

Engineering Standards for New and Refurbished Landscapes

Why do we have these Standards?

These standards enforce the water conservation requirements of the State of California and will establish water efficient landscapes in the City of San Luis Obispo.

Who does this affect?

- New construction and rehabilitated landscapes for institutional, commercial and multi-family development projects with a landscape area equal to or greater than 2,500 square feet.
- Developer-installed single-family residential landscapes and common areas with a landscape area equal to or greater than 2,500 square feet.
- New construction landscapes which are homeowner-provided and/or homeowner-hired in single-family residential projects with a total project landscape area equal to or greater than 5,000 square feet.

What is required?

When plans are submitted to the City for Development Review, a conceptual landscape plan, including hydrozone areas, the Maximum Applied Water Allowance calculation, and the estimated water required, will be included.

When the applicant applies for a Building Permit, the completed landscape, irrigation and grading plans, and a soils report are required.

- A completed Maximum Applied Water Allowance form based on the final landscape design plan. The form can be found at <http://www.slocity.org/utilities/download/Indscpcalc.xls>
- A final landscape design plan that includes all the criteria required in the City Engineering Standards.
- A final irrigation plan that includes all the criteria required in the City Engineering Standards.
- A soils report that includes at a minimum the criteria required in the City Engineering Standards.
- A final grading plan that includes all the criteria required in the City Engineering Standards.
- A hydrozone table
- A Certificate of Completion

Brief Description of Requirements

[for complete Engineering Standards and a description of water efficient landscape standards go to <http://www.slocity.org/utilities/download/engstandland.pdf>]

Landscaping Plan:

- Any combination of plant materials that do not exceed the Maximum Applied Water Allowance (MAWA)
- Each hydrozone shall have plant materials with similar water requirements.
[see <http://www.slocity.org/utilities/download/outdoorconserv.pdf> for plant water requirements]
- Plants shall be selected and planted appropriately based upon their adaptability to the environment.
- No turf on slopes greater than 15% where the toe of the slope is adjacent to an impermeable hardscape.
- No turf in narrow planters less than 8 feet by 8 feet, irregularly shaped areas, street medians, traffic islands, planter strips, bulbouts or raised beds for maximum water efficiency and ease of maintenance.
- Low and moderate water use plants can be mixed, but the entire hydrozone will be classified as moderate water use for MAWA calculations.
- High water use plants shall not be mixed with low or moderate water use plants.
- Invasive plants as listed by the Cal-IPC are prohibited.
[for prohibited plants see <http://www.cal-ipc.org/ip/inventory/pdf/Inventory2006.pdf> and <http://www.cal-ipc.org/ip/inventory/pdf/WebUpdate2007.pdf>]
- Recirculating water systems shall be used for water features.
- The surface area of water features, including swimming pools, will be included in a high water use hydrozone.

Irrigation Plan:

- Design to avoid overspray and runoff
- Soil type
- Infiltration rates

- Equipment
- Irrigation schedule
- Separate valves for different hydrozones
- Rain sensors
- Head to head coverage
- Low volume irrigation
- Correct water pressure
- Manual shut-off valves
- Automatic irrigation controllers utilizing either evapotranspiration or soil moisture sensor data shall be required for irrigation scheduling in irrigation systems for applicable projects in section 17.87.020 (A) (1) of the Municipal Code.
- *Water Reuse Master Plan* area – other considerations if project is in this area.

Soils Management Report:

Prepared by a licensed landscape architect, licensed landscape contractor, licensed civil engineer or licensed architect.

If the characteristics of the project's soil are known, the minimum requirements of the report include the following:

- A minimum of 8 inches of non-mechanically compacted soil shall be available for water absorption and root growth in planted areas.
- Incorporation of compost or other natural fertilizer into the soil at a rate recommended by a soil scientist or other qualified professional.
- A minimum of 2 inches of mulch shall be applied on all exposed soil surfaces of planting areas except in turf areas, creeping or rooting groundcovers or direct seeding applications. Plant mulch shall be shredded redwood bark unless otherwise approved by the City Engineer.

If the characteristics of the project's soil are unknown, the project applicant shall submit soil samples to a laboratory for analysis and recommendations.

- Soil sampling shall be conducted in accordance with laboratory protocol, including protocols regarding adequate sampling depth for the intended plants.
- The soil analysis may include: soil texture; infiltration rate determined by laboratory test or soil texture infiltration rate table; pH; total soluble salts; sodium; percent organic matter; and recommendations.

The soil analysis report shall be made available, in a timely manner, to the professionals preparing the landscape design plans and irrigation design plans to make any necessary adjustments to the design plans.

Grading Design Plan:

The project applicant shall submit a landscape grading plan that indicates finished configurations and elevations of the landscape area including:

- Height of graded slopes;
- Drainage patterns;
- Pad elevations;
- Finish grade; and
- Stormwater retention improvements, if applicable.

To prevent excessive erosion and runoff, grading shall comply with the following to the maximum extent practicable:

- Grade so that all irrigation and normal rainfall remains within property lines and does not drain on to non-permeable hardscapes;
- Avoid disruption of natural drainage patterns and undisturbed soil;
- Avoid soil compaction in landscape areas;
- Preserve natural drainage channels.

Certificate of Completion:

The project applicant shall submit documentation verifying implementation of soil analysis report recommendations to the City with the Certificate of Completion. For more details, refer to Project Completion section of Landscape Engineering Standards. <http://www.slocity.org/utilities/download/engstandland.pdf>

Landscape Checklist for Development Review

- Conceptual Site Plan
- Drawing of Hydrozone areas, with dimensions
- Completed Worksheet for Maximum Applied Water Allowance and Estimated Total Water Use calculations
[can complete online & print or download Excel worksheet from <http://www.slocity.org/utilities/download/indscpcalc.xls>]

Landscape Checklist for Building Permit Application

- Final Site Plan
- Drawing of Hydrozone areas, with dimensions
- Completed Worksheet for Maximum Applied Water Allowance and Estimated Total Water Use calculations and Completed Hydrozone Table
[can complete online & print or download Excel worksheet from <http://www.slocity.org/utilities/download/indscpcalc.xls>]
- Landscaping Plan
- Irrigation Plan
- Soils Management Report
- Grading Plan
- Certificate of Completion – All 5 parts