Latest MWELO Updates + Storm Water Requirements

“Kliffs Notes”

California Model Water Efficient Landscape Ordinance
MWELO – AB1881 2015

Presented by: Chris Roesink, Hunter Industries
California Model Water Efficient Landscape Ordinance
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Disclaimer

Information has been adapted from the California Code of Regulations Title 23, Division 2, Chapter 2.7 Model Water Efficient Landscape Ordinance 2015
2015 Model Ordinance

§ 492.1. Compliance with Landscape Documentation Package.

(a) Prior to construction, the local agency shall:
   (1) provide the project applicant with the ordinance and procedures for
   permits, plan checks or design reviews;
   (2) review the Landscape Documentation Package submitted by the
       project applicant;
   (3) approve or deny the Landscape Documentation Package;
   (4) issue a permit or approve the plan check or design review for the
       project applicant; and
   (5) upon approval of the Landscape Documentation Package, submit a
       copy of the Water Efficient Landscape Worksheet to the local water
       purveyor.

(b) Prior to construction, the project applicant shall:
   (1) submit a Landscape Documentation Package to the local agency.
   (2) Upon receipt of the Landscape Documentation Package, local
       agency shall:

   § 492.4. Water Efficient Landscape Worksheet.

   (a) A project applicant shall complete the Water Efficient
       Worksheet in Appendix B which contains information on
tor, irrigation method, irrigation efficiency, and area as
each hydrozone. Calculations are then made to show that
ipation adjustment factor (ETAF) for the landscape project
ceed a factor of 0.55 for residential areas and 0.45 for
areas, exclusive of Special Landscape Areas. The ETAF for
ject is based on the plant factors and irrigation methods
aximum Applied Water Allowance is calculated based
any ETAF allowed 0.55 for residential areas and 0.45 for
raction, incorporating organic matter that increases water retention, and
providing protective plant growth that leads to more carbon storage, oxygen
production, shade, habitat and aesthetic benefits.

    (2) Minimizing energy use by reducing irrigation water requirements,
reducing reliance on petroleum based fertilizers and pesticides, and
planning climate appropriate shade trees in urban areas.

    (3) Conserving water by creating and maintaining waterwise
scapes wherever possible and selecting climate appropriate plants that
natural water and water quality by reducing power equipment use
and minimizing soap, and recycled and locally sourced materi
DWR Reference Website

http://www.water.ca.gov/wateruseefficiency/landscapeordinance/
Applicable Projects

- December 1st, 2015

- New projects requiring a building or landscape permit ≥ 500 S.F.

- Rehabilitated projects requiring a building or landscape permit ≥ 2,500 S.F.

- 500 S.F. – 2,500 S.F Prescriptive Compliance (checklist option)
Applicable Projects

- Does not apply to:
  - Registered local, State or Federal Historical Sites
  - Ecological Restoration Projects not requiring a permanent Irrigation Systems
  - Mined-Land Reclamation Projects nor requiring a permanent Irrigation System
  - Existing Plant Collections as part of Botanical Gardens and Arboretums open to the public
Maximum Applied Water Allowance

- For use in Maximum Applied Water Allowance (MAWA) calculations

- Lowered the ET Adjust Factor (ETAF) from 0.70:
  - to 0.55 for residential
  - to 0.45 for non-residential and commercial
  - to 0.65 for DSA projects (K-12 Schools)
  - to 0.80 for Existing minor Improvements

- Special Landscape Area (SLA) remains ET Adjustment Factor (ETAF) of 1.0
Recycled Water

- Recycled Water Systems designed and operated in accordance with local and State laws

- Recycled Water areas to use ETAF of 1.0
Maximum Applied Water Allowance

- Water features shall be calculated as a ‘High’ Water Use Hydrozone

- Temporarily Irrigated Areas shall be calculated as ‘Low’ Water use Hydrozone

- ETAF of New and Existing Special Landscape Areas shall not exceed 1.0

- ETAF for Synthetic turf Appendix E Low City of SD (Low water use) / County of SD (Moderate)
Soil Management Report

- Soil Analysis shall include
  - Soil texture
  - Infiltration rate
  - pH
  - Total soluble salts
  - Sodium
  - Percent organic matter
  - Recommendations

- Sample ratio of 1:7 lots (15% off overall developed site) for residential development projects
Landscape Design Plan

- Methods to Achieve Water Efficiency shall include:
  - Protection and Preservation of Native Species
  - Selection of Locally Native Plants
  - Selection of plants based on Local Climate Suitability
  - Selection of Trees based on local ordinances and size at maturity as appropriate for planting area
  - Selection of Plants from local landscape program lists
  - Selection of Plants from Local Fuel Modification Plan Guidelines
Landscape Design Plan

- Turf

- Prohibited from sloped areas greater than 25% (1:4)
- High water use plants prohibited in Street Medians
- Shall not exceed 25% of total landscape area in Residential Projects
- Prohibited in Non-Residential areas except for Special Landscape Areas (SLA)
- Prohibited in Parkways 10’ wide or less unless the parkway is located adjacent to a parking strip used to enter and exit vehicles.
Landscape Design Plan

- Soil Preparation, Mulch and Amendments
  - Prior to planting, compacted soils shall be transformed to friable condition; planting pits only on slopes
  - Soil amendments shall be incorporated per soils report
  - Compost at a rate of 4 C.F. per 1,000 S.F. and incorporated to a depth of 6”. Soils with 6% organic matter in top 6” are exempt
  - 3” mulch required in planting areas. 5% may be left un-mulched to allow wildlife and insect habitat. Slopes exempt, follow fire prevention guidelines. No Mulch needed for turf, creeping ground cover, or seeded areas.
  - Organic mulch made from recycled material shall take precedence over inorganic or virgin forest products unless recycled material is not locally available or prohibited by local Fuel Modification Guidelines
Landscape Design Plan

- Water Features
  - Only recirculating systems shall be used
  - Recycled Water shall be used when available
  - Surface area of water feature included in ETWU calculation as ‘High’ water use hydrozone
  - Pool and Spa Covers are highly recommended
Irrigation Design Plan

- Applies only to permanent irrigation systems

- Project Irrigation Sub-meters requirements:
  - Non-Residential: 1,000 S.F. or greater
  - Residential: $\geq$ 5,000 S.F.
  - Sub-meters are acceptable and flow sensors may function as a water meter Section (V) 490.1

- Controllers:
  - Utilize ET or Soil Moisture Sensor data to automatically adjust irrigation schedule
  - Equipped with Non-Volatile Memory
  - Utilize sensors to suspend irrigation during unfavorable weather (wind, rain, freeze)
Irrigation Design Plan

- Pressure regulators or pumps required to provide optimum operating pressure to at each emission device

- Manual shut-off valves shall be installed as close as possible to point of connection

- Backflow devices shall be installed per local codes

- Project Flow Sensors Requirements:
  - All Non-Residential
  - Residential over 5,000 S.F.

- Master Valve required 2,500 S.F and above if prescriptive option is used for smaller projects
  - Normally Closed Recommended
Irrigation Design Plan

- System shall be designed to prevent run-off
- System shall be designed to accommodate and identify hydrozones with matched precipitation rates between irrigation emission devices
- Low volume irrigation devices are required in mulched areas
- Swing joints required adjacent to hardscape and high traffic areas in turf
- Check valves required on all emission devices where run-off may occur
Irrigation Design Plan

- Areas less than 10 feet in width shall be irrigated with subsurface irrigation or by other means that do not allow overspray of run-off.

- Overhead irrigation shall not be permitted within 24 inches of a non-permeable surface unless surface drains into landscape area.

- Slopes greater than 25% shall not be irrigated with an irrigation system with an application rate exceeding .75 inches per hour.

- Trees shall be irrigated on dedicated valves where feasible.
Irrigation Design Plan

- Emission Device Performance:
  - Requires all irrigation emission devices to meet American Society of Agricultural and Biological Engineer / International Code Council (ASABE/ICC) standards
  - Minimum Requirement: .65 (DULQ)
Irrigation Efficiency

- Irrigation Efficiencies for use in Estimated Total Water Use Calculation (ETWU) State figures
  - Overhead Irrigation Devices: ≥ 0.75
  - Drip Irrigation Devices: ≥ 0.81
- Locally Some Jurisdictions will be using
  - Drip 0.90
  - Bubblers 0.85
  - Rotating Nozzles 0.75
  - Rotors 0.70
  - Conventional Sprays 0.60
- County of San Diego Overall
  - Flat areas 0.85 IE
  - Slopes 0.75 IE
Locally

- Some local jurisdictions will be using the following Irrigation Efficiencies
  - Drip 0.90
  - Bubblers 0.85
  - Rotating Nozzles 0.75
  - Rotors 0.70
  - Conventional Sprays 0.60

- County of San Diego Overall Average .75 Irrigation Efficiency
Irrigation Audits

- Audits shall be conducted by local agency landscape auditor or a third party certified landscape irrigation auditor
  - Not conducted by person involved with design or installation of landscape

- Sets Audit ratio of 1:7 lots (15% off overall developed site) for residential development projects

- Audit shall be submitted with Certificate of Completion and may include, but is not limited to:
  - Inspection, system tune-up, system test with distribution uniformity, reporting overspray and run-off, and preparation of irrigation schedule
Alternative Water Supply
Storm Water and Rainwater Retention

- Storm Water best management practices recommend for all projects
- Refer to local agency for code compliance and technical requirements
- All planted landscape required to have friable soils to maximize water retention and infiltration
- Rainwater - Recommended that landscape areas be designed for capture and infiltration capacity that is sufficient to prevent run-off from impervious surfaces from 1 inch / 24 hour event or the 85th percentile / 24 hour event
- Recommended that projects incorporate elements to improve on-site storm water and dry weather run-off capture
Alternative Water Supply
Grey Water Systems

- Grey Water irrigation systems recommended where feasible
  - Must conform to California Plumbing Code
    - Water applied 2 inches below finished grade
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