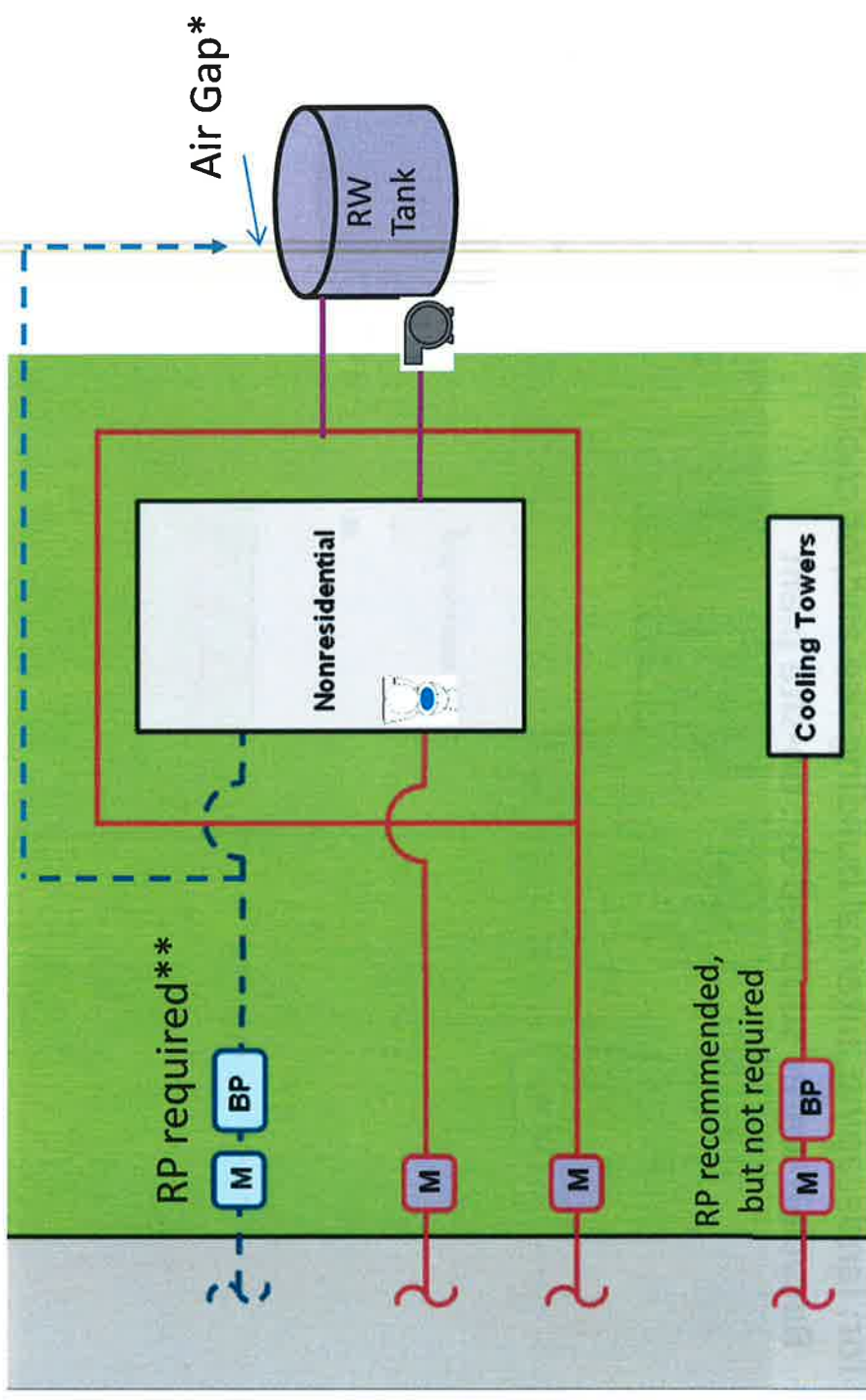


*Reference: Title 17, Table 1(c) Recycled Water: (2): Premises where recycled water is used and there is no interconnection with the potable water system. Minimum Type of Backflow Prevention: RP

Non-Residential or Residential Condo-type Building

Potable Water used to Supplement Recycled Water Supply

Recycled water for: landscaping, internal building use and/or cooling towers
Recycled water supplied by: Off-site purveyor



Reference: Title 17, Table 1(c) Recycled Water:

*(1) Premises where the public water system is used to supplement the recycled water supply. Minimum Type of Backflow Prevention: AG

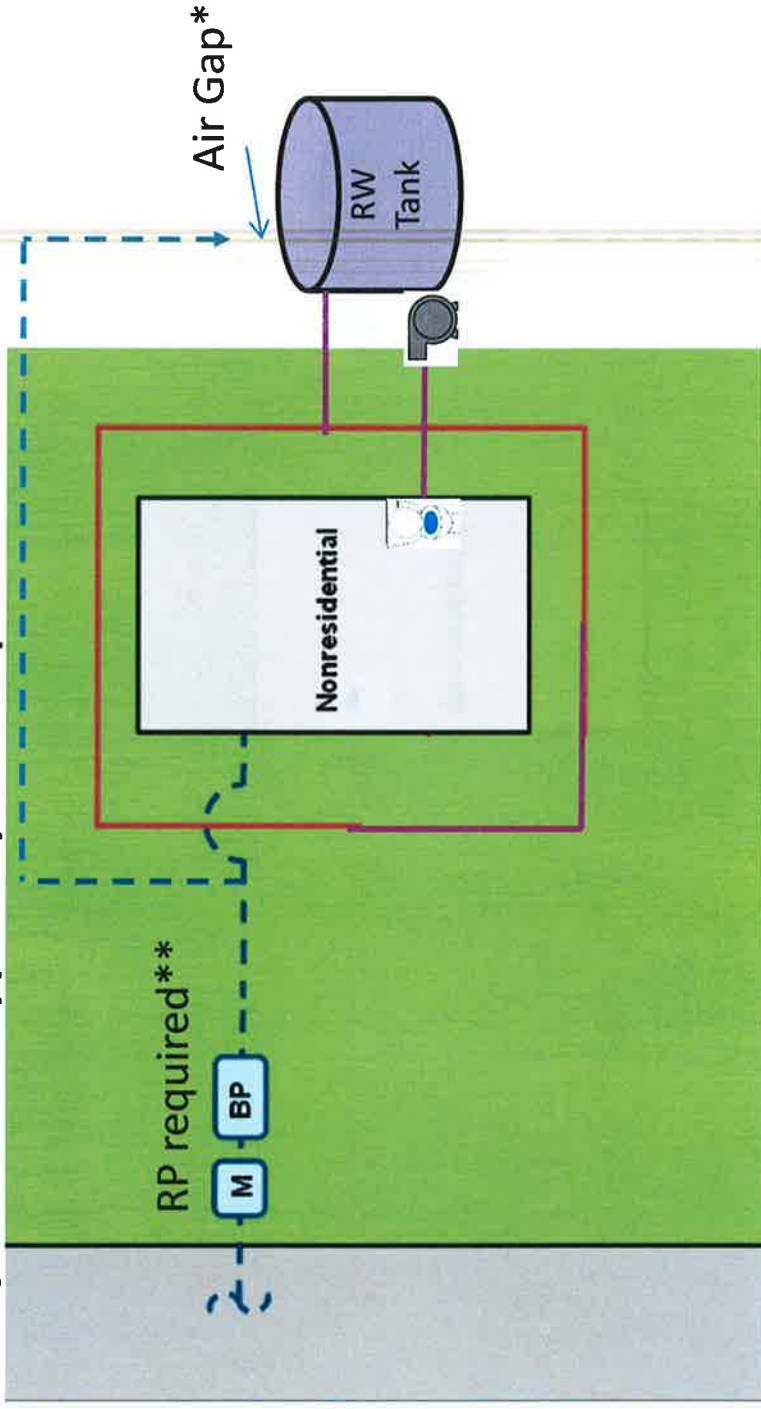
** (2) Premises where recycled water is used and there is no interconnection with the potable water system. Minimum Type of Backflow Prevention: RP

Non-Residential or Residential Condo-type Building

Potable Water used to Supplement Recycled Water Supply

Recycled water for: landscaping, internal building use and/or cooling towers

Recycled water supplied by: on-site plant



Reference: Title 17, Table 1(c) Recycled Water:

*(1) Premises where the public water system is used to supplement the recycled water supply. Minimum Type of Backflow Prevention: AG

** (2) Premises where recycled water is used and there is no interconnection with the potable water system. Minimum Type of Backflow Prevention: RP

Graywater

Graywater would currently fall under “auxiliary water supplies” in Title 17

TABLE 1
TYPE OF BACKFLOW PROTECTION REQUIRED

Degree of Hazard	Minimum Type of Backflow Prevention
(b) Auxiliary Water Supplies	
(1) Premises where there is an unapproved auxiliary water supply which is interconnected with the public water system. A RP or DC may be provided in lieu of an AG if approved by the health agency and water supplier	AG
(2) Premises where there is an unapproved auxiliary RP water supply and there are no interconnections with the public water system. A DC may be provided in lieu of a RP if approved by the health agency and water supplier.	RP

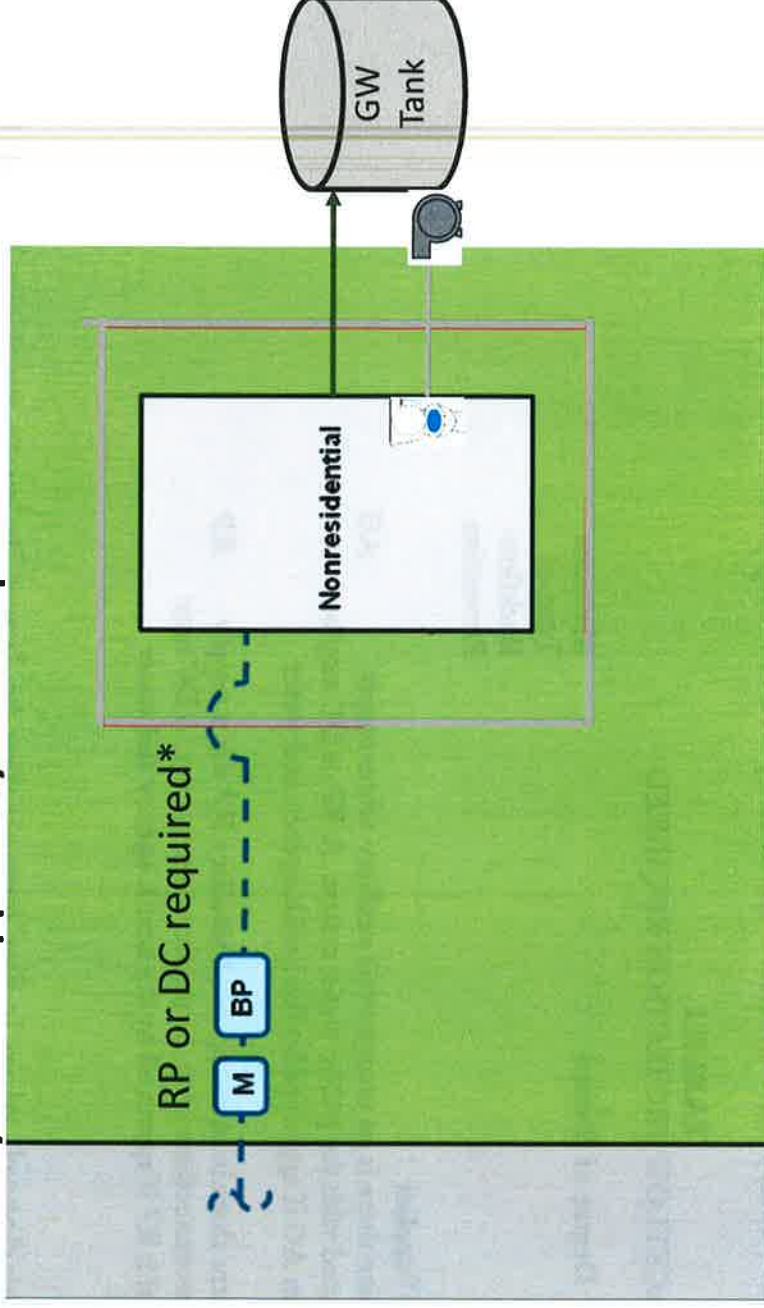
When Title 17 is updated, plan is for graywater to have its own section in the table. Would look similar to auxiliary water supply requirements, except a DC would not be allowed for graywater interconnected with potable water (reduction to a RP would still be allowed) in b(1) above.

Non-Residential or Residential Condo-type Building

Gray Water Supply Not Interconnected with Potable Water

Gray Water for: landscaping, internal building use and/or cooling towers

Gray water supplied by: on-site plant



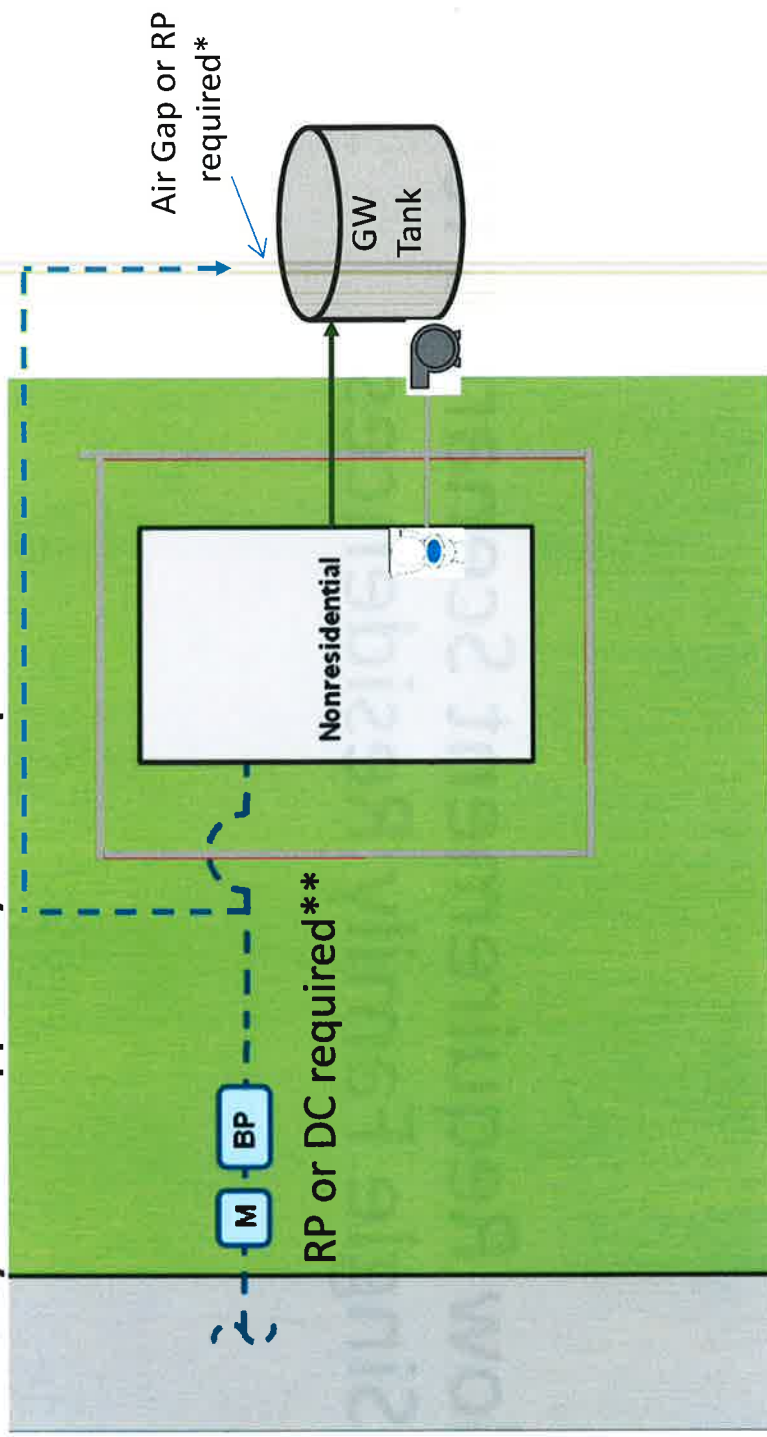
Reference: Title 17, Table 1(b) Auxiliary Water Supplies:

*(2) Premises where there is an unapproved auxiliary RP water supply and there are no interconnections with the public water system. Minimum Type of Backflow Prevention: RP. A DC may be provided in lieu of a RP if approved by the health agency and water supplier.

Note: "unapproved" means unapproved for use in a public drinking water supply

Non-Residential or Residential Condo-type Building
Potable Water used to Supplement Gray Water Supply

Gray Water for: landscaping, internal building use and/or cooling towers
Gray water supplied by: on-site plant



Reference: Title 17, Table 1(b) Auxiliary Water Supplies:

- *1) Premises where there is an unapproved auxiliary water supply which is interconnected with the public water system. Minimum Type of Backflow Prevention: AG. A RP ~~or DC~~ may be provided in lieu of an AG if approved by the health agency and water supplier. *(2) Premises where there is an unapproved auxiliary RP water supply and there are no interconnections with the public water system. Minimum Type of Backflow Prevention: RP. A DC may be provided in lieu of a RP if approved by the health agency and water supplier.

Note: "unapproved" means unapproved for use in a public drinking water supply

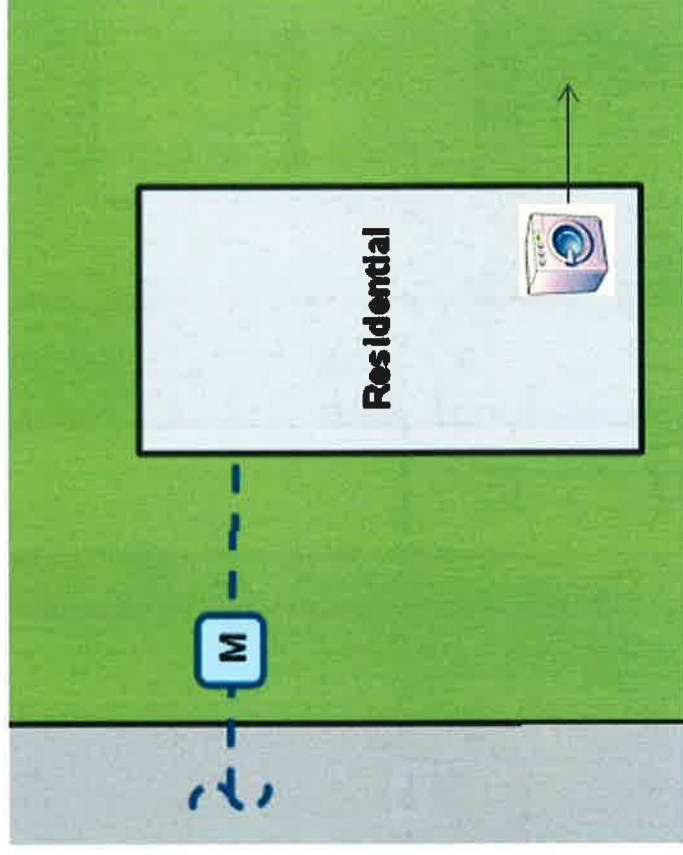
Backflow Requirement Scenarios for Single Family Residences

Single Family Residence

Gray water not interconnected with Potable Water

Gray water for: landscaping

Gray water supplied by: clothes washer



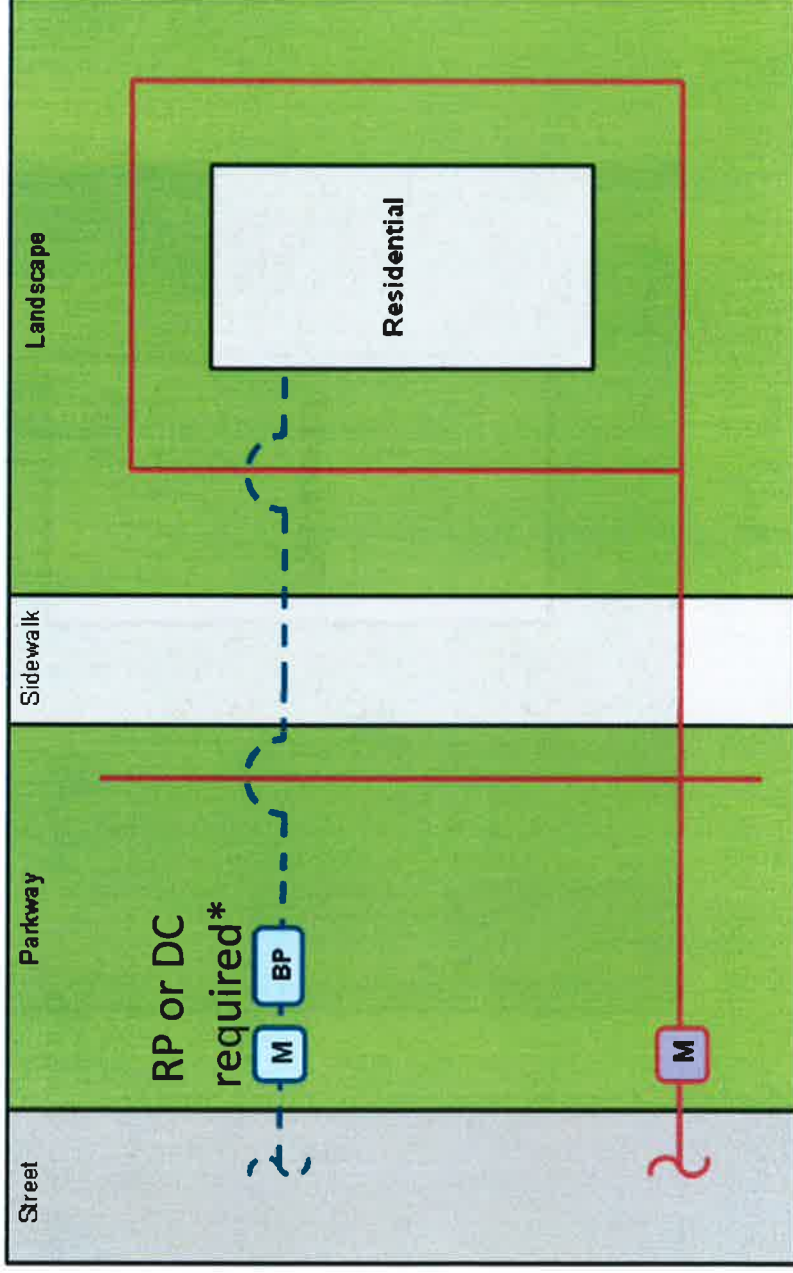
Backflow protection at meter generally considered to be not required based on plumbing code exception in 1601.3 and 1602.1.1

Single Family Residence

Recycled Water not interconnected with Potable Water

Recycled water for: landscaping

Recycled water supplied by: Off-site purveyor



*Reference: Title 17, Table 1(c) Recycled Water:

(2): Premises where recycled water is used and there is no interconnection with the potable water system. Minimum Type of Backflow Prevention: RP

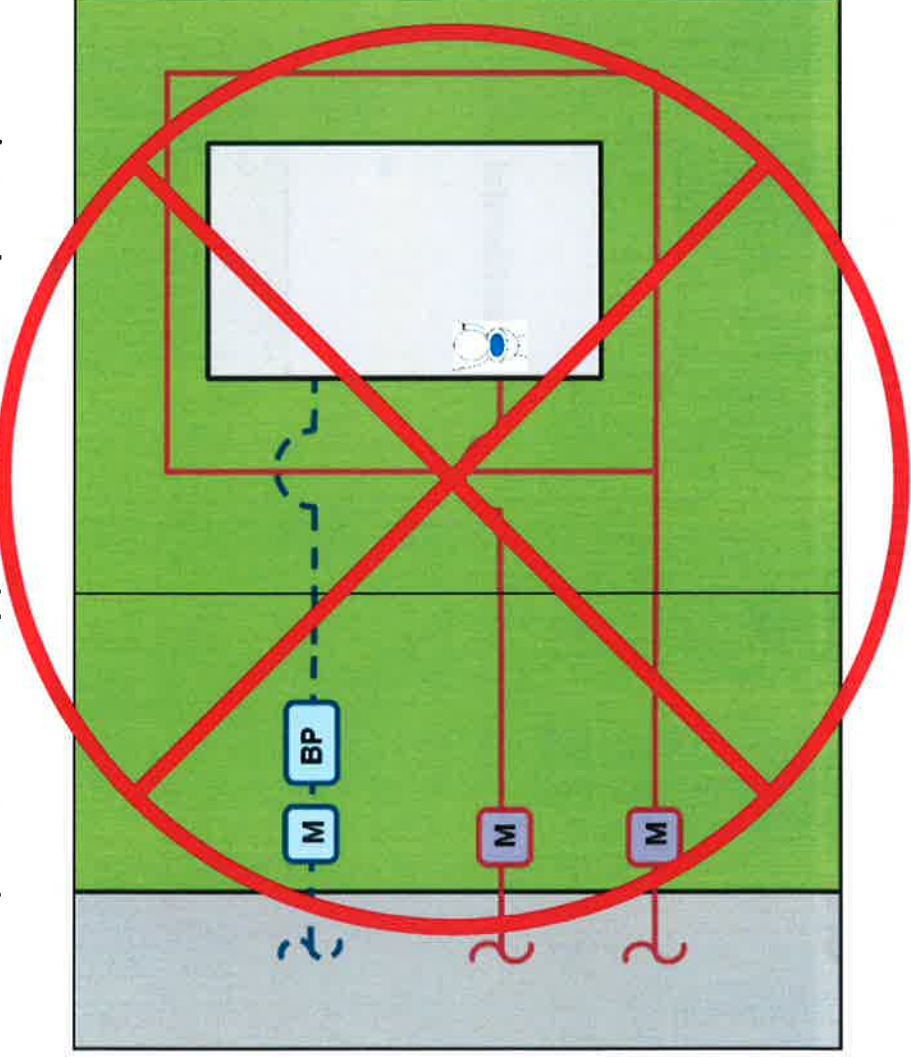
(3): Residences using recycled water for landscape irrigation as part of an approved dual plumbed use area established pursuant to sections 60313 through 60316 unless the recycled water supplier obtains approval of the local public water supplier, or DDW, if the water supplier is also the supplier of the recycled water, to utilize an alternative backflow protection plan that includes an annual inspection and annual shutdown test of the recycled water and potable water systems pursuant to subsection 60316(a). Minimum Type of Backflow Prevention: DC

Single Family Residence

Recycled Water not interconnected with Potable Water

Recycled water for: landscaping and internal use

Recycled water supplied by: Off-site purveyor



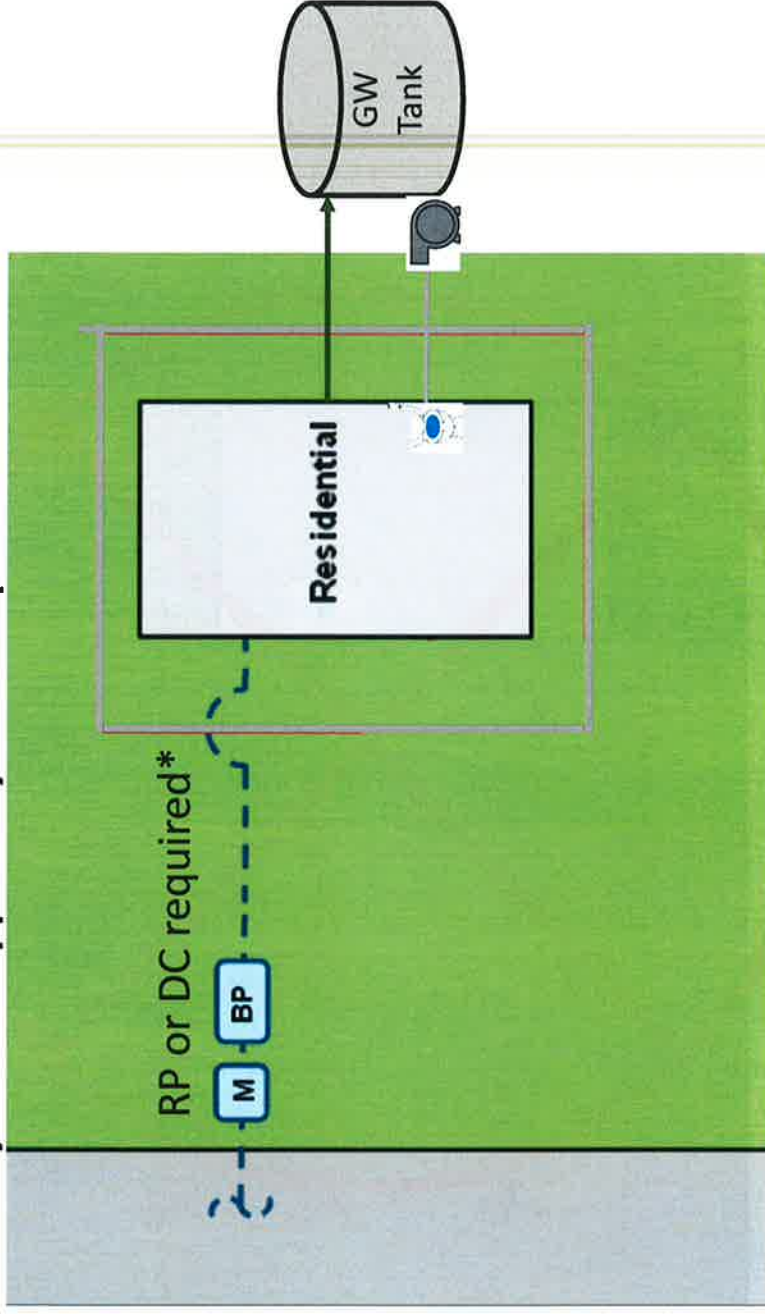
INTERNAL USE NOT ALLOWED BY TITLE 22

Single Family Residence

Gray Water Supply Not Interconnected with Potable Water

Gray Water for: landscaping, internal building use and/or cooling towers

Gray water supplied by: on-site plant



Reference: Title 17, Table 1(b) Auxiliary Water Supplies:

*(2) Premises where there is an unapproved auxiliary RP water supply and there are no interconnections with the public water system. Minimum Type of Backflow Prevention: RP. A DC may be provided in lieu of a RP if approved by the health agency and water supplier.

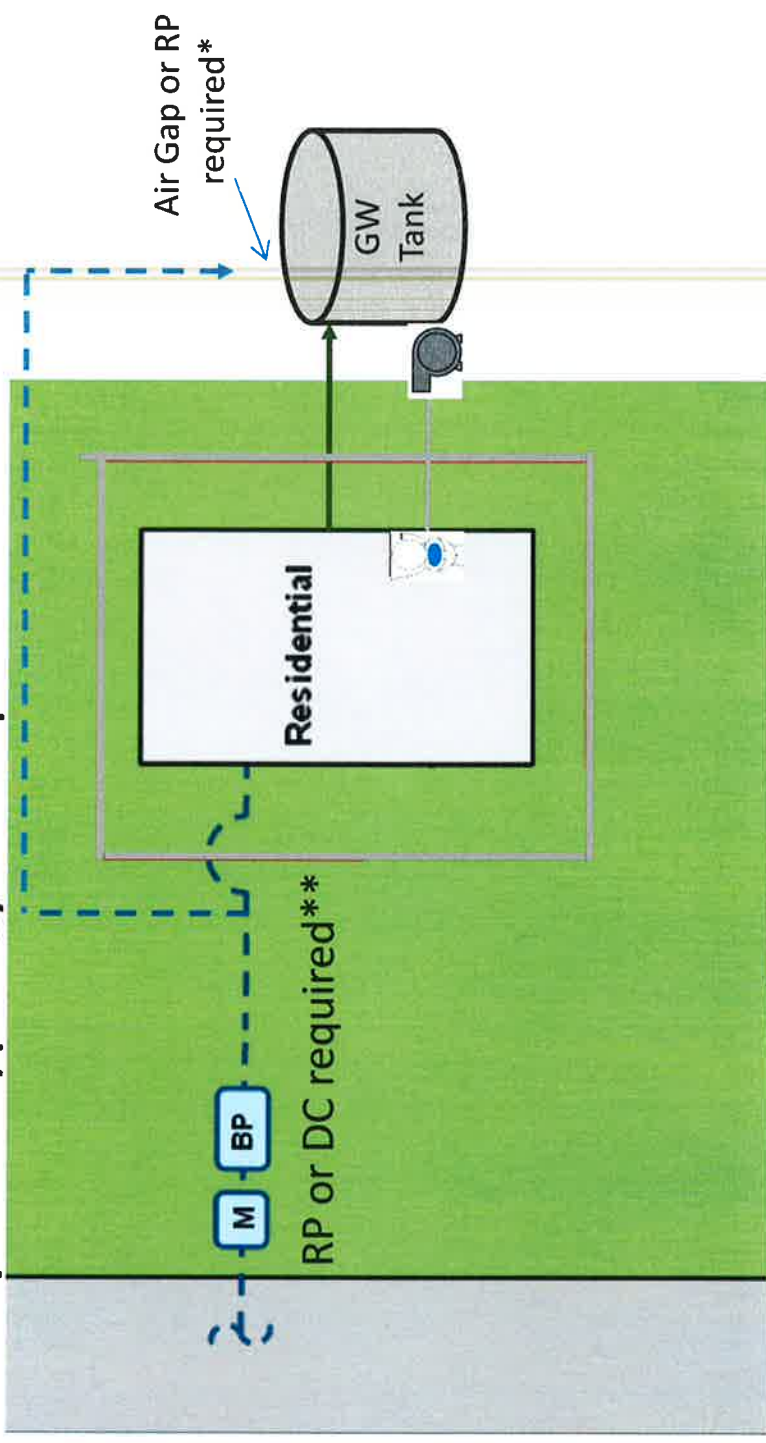
Note: "unapproved" means unapproved for use in a public drinking water supply

Single Family Residence

Gray Water Supply Interconnected with Potable Water

Gray Water for: landscaping, internal building use and/or cooling towers

Gray water supplied by: on-site plant



Reference: Title 17, Table 1(b) Auxiliary Water Supplies:

*1) Premises where there is an unapproved auxiliary water supply which is interconnected with the public water system. Minimum Type of Backflow Prevention: AG. A RP ~~or DC~~ may be provided in lieu of an AG if approved by the health agency and water supplier. *(2) Premises where there is an unapproved auxiliary RP water supply and there are no interconnections with the public water system. Minimum Type of Backflow Prevention: RP. A DC may be provided in lieu of a RP if approved by the health agency and water supplier.

Note: "unapproved" means unapproved for use in a public drinking water supply

