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AUXILIARY WATER CODES COORDINATION PROJECT RECOMMENDATIONS

Environmental Board

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Topics

- Background
- Administrative Recommendations
- Technical Recommendations
- Graywater Recommendations
- Code Recommendations
- Minor Code Revisions

Administrative Recommendations

- Coordinate permit contact through One Stop Shop,
  AWU's Special Services Division also assisting developers
- Develop fact sheets with standards and design criteria
- Add definitions for site, pressurized system, potable rainwater
- Adopt registration system
- Develop site supervisor training program (alt. recommendation)
- Allow multiple design professions for auxiliary water systems.
- Accept cross-connection reports without staff observation

Technical Recommendations

- Limit on site pressure to 20 psi for most auxiliary water systems (alt. recommendation)
- Eliminate the requirement for RPZs on hose bibs
- Extend cross-connection testing frequency from 12 to 48 months (alt. recommendation)
- Disinfect auxiliary water irrigation pipe if converting back to drinking water
- Allow use of same pipe materials for auxiliary waters as for drinking waters

- Limit the requirement for double check valves on reclaimed service lines
- Eliminate irrigation pipe replacement for reclaimed water conversions

Graywater Recommendations

- Adopt Laundry to Landscape Graywater systems with modifications
- Include design concept for “small” tank design (alt. recommendation)
- Adopt 2” mulch cover for laundry to landscape and require a minimum mulch basin size of 75 sf (alt. recommendation)

Code Recommendations

- Modify tank labeling and color code requirement for L2L
- Retain 2012 UPC requirements for "hose bibs" on auxiliary water systems (alt. recommendation)
- Require RPZ on potable water lines on properties with auxiliary waters (alt. recommendation)

<= 500 gallons of storage	No backflow preventer, no registration, no inspection
Gravity systems with >500 gallons of storage	No backflow preventer, registration, inspection as needed
Pressurized systems with >500 gallons of storage	RPZ backflow preventer, permit, 4 year inspections

Thank you

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Q & A

AUXILIARY WATER CODES COORDINATION

CDM Smith Recommendations

ADMINISTRATIVE RECOMMENDATIONS

Recommendation A1: Coordinate all permit contact and submittal requirements through the One Stop Shop with links to documents prepared by the AWU Conservation Division.

Why: Different city staff and departments interpreted regulations differently causing conflict among staff and confusion among the public. This recommendation is intended to provide consistency and clarity.

Follow-up action: Already implemented. In addition, AWU's Special Service Division is providing assistance to property owners above and beyond the recommendation.

Recommendation A2: Adopt auxiliary water standards and design criteria, develop Fact Sheets in plain language for utility customers, and develop training for consistent application of the criteria by all City staff

Why: This recommendation is complimentary to recommendation A1. It will provide clarity and consistency in written form.

Follow-up action: To be implemented as a follow up to code changes.

Recommendation A3: Adopt definitions for pressurized onsite systems; site; and potable rainwater system.

Why: This recommendation is complimentary to recommendation A1. Definitions of pressurized system and site have been particularly problematic among city staff. Potable rainwater use is being promoted by the state/legislature and we want to work the appropriate definition into our codes.

Follow-up action: To be included in ordinance changes.

Recommendation A4: Adopt an Auxiliary Water Registration System to provide a simple clear process for staff and residents.

Why: To track auxiliary water customers in case of backflow problems, complaints by neighbors (odors, flows across property lines, etc.), or property changes/improvements.

Follow-up action: Except for gravity fed systems, already implemented. (Graywater systems are automatically registered when they get their "permit"). Auxiliary water systems with 500 gallons of storage or less will not be required to register.

Recommendation A5: Develop a site supervisor training program for inclusion in the L2L, auxiliary water and reclaimed water educational programs as part of the simplified permit process.

What this means: The justification was that with training auxiliary water customers would be eligible for an extension of the time period between cross-connection testing up to four years.

Follow-up action: Not to be included in ordinance changes. Many of the auxiliary water customers have time periods of four years or greater between cross-connection tests. Therefore this recommendation adds a layer of administrative burden, which is contrary to the intent of the study.

Recommendation A6: Accept multiple authorized design professionals to provide auxiliary water design services in their respective area of expertise.

What this means: The plumbing code implies that auxiliary water systems must be designed by licensed plumbers, while the state allows others (licensed irrigators, engineers) to perform design too.

Follow-up action: To be included in ordinance changes.

Recommendation A7: Accept certified BPA tester annual testing reports on private property without concurrent city staff observation.

A7 in Plain English: Accept third party reports without having a COA staff member present.

What this means: This recommendation brings City regulation into conformance with current practice. Regulations require COA staff to be present.

Follow-up action: To be included in ordinance changes.

TECHNICAL RECOMMENDATIONS

Recommendation T1: Limit onsite auxiliary gray water and nonpotable rainwater system pressure to 20 psi and eliminate the requirement for multiple RPZ's on private property following the backflow prevention assembly on the potable water system.

T1 in Plain English: Restrict auxiliary water, other than reclaimed water, pressure to 20 psi at the outlet to the pump. RPZs on drinking water hose bibs no longer required on properties with auxiliary water.

Follow-up action: Staff disagrees with the recommendation to limit auxiliary water plumbing pressure to less than 20psi at the pump outlet. At pressures this low, sprinkler heads will not even open. This recommendation will be implemented in part. Pressure restrictions will remain as is in the Plumbing Code since the recommended changes make the administrative more, not less, complex. (Plumbing Code pressure limits are: 1) reclaimed – no limit, 2) rainwater – 80 psi within a building, 3) graywater subsurface – 20 psi, 4) graywater mulch basin – no limit, and 5) graywater subsoil – no limit). The RPZ on hose bib requirement will be removed from the Utility Criteria Manual.

Recommendation T2: Change Table 603.5 from RPZ on the reclaimed water meter to a DC type backflow assembly (if an apparent risk) to protect the City reclaimed water supply and amend Ordinance.

What this means: Currently all reclaimed water customers are required to have a double check valve on their reclaimed water service line. (CDM Smith is in error here regarding the RPZ). The requirement for backflow prevention on reclaimed service lines will be eliminated unless chemical injection is used on the reclaimed water.

Follow-up action: To be included in ordinance changes.

Recommendation T3: Extend cross connection testing to four year frequency for L2L, residential gray water systems with less than 250 gpd, and rainwater systems. Maintain annual frequency for CII onsite cross connection testing.

What this means: Extend the cross-connection testing frequency from one year to four years for all auxiliary water systems except reclaimed water.

Follow-up action: Partial implementation. Cross-connection for L2L and rainwater systems to be performed at installation and one-year anniversary. Reclaimed connections to be tested annually.

Recommendation T4: Eliminate irrigation pipe replacement requirement when converting to auxiliary waters.

T4 in Plain English: The local amendments to the Plumbing Code require purple pipe for new irrigation system construction and repairs. This is not common among utilities providing reclaimed water. Use of existing irrigation piping is permissible as long as all above ground equipment is purple.

Why: This is a major impediment to the conversion of existing irrigation customers to reclaimed water and other auxiliary water use.

Follow-up action: To be included in ordinance changes.

Recommendation T5: Require irrigation piping to be disinfected if a system is converting from reclaimed water to use of potable water.

What this means: This recommendation is meant to address a future condition where a site, perhaps through a change in ownership, opts to use drinking water for irrigation rather than reclaimed, or another auxiliary water.

Follow-up action: To be included in ordinance changes.

Recommendation T6: Allow use of the same pipe materials and pressure class of pipe of potable water and reclaimed water systems.

T6 in Plain English: Onsite plumbing material options (PE, PVC, ABS) should be the same for all auxiliary water as long as they are properly marked and identified.

Other: This recommendation is already implemented since distribution pipe materials for drinking water and reclaimed water are the same.

Follow-up action: Already implemented.

GRAYWATER RECOMMENDATIONS

Recommendation G1: Adopt the proposed Laundry to Landscape Gray Water Systems with modification to meet TCEQ regulations.

Why: The City adopted the L2L Ordinance since the consultant's work started and the technical memo was written. The ordinance needs minor adjustments. See other G recommendations.

Follow-up action: To be included in ordinance changes.

Recommendation G2: Include a design concept for gray water "small" tank design.

G2 in Plain English: Gray water systems should include a small storage/surge tank with a clean out, gray water inlet, gray water outlet and overflow to sewer system.

What this means: City staff is proposing an alternate recommendation. It adds complexity to the L2L concept and it is not desirable to "hold" gray water as its water quality will deteriorate.

Follow-up action: This is a reversal of current policy negotiated with stakeholders and several departments. Maintain current PDRD interpretation of pipe storage being considered the "tank" for L2L applications because gray water quality degrades with storage.

Recommendation G3: Adopt a 2-inch mulch cover for gray water laundry to landscape systems unless the pipe manufacturer specifically recommends a greater depth, and require a minimum mulch basin landscape are of 75 square feet unless better soil conditions are documented.

What this means: The 2009 UPC allowed for the use of sand and gravel. This was an adaptation of septic drain field design that required a pipe depth of 18 inches. The 2012 included mulch as well. TCEQ Chapter 344 governs irrigation pipe installation. Installation depth is to follow the manufacturer's recommendation or 6 inches if not recommendation is given. Chapter 344 also allows a minimum 2 inches of cover when obstacles and roots do not allow a 6 inch installation. With the worst soil conditions in Austin and a max flow rate of 60 gallons per day, a minimum mulch basin of 72 sf is needed.

Follow-up action: This recommendation could be viewed as an impediment because the limit is higher than most found in 2012 UPC. Maintain established 2012 UPC recommended mulch cover requirements and drain field sizes.

CODE RECOMMENDATIONS

Recommendation C1: Continue to require an RPZ on the potable water supply to any property served with auxiliary water.

Why: City staff is proposing an alternate recommendation. With gravity graywater and rainwater systems, there is no pipe to pipe connection, and therefore an air gap. An air gap is recognized as the most effective cross-connection prevention mechanism.

Follow-up action: Partial implementation. See table below.

Backflow Prevention for Auxiliary Waters other than Reclaimed

<= 500 gallons of storage	No backflow preventer, no registration, no inspection
Gravity systems with >500 gallons of storage	No backflow preventer, registration, inspection as needed
Pressurized systems with >500 gallons of storage	RPZ backflow preventer, permit, 4 year inspections

Recommendation C2: Recognize pipe and tank labeling and color code adoption, including modifications of the San Francisco Gray Water Design Manual guidance to comply with UPC and TCEQ requirements.

C2 in Plain English: Modify L2L ordinance regarding tank and pipe labeling, and pipe color to match the UPC and TCEQ 210 rules.

Why: In adopting the Laundry to Landscape Ordinance, the City adopted portions of the San Francisco Graywater Design Manual. There are two minor inconsistencies between the Plumbing Code and the Design Manual – matching pipe color and pipe and tank identification text. These also conflict with the UPC and TCEQ 210 rules.

Follow-up action: To be included in ordinance changes.

Recommendation C3: Eliminate the allowance for hose bibs associated with "other non-potable water" use by modifying proposed local amendments to 2012 UPC 1605.10.1.

A1 in Plain English: Eliminate the blanket allowance for hose bibs on auxiliary waters of non-sewage origin.

Why: This change would place an additional restriction on "other non-potable water."

Follow-up action: City staff is proposing to leave 2012 UPC 1605.10.1 as is, which allows hose bibs with a labeling for "other non-potable waters." It would treat "other non-potable waters" similar to rain water.

Recommendation C4: Allow the use of fixtures with signage and unique connection or keyed use as allowed in the UPC and by TCEQ Chapter 210 for Type 1 reclaimed water and "other non-potable water" meeting the same quality as Type 1 reclaimed water.

C4 in Plain English: Hose bibs for auxiliary waters may be allowed as long as they meet Reclaimed Type 1 quality, have signage, and a lockbox/quick-connect.

Why: This change would place an additional restriction on rain water systems. Also there is a significant issue here regarding who tests the water and how often to determine whether or not it meets Type 1 requirements.

Follow-up action: City staff is proposing an alternate recommendation to follow the 2012 UPC. See the table below for a summary of current, CDM Smith, and alternative recommendations for hose bibs on auxiliary water systems.

Hose Bib Requirements on Auxiliary Water Systems

Auxiliary Water	Current	CDM Smith	Alt. Recomendation
Graywater	Not allowed	Not allowed	Not allowed
Reclaimed	Not allowed in areas accessible to the public, in public area use a quick connect, hose bibs to have signage	Allowed with signage and a quick connect	Not allowed in areas accessible to the public, in public area use a quick connect, hose bibs to have signage
Rain water	Allowed signage	Allowed with signage and a quick connect as long as the water meets Type 1	Allowed signage
Other Non-Potable	Allowed signage	Allowed with signage and a quick connect as long as the water meets Type 1	Allowed signage