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Water-Efficient Landscape and Irrigation Standards Plan Submittal Requirements

The following items will be required prior to the issuance of a building permit for all new development projects. Any revisions to the city-approved plans will require re-submittal and approval. *Do not include landscape plants, hardscape, or irrigation systems within the parkway on the plan set. Include title block information for all plans.*

*Must have the signature of a licensed architect, licensed landscape architect, licensed landscape contractor, licensed engineer or any other person authorized to design a landscape. (See Sections 5500.1, 5615, 5641, 5641.1, 5641.2, 5641.3, 5641.4, 5641.5, 5641.6, 6701, 7027.5 of the Business and Professions Code, Section 832.27 of Title 16 of the California Code of Regulations, and Section 6721 of the Food and Agriculture Code.)

**Must have the signature of a certified irrigation designer, licensed architect, licensed landscape architect, licensed landscape contractor, licensed engineer or any other person authorized to design a landscape. (See Sections 5500.1, 5615, 5641, 5641.1, 5641.2, 5641.3, 5641.4, 5641.5, 5641.6, 6701, 7027.5 of the Business and Professions Code, Section 832.27 of Title 16 of the California Code of Regulations, and Section 6721 of the Food and Agricultural Code.)

Landscape and Irrigation Plan Requirements

- A. Cover Sheet with Required Plan Submittal Notations***
- B. Landscape Plan* (may be submitted on separate sheets as a construction plan, landscape planting plan, landscape planting details and specification plan, and landscape elevations)**
- C. Irrigation Plan** (may be submitted on separate sheets as an irrigation plan, irrigation details and specification plan, and hydrozone matrix)**

A. Cover Sheet and Notations

1. Include a sheet index legend.

2. Include signatories' company name, address, telephone number, and email.
3. Notations as specified by the City of Santa Monica. See Landscape and Irrigation Plan Required Notations.

B. Landscape Plan

1. Construction Plan / Site Characteristics:

- a. North Arrow
- b. Scale
- c. Base plan information
 - i. Proposed or existing building footprint (identified)
 - ii. Proposed or existing shade structures (identified)
 - iii. All proposed or existing hardscape (identified in Legend as new or to remain and appropriately hatched) such as:
 - a. Steps and Entries
 - b. Driveways
 - c. Pathways (e.g. concrete, stone, decomposed granite, gravel)
 - d. Retaining Walls
 - e. Patios, pads
 - f. Pools, spas
 - g. Permanent amenities (e.g. barbecues, fire pits, built-in seating)
 - h. Raised Planting Beds (curbs and mow strips)
 - iv. All existing hardscape to remain (identified)
 - v. Landscape areas (planting areas identified as "PA" and shown without plant material)
 - vi. All other permeable surfaces identified (e.g. gravel path or mulch area or artificial turf)
 - vii. All proposed or existing gates and fences (identified in Legend as new or to remain)
 - viii. Arrows indicating direction of slope and percentage
- d. Include the following measurements in square feet:
 - i. Parcel Size
 - ii. Combined area of all building footprints
 - iii. Total impermeable hardscape (Do not include Areas under planters or green roofs)
 - iv. Total pool, spa and pond surface area
 - v. Total water feature(s) surface area and indicate the type of alternative water source used, i.e. greywater,

- rainwater, if applicable
- vi. Total plantable landscape area [(i-ii-iii-iv-v)]
- vii. Total permeable hardscape area (decomposed granite, gravel, artificial turf, mulch, permeable pavers)
- viii. Total planted area (vi-vii)
 - a. Total irrigated planted areas (hydrozone matrix)
 - b. Total non-irrigated planted areas (i.e. hand watered planted areas; does not include mulch, decomposed granite or other non-planted permeable surfaces)
- ix. Include the following measurements in square feet and as a percentage of the total plantable landscape area (vi) for all planted areas (irrigated and non-irrigated) using plant factors as defined by the current edition of the Water Use Classification of Landscape Species (WUCOLS) for both new and existing plant material
 - a. Total turfgrass and high water use plant material
 - b. Total moderate water use plant material
 - c. Total low and very low water use plant material
 - d. Total edible plant material (do not include in a-c,e)
 - e. Total planted area irrigated with an approved alternative water supply (do not include in a-d)
- e. Legend of symbols and abbreviation if not on title block
- f. Call-outs or a numbering system to identify the elements drawn in the plan with the Legend
- g. If designating insect habitat, up to five percent (5%) of the landscape area may be left without mulch. Designated insect habitat must be clearly identified on the construction plan.

2. Landscape Planting Plan / Plant Characteristics

- a. Include a legend that clearly indicates the following for all plant material, new and existing:
 - i. Plant species including both the botanical and common name
 - ii. Planting Size/Form (Gallon, Box, Seed, Sod, etc.)
 - iii. Quantity
 - iv. Location
 - v. Water use needs or plant factor as defined by the current edition of the Water Use Classification of Landscape Species (WUCOLS).
- b. Specify any non-fruiting, non-invasive, sterile varieties or cultivars of plants invasive plants.

- c. Mixed-Use Development Projects and Institutional Landscape projects must clearly designate any recreational turfgrass areas on the planting plan.

3. Landscape Planting Details and Specifications

- a. Specify soil amendments as necessary; mulch type, depth, and location.
- b. Include detail drawings showing proper installation and spacing of plant material.
- c. Include specifications indicating installation procedures.
- d. Include landscape maintenance schedule.
- e. Construction Notes: Instructions to Contractor
- f. Hardscape details

4. Landscape Elevation Drawings (*optional for single-family homes*)

- a. Provide at planting and at two-year growth.
- b. Provide at minimum one elevation from street or front of dwelling or unit and one elevation from the side of dwelling or unit.

5. Irrigation Plan

a. Irrigation Plan / Irrigation Characteristics:

- a. Include point of connection, water supply type (potable, greywater, rainwater, recycled, etc.).
- b. Include all parts and their make and model, including but not limited to: master valves (or equivalent), flow sensors (or equivalent), manual shut off valve, pressure regulators, valves, backflow prevention devices, filters, piping and piping depth, pressurized main lines and lateral lines, drip irrigation components and drip irrigation layout. For Institutional Landscapes and Mixed-Use Development projects with recreational turfgrass and overhead irrigation, and where sprinklers are proposed, include sprinkler heads showing head-to-head coverage.
- c. Include water source, maximum and minimum static pressure reading at source, service line type and size, meter type model and size, date information is obtained, source of information and who it is obtained by and from.
- d. Residential landscape properties with over 5,000 square feet of irrigated landscape area and all commercial properties must provide pressure loss calculations.
- e. If automating the system, include automatic irrigation controller and sensor(s) information.

- f. Identify (outline and letter) each hydrozone group, according to watering needs, on the irrigation plan. Irrigation design shall accommodate hydrozones accordingly. For example; separate zones may be required for trees, shrubs, flowers, shady or sunny areas, drip irrigation and/or sprinklers. Indicate hydrozones for each valve and the area of the landscape being irrigated.

2. Irrigation Hydrozone matrix

- a. Include a hydrozone information table that includes *irrigated planting areas** arranged into hydrozones according to watering needs. Each valve will be assigned a single hydrozone. Describe for each zone the following: the square footage, percentage of total plantable landscape area**, percentage of slope at finished grade, average plant factor***, hydrozone basis****, hydrozone description*****, exposure or micro-climate, irrigation method, irrigation emission devices (including manufacturer / model / number), device flow rate (gpm or gph), zone pressure, precipitation rate, zone gallons per minute, and controller station number.

*please note total irrigated planted areas or hydrozones may not total 100% of plantable landscape area

** *percentage of total plantable landscape area* for trees is calculated based on the container or box size of tree specified at time of planting

*** *average plant factor* is calculated based on the proportions of the respective plant water uses and their plant factor (moderate, low, very low); represent as a number and letter (i.e., 0.2 LVL or 0.5 M or 0.6 T); high plant factor plants, such as turfgrass, cannot be mixed with lower plant factor plants and must be on their own separate hydrozone; when specifying grass seed mix product, the species with the highest plant factor will determine the plant factor for that hydrozone

**** *hydrozone basis* indicates the reason(s) behind selecting that hydrozone grouping including Plant Type (PL), Irrigation Method (IR), Sun Exposure (SU), Soil Type (ST), Slope (SL) or Other (O)

***** *hydrozone description* indicates the type of planting (turf, shrubs, trees, etc.) and edible and alternative water supply zones

Include this legend with the matrix:

PLANT TYPE	
Code	Rating
T	Turf
H	High
M	Medium
LVL	Low, Very Low
O	Other

HYDROZONE BASIS	
PL	Plant Type
IR	Irrigation Method
SU	Sun Exposure
SO	Soil Type
SL	Slope
O	Other

IRRIGATION METHOD	
D	Drip
S	Small Rotor
L	Large Rotor
B	Bubbler
M	Microspray
O	Other

3. Irrigation Details and Specification Plan

- Include detail drawings showing proper installation of irrigation system.
- Include specifications indicating installation procedures.
- Include irrigation maintenance schedule.
- Include establishment period irrigation schedule with monthly estimated cycle and run times, and include established landscape irrigation schedule. Schedule should take into account the parameters used to program the specified irrigation controller.
- Include the City’s recommended tree watering guidelines chart below.

Tree Trunk Width Size	Recommended Water Volume	Watering Frequency Based on Species	Months	Months
			April to October	November to March
Newly Planted (less than 5")*	10 to 20 Gallons	Newly Planted Tree	Weekly	Bi-Weekly
Average Street Tree (16")*	160 gallons	Minimal	Once or Twice a Month	None
Small (5" to 12")*	80 gallons	Minimal	Once or Twice a Month	None
		Moderate	Twice to Three Times a Month	Once a Month
		High	Weekly	Once to Twice a Month
Medium (13" to 21")*	160 gallons	Minimal	Once or Twice a Month	None
		Moderate	Twice to Three Times a Month	Once a Month
		High	Weekly	Once to Twice a Month
Large(22" to 30")*	260 gallons	Minimal	Once or Twice a Month	None
		Moderate	Twice to Three Times a Month	Once a Month
		High	Weekly	Once to Twice a Month
Very Large (31" and Over)*	310 gallons	Minimal	Once or Twice a Month	None
		Moderate	Twice to Three Times a Month	Once a Month
		High	Weekly	Once to Twice a Month

* Width of Tree Trunk at four feet from ground level