

# Saving WATER Together

Wednesday Water Workshops

## Grey Water Systems



# Saving WATER Together

## Grey Water Systems

- Drought & Mandatory Water Waste Restrictions
- Greg Mahoney, City of Davis Chief Building Official
- EcoAssistant—Leslie Crenna & Chrissy Backman
- Grow Water—Rodger Sargent & Chris Lopez
- Nexus eWater—Bob Hitchner
- Questions



# Saving WATER Together

## California Drought

- September 2: City Council calls Stage 3 water shortage, enacts water restrictions
- Water Board Emergency regulations: 28% reduction
  - June 2015—February 2016 compared to 2013
- **June 2015: 32% reduction**



# Saving WATER Together

## Mandatory Water Waste Restrictions

- Outdoor watering only 3 days a week\*
  - Odd numbered addresses:  
Tuesday, Thursday and Saturday
  - Even numbered addresses:  
Wednesday, Friday and Sunday
  - No outdoor watering on Monday
- No watering between 9am – 6pm\*
  - Hose with a shut off nozzle OK
  - Handheld container OK
- No watering during and within 48 hours of rain

*\*properly operating drip and soaker hoses are exempt*



# Saving WATER Together

## Mandatory Water Waste Restrictions

- No excessive water flow or runoff onto pavement, gutters or ditches from irrigation
- No washing off paved surfaces unless necessary for sanitation or safety
  - Hand held bucket
  - Hose with shut-off nozzle
  - Cleaning machine that recycles water
  - Low volume/high pressure water broom
- Property owners must fix leaks immediately or within 72 hours of notification by the City.
- Fountains and water features must have recirculating water



# Saving WATER Together

## Wednesday Water Workshops

The City of Davis is hosting a series of water conservation workshops that will be held at 6:30 p.m. on Wednesday evenings at the Veteran's Memorial Center in the Game Room. Each workshop will feature local subject matter experts.

**May 6: Rain Water Retention**

**May 20: Lawn Conversion**

**June 10: Irrigation Systems, Controllers & Watering Schedules**

**June 24: Plant Selection & Drought Tolerant Landscaping**

**July 15: Grey Water Systems**


**July 29: Large Scale Impacts of Drought**

**August 5: Taking Care of Trees in a Drought**

# Saving WATER Together

*The City of Davis does not recommend, sponsor or otherwise promote any of the businesses that participate in these workshops.*

# SaveDavisWater.org



When it comes to water conservation, let's work together to **SAVE DAVIS WATER**

HOME TIPS & WORKSHOPS WATERINSIGHT REBATES & WATER INFO PHOTO GALLERY

**DAVIS WATER CONSERVATION**


We are in a continued state of severe drought and no one can predict how long it will last. The City of Davis is asking everyone to work together to save for our future. While Davis is in better shape than many other cities and water providers, we still need to do our part. Check out our conservation tips and events to find out how small changes can make a big difference in our community.





**E-Letter Sign-up**  
Stay up-to-date on the latest Davis community news and events. Let's stay informed together.  
 Yes, please sign me up for the free Davis E-Letter!

Easily reduce your water use. Get savings tips specific to your household. Find out how with **WATER INSIGHT**

**WATER ALERT**  
Click here for more information

**Davis**

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SAVING MORE TOGETHER

 Davis  
  



Saving **WATER** Together

We're a Conservation Household. How about you?

**SaveDavisWater.org**  
Report Water Leaks: 530-757-5620

**Davis Water**  
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Free Yard Signs!

Report leaks and water waste:

[WaterSmart@CityofDavis.org](mailto:WaterSmart@CityofDavis.org)

(530) 757-5620

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**Davis Water**  
SAVING MORE TOGETHER



# Reducing Potable Water Use

Gray Water Systems

4-1-10



4-1-12



3-28-13



4-1-14

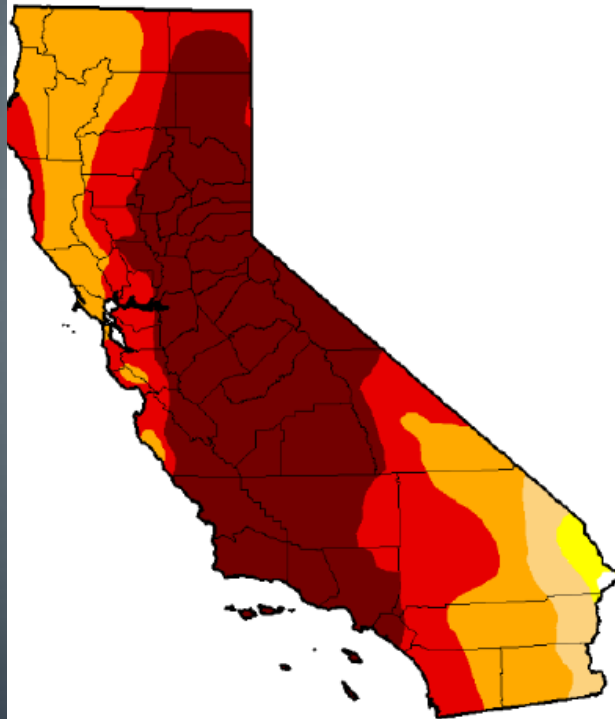


4-1-15



# U.S. Drought Monitor

## California



**June 16, 2015**  
 (Released Thursday June 18, 2015)  
 Valid 8 a.m. EDT

Statistics type: **Traditional Percent Area**

Export table:

Week	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current <a href="#">2015-06-16</a>	0.14	99.86	98.71	94.59	71.08	46.73
Last Week <a href="#">2015-06-09</a>	0.14	99.86	98.71	93.91	71.08	46.73
3 Months Ago <a href="#">2015-03-17</a>	0.16	99.84	98.11	93.44	67.46	39.92
Start of Calendar Year <a href="#">2014-12-30</a>	0.00	100.00	98.12	94.34	77.94	32.21
Start of Water Year <a href="#">2014-09-30</a>	0.00	100.00	100.00	95.04	81.92	58.41
One Year Ago <a href="#">2014-06-17</a>	0.00	100.00	100.00	100.00	76.69	32.98

Population Affected by Drought: **37,034,027**

[View More Statistics](#)

### Intensity:

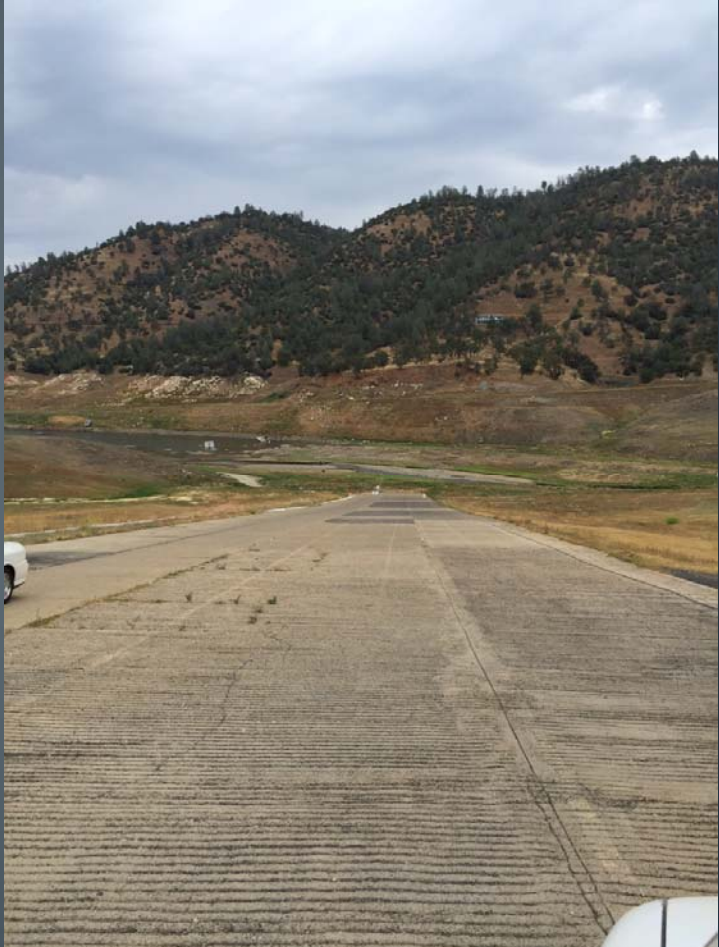
- D0 (Abnormally Dry)
- D1 (Moderate Drought)
- D2 (Severe Drought)
- D3 (Extreme Drought)
- D4 (Exceptional Drought)

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying [text summary](#) for forecast statements.

Author(s):



© California Department of Water Resources





# Memorial Day weekend Lake Don Pedro boat trailer parking lot



# Who uses how much water?

## Fact vs. Fiction

“Agriculture consumes a staggering 80 percent of California’s developed water, even as it accounts for only 2 percent of the state’s gross domestic product,”

*Daily Beast writer Mark Hertsgaard*



Irrigation ditch in Richvale, Calif.

# Who uses how much water?

## Fact vs. Fiction

Water use within the interconnected network of California

- 52 percent agricultural
- 14 percent urban
- 33 percent environmental

*-Jeffrey Mount, UC Davis  
Center for Watershed Sciences*



# Per Capita Water Use

## Santa Fe Irrigation District

Average of 345 gallons a day in February and 644 gallons a day in July.



## Santa Cruz

Santa Cruz residents used an average of 44 gallons a day in February, the lowest rates in the state.



# Coachella Valley



# Santa Cruz



**WEATHER ALERTS** Alerts **Severe (5)** Radar View Radar >> 7-Day View Map >> local View Photos >> Upload >> TRAFFIC >> LATEST VIDEOCAST >> Get Alerts >>

Home / News / Local News / Sacramento News



By Sarah Heise  
BIO >>

## Sacramento-area residents reduce water use in May by 40%

*May was last month before mandatory cutbacks went into effect*

UPDATED 8:33 AM PDT Jul 01, 2015

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NEXT STORY  
Stranded for 3 days, woman gives birth, fends off bees



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# Executive Order B-29-15

## Signed on April 1, 2015

**Executive Department**  
State of California

### EXECUTIVE ORDER B-29-15

**WHEREAS** on January 17, 2014, I proclaimed a State of Emergency to exist throughout the State of California due to severe drought conditions; and

**WHEREAS** on April 25, 2014, I proclaimed a Continued State of Emergency to exist throughout the State of California due to the ongoing drought; and

**WHEREAS** California's water supplies continue to be severely depleted despite a limited amount of rain and snowfall this winter, with record low snowpack in the Sierra Nevada mountains, decreased water levels in most of California's reservoirs, reduced flows in the state's rivers and shrinking supplies in underground water basins; and

**WHEREAS** the severe drought conditions continue to present urgent challenges including: drinking water shortages in communities across the state, diminished water for agricultural production, degraded habitat for many fish and wildlife species, increased wildfire risk, and the threat of saltwater contamination to fresh water supplies in the Sacramento-San Joaquin Bay Delta; and

**WHEREAS** a distinct possibility exists that the current drought will stretch into a fifth straight year in 2016 and beyond; and

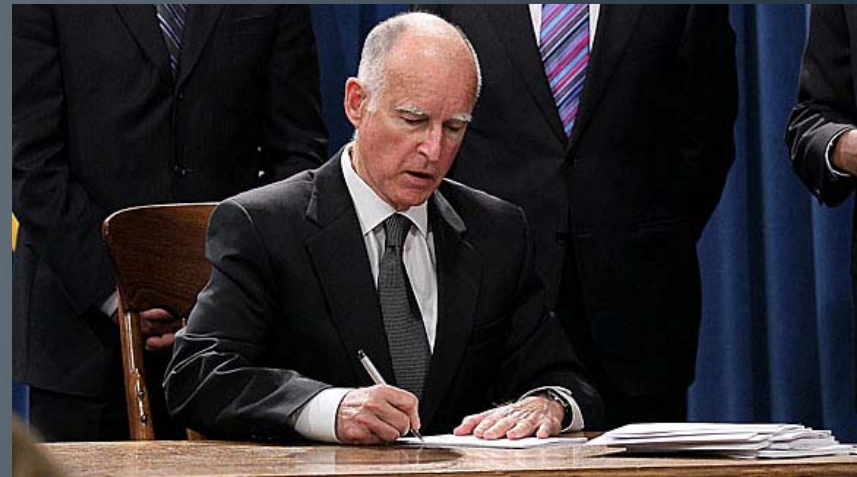
**WHEREAS** new expedited actions are needed to reduce the harmful impacts from water shortages and other impacts of the drought; and

**WHEREAS** the magnitude of the severe drought conditions continues to present threats beyond the control of the services, personnel, equipment, and facilities of any single local government and require the combined forces of a mutual aid region or regions to combat; and

**WHEREAS** under the provisions of section 8558(b) of the Government Code, I find that conditions of extreme peril to the safety of persons and property continue to exist in California due to water shortage and drought conditions with which local authority is unable to cope; and

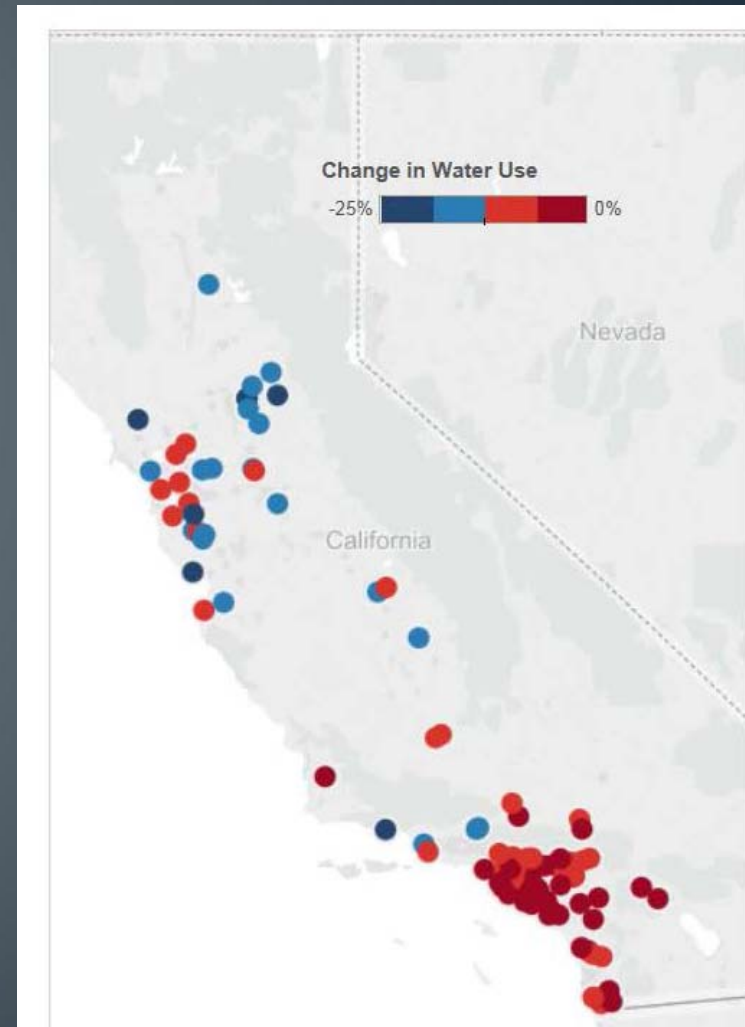
**WHEREAS** under the provisions of section 8571 of the California Government Code, I find that strict compliance with various statutes and regulations specified in this order would prevent, hinder, or delay the mitigation of the effects of the drought.

**NOW, THEREFORE, I, EDMUND G. BROWN JR.,** Governor of the State of California, in accordance with the authority vested in me by the Constitution and statutes of the State of California, in particular Government Code sections 8567 and 8571 of the California Government Code, do hereby issue this Executive Order, effective immediately.



# Executive Order B-29-15 (4/1/15)

The State Water resources Control Board (Water Board) shall impose restrictions to achieve a statewide 25% reduction in potable urban water usage through February 28, 2016





# Alternate Water Sources for Nonpotable Water Applications (Gray Water)

## Chapter 16

## Definition CPC § 209 “Graywater”

*Graywater (BSC & HCD 1).*

*Pursuant to Health and safety Code Section 17922.12, “graywater” means untreated waste water 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 unhealthful processing, manufacturing, or operating wastes.*

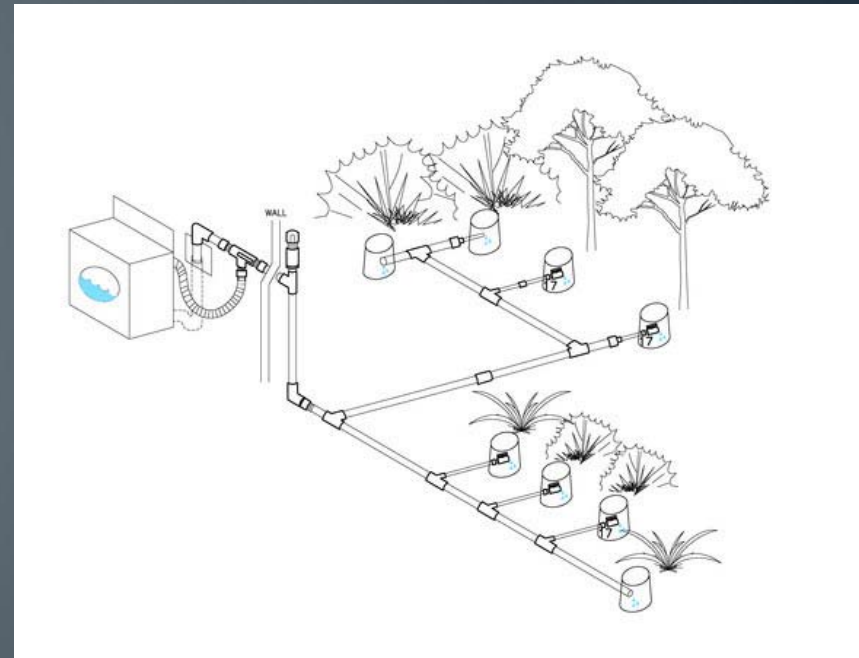
*“Graywater” includes but is not limited to wastewater from bathtubs, showers, bathroom wash basins, clothes washing machines, and laundry tubs, but does not include wastewater from kitchen sinks or dishwashers.*

# Gray Water or Grey Water Systems?

- Laundry to Landscape (Clothes washer)
- Branched Drain
- Pumped Systems
- Dual Drainage Plumbing
- Sand Filter to Drip Irrigation
- Manufactured Gray Water System

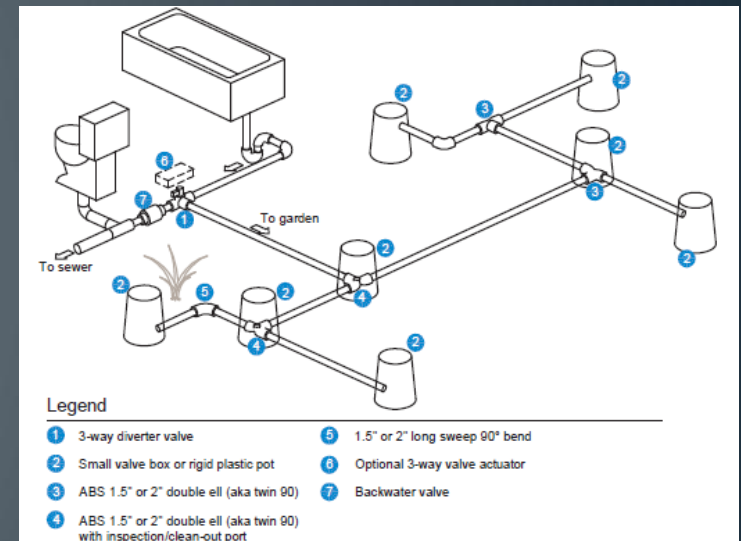
# Laundry to Landscape (Clothes washer)

- The most simple gray water system
- No permit required
- Some limitations
  - No spray irrigation
  - No ponding
  - Exterior use only
  - Sub-soil irrigation



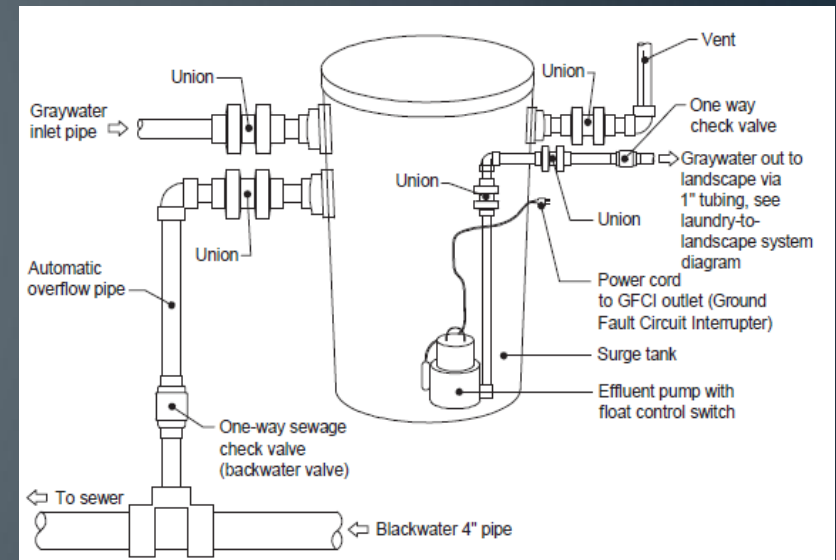
# Branched Drain

- Allows other sources besides the washing machine.
- Requires no electricity, gravity driven.
- Typically utilizes graywater from showers and/or sinks.
- Distributes graywater to the landscape using standard 1 1/2-inch or 2-inch drainage pipe.
- Branched-drain systems are best suited to irrigating trees or large shrubs.
- Once installed this system is persistent and requires little maintenance.



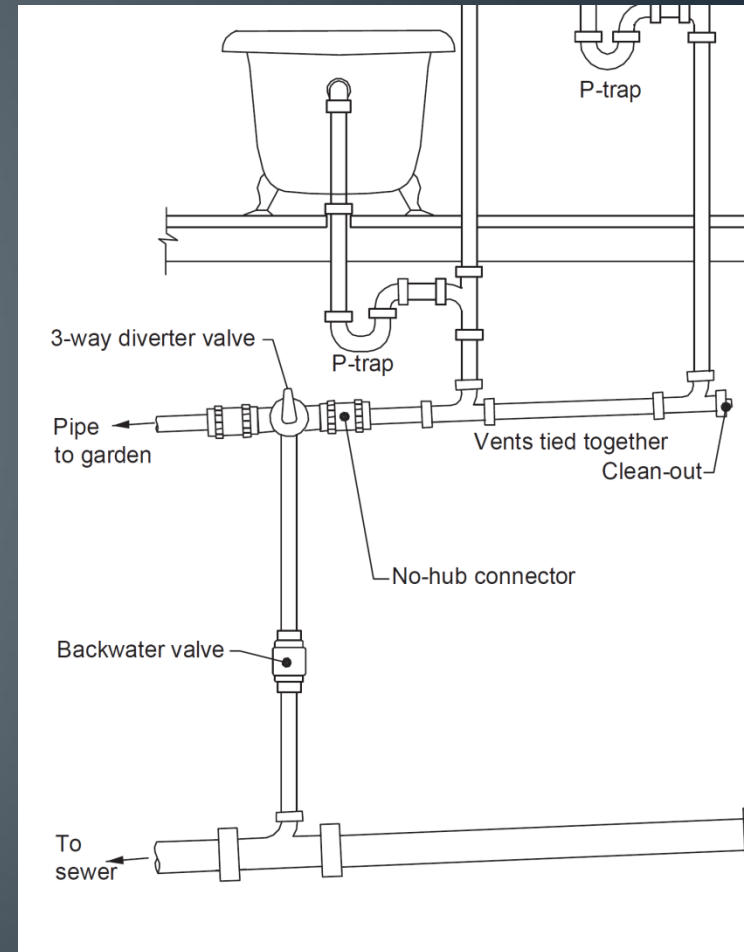
# Pumped Systems

- Temporary storage tank (less than 24 hours) before being pumped to the landscape.
- If the system is to be used for drip irrigation, the graywater must be filtered
- Graywater is directed to a watertight (surge) tank, then pumped through tubing to the landscape.
- This system is lower in cost and easier to install than a system that includes a filter for drip irrigation.



# Dual Drainage Plumbing

- Typically seen in new construction or major remodel.
- The graywater drains separately from the toilet and kitchen sink.
- Enables access to all the household graywater in one pipe.
- The graywater and black water (toilet and kitchen sink) pipes can combine either after they exit the house or “downstream” of a 3-way valve on the graywater pipe.



# Sand Filter to Drip Irrigation

- Graywater flows by gravity to a temporary holding tank then pumped through a sand filter to remove particles.
- Pumped to a drip irrigation system.
- An irrigation controller allows municipal water to supplement graywater.
- A backflow prevention assembly must be installed on the municipal water supply line, and the assembly must be tested annually.





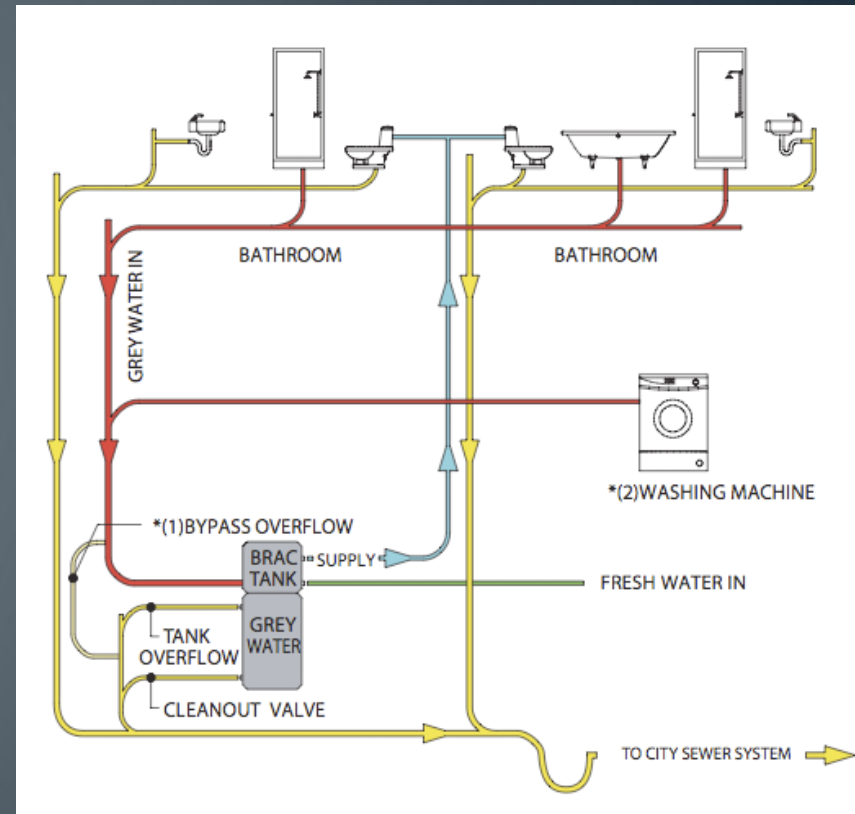
# Manufactured Gray Water System

- Manufactured systems typically filter graywater for use in graywater-compatible drip irrigation tubing.
- Manufactured graywater systems are typically lower in cost than automated sand filter-to-drip irrigation systems.
- If possible, read reviews or talk to people who have experience with the specific system.
- Because these systems incorporate filters, pumps, and sometimes disinfectant they have more components to maintain and replace.
- These systems typically require manual filter cleaning.



# Indoor Use

- Graywater can be filtered, disinfected, and pumped back inside residential buildings to be used for toilet flushing and other non-potable uses.
- Not a simple system.
- There are rigorous water quality standards that need to be met for interior graywater reuse
- While technology has been developed to meet these standards, it can be expensive for individual homes.



# Basic Requirements

- The enforcing Agency may require plans prepared by a licensed design professional, dependent on the complexity of the system.
- Alternate water source systems and components shall be inspected and maintained
- An operation and maintenance manual for gray water, rainwater, and on-site treated water systems shall be supplied to the building owner
- The minimum water quality for alternate water source systems shall meet the applicable water quality requirements for the intended application

# Clothes Washer System.

## No Permit required

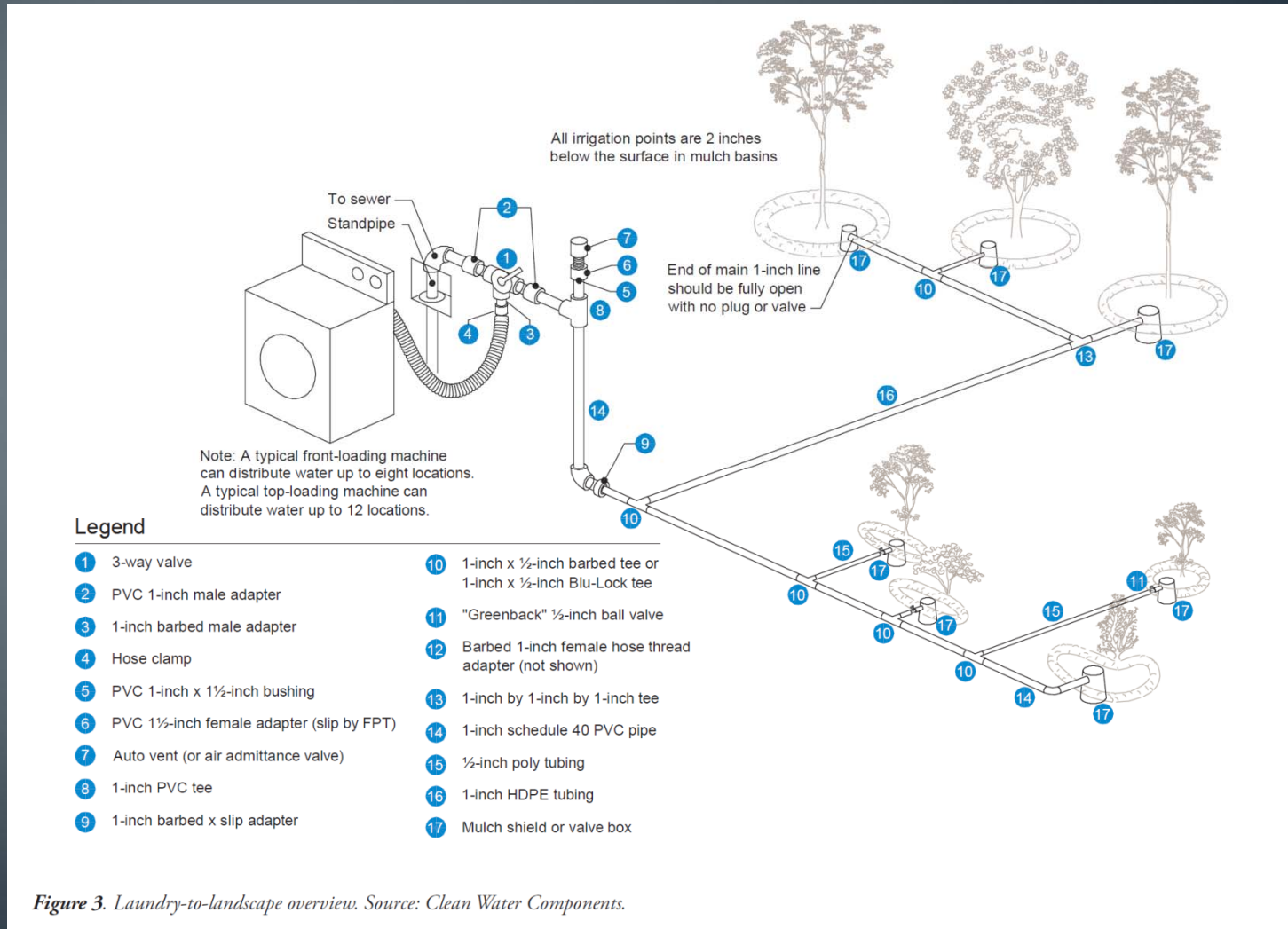
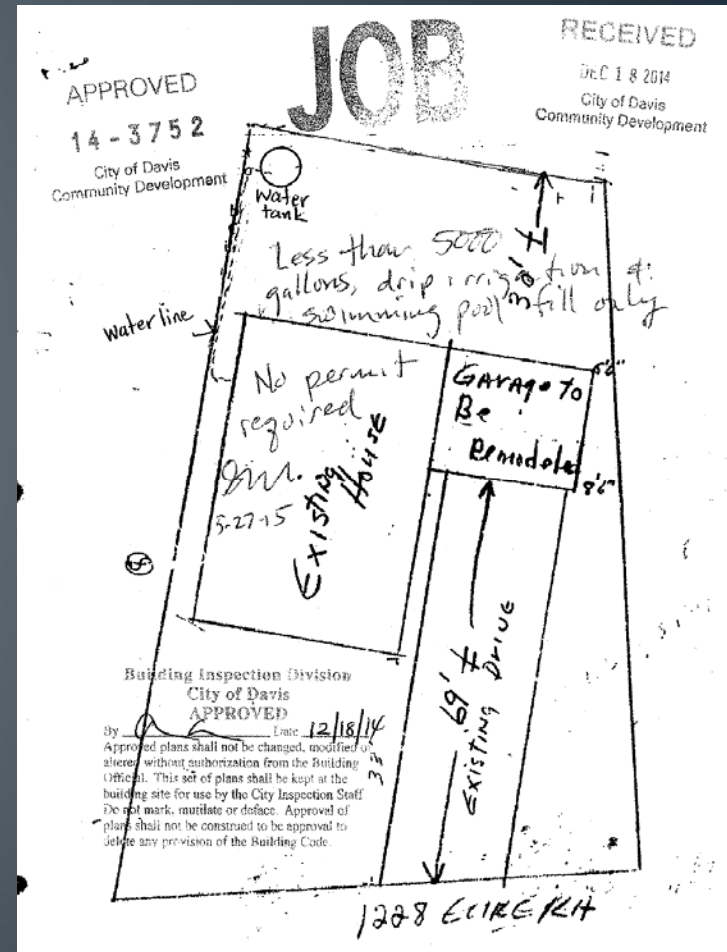


Figure 3. Laundry-to-landscape overview. Source: Clean Water Components.

# Clothes Washer System.

A clothes washer system in compliance with all of the following does not require a permit.

If required, notification has been provided to the enforcing agency regarding the proposed location and installation of a gray water system irrigation or disposal system.



# Clothes Washer System.

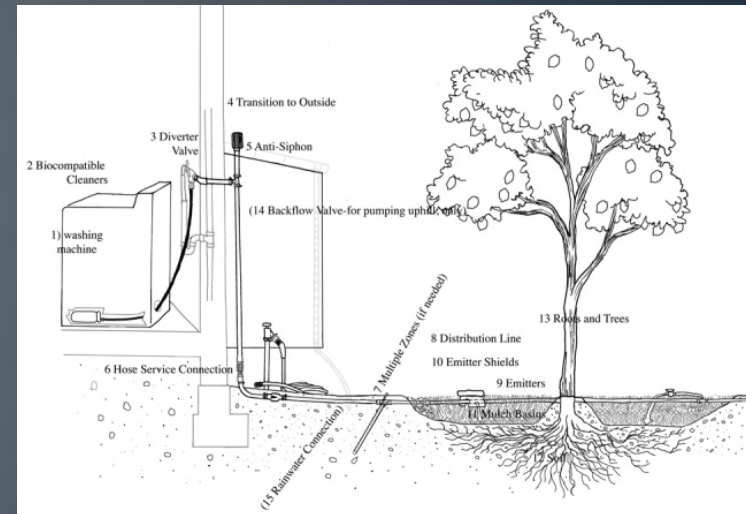
*The design shall allow the user to direct the flow to the irrigation or disposal field or the building sewer. The direction control of the gray water shall be clearly labeled and readily accessible to the user.*



# Clothes Washer System.

*The installation , change, alteration, or repair of the system does not include a potable water connection or a pump and does not affect other building, plumbing, electrical or mechanical components.*

*Note: The pump in a clothes washer shall not be considered part of the gray water system.*



# Clothes Washer System.

*The gray water shall be contained on the site where it is generated.*

*Gray water shall be directed to and contained within an irrigation or disposal field*





# Clothes Washer System.

*Ponding or run-off is prohibited and shall be considered a nuisance*

*Gray water may be released above the ground surface provided at least 2 inches of mulch, rock, or soil, or solid shield covers the release point.*

*Gray water systems shall be designed to minimize contact with humans and domestic pets.*



# Clothes Washer System.

*Water used to wash diapers or similarly soiled or infectious garments shall not be used and shall be diverted to the building sewer.*

*Gray water shall not contain hazardous chemicals derived from activities such as cleaning car parts, washing greasy or oily rags, or disposing of waste solutions from home photo labs or similar hobbyist or home occupational activities.*

# Clothes Washer System.

*Exemption from construction permit requirements of this code shall not be deemed to grant authorization for any gray water system to be installed in a manner that violates other provisions of the Plumbing Code.*



# Clothes Washer System.

An operation and maintenance manual shall be provided to the owner.

Directions shall indicate that the manual is to remain with the building throughout the life of the system and upon change of ownership or occupancy.

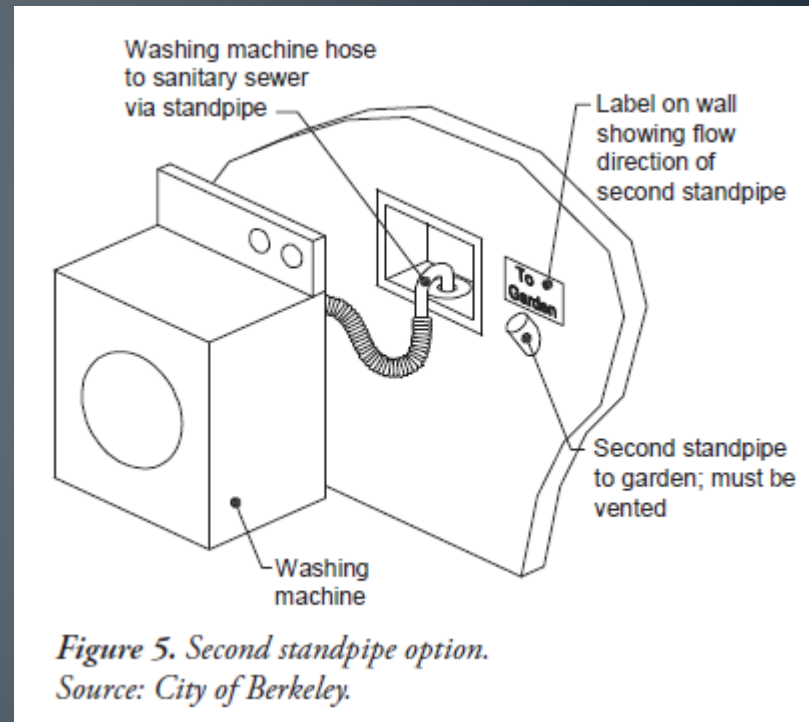
**Table 4. Laundry-to-Landscape System: Operation and Maintenance Checklist**

Component	Inspection Schedule	O&M Activity	Action Needed
<b>3-way valve</b>	Annual	Check for leaks at washer hose and that label is in place	<input type="checkbox"/> Condition good <input type="checkbox"/> Action needed <ul style="list-style-type: none"> <li>• If leaking, tighten hose clamp.</li> <li>• Replace label if needed.</li> </ul>
<b>Auto vent</b>	Annual	Check for leaks from auto vent	<input type="checkbox"/> Condition good <input type="checkbox"/> Action needed <ul style="list-style-type: none"> <li>• If leaking, replace the auto vent.</li> </ul>
<b>Piping and tubing</b>	If you notice water in an unusual place	Check for leaks	<input type="checkbox"/> Condition good <input type="checkbox"/> Action needed <ul style="list-style-type: none"> <li>• If piping or tubing is damaged, cut out damaged section and reconnect with a 1-inch barbed coupling.</li> </ul>
	Annual	Check for even distribution from outlets	<input type="checkbox"/> Condition good <input type="checkbox"/> Action needed <ul style="list-style-type: none"> <li>• Unclog hair or lint built up in the outlets. Open ball valves, check for clogs. If needed, flush the system with a hose: temporarily disconnect the tubing from the PVC fitting, attach the garden hose by barb fitting, and connect the hose to the system.</li> </ul>
<b>Mulch basins</b>	Annual	Check to see if mulch has decomposed and water is pooling under graywater outlets	<input type="checkbox"/> Condition good <input type="checkbox"/> Action needed <ul style="list-style-type: none"> <li>• Remove decomposed mulch and add new mulch.</li> </ul>

# Clothes Washer System.

*Gray water discharge from a clothes washer system through a standpipe shall be properly trapped in accordance with Section 1005.*

Biocompatible Laundry Detergent, there's a few on the market, such as Oasis, or ECOS



# Laundry to Landscape

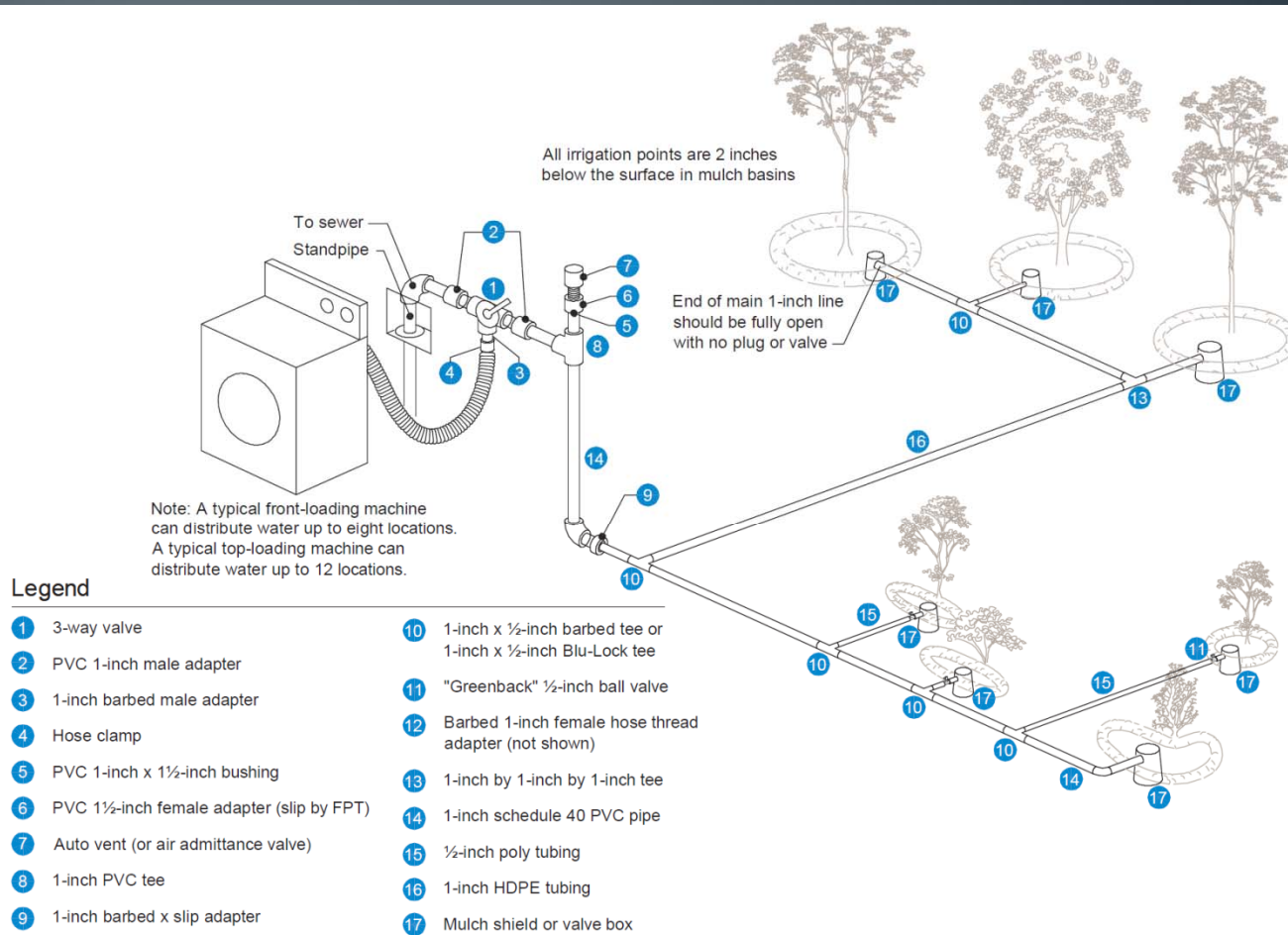
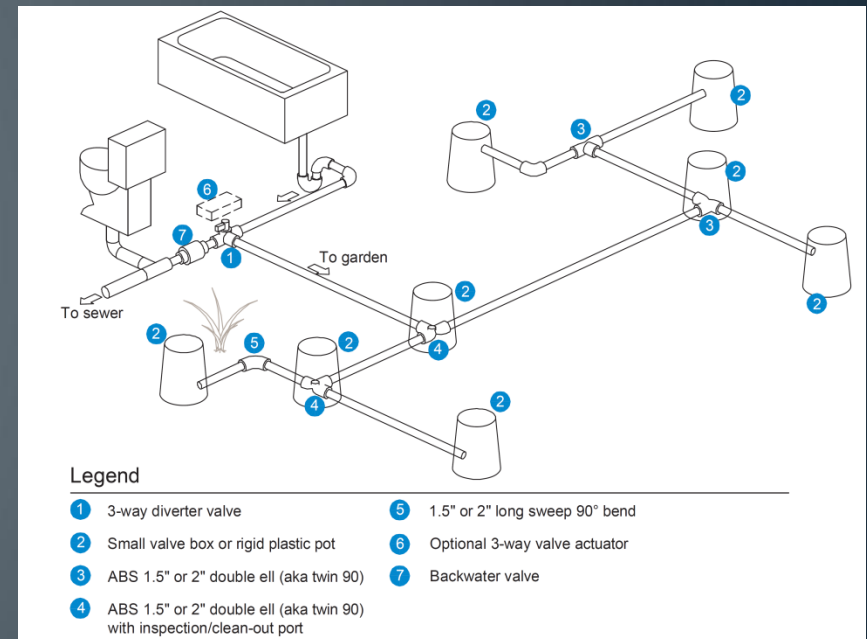


Figure 3. Laundry-to-landscape overview. Source: Clean Water Components.

# Simple System

The discharge capacity of a gray water system shall be determined by Section 1602.8 (calculations using specified formulas). **Simple systems have a discharge capacity of 250 gallons per day or less.**

Simple systems shall require a construction permit.



## *Complex System*

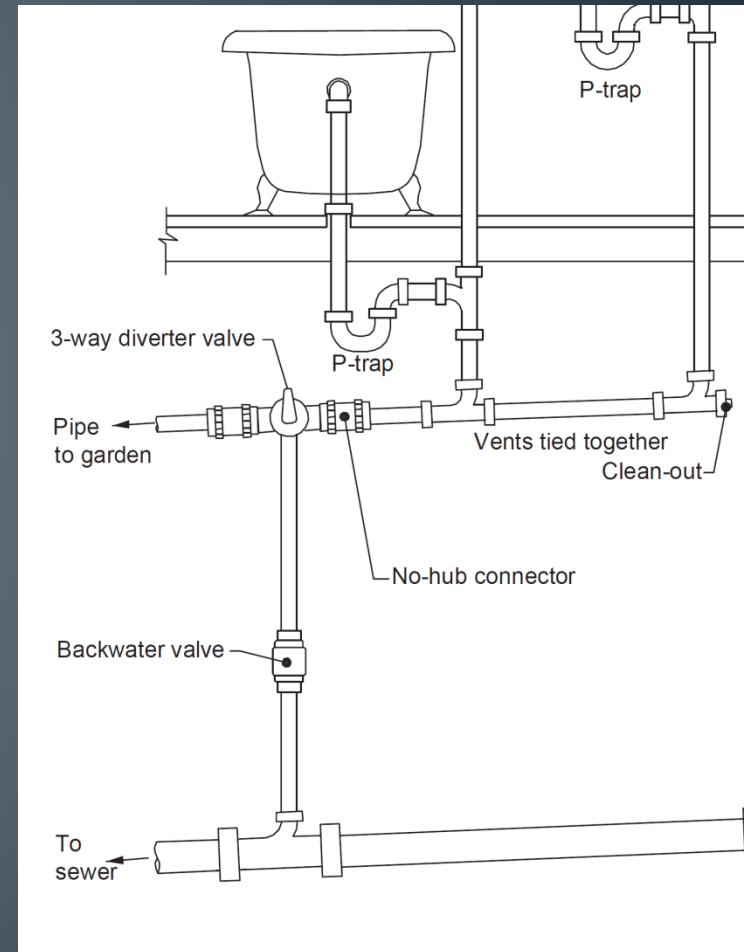
*The discharge capacity of a gray water system shall be determined by Section 1602.8 1602.8 (calculations using specified formulas). **Complex systems have a discharge capacity of over 250 gallons per day.***

*Complex systems require a construction permit.*



# Diverter Valve

*All gray water systems shall be designed with a diverter valve to allow the user to direct the flow to the building sewer and either the irrigation field or disposal field, whichever is used.*



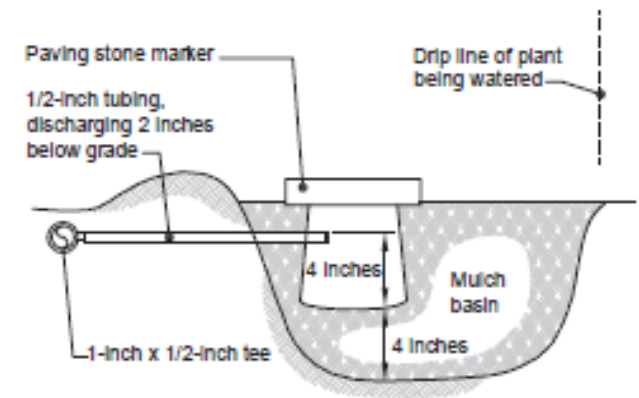
# No Ponding and Spray Irrigation

*Gray water shall not be used in spray irrigation, allowed to pond or runoff and shall not be discharged directly into or reach any storm sewer system or any surface body of water.*



# Point of Discharge

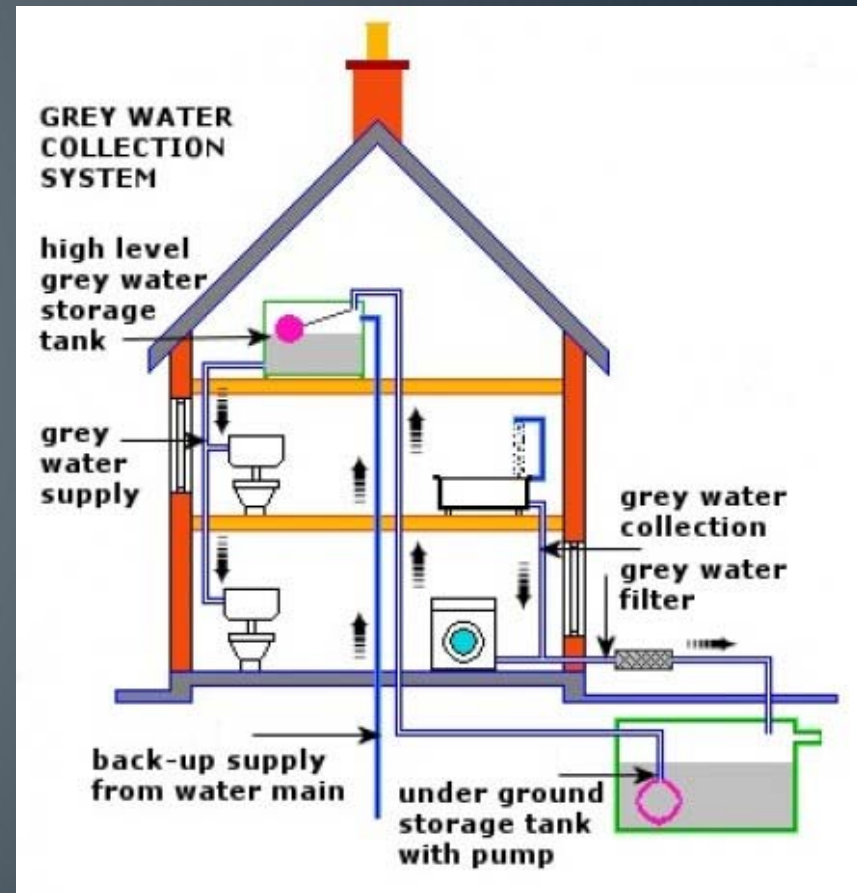
*The discharge point of any gray water subsoil irrigation or subsurface irrigation field shall be covered by at least 2 inches of mulch, rock, or soil, or a solid shield to minimize the possibility of human contact.*



*Figure 4. Mulch shield placement.*

# Potable water connections protected

*A grey water system shall not be connected to any potable water system without an air gap, reduced pressure principle backflow preventer, or other physical device with prevents backflow and shall not cause ponding or runoff of gray water.*



## *Mulch Basin.*

*Mulch basins shall be sized in accordance with Table 1602.10 to prevent ponding or run-off. Mulch must be replenished as required due to decomposition of organic matter.*

*Mulch basins will require periodic maintenance, reshaping or removal of dirt to maintain surge capacity*



*Mulch basin around a dwarf peach tree being filled with wood chips. Photo: David Glover.*

# *Irrigation Field.*

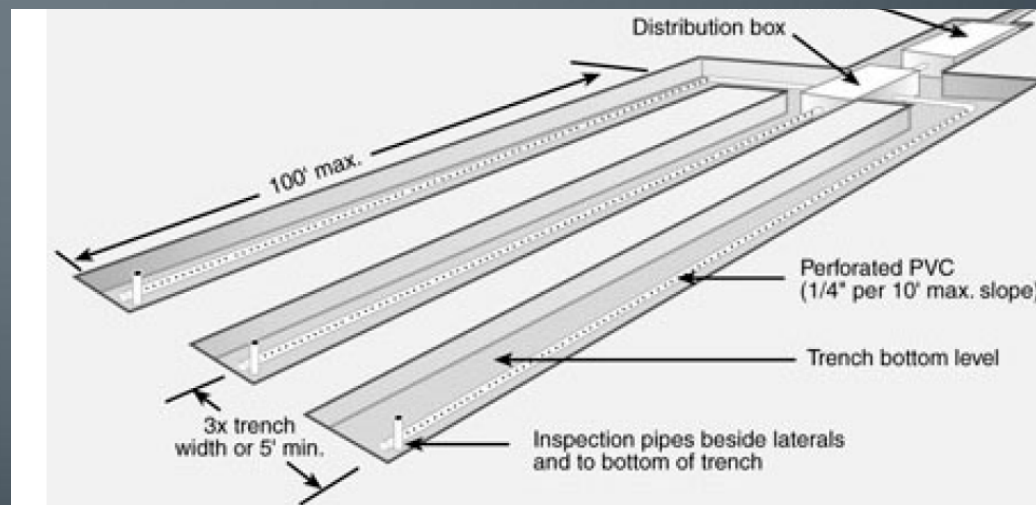
*Emitters shall be designed to resist root intrusion and shall be of a design recommended by the manufacturer for the intended gray water flow and use.*

*For emitter ratings, refer to Irrigation Equipment Performance Report, Drip Emitters and Micro Sprinklers, Center for Irrigation Technology, California State University, 5730 N. Chestnut Avenue, Fresno, California.*



# Disposal Field.

*Disposal systems shall be not less than three inches in cross sectional dimension and shall be constructed of perforated high-density polyethylene pipe, perforated ABS pipe , perforated PVC pipe, leaching chambers or other approved materials , provided that sufficient openings are available for distribution of the gray water into the trench area.*



## Gray Water System Color and Marking Information.

Pressurized gray water distribution systems shall be identified as containing nonpotable water in accordance with Section 601.2 of this code.

*Marking shall be at intervals not to exceed 5 feet. Gray water distribution piping upstream of any connection to an irrigation or disposal field or a distribution valve shall be identified with the words. "CAUTION: NONPOTABLE GRAY WATER, DO NOT DRINK".*



## On-Site Treated Nonpotable *Gray* Water Systems.

On-site treated nonpotable *gray* water systems may supply uses such as:

- Water closets
- Urinals
- Trap primers for floor drains and floor sinks
- Above and below ground irrigation
- Other uses approved by the AHJ



# *Nonpotable Water Sources Approved for Re-use*

*Swimming pool backwash operations*

*Air conditioner condensate*

*Rainwater*

*Cooling tower blow-down water*

*Foundation drainage*

*Steam system condensate*

*Fluid cooler discharge water*

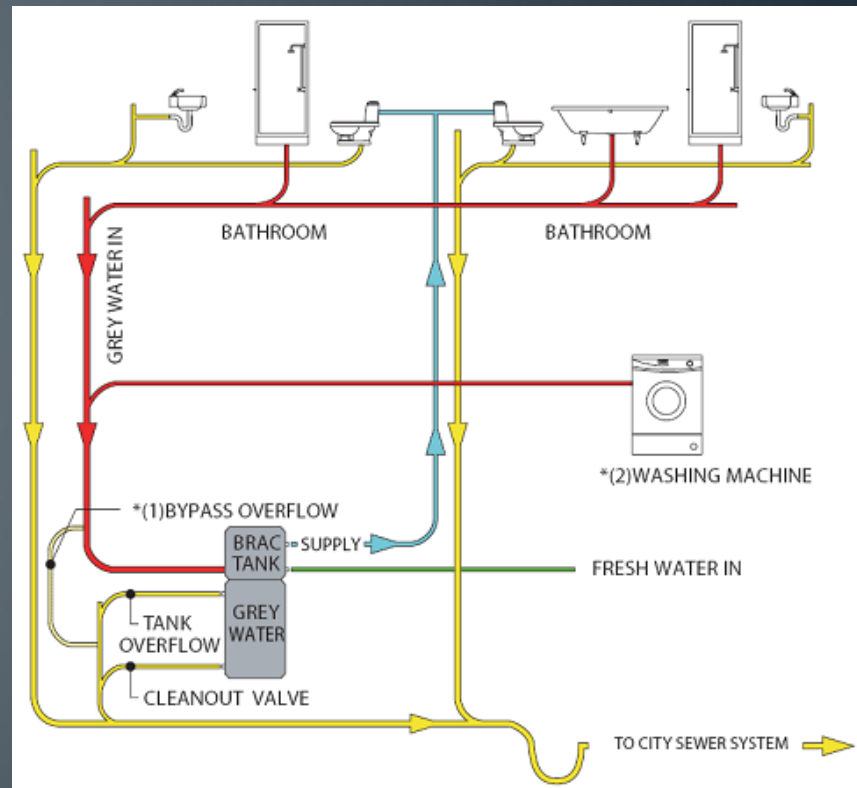
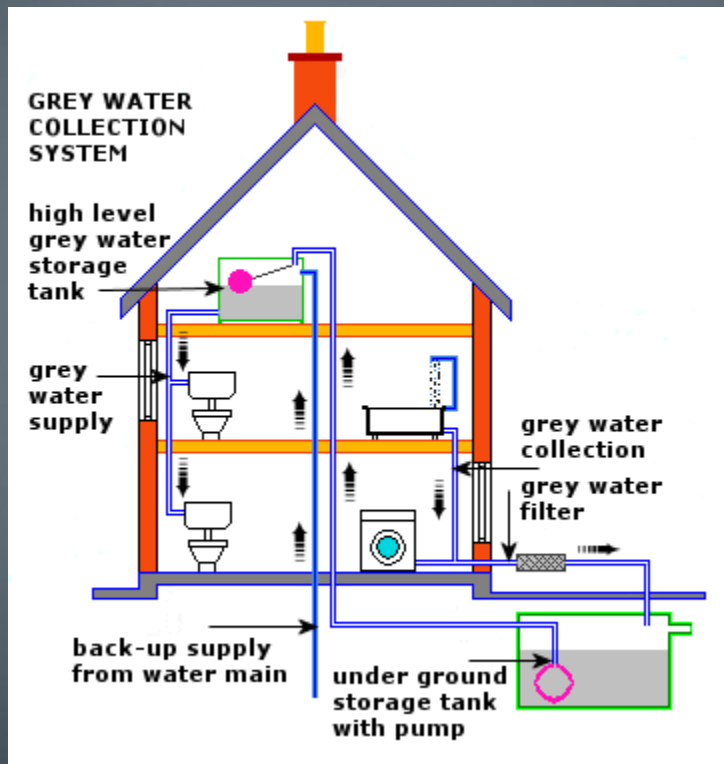
*Food steamer discharge water*

*Combination oven discharge water*

*Industrial process water*

*Fire pump test water*





The image features a background of thin, vertical, light blue lines of varying lengths and positions, creating a textured, forest-like effect. A solid teal horizontal bar spans the width of the page, containing the word "Resources" in white, bold, sans-serif font. Below this bar is a thin yellow line, and at the bottom is a grey gradient bar.

# Resources

<http://www.water.ca.gov/wateruseefficiency/landscapeordinance/>

The screenshot shows a web browser window displaying the California Department of Water Resources website. The browser's address bar shows the URL <http://www.water.ca.gov/wateruseefficiency/landscapeordinance/>. The website header features the "CA.GOV DEPARTMENT OF WATER RESOURCES" logo and a search bar with "GO" and radio buttons for "DWR" and "California". A navigation menu includes links for Home, Newsroom, Flood & Safety, Planning, State Water Project, Funding, Environment, Supply & Use, and Data. Below the menu is a blue banner with links for California Cooperative Snow Surveys, Water Supply Contracts, Water Use Efficiency, and All Supply/Use Topics... The main content area is titled "Water Efficient Landscape Ordinance" and includes a breadcrumb trail: Home -> Water Use Efficiency -> Water Efficient Landscape Ordinance. On the left, there is a "Save Our WATER" graphic and a "WATER USE EFFICIENCY" sidebar with links to Water Use Home, The Water Conservation Act of 2009 (SB X7-7), Funding (Financial Assistance), Publications, News Archive, Contacts, and Links. Below this is a "DROUGHT RELATED" sidebar with links to Drought in California, Urban Drought Guidebook, Water Shortage Contingency Plan (Excerpt from Urban Drought Guidebook), Urban Water Suppliers Water Conservation Data, and California Drought Contingency Plan (2010). The main content area features a large image of a modern building with a landscaped courtyard. Below the image is the section title "2015 – Updating the State Model Water Efficient Landscape Ordinance (per Governor’s Executive Order B-29-15)". The text explains that in California, about half of the urban water is used for landscape irrigation and that DWR is updating the Model Ordinance to promote efficient landscapes. It also mentions that the Executive Order calls for revising the Model Ordinance to increase water efficiency standards for new and retrofitted landscapes through more efficient irrigation systems, greywater usage, onsite storm water capture, and by limiting the portion of landscapes that can be covered in turf. The text concludes that updating the ordinance to incorporate these elements will help stretch limited water supplies. A link to "Executive Order B-29-15" is provided. The page also includes a "Schedule" section. The browser's taskbar at the bottom shows the time as 1:17 PM on 6/3/2015.

CA.GOV DEPARTMENT OF WATER RESOURCES

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## Water Efficient Landscape Ordinance

Home -> [Water Use Efficiency](#) -> **Water Efficient Landscape Ordinance**

### 2015 – Updating the State Model Water Efficient Landscape Ordinance (per Governor’s Executive Order B-29-15)

In California, about half of the urban water is used for landscape irrigation. Substantial water savings can be gained by proper landscape design, installation and maintenance. To improve water savings in this sector, DWR is updating the Model Ordinance. The Model Ordinance promotes efficient landscapes in new developments and retrofitted landscapes.

The Executive Order calls for revising the Model Ordinance to increase water efficiency standards for new and retrofitted landscapes through more efficient irrigation systems, greywater usage, onsite storm water capture, and by limiting the portion of landscapes that can be covered in turf. It also requires reporting on the implementation and enforcement of local ordinances, with required reports due by December 31, 2015. Updating the ordinance to incorporate these elements will help stretch our limited water supplies.

[Executive Order B-29-15](#)

#### Schedule

# Water Budget Calculator

The screenshot shows a web browser window with the address bar displaying <http://www.water.ca.gov/wateruseefficiency/landscapeordinance/>. The browser has a single tab titled "Water Use Efficiency" and the "ca.gov" logo in the top right corner. The browser's menu bar includes "File", "Edit", "View", "Favorites", "Tools", and "Help". The address bar also shows "Page", "Safety", and "Tools" dropdown menus.

The page content is organized into a sidebar on the left and a main content area on the right. The sidebar contains several sections:

- Urban Water Management**
  - Independent Technical Panel (ITP)
  - CIMIS
  - 20 x 2020 Water Conservation Plan
- DESALINATION**
  - Desalination
- RECYCLING**
  - Recycling
- DWR RELATED LINKS**
  - Agricultural Water Use Efficiency
  - Considering Water Use Efficiency for the Environmental Sector
  - Desalination
  - Land and Water Use
  - California Water Plan Resource Management Strategy
  - Recycled Municipal Water
  - Urban Landscape Evapotranspiration
  - Vegetative Assessment in an Urban Environment
  - Water-Energy Grant Program
- Division of Statewide Integrated Water Management**
  - Water Use Efficiency**  
901 P Street Sacramento, CA

The main content area features a heading "Model Ordinance Technical Resources" followed by a list of links:

- [A Report on the Status of Adoption of Water Efficient Landscape Ordinances, Pursuant to AB 1881 Section 65597, Dec 2010](#)
- [Appendix](#)
- [Material and Literature](#)
- [Text changes needed if adopting the State Model Ordinance](#)
- **Examples of ordinances:**

Posting of local ordinances on the Department of Water Resources website does not mean DWR approves or disapproves of an ordinance effectiveness or otherwise make any determination about that ordinance. Consult your Legal Counsel to determine if your ordinance is at least as effective in conserving water as the updated model ordinance adopted by the DWR.

  - [Ordinance by City](#)
  - [Ordinance by County](#)
- [Sample Forms](#)
- [CIMIS](#)
- [Water Budget Calculator](#)
- [California Building Standards Commission water budget calculator](#)
- [California Aerial Imagery](#)

A contact information box is located below the links:

For more information about the Updated Model Water Efficient Landscape Ordinance, please contact  
Julie Saare-Edmonds  
(916) 651-9676  
[Landscape@water.ca.gov](mailto:Landscape@water.ca.gov)

The bottom of the page features a section titled "Adoption of the Updated Model Water Efficient Landscape Ordinance" with the text: "Please read the attached letter from Department of Water Resources Director regarding the adoption of the Updated Model Water Efficient Landscape Ordinance." Below this text are links:

- [Director's Letter](#)
- [Enclosure 1](#)
- [Enclosure 2](#)

The Windows taskbar at the bottom shows the system tray with the time "1:19 PM" and date "6/3/2015".

# California Energy Commission Water & Energy Savings Technology (WET)



The screenshot shows the California Energy Commission website. The header includes the CA.GOV logo, the California Energy Commission logo, and navigation links: Home, About Us, Analysis & Stats, Efficiency, Funding, Power Plants, Renewables, Research, and Transportation. A search bar is also present. The main content area features a large image of a reservoir and the heading "Investing in Innovative Water & Energy Saving Technologies". Below this, there is a paragraph explaining the program's purpose in response to California's drought, followed by a list of criteria for eligible technologies. The criteria include: displaying significant water savings, energy savings, and greenhouse gas emission reductions; demonstrating actual operation beyond the research and development stage; and documenting readiness for rapid, large-scale deployment. Examples of eligible technologies are provided for Agriculture (low-pressure irrigation, precision agriculture, etc.) and Industrial/Commercial (advanced technology solutions for water and energy savings).

**Investing in Innovative Water & Energy Saving Technologies**

In response to California's drought, Governor Brown's [Executive Order B-29-15](#) outlines bold steps to save water, increase enforcement of water use standards, streamline the state's drought response, and invest in new water energy technologies. To accelerate the deployment of innovative water and energy saving technologies and reduce greenhouse gas emissions, the California Energy Commission, jointly with the Department of Water Resources, and the State Water Resources Control Board, will implement a Water Energy Technology (WET) program to provide funding for innovative technologies that meet the following criteria:

- Display significant water savings, energy savings, and greenhouse gas emission reductions.
- Demonstrate actual operation beyond the research and development stage.
- Document readiness for rapid, large-scale deployment (but not yet widely deployed) in California.

**Examples of eligible innovative WET program technologies:**

- **Agriculture:** Low-pressure, precision agriculture, and integrated irrigation solutions that reduce on-farm water use, net energy use, and GHG emissions and can include moisture sensing, remote sensing to estimate crop stress, water-use monitoring software, irrigation scheduling technologies, soil characteristics, PC emitters, filters, variable frequency drive motors, valves, flow meters, regulated deficit irrigation practices, leak detection, and/or other factors.
- **Industrial/Commercial:** Advanced industrial/commercial technology solutions that save water, reduce net energy use, and reduce GHG emissions, and can include integrated on-site water reuse and

**More Information**

- Workshops and Meetings

**e-Filing**

- Submit Comment on the Water Energy Technology (WET) program
- View Comments and Documents
- Fact Sheet - English
- Fact Sheet - Spanish
- Fact Sheet - Korean

**Related Links**

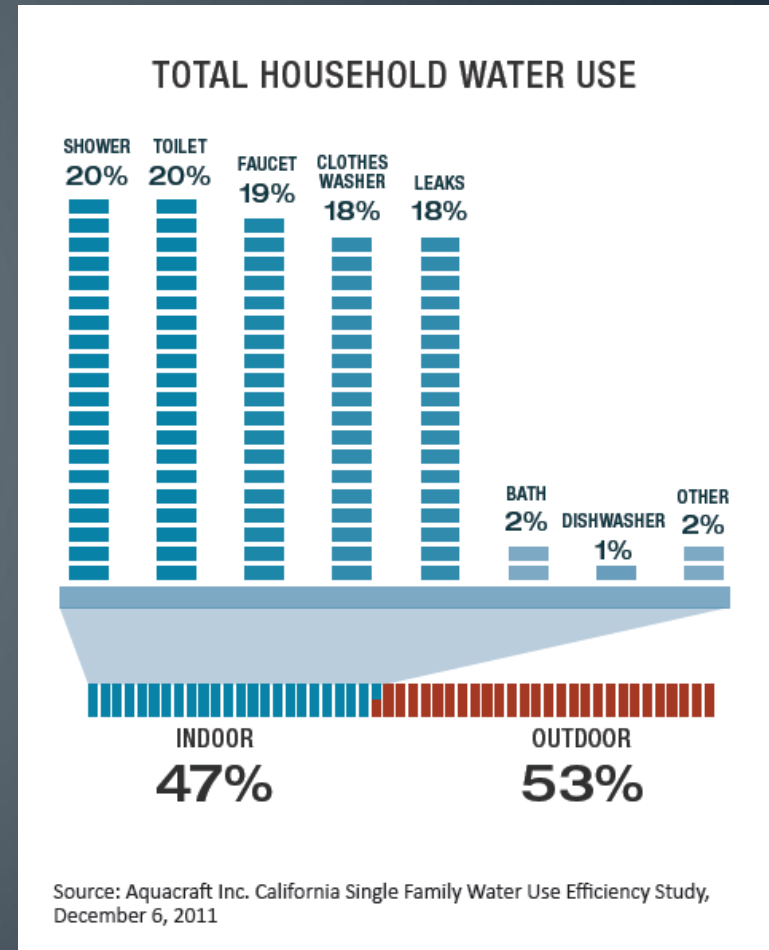
- Ideas Exchange
- Drought Rebate Program
- California Drought Page
- Governor's Executive Order B-29-15

Launching Summer 2015 [www.energy.ca.gov/wet/](http://www.energy.ca.gov/wet/)

# W.E.T.

## Provides rebates for residential applications

- Efficient clothes washers are available that use as little as 13 gallons of water per load, compared to the 23 gallons per load used in older, inefficient units.
- 1.2 gallon water-efficient faucets
- 1.5 gallon per minute showerheads





# W.E.T.

## Provides funding for innovative technologies

- **Agriculture:** Low-pressure, precision agriculture, and integrated irrigation solutions.
- **Industrial/commercial:** Advanced industrial/commercial technology solutions that save water, reduce onsite net energy use.
- **Residential:** Integrated onsite water reuse and heat recovery systems that save water and reduce net energy use.

### CALIFORNIA'S DROUGHT TECHNOLOGY PROGRAM INVESTING IN INNOVATIVE WATER & ENERGY SAVING TECHNOLOGIES

LAUNCHING SUMMER 2015

In response to California's drought, Governor Brown's Executive Order B-29-15 outlines bold steps to save water, increase enforcement of water use standards, streamline the state's drought response, and invest in new water energy technologies. To accelerate the deployment of innovative water and energy saving technologies and reduce greenhouse gas emissions, the California Energy Commission, jointly with the Department of Water Resources, and the State Water Resources Control Board, will implement a Water Energy Technology (WET) program to provide funding for innovative technologies that meet the following criteria:

- » Display significant water savings, energy savings, and greenhouse gas emission reductions.
- » Demonstrate actual operation beyond the research and development stage.
- » Document readiness for rapid, large-scale deployment (but not yet widely deployed) in California.

#### Examples of eligible innovative WET program technologies:

- » Agriculture: Low-pressure, precision agriculture, and integrated irrigation solutions that reduce on-farm water use, net energy use, and GHG emissions and

can include moisture sensing, remote sensing to estimate crop stress, water-use monitoring software, irrigation scheduling technologies, soil characteristics, PC emitters, filters, variable frequency drive motors, valves, flow meters, regulated deficit irrigation practices, leak detection, and/or other factors.

- » Industrial/commercial: Advanced industrial/commercial technology solutions that save water, reduce onsite net energy use, and reduce GHG emissions, and can include integrated onsite water reuse and heat recovery systems; packaged/modular wastewater treatment systems; and no-water or low-water use technologies for process operations, laundries, food service, and industries and businesses with high water consumption.
- » Residential: Integrated onsite water reuse and heat recovery systems that save water and reduce net energy use and GHG emissions.
- » Water treatment and recovery: Reduce greenhouse gas emissions from existing desalination plants through installation of advanced technologies/processes that use less energy than the current systems (e.g., use less than 10 kWh/1000 gallons of water produced) with increased water production; and installation of renewable energy sources for heat or power, and/or other novel methods to reduce greenhouse gas emissions.




Search

- City Home
- Water Home
- Residents
- Businesses
- Visitors
- Departments

Public Works > Water > Water Conservation

### Water Conservation

**When it comes to water conservation, let's work together to **SAVE DAVIS WATER****



**Davis Water**  
SAVING MORE TOGETHER

### SaveDavisWater.org

- [City of Davis Mandatory Water Restrictions](#)
- [City of Davis Mandatory Water Cutbacks: Workshop Presentation](#)
- [City's Efforts to Conserve Water](#)
- [Water Reduction in Parks and City Facilities](#)
- [Caring for Trees During the Drought](#)
- [UC Davis Arboretum All-Stars: Low-Water Use Plants](#)

On September 2, 2014, the City of Davis adopted resolution 14-124 which established emergency regulations that remain in effect during continued periods of drought. The City continues to aim to achieve a citywide 30% water use reduction consistent with Davis' Urban Water Management Plan's Stage 3 water shortage contingency plan. Davis' 30% water use reduction goal is measured at the wells and not measured by changes in individual customer accounts.

<http://public-works.cityofdavis.org/>

### Public Works

Water

- Water Conservation**
  - Davis Ranked Third in California for Reducing Water Use During September Drought
  - Watering your lawn
  - Leak detection
  - Water use in your home
  - Water conservation tips
  - Helpful Links
  - City Water Conservation Efforts
- Water Quality Information
- Backflow
- Rates
- Documents
- The Davis Woodland Water Supply Project
- WaterSmart: WaterInsight
- Water Assistance Program
- Davis Water Quality Improvement Project

### Department Navigation

- Administrative
- Transportation
- Wastewater
- Stormwater
- Water

# City of Davis Handouts

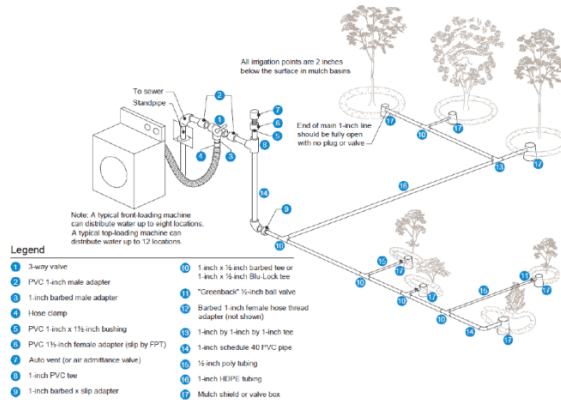
**Davis**  
California  
Community Development Department  
23 Russell Boulevard-Davis, California 95616  
530/757-5610 Fax: 530/757-5660 TDD: 530/757-5666

## GRAYWATER - LAUNDRY TO LANDSCAPE

A laundry-to-landscape graywater system captures graywater from the discharge hose of your washing machine, enabling you to reuse the water without altering the existing plumbing in your home.

You need a permit for a graywater system for outdoor irrigation that includes any of the following conditions:

- Graywater system collects water from showers, sinks, or baths.
- Graywater system alters the plumbing (you cut into the drainage plumbing to access the graywater).
- Graywater system is installed in a building that is not a one- or two-unit residential building.
- Graywater system includes a pump (besides the washing machine's internal pump) or a tank.



C:\Users\signahoney\Desktop\Laundry to Landscape.docRev. 7/7/2015

**Davis**  
California

Community Development Department  
23 Russell Boulevard-Davis, California 95616  
530/757-5610 Fax: 530/757-5660 TDD: 530/757-5666

## RAIN WATER CATCHMENT SYSTEMS

Rainwater catchment systems shall comply with the requirements found in Chapter 17 of the 2013 California Plumbing Code (CPC).

If the rainwater catchment system includes a pump and/or is used to provide non-potable water to toilets or urinals the code requires additional measures to be in place including treatment, additional filtration and cross-connection protection and testing.

The requirements for an outdoor gravity system are listed below:

Per the California Plumbing Code a permit is required for a rainwater catchment system. Complete plumbing plans shall be submitted to the Building Division for review and approval.

Exceptions:

1. A permit is not required for exterior rainwater catchment systems used for outdoor **non-spray** irrigation with a maximum storage capacity of 5000 gallons supported on grade and a height to width ratio that does not exceed 2 to 1.
2. A permit is not required for exterior catchment systems used for spray irrigation with a maximum storage capacity of 360 gallons and no pump.

Rainwater catchment systems shall have no direct connection to a potable water supply or alternate water source system.

Rainwater shall be collected from roof surfaces or other man-made above grade impervious surfaces.

Rainwater collected from surface water run-off, vehicular parking or manmade surfaces at or below grade shall comply with the requirements for **on-site treated nonpotable gray water** in Chapter 16 of the CPC or be used exclusively for sub-surface irrigation.

Horizontal rainwater catchment system collection piping shall maintain a minimum slope and be sized using the Table-1.

ALLOWABLE ROOF AREA (2" per hour rainfall)				
Pipe slope	3" pipe	4" pipe	5" pipe	6" pipe
1/8" per foot	1644	3760	6880	10,700
1/4" per foot	2320	5300	9440	15,100
3/8" per foot	3288	7520	13,360	21,400


TABLE -1

The rainwater catchment conveyance system shall be equipped with a debris excluder or other approved means to prevent the accumulation of leaves, needles, other debris and sediment from entering the storage tank.

A filter permitting the passage of particulates not larger than 100 microns shall be provided for rainwater supplied to water drip irrigation system.

C:\Users\signahoney\Desktop\Rainwater catchment.docRev. 7/8/2015

# Websites



ABOUT | ONLINE STORE | DO-IT-YOURSELF | WORKSHOPS

## Rebates

Many cities, counties, water districts, and conservation agencies offer rain barrel rebates and incentives for rainwater harvesting. We've linked to a few rebate programs here. This list is by no means exhaustive, so be sure to check with your local jurisdiction or water district if you don't see a listing here.

*\*\* Asterisks indicate rebates that exceed the cost of the BlueBarrel System—that's right, BlueBarrel's price per gallon is so low that with these rebates you may get a system for **FREE!***

### Northern California:

*Our online shopping cart will connect you with one of our approved barrel suppliers in the Bay Area or Sacramento Valley. Then you can apply for one of these great rebates and get most or all of your money back!*

[City of Santa Rosa Rainwater Harvesting Rebate](#)

[North Marin Water District Rainwater Harvesting Rebate](#)

[Bay Area Water Supply & Conservation Agency \(BAWSCA\) Rain Barrel Rebate \(ENDS JUNE 30!\) serving residents of:](#)

- San Mateo County
- City of Hayward
- City of Sunnyvale



Original designs for living better, cheaper, & ecologically

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[Grey Water Central](#) | [Common grey water mistakes](#) | [Grey water policy center](#) | [Create an Oasis with Grey Water \(book\)](#) | [Builder's Grey Water \(book\)](#) | [Laundry to Landscape](#) | [Wild Water Wisdom \(article\)](#) | [Grey water Q&A](#)

You are here: [Home](#) >

[Grey Water Central](#)

## Grey Water Central

The web's information central on all aspects of grey water systems from the leading innovators and producers of greywater information

By [Art Ludwig](#)

Why you can trust this information

- What is grey water?
- Why use grey water?
- Is grey water reuse safe?
- Is grey water legal?
- The benefits of grey water recycling
- Further reading and watching

# BAY-FRIENDLY LANDSCAPE GUIDELINES

*Sustainable Practices  
for the Landscape Professional*



# RIVER-FRIENDLY LANDSCAPE GUIDELINES

*Sustainable Practices  
for the Landscape Professional*





Guide to Achieving a  
**GREENPOINT RATING**

**BUILDER HANDBOOK – VERSION 6.0**



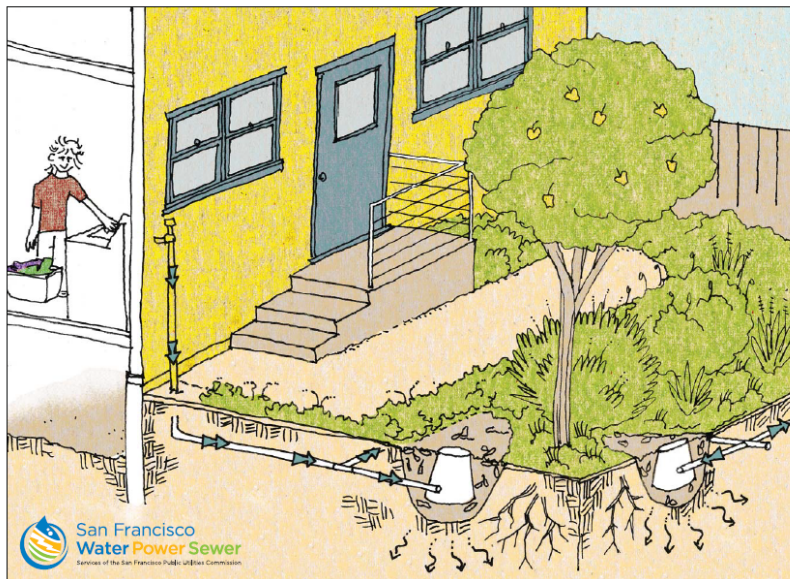
# GARDENS FOR SAN LORENZO



RECOMMENDATIONS FROM  
UC BERKELEY'S LANDSCAPE  
ARCHITECTURE DEPARTMENT



# Thanks to City of San Francisco



San Francisco  
Water Power Sewer  
Services of the San Francisco Public Utilities Commission

**SAN FRANCISCO**  
**graywaterdesignmanual**  
for OUTDOOR IRRIGATION

## On-site Non-potable Water Use

Guide for the collection, treatment,  
and reuse of alternate water supplies  
in San Francisco



City and County of San Francisco  
San Francisco Department of Building Inspection  
San Francisco Department of Public Health  
San Francisco Public Utilities Commission