

# WATER EFFICIENCY

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PASADENA  
THINK GREEN

## WE CREDIT 1.1: Water Efficient Landscaping – Reduce by 50%

**Intent**

Limit or eliminate the use of potable water, or other natural surface or subsurface water resources available on or near the project site, for landscape irrigation.

**Requirements**

- Reduce potable water consumption for irrigation by 50% from a calculated mid-summer baseline case.
- Reductions shall be attributed to any combination of the following items:
  - Plant species factor
  - Irrigation Efficiency
  - Use of captured rainwater.
  - Use of recycled wastewater
  - Use of water treated and conveyed by a public agency specifically for non-potable uses

Pasadena Credit Assessment					Pasadena Credit Support				
	Required	√	Recommended		Possible	√	Pasadena LEED Supplement	√	Plan Check Submittals

**Pasadena LEED Supplement:**

PMC Chapter 17.44 is devoted to landscape requirements including plant selection and irrigation design which reinforce this LEED credit.

The selection of drought tolerant plant material and the use of drip irrigation are popular design practices in Southern California. Other means of achieving this credit include using collected storm water to offset irrigation needs, although this is not a practical method to meet annual water needs for landscape areas.

**Plan Check Submittals:**

Complete the LEED WEc1.1 Letter template and required template support documentation:

- A. Landscape plan.
- B. Narrative describing the landscaping and irrigation design strategies used.

**Option 1 – Landscaping and Irrigation Systems**

- Calculate baseline and design case irrigation water consumption

**Option 2 – Non-Potable Source**

- Calculate the baseline irrigation water consumption and non-potable water supply
- Select non-potable water sources

**Option 3 – Both**

- Calculate baseline and design case irrigation water consumption and non-potable water supply
- Select non-potable water sources

## WE Credit 1.2: Water Efficient Landscaping – No Potable Water Use or No Irrigation

### Intent

Eliminate the use of potable water, or other natural surface or subsurface water resources available on or near the project site, for landscape irrigation.

### Requirements

- Achieve WE Credit 1.1 and:
  - Use only captured rainwater, recycled wastewater, recycled graywater, or water treated and conveyed by a public agency specifically for non-potable uses for irrigation.

OR

- Install landscaping that does not require permanent irrigation systems. Temporary irrigation systems used for plant establishment are allowed on if removed within one year of installation.

Pasadena Credit Assessment					Pasadena Credit Support				
	Required		Recommended	√	Possible	√	Pasadena LEED Supplement	√	Plan Check Submittals

### **Pasadena LEED Supplement:**

In addition to comments for WE 1.1 select plant material that will not require a permanent irrigation system or will only use captured rain water or treated graywater for 100% of the irrigation needs. It is acceptable to install hose bibs in convenient locations to provide irrigation for the establishment of the plants if necessary.

In California, the standards for graywater systems are part of the State Plumbing Code (Title 24, Part 5 Appendix G).

### **Plan Check Submittals:**

Complete the LEED WEC1.2 letter template and required template support documentation:

- A. Provide the project's calculated occupants.
- B. Provide the project's calculated baseline water usage for sewage conveyance.
- C. Provide the project's calculated design case water usage for sewage conveyance.
- D. For projects using non-potable water for sewage conveyance, provide the total non-potable water supply (gal) available for sewage conveyance purposes.
- E. For projects treating wastewater onsite, provide the annual quantity (gal) of water treated, the annual quantity (gal) of treated water that is infiltrated, and the annual quantity (gal) of treated water that is re-used on-site.

## WE Credit 2: Water Innovative Wastewater Technologies

### Intent

Reduce generation of wastewater and potable water demand, while increasing the local aquifer recharge.

### Requirements

#### OPTION 1

- Reduce potable water use for building sewage conveyance by 50% through the use of water-conserving fixtures (water closets, urinals) or non-potable water (captured rainwater, recycled greywater, and on-site or municipally treated wastewater).

OR

#### OPTION 2

- Treat 50% of wastewater on-site to tertiary standards. Treated water must be infiltrated or used on-site.

Pasadena Credit Assessment					Pasadena Credit Support				
	Required		Recommended	√	Possible	√	Pasadena LEED Supplement	√	Plan Check Submittals

### **Pasadena LEED Supplement:**

Although no citywide means for delivering recycled water currently exists, the city considers recycled water as a viable water supply source and an effective way to reduce the future need for imported water. For ideas on reducing wastewater see the California Building Code Appendix <http://www.swrcb.ca.gov/ab885/docs/techonsite/chapter2.pdf>

The most attainable way to achieve this credit is by incorporating waterless urinals and ultra low-flow toilets in the design. The most cost-effective way to achieve this credit would be by providing waterless urinals and composting toilets.

If storage and reuse of storm water is feasible then this credit can work in concert with SS6.1 and 6.2 to reduce storm water runoff.

Projects can earn an additional Innovation in Design (ID) Credit for exemplary performance by demonstrating a 100% reduction in potable water use for sewage conveyance, or onsite treatment and re-use/infiltration of 100% of generated wastewater.

### **Plan Check Submittals:**

Complete the LEED WEc2 Letter template and required template support documentation:

- Occupancy breakdown
- Percentage of male restrooms with urinals and annual days of operation
- Wastewater calculation – baseline and design case for flush fixture data
- Narrative describing potable water reduction strategies

#### **Option 1 – Water Savings Calculation**

- Enter the amount of on-site water used for sewage conveyance

#### **Option 2 – On-Site Wastewater Treatment**

- Plumbing drawings showing the on-site water treatment capabilities
- Enter the amount of on-site water used for sewage conveyance

## WE Credit 3.1 & 3.2: Water Use Reduction – 20% Reduction, 30% Reduction

### Intent

Maximize water efficiency within buildings to reduce the burden on municipal water supply and wastewater systems.

### Requirements

Employ strategies that in aggregate use 20% less water than the water use baseline calculated for the building (not including irrigation) after meeting the Energy Policy Act of 1992 fixture performance requirements. Calculations are based on estimated occupant usage and shall include only the following fixtures (as applicable to the building): water closets, urinals, lavatory faucets, showers and kitchen sinks.

Pasadena Credit Assessment					Pasadena Credit Support				
√	Required (3.1)	√	Recommended (3.2)	Possible	√	Pasadena LEED Supplement	√	Plan Check Submittals	

### Pasadena LEED Supplement:

The city amended the Green Building Practices Ordinance on May 16, 2008 to make Credit 3.1 (20% water efficiency) a Pasadena requirement.

There are many available and economical water saving design strategies for achieving this credit. Typical approaches include the use of:

- Waterless or half/gallon flush urinals
- Dual flush toilets
- High efficiency toilets
- Low flow lavatories and showers
- Sensor or timer controlled lavatories and showers
- Aerators

Projects can earn an additional ID Credit for exemplary performance by demonstrating a projected water savings of 40%. Another ID credit can be achieved by demonstrating potable water use reduction in processed and non-regulated water consuming fixtures.

The city supports and permits the use the waterless urinals and for the installation of water conserving fixtures. For rebates on fixtures, see the Pasadena Water and Power Department. site <http://www.ci/pasadena.ca.us/waterand power/programs commercial.asp>.

### Plan Check Submittals:

Complete the LEED WEc3 Letter template and required template support documentation:

- A. Occupancy breakdown
- B. Percentage of male restrooms with urinals and annual days of operation
- C. Water savings calculation – baseline and design case for flush and flow fixtures
- D. Enter amount of on-site water used for flush or flow fixtures
- E. Narrative describing project approach