

A Guide to Building a Graywater System in Santa Monica

NEW STANDARDS IN EFFECT AS OF March 1, 2013



Type of Graywater System	Water Discharged Gallons Per Day	Permit Requirements
Clothes Washer	NA	Permit not Required if conditions of System Requirements are met - See Attachment A
Simple	<250gals./day but exceeds Clothes Washer	Permit and Plans Required - See Attachment B
Complex	>250 gals./day	Permit and Plans Required - See Attachment B

Follow These Steps:

Step 1	Research graywater systems that will work for your site and water needs.
Step 2	Design your graywater system according to the State requirements.
<p>For Clothes Washer graywater systems fill out no-cost application available at City Building & Safety or on line at http://www.smgov.net/Departments/Building_and_Safety/Applications_and_Forms.aspx City of Santa Monica plan check and permits (Steps 3-8) are not required, provided all relevant State and local requirements are met. A plan check fee is required by LA County Department of Public Environmental Health for all graywater systems. Please see details related to Steps 3 & 4 below for more information. For Simple and Complex graywater systems, this guide provides an abbreviated overview of the steps required. For these types of systems a Santa Monica building permit is required. These items are described further in the text below. All systems, regardless of type, must meet all requirements of the most recent version of the California Plumbing Code, Chapter 16A.</p> <p>The lead point of contact for the permit, construction and inspection process is City of Santa Monica Building & Safety.</p>	
Step 3	Apply for Plan Check from City Building & Safety.
Step 4	Get Plan Check approval and permit from City.
Step 5	Begin building the system according to the approved plans.
Step 6	Call City Building & Safety (310) 458-2202 for all required plumbing, mechanical and electrical rough-in inspections.
Step 7	Call City Water Resources (310) 458-8535 for cross-connection inspection.
Step 8	Final inspections by City Building & Safety and Water Resources.

Step 1 – Research Graywater and Cistern Systems

- The rules for building a graywater system in Santa Monica are described in the 2010 California Plumbing Code (CPC): Title 24, Part 5 California Administrative Code, Chapter 16A. You can find this document at:
http://www.hcd.ca.gov/codes/shl/20_2010_CPC_Graywater_Complete_2-2-10.pdf
 Title 17, Chapter 22 also has information regarding graywater systems
<http://www.cdph.ca.gov/certlic/drinkingwater/Documents/Recharge/Purplebookupdate6-01.PDF>
 (NOTE: Graywater is considered an “unapproved auxiliary water supply” NOT recycled water.)
- Graywater** is defined as “....untreated wastewater that has not been contaminated by any toilet discharge, has not been affected by infectious, contaminated, or unhealthy bodily wastes, and does

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not present a threat from contamination by unhealthful processing, manufacturing, or operating wastes. "Graywater" includes but is not limited to wastewater from bathtubs, showers, bathroom washbasins, clothes washing machines, and laundry tubs, **but does not include wastewater from toilets, kitchen sinks or dishwashers**". CPC Chapter 16A.

Items for consideration during research/design:

- :
- ~ For simplicity, the areas you want to irrigate should be downhill from the source point in your graywater system. Clothes washer or single fixture systems cost less and should be most cost-effective in a shorter period of time.
- ~ No matter how much graywater water you produce (~30,000 gallons per year for a house that has non water-efficient showers, faucets and clothes washers), you will probably still need a conventional potable water irrigation system on at least part of your property.
- ~ Putting in a graywater system is not something that may save you a lot of money initially. But it is one of the most effective things you can do to cut your exterior water use and reduce sewer waste.
- ~ Getting a permit for a Simple and Complex graywater system can be a time-intensive process if the proper documentation is not submitted. Be sure your plans are detailed and show everything about the proposed system, where it goes, all the parts, all the connections, detail drawing, and specifications. Know your City of Santa Monica ProjectDOX number that will be assigned by Santa Monica Building & Safety and have it ready when scheduling inspections or for other system related communications with the City.
- ~ For Simple and Complex systems in addition to the cost of the graywater, irrigation system, and cross-connection devices, all plan check and permit fees shall be waived with exception of miscellaneous state fees and \$40 for the approved cross-connection protection device fee from the Water Resources Division plus yearly testing by a certified cross-connection tester.
- ~ You can't combine rain water and graywater in a holding tank. Overflow or excess rainwater from a cistern or holding tank must be discharged to the stormdrain system. Graywater is not allowed to overflow, pond or runoff the site and any excess must be diverted to the sanitary sewer. NOTE: The operational holding tank is not for long term storage. All graywater produced shall be utilized through the graywater irrigation field and/or disposed to the sanitary sewer system.

Step 2 – Design Your Graywater System

- A. Design your graywater/cistern system according to the the most recent version of the California Plumbing Code Chapter 16A. Any associated plumbing, mechanical or electrical components must meet City building codes and specifications.
- B. All irrigation must conform to the [City's Green Building Ordinance](#).
- C. For Clothes Washer Systems see Attachment A.
- D. For Simple and Complex Systems see Attachment B: Plan Submittal Requirements
- E. Changes to the plan require a plan check revision from City Building & Safety (fee required for changes).
- F. Visit www.sustainablesm.org/landscape for the codes, ordinances and sample plans.

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Step 3 & 4 – Plan Review and Permit (Critical Process Steps)

Submit plans to the City.

- A. Submit an application for your Graywater system

(http://www.smgov.net/Departments/Building_and_Safety/Applications_and_Forms.aspx the project to the City of Santa Monica via email to eplans@smgov.net. Once the information has been received and entered into the permit system, the applicant will receive an invitation along with a temporary password via email from the ProjectDOX “ eplan system”. Applicant also can prepare an electronic file on a disc and submit it in person by visiting the City’s permit counter:

City of Santa Monica Building & Safety Counter

Santa Monica City Hall

1685 Main Street, Room 111, Santa Monica CA, 90401(310) 458-8355

For detail questions, please contact Cheryl Fuss between 8:00 am and 5:00pm. at (310) 458-2201 x 5072 for plan check/technical questions.

- **Be sure to state that this is a graywater project and includes an irrigation system.**
- All City of Santa Monica plan check and permit fees, except minor miscellaneous state fees shall be waived, unless the system is a Simple or Complex-type system (see Table at top of page 1 for basic definition).
- Extra inspections beyond 3 inspections or renewal of expired permits, shall require additional fees that are not waived.
- Approval time is approximately 35 days, provided all documents and fee payments, as required are in order. Upon approval you will be notified by the plan check project coordinator and receive an approval letter.
- The LA County Department of Public Environmental Health requires a plan check fee for ALL Graywater systems. Two separate checks, both made out to the LA County Department of Public Environmental Health, are required. The first check should be made out for \$786.00, the notation on this check should be –“Land Use Program”. The second check should be made out for \$260.00, the notation on this check should be- “Cross Connection Program”. Please be sure to note your Santa Monica Project DOX number (provided for Simple and Complex systems) on the checks as well. This will help ensure your payment is credited to the proper project. These fees are due as soon as you receive your ProjectDOX number from the City. Fee payment to the County should be transmitted to the following:

Los Angeles County Department of Public Environmental Health

Attention: Land Use Program

5050Commerce Drive, Baldwin Park, CA. 91706

- A City of Santa Monica Single Trade Permit will be issued. Plans and other related construction related documents shall be submitted for plan check before a permit is issued. **Note: this may trigger additional plumbing upgrades, such as a meter size upgrade, if required by the City’s Water Resource’s Manager.**
- If your project is valued at \$1,000 or more, you will be required to have appropriate smoke and carbon monoxide detectors and water heater straps. If your project is valued at \$10,000 or more, you will also be required to have an appropriate seismic gas shut-off valve.

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Following the plan check approval, inspections are scheduled with the contractor during the construction phase, for both conversions and new construction projects.

Step 5 – Build Your System

- A. Begin building your system according to the latest approved version of the California Plumbing Code Chapter 16A and the approved design plans if required. Inspections are required throughout the building process (see Steps 6, 7, 8)
- B. Changes to the plan require a plan check revision from the City's Building & Safety Division (fee required for changes).

Step 6 – City Installation Inspection

Call the City's Building and Safety Division to schedule ALL inspections. The City will coordinate inspections with other agencies, as needed.

Inspector Request Lines: (310) 458-2202 or (310) 458-8358

- A. Underground plumbing inspection as pipes and system for both irrigation and graywater are being installed.
- B. Plumbing rough-in inspection once pipes for irrigation and graywater are installed but before they are covered.
- C. Electrical inspection as system is installed.

Step 7 – City Cross-Connection Installation Inspections

Step 7 is required if a system has a pump and/or is pressurized. The inspector will make sure the appropriate approved back flow prevention device has been installed properly on the water line after the main water meter. The inspector will also inspect the air gap, if one is required for your system. As noted above, the City will coordinate inspections with other agencies, as needed. **NOTE: The approved backflow prevention device shall be installed on the main potable water supply line. The approved backflow prevention device does NOT connect the potable water supply to the graywater system (for details regarding air gap and other items please refer to the most recent version of the approved California Plumbing Code).**

Call the **City of Santa Monica Water Resources Division** for required cross-connection inspection(s).

Stuart Jose or Chris Camacho (310) 458-8535

Step 8 – Final Inspections

These inspections by the City will determine if the system meets all code requirements and is ready for approval. Inspections may incur additional costs ranging currently from \$44 to \$89 depending on the type of inspection.

All inspections by other agencies will be coordinated by the City, as needed.

Call the City of Santa Monica Building & Safety Division for an inspection when the entire system is complete. **Inspector Request Lines: (310) 458-2202 or (310) 458-8358**

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Call the **City of Santa Monica Water Resources Division** for a final system inspection.
Stuart Jose or Chris Camacho (310) 458-8535

Questions?

Call the City of Santa Monica-Building Division staff, Shane Peters at 310-458-2201 x5603.

ATTACHMENT A:

System Requirements for Clothes Washer Graywater System

- **Complete and submit no-cost application to City Building & Safety. A permit is not required for the Clothes Washer- type graywater system, which does not include cutting of the existing plumbing piping.**
- **Submit the required fees LA County Department of Public Environmental Health, see above text for details.**
- The design must allow the user to direct the graywater to irrigation, landscape, disposal field or the sanitary sewer.
- The direction control of the graywater must be clearly labeled and easily accessible by the user.
- No potable makeup water.
- No pumps. The clothes washer pump is not considered part of the graywater system.
- No spray irrigation of graywater (i.e., no sprinklers).
- The system must not affect other building, plumbing, electrical or mechanical components including structural features, egress, fire-life safety, sanitation, potable water supply piping or accessibility.
- The graywater must be contained on the site where it is generated.
- Graywater must be directed and contained within an irrigation or disposal field.
- Graywater must NOT be used to irrigate root crops or edible parts of food crops that touch the soil.
- Ponding and runoff are prohibited.
- Graywater may be released above the ground surface if the release point is covered by at least 2 inches of mulch, rock, soil or solid shield covers.
- Graywater systems shall be designed to minimize contact with humans and pets.
- Water used to wash diapers, soiled or infectious garments, cleaning of car parts, washing greasy or oily rags, or waste water from home photo labs or similar hobbyist or home occupational activities must go the sanitary sewer.
- Exemption from a building permit does not grant authorization for any graywater system that violates other provisions of the graywater code or any other applicable laws or ordinances.
- An operation and maintenance (O& M) manual must be provided and remain with the building for the life of the system and indicate that upon change of ownership or occupancy, the new owner/tenant must be notified of the graywater system

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- Graywater distribution piping upstream of any connection to an irrigation or disposal field or valve shall be identified with the words; "**CAUTION:NONPOTABLE WATER. DO NOT DRINK.**" The marking shall be at intervals not to exceed 5.0 feet.

ATTACHMENT B:

Simple and Complex Graywater System Plan Submittal Requirements

(The following information, if applicable, must be shown on all plans submitted for review)

- All landscape and irrigation must follow the [City's Green Building Ordinance](#).
- Plot Plan of site including grading – show existing equipment/areas of landscape and proposed equipment/affected areas.
- Graywater System – proposed location, potable water connections, water meters, make, model, etc.
- Irrigation Plan – all irrigation equipment, make, models, location, points of connection
- Landscape Plan with Hydrozone Matrix– all plants, location, size, quantity, water needs and the grouping of those plants based on watering needs.
- Grading Plan
- Detailed drawings and specifications of all equipment and appurtenances, and detailed specifications for installation
- Cross-Connection Devices:
 - Graywater system with a pump and/or pressurization, require back flow and air gap protection.
 - The **RP** must be installed on the domestic water supply line (water main going into the house) as close to the main water supply meter as possible.
 - The **air gap** must be installed between the graywater discharge and the graywater holding tank. The air gap must be at least two times the diameter of the effective pipe opening (see most recent California Plumbing Code Chapter 6).
- Internal backflow devices, i.e. non-potable uses.
- All water lines must be identified per applicable codes

Potable (blue or green background):
“CAUTION – POTABLE WATER LINE”

Non-potable (Irrigation, from a potable source, yellow background):
“CAUTION – NON-POTABLE WATER LINE”

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Graywater:

"CAUTION:NONPOTABLE WATER. DO NOT DRINK" Markings shall be at intervals not to exceed 5.0 feet.

Graywater stub-out for future connection:

"GRAYWATER STUB-OUT, CAUTION --- UNSAFE WATER"