Drought-Ready Construction Model Ordinance

Pre-plumbing buildings for graywater, rainwater, and recycled water

Developed by Ecology Action, Greywater Action, California Onsite Water Association, and Central Coast Greywater Alliance

Prepared for local and state jurisdictions
interested in promoting water conservation through codes

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Credits

This document is an adaptation of “Greywater Ready Buildings” model ordinance developed by **Laura Allen** (Greywater Action) and **Regina Hirsch** (California Onsite Water Association).

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SECTION 1. FINDINGS AND DETERMINATIONS

Growing population, climate change, and droughts make it essential for the [City, County, or Water District] to manage its water resources as efficiently as possible.

Reducing the demand for potable water through onsite water reuse improves reliability of local water supplies, reduces impact on downstream wastewater treatment facilities, reduces energy consumption and greenhouse gas emissions, and provides environmental benefits, including protecting water quality and preserving stream flows.

The cost to make dual supply and dual drainage plumbing accessible for installation of a future onsite alternate water system is lowest during the construction or certain remodels of a bathroom or laundry room when the piping is being installed.

SECTION 2. INTENT

The intent of the Drought-Ready Construction model ordinance is to lower the costs and barriers for future installation and future use of alternate water source systems for non-potable uses by pre-plumbing buildings during construction or during certain remodels that expose supply or drainage piping.

SECTION 3. DEFINITIONS

Alternate water sources

Alternate water: Nonpotable water including disinfected tertiary recycled water, graywater, onsite treated nonpotable water, and rainwater.

Disinfected tertiary recycled water: Water from a centralized wastewater treatment facility and treated for beneficial use as defined by Title 22 of the California Code of Regulations.

Graywater: Untreated wastewater from bathtubs, showers, bathroom sinks, clothes washers, and laundry tubs. For the purposes of this ordinance, graywater is intended for landscape irrigation or as a source for onsite treated nonpotable water to use for toilet flushing.

Onsite treated nonpotable water: Nonpotable water that has been collected, treated, and intended to be used onsite to supply toilets, urinals, and above or below ground irrigation. Sources for onsite treated nonpotable water include, but are not limited to, graywater, rainwater, stormwater, recycled water, cooling tower blow-down water, and foundation drainage.

Rainwater: Precipitation collected from roof surfaces or other manmade, aboveground collection surfaces. For the purposes of this ordinance, rainwater is intended for landscape irrigation or, with minimum filtration in accordance with California Plumbing Code, for clothes washers and toilet flushing.

Dual water supply

Dual water supply access point: A capped alternate water distribution pipe located in an accessible area where a future alternate water source can be connected to dual water supply plumbing.

Dual water supply plumbing: Nonpotable water distribution pipes and the necessary connecting pipes, fittings, control valves, backflow prevention devices, and all appurtenances carrying or supplying alternate water to nonpotable fixtures in or adjacent to the building.

Dual drainage

Diverter valve: A single valve that can direct graywater to either a sewer/septic system or to a graywater irrigation system.

Dual drainage plumbing: Graywater drainage pipes and the necessary connecting pipes, fittings, valves, and all appurtenances carrying untreated graywater to a diverter valve that, on one side, allows the graywater to flow to a blackwater pipe and, on the other side, diverts the graywater to a graywater stub-out.

Graywater stub-out: A capped termination point of graywater drainage piping extending from the diverter valve; typically located outside of a dwelling and ready to be connected to a graywater irrigation or reuse system.

SECTION 4. APPLICABILITY

The provisions of this ordinance shall apply to the following buildings:

- New residential construction including accessory dwelling units (ADUs), single-family dwellings, duplex dwellings, and multi-family buildings;
- Bathroom or laundry room addition in ADUs, single-family dwellings, and duplex dwellings;
- Bathroom remodel that alters supply piping to toilet(s) or that alters drainage piping to shower(s) in ADUs, single-family dwelling, and duplex dwellings; and
- Laundry room remodel in ADUs, single-family dwellings, and duplex dwellings.

SECTION 5. REQUIREMENTS

(a) Dual water supply plumbing.

1. Dual water supply plumbing and dual water supply access point shall be included in new residential construction and applicable additions and remodels to allow future supply of rainwater with minimum filtration in accordance with California Plumbing Code, or disinfected tertiary recycled water, or onsite treated nonpotable water to fixtures specified in Table 1.

2. Toilets fitted with bidet seats shall be connected to angle stops that use potable water supply. Angle stops that use alternate water supply shall be permanently marked “CAUTION: NONPOTABLE WATER, DO NOT CONNECT BIDET SEATS.”

3. Dual water supply access point shall be located within 10 feet of a dedicated 120-volt electrical receptacle with ground-fault circuit interrupter so that a pump can be installed to pressurize a future alternate water supply.

4. When disinfected tertiary recycled water is available within 200 feet of the property boundary, the dual water supply access point shall be connected to the site’s recycled water lateral supply pipe(s).

5. When graywater is identified in construction plans as the source for onsite treated nonpotable water, the dual water supply access point shall be located within 10 feet of any graywater stub-out required in Section 5(b).

6. When rainwater is identified in construction plans as the alternate water supply source, the dual water supply access point shall be connected to the rainwater harvesting system’s distribution pipe and sediment filter(s).

7. The dual water supply access point(s) shall be permanently marked "CAUTION: NONPOTABLE WATER, DO NOT DRINK."

8. Dual water supply plumbing shall meet all requirements in the California Plumbing Code.

EXCEPTION to Section 5(a): Bathroom remodels where fixtures are located on interior walls and on concrete slabs are exempt.

***TABLE 1**: Fixtures Requiring Mandatory Dual Water Supply Plumbing*

Project Type	**Plumbing Fixtures Requiring Mandatory Dual Water Supply Plumbing Angle Stops**
New Construction: • Accessory Dwelling Unit (ADU), • Single-family Dwelling, or • Duplex Dwelling	• All toilets
New Construction: Multi-family Residential Building (3 or more dwelling units)	• All toilets and urinals
Bathroom Addition: • ADU, • Single-family Dwelling, or • Duplex Dwelling	• Toilets that are part of the addition project
Bathroom Remodel: • ADU, • Single-family Dwelling, or • Duplex Dwelling	• Toilets for which altering water supply piping is part of the remodel project

(b) Dual drainage plumbing.

1. Dual drainage plumbing shall be included in new residential construction and applicable additions and remodels so that the graywater can to be diverted into a future graywater irrigation system. Dual drainage plumbing shall include readily accessible diverter valve(s) and stub-out(s) and allow graywater to be diverted from graywater sources specified in Table 2.

2. When the location of a diverter valve is not accessible for manual valve operation, an electrical outlet shall be located within 10 feet of the diverter valve so that an electronic actuator can be connected to the diverter valve for remote operation.

3. The graywater stub-out(s) shall be located outside of the dwelling and adjacent to an existing or future landscaped area. The graywater stub-out can also be located in a garage, basement, or mechanical room when site elevations or intended use of graywater requires a pumped system.

4. A dedicated 120-volt electrical receptacle with ground-fault circuit interrupter shall be located within 10 feet of the graywater stub-out(s) so that a pump can be installed for a future graywater system.

   EXCEPTION to Section 5(b)4: Laundry-to-landscape graywater systems that use a clothes washer's internal pump to distribute graywater through irrigation distribution piping are exempt.

5. The graywater stub-out(s) shall be permanently marked "CAUTION: NONPOTABLE GRAYWATER, DO NOT DRINK."

6. Dual drainage plumbing shall meet all requirements in the California Plumbing Code.

EXCEPTION 1 to Section 5(b): Projects with landscaped area within 100 feet from a creek, wetland, river, or located in an area where groundwater is documented less than 3 vertical feet below the excavation of the graywater irrigation field or mulch basin(s), are exempt.

EXCEPTION 2 to Section 5(b): Bathroom and laundry room remodels where existing drainage plumbing is embedded in a concrete slab, and where under-slab drainage plumbing is not being altered or extended, are exempt.

EXCEPTION 3 to Section 5(b): Projects with landscaped areas that are unable to infiltrate the daily volume of graywater produced from mandatory graywater source(s) in Table 2 are exempt. Project applicants claiming this exception shall submit documentation demonstrating exception's applicability.

TABLE 2: *Graywater Sources Requiring Mandatory Dual Drainage Plumbing*

Project Type	**Graywater Sources Requiring Mandatory Dual Drainage Plumbing**
New Construction: • Accessory Dwelling Unit (ADU), or • Single-family Dwelling	• At least one clothes washer and • At least one shower or one bathtub shower from the master bathroom
New Construction: Duplex Dwelling	• At least one clothes washer in each unit and • At least one shower or one bathtub shower from the master bathroom in each unit
New Construction: Multi-family Residential Building (3 or more dwelling units)	• All common laundry facilities and • All showers in pool and spa area(s)
Bathroom Addition: • ADU, • Single-family Dwelling, or • Duplex Dwelling	• One shower or bathtub shower when adding shower or bathtub shower
Bathroom Remodel: • ADU, • Single-family Dwelling, or • Duplex Dwelling	• One shower or bathtub shower when altering drainage piping to the shower is part of the remodel project
Laundry Room Addition or Remodel: • ADU, • Single-family Dwelling, or • Duplex Dwelling	• Clothes washer