Local Agency MWELLO Guidebook Webinar

January 11, 2021@ 10:00 AM
WELCOME

Julie Saare-Edmonds | Department of Water Resources
Which profession/affiliation best describes you (choose all that apply)?

- Landscape Architect
- Landscape Contractor
- Landscape Designer
- Irrigation Consultant/Designer
- City Planner
- County Planner
- City or County Public Works
- City or County Parks Department
- State Agency
- Water Agency
- Master Gardener
- Educator
- Other
MWEOLO Guidebook for Local Agencies

Kim O’Cain | O’Cain Consulting, Inc.
Background: O’Cain Consulting, Inc.

- Wrote the draft MWELO Guidebook for Local Agencies
- 20-years developing and implementing water conservation programs and ordinances including:
  - Writing City of Santa Monica’s Sustainable Landscape Ordinance and Standards, performing inspections, and enforcing ordinance
- Adjunct Professor at Santa Monica College
Topics

- What is MWELO?
- What is the MWELO Guidebook for Local Agencies?
- Goals of the Guidebook
- Process for Developing the Guidebook
- Layout of the Guidebook
- Providing Edits
- Q&A
What is MWELO?

A model for local agencies to enforce minimum water-efficiency standards in landscape design, construction, management, and maintenance.

It drives water-efficiency through water budgets and the thoughtful selection of soil, plants, irrigation, stormwater management, and non-potable water supplies.

There are two compliance pathways depending on the size and scope of the project.
MWELO Address Issues:

- Safety
- Climate
- Damage
- Supply
The Numbers Speak for Themselves

Traditional Landscape

Sustainable Landscape

Landscaping has costs. Besides hitting us in our wallet, landscaping also significantly impacts human health, pot health, the environment, and strains public infrastructure. garden garden, a demonstration project at Santa Monica College, compares two landscape strategies side-by-side: Sustainable vs. Traditional "mow and blow" - and the numbers speak for themselves. Sustainable landscaping saves time, money and water.

Learn more about garden garden, sustainable landscape practices and grants that will help you install sustainable landscaping at your home, visit www.smepd.org/landscape for details.
Where is MWELO in Effect?

MWELO is in effect in every city/county unless a local ordinance that is at least as effective has been adopted.
The MWELO Guidebook for Local Agencies

It is NOT a “How to Design A Landscape and Irrigation System” guidebook...
The MWELO Guidebook for Local Agencies

A resource guide to make compliance easier

Written for plan checkers but can be used by Architects, CID’s, Contractors, Designers and Homeowners
Guidebook Availability

- Draft is available on DWR’s website by using the link provided

- The final Guidebook will be available on DWR’s WUE website
  - Downloadable files

Link to website
https://water.ca.gov/Programs/Water-Use-And-Efficiency/Urban-Water-Use-Efficiency/Model-Water-Efficient-Landscape-Ordinance
MWELO Guidebook Goals

Increase compliance and save water by:

- Clarifying language in the code
- Explaining the intent (why these things are required)
- Providing basic information about the components of a landscape and irrigation system
- Clarifying and showing examples of what needs to be included in a plan set
- Providing a suite of checklists and resources for plan checkers and applicants
Prepare & Enforce

1. Tips for developing internal enforcement processes and systems
2. Tips for implementing programs for existing landscapes
3. Tips for reporting
4. Tips for educating the public
Guidebook Process

- Incorporated Landscape Stakeholders Advisory Group Working Groups comments and sample templates
- Interviewed cities/counties/water agencies that are easily complying and those that are struggling
- Researched examples of resources developed by cities/counties/water agencies/non-profits
People Involved in MWELO Compliance

- **Local agency (city or county)** – Plan check/review, inspections, education, tracking and reporting
- **Water purveyor** – may also review already approved plans or implement MWELO for the local agency; may provide dedicated water meter
- **Applicant** – owner or designee that submits required documentation
- **Property owner** – receives landscape documentation
- **Irrigation Auditor** – performs irrigation audit to confirm landscape installed to specific standards and approved plans
Guidebook Layout

• Main Body: Compliance Pathways
  • Performance
  • Prescriptive
• Appendices: Resources

*Note: the draft is in plain text with no formatting except for heading numbers and titles.
* = bullet point
Guidebook Layout: Main Body

- Introduction
- Purpose
- One Water Approach
- History
- Effective Use of the Guidebook
- Compliance Pathways
- Performance Path
- Prescriptive Path
- Recycled Water, Graywater, Rainwater, Stormwater
- Existing Landscape Requirements
- Reporting
- Public Education
- Considerations for Enforcing MWELO
Guidebook Layout: Appendices

• Index
• 2015 MWELO Ordinance
• Landscape, Irrigation and Water Budget Overview
• Updated Water Efficient Landscape Worksheet
• Flowcharts
• Checklists
• Samples
• Resources for agencies
• Applicant Brochure
Drivers for requiring water-efficient landscapes:

1) Public Health and Safety
2) Sustainability and Resiliency
3) Livability & Wellbeing
4) Affordability
Guidebook: History

From AB 325, the Water Conservation in Landscaping Act, in 1990 to today
Guidebook: Effective Use of This Guidebook

→ Building officials, plan checkers, inspectors, irrigation auditors and applicants

→ Highly recommend reading the Landscape, Irrigation and Water Budget Overview that explains key terms in a picture book format (Appendix C)
Guidebook: MWELO Sections

CCR, Title 23, Chapter 2.7 Model Water Efficient Landscape Ordinance

- §490 Purpose
- §491 Definitions
- §492 Provisions for new construction or rehabilitated landscapes
- §493 Provisions for Existing Landscapes
- §494 Effective Precipitation
- §495 Reporting – to DWR annually
Guidebook: Effective Use of This Guidebook

Ordinance section: Ordinance section numbers from the 2015 MWELO.

Summary: Explanation of the requirement.

Intent: Explanation of the catalyst for the requirement.

Compliance: Recommendations, suggestions or notes about the requirement.

Design: Explanation for the design team.

Applicant: Explanation for the applicant which may or may not be the designer.

Enforcement: Explanations for the agency staff performing plan review/check and inspections.

Plan review: Recommendations or suggestions for construction documents.

Inspection: Recommendations or suggestions for on-site inspections during and after construction.
Guidebook: Effective Use of This Guidebook

Under the Compliance and Enforcement sections are notes that are essentially tips to help the applicant, reviewer and/or inspector.
The draft you will be reviewing is NOT formatted. Please ignore the heading numbering and “bullets” and “numbering” such as:

**Heading example:**
H3/4.3.1 Project Information Form § 492.3(a)(1)

**Bullet and numbering examples:**
* Decomposed granite.
* River rock, small stones, gravel, pebbles.
**Summary:** This form includes basic information about the project scope, applicant, owner, and water provider.

**Intent:** Plan reviewers will understand the scope of the project and determine which MWELO requirements apply and if other laws apply, e.g. non-potable water supplies will trigger additional review by local health agency.

**Compliance:**

**Design:** Total Landscape Area includes the aggregate of all proposed irrigated landscape areas. For common interest developments (neighborhoods, planned developments, tract developments, campuses, etc.), this includes all of the landscaping that will be designed and installed by the developer which is considered one project, NOT what the individual homeowner is responsible for designing and installing.

**Design:** The landscape area also includes water features like swimming pools, spas and fountains.

**Note:** The water provider may request from the applicant the total irrigable area including homeowner installed areas in tract developments in order to size the meter correctly. Irrigable area is the area that is irrigated or could be irrigated in the future.

**Example:** A homeowner builds a new custom home but does not have the money to install plants and irrigation. They install only 3 inches of mulch over the entire backyard. They plan to install plants and irrigation in a few years. The water provider needs to size the service line and meter for the future water supply and may require or formulate a water budget for the irrigable (current and future) area.

**Note:** The Performance Submittal Checklist which includes Project Information can be found in Appendix F.
Guidebook: Overview

• **Intent**: Pictorial guide that explains the various elements of a landscape and components of an irrigation system found in Appendix C

• **Elements**:
  - Soil
  - Plants
  - Irrigation
  - Water Budgets
Guidebook: Overview Example

H4/1.0 Types of Mulch:

**Organic, Recycled Content Mulch:**
*Tree trimmings/wood chips – usually 2-3 inch pieces; don’t hold together; prone to migration; may absorb water from soil until decomposition begins.*

PLACEHOLDER Photo 7 Wood Chip Mulch

*Stabilized/coarse composted/walk-on mulch—usually long, fine shredded bark and wood that weaves together to create a blanket; holds together and doesn’t migrate; good for bioretention/stormwater retention and to prevent soil erosion.*

PLACEHOLDER Photo 8 Walkon Mulch

*Pallet Mulch or Dimensional Lumber—recycled and shredded wood pallets or pre-cut lumber used for framing.*

PLACEHOLDER Photo 9 Pallet Mulch

**Inorganic Mulch:**
*Decomposed granite
*River rock, small stones, gravel, pebbles

These types of mulch are not recommended: gorilla hair bark, virgin materials, tires, playground fiber.
H3/1.1 Anatomy of Irrigation Systems

Irrigation systems are made of many devices and components. These components are affected by different variables. Before the individual components are explained, there are a few terms to know.

**Flow rate** – The volume of water flowing through an area. It is measured in gallons per minute (GPM) or gallons per hour (GPH).

**Pressure** – The force the pushes water through an area. It is measured in pounds per square inch (PSI).

**Precipitation rate** - The speed at which the irrigation water is applied over an area. It is also called the “application rate.” It is measured in inches per hour.

**Distribution uniformity** – how evenly irrigation water is applied over an area. Distribution uniformity for the lower quarter (DULQ) is the ratio of the average measurements in the lowest quarter of samples to the average of all samples. Some resources consider DULQ of 0.85 or more excellent;
**Emission Devices**: A device that emits water over an area. There are three main types of emission devices: sprinklers, microirrigation, and bubblers. MWELO requires emission devices to adhere to the ASABE/ICC 802-2014 “Landscape Irrigation Sprinkler and Emitter Standard.”

Depending on the type of emission device the efficiency and flow rates vary.

**H4/1.0 Sprinklers**

The ANSI/ASABE/ICC standard calls all overhead irrigation sprinklers. Spray irrigation are what the public generally calls “sprinklers” that pop-up or are stationary and found in single-family homes and smaller landscapes. Rotors are the devices that are found in sports fields, parks and larger estates or properties.

Sprinkler: Spray irrigation device that emits water through a nozzle in various radii (spray distance 2 to 30 feet) and arcs (90 to 360 degrees). Sprinklers can be plastic or brass.

The flow rate for a sprinkler is measured in gallons per minute (GPM) and varies by make and model.

Sprinklers should not be used on the same irrigation zone as drip or bubblers.
H2/1.5 Calculating the MWELO Water Budget

For the Performance Path MWELO requires an annual water budget which calculates the total water required for the established landscape which cannot exceed the maximum allowance.

Key Terms

**ETo** – Reference ET is the amount of water in inches per year needed to keep cool season grass thriving based on the evapotranspiration which water transpired by plants and evaporated from soil. Appendix A in MWELO provides a list of ETo for each county and can also be found at [www.cimis.water.ca.gov](http://www.cimis.water.ca.gov) for each CIMIS weather station throughout California. You can get a free password from DWR.

**PF** – Plant Factor is a number from 0 to 1.0 that was multiplied by a factor and ETo to estimate the water needed by plants.

MWELO defines the PF categories as follows:
- 0 to 0.1 = Very low water use plants
- 0.1 to 0.3 = Low water use plants
- 0.4 to 0.6 = Moderate water use plants
- 0.7 to 1.0 = High water use plants

**WUCOLS** – Water Use Classification of Landscape Species is an online searchable database for plant factors of individual plant species and is published by the University of California Cooperative Extension and the California Department of Water Resources. [https://ucanr.edu/sites/WUCOLS/](https://ucanr.edu/sites/WUCOLS/)
Guidebook: Determining Pathway

Provide an Applicability Chart – sample in Guidebook

Note: Local agencies can require new or rehabilitated landscapes to follow the Performance Pathway even if the size is 500 to 2,500 sq.ft.

Note: Local agencies may choose not to adopt Prescriptive Pathway (MWELO Appendix D)
Guidebook: Compliance Pathways

**Performance:**
- 500 sq.ft.+ new construction; 2,500 sq.ft.+ renovations
- Water Budget
- Specific soil, irrigation and plant requirements
- Design flexibility
- Construction documents for plants, irrigation, grading

**Prescriptive (Appendix D in MWELO):**
- 500 to 2,500 sq. ft. new or renovated
- No Water Budget
- Specific but very limited irrigation and plant requirements
- Landscape plan
- More cost-effective for smaller projects
Guidebook: Performance Pathway

Guidebook addresses:

- Roles and responsibilities
- What is required to be submitted as part of the Landscape Documentation Package and Certificate of Completion
- What is recommended for submittal to provide a complete set of plans for plan check and installation, e.g. cover sheet, plant list, details, specifications, notes
- Clarification of confusing language such as rehabilitated landscapes, special landscape areas, compost
- Common submittal errors such as water budget miscalculations, notations missing, verification of compost installation
- Common errors found during irrigation audits and/or final inspection
Guidebook: Performance Pathway

- H1/4.0 Performance Pathway
- H2/4.1 Applicability §490.1
- **Summary:** Landscape projects that require a building or landscape permit, plan check or design review and meet the following criteria:
  - *New construction projects:* aggregate landscape area equal to or greater than 500 sq. ft.
  - *Rehabilitated landscape projects:* aggregate landscape area equal to or greater than 2,500 sq. ft.
  - *Any landscape project:* aggregate landscape area 500 to 2,500 sq. ft. (or follow Prescriptive Method).
- **Note:** The rehabilitated area is the portion of the landscape at least 2,500 sq.ft. that will be renovated/modified.
- Example: If a homeowner wants to remodel 4,500 sq. ft. of a 10,000 sq. ft. yard, only that 4,500 sq. ft. needs to comply, because: 1) the renovation size triggers compliance and 2) MWELO does not require the non-renovated areas to come into compliance. This is similar to a homeowner remodeling their master bed and bath. Only the bedroom and bathroom would need to comply with the building code (electrical, plumbing, etc.) for the renovation, because the code does not require the entire house to be upgraded.
**Guidebook: Performance Pathway**

**SAMPLE Model Water Efficient Landscape Ordinance: Performance Pathway Process Flowchart**
(new construction landscape ≥ 500 square feet and rehabilitated landscape ≥ 2,500 square feet)*

<table>
<thead>
<tr>
<th>Entitlement: Design Review Documents</th>
<th>Building Permit: Construction Documents</th>
<th>Construction</th>
<th>Project Completion: Prior to Sign-off &amp; Occupancy</th>
<th>Reporting</th>
</tr>
</thead>
</table>
| Review MWELO Requirements             | Submit/Resubmit Landscape Documentation Package:  
  1. Plans: Cover Sheet, Site Plan, Landscape Irrigation, Grading  
  2. Water Efficient Landscape Worksheet  
  3. Soil Management Report  
  Provide copy of Worksheet to water provider | Construct according to approved plans  
  Re-submit plans, if significant changes  
  Request open-trench inspection, if required  
  Request irrigation audit and make corrections | Submit Certificate of Completion:  
  1. Certificate of Installation  
  2. Irrigation Schedule  
  3. Schedule of Landscape and Irrigation Maintenance  
  4. Irrigation Zone Map (inside controller)  
  5. Irrigation Audit Report  
  6. As-Built Plans  
  7. Soil Management Report  
  8. Verification of Soil Amendments  
  Request final inspection, if required | Not Applicable |
| Develop Conceptual Plans and Documents |                                        |              |                                                 |           |
| Submit Conceptual Plans and Documents:  
  1. Landscape Plan  
  2. Water Efficient Landscape Worksheet |                                         |              |                                                 |           |
| Applicant                              |                                        |              |                                                 |           |
| Agency                                 |                                        |              |                                                 |           |
| Determine if proposed project triggers MWELO | Review Plans/Construction Documents and Approve or Deny  
  Track data for annual report  
  Provide Landscape Documentation Package to local water provider and owner | Perform open-trench inspection, if required  
  Perform irrigation audit if provided by local agency | Review Certificate of Completion and Approve or Deny  
  Perform final inspection, if required  
  Track data for annual reporting | Submit Annual Report to DWR by January 31* Each Year |

*Submit with Certificate of Completion if mass grading will occur; **Verification that the Soil Management Report recommendations were installed
Guidebook: Performance Pathway

SAMPLE Model Water Efficient Landscape Ordinance: Performance Pathway Process Flowchart
(new construction landscape ≥ 500 square feet and rehabilitated landscape ≥ 2,500 square feet)*

<table>
<thead>
<tr>
<th>Entitlement: Design Review</th>
<th>Building Permit: Construction Documents</th>
<th>Construction</th>
<th>Project Completion: Prior to Sign-off &amp; Occupancy</th>
<th>Reporting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Develop Conceptual Plans and Documents</td>
<td>Provide copy of Worksheet to water provider</td>
<td>Re-submit plans, if significant changes</td>
<td>Request open-trench inspection, if required</td>
<td>Request final inspection, if required</td>
</tr>
<tr>
<td>Submit Conceptual Plans and Documents: 1. Landscape Plan 2. Water Efficient Landscape Worksheet</td>
<td></td>
<td>Request irrigation audit and make corrections</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Applicant</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Entitlement:</th>
<th>Building Permit: Construction Documents</th>
<th>Construction</th>
<th>Project Completion: Prior to Sign-off &amp; Occupancy</th>
<th>Reporting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Determine if proposed project triggers MWELO</td>
<td>Review Plans/Construction Documents and Approve or Deny</td>
<td>Perform open-trench inspection, if required</td>
<td>Review Certificate of Completion and Approve or Deny</td>
<td>Submit Annual Report to DWR by January 31st Each Year</td>
</tr>
<tr>
<td>Review and comment on Conceptual Plans and Documents</td>
<td>Track data for annual report</td>
<td>Perform irrigation audit if provided by local agency</td>
<td>Perform final inspection, if required</td>
<td></td>
</tr>
<tr>
<td>Coordinate with local agencies</td>
<td>Provide Landscape Documentation Package</td>
<td></td>
<td>Track data for annual reporting</td>
<td></td>
</tr>
</tbody>
</table>

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Guidebook: Performance Pathway

SAMPLE Performance Pathway Flowchart – Model Water Efficient Landscape Ordinance

Applicant (owner or designer) Requirements:
- Review MWELO Requirements
- Develop Conceptual Plans and Documents
- Submit Conceptual Plans and Documents
  1. Landscape Plan
  2. Water Efficient Landscape Worksheet
- Submit/Resubmit Landscape Documentation Package:
  1. Plans: Cover Sheet, Site Plan, Landscape Plan, Irrigation Plan, Grading Plan
  2. Water Efficient Landscape Worksheet
  3. Soil Management Report, if mass grading then submit with Certificate of Completion
- Provide copy of approved Worksheet to water provider
- Provide copy of approved Landscape Documentation Package to owner
- Construct according to approved plans
- Resubmit if significant changes
- Request open-trench inspection, if required
- Request irrigation audit & make corrections
- Submit Certificate of Completion:
  1. Certificate of Installation
  2. Irrigation Schedule
  3. Schedule of Landscape & Irrigation Maintenance
  4. Hydrometer Irrigation Map (with controller)
  5. Irrigation Audit
  6. As-Built Plans
  7. Soil Management Report
  8. Verification of Soil Amendments
- Request Final Inspection
- Provide approved Certificate of Completion to the water provider and owner
- Not Applicable

Local Agency Requirements:
- Determine if proposed project triggers MWELO & Pathway
- Review & Comment on Construction Documents
- Approve & Permit
- Track data for annual report
- Provide approved Landscape Water Efficient Landscape Worksheet to local water provider
- Perform open-trench inspection, if required
- Perform irrigation audits, if staff is certified
- Review Certificate of Completion and approve or deny
- Perform final inspection
- Complete Permit
- Track data for annual reporting
- Submit Annual Report to DWR by January 31st each year
# Guidebook: Performance Pathway

<table>
<thead>
<tr>
<th>Landscape Documentation Package</th>
<th>Who Prepares Documents?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Information</td>
<td>Owner or designee</td>
</tr>
<tr>
<td>Water Efficient Landscape Worksheet</td>
<td>Owner or designee</td>
</tr>
<tr>
<td>Soil Management Report (if doing mass grading, submit with Cert of Completion)</td>
<td>Soil Lab</td>
</tr>
<tr>
<td>Landscape Plan</td>
<td>Landscape Architect, Contractor, Owner</td>
</tr>
<tr>
<td>Irrigation Plan</td>
<td>Landscape Architect, Contractor, Irrigation Designer or other “authorized” person</td>
</tr>
<tr>
<td>Grading Plan</td>
<td>Landscape Architect, Civil Engineer</td>
</tr>
</tbody>
</table>
Guidebook: Performance Pathway
Example

**Applicant:** The applicant must submit the Landscape Documentation Package and include the following:

1. Project Information.
2. Water Efficient Landscape Worksheet.
   * Hydrozone Information Table.
   * Water Budget Calculations.
4. Landscape Design Plan.
5. Irrigation Design Plan.

**Design:** Landscape Design Plans and Irrigation Design Plans must be signed by a licensed landscape architect, licensed landscape contractor, or other authorized person per California Business and Professions Code in the California Code of Regulations. Grading Plan must be signed by a licensed professional. For additional guidance, see Appendix Z, the Permitted Practice in California chart.
Guidebook: Performance Pathway Example

- **Enforcement:**
- **Plan review:** Check that the total landscape area includes all the irrigated areas listed on the site plan, landscape design plan, and irrigation design plan.

- **Note:** Track data for annual MWELO implementation (§495) report.

- **Note:** Submit approved Landscape Documentation Package to local water provider and property owner/designee.
**Recommendation:** The Certificate of Completion should be submitted after the project is complete and before the final inspection.

**Compliance:**

**Applicant:** Include the required documents in the Certificate of Completion and follow irrigation audit and inspection instructions provided by the local agency. The package must include:

1. Project Information Form.
2. Certificate of Installation.
3. Irrigation Schedule and Parameters.
4. Landscape and Irrigation Maintenance Schedule.
5. Irrigation Audit Report.
6. Irrigation Zone.
7. Soil Management Report if not previously included in the Landscape Documentation Package.

**Recommendation:** Use the Certificate of Completion Checklist provided by the local agency.

**Note:** See sample Irrigation Zone in Appendix K.

**Note:** See sample Irrigation Schedule and Parameters in Appendix L.

**Note:** See sample Irrigation Schedule Appendix M.

**Note:** See sample Maintenance Schedule in Appendix N.
Guidebook: Prescriptive Pathway

Guidebook addresses:

- Roles and responsibilities
- What is required to be submitted as part of the Landscape Documentation Package and Certificate of Completion
- What is recommended for submittal to provide a complete set of plans for plan check and installation, e.g. irrigation equipment
- Clarification of confusing language such as rehabilitated landscapes
- Common submittal errors such as verification of compost installation
- Common errors found during final inspection
Guidebook: Prescriptive Pathway

Applicability

Landscape projects that require a building or landscape permit; plan check or design review and meet the following criteria:

*Any landscape project: aggregate landscape area 500 sq. ft. to 2,500 sq. ft.

*Any landscape project: aggregate landscape area 500 sq. ft. to 2,500 sq. ft. and 100 percent of Estimated Total Water Use is provided by on-site graywater or rainwater is subject to only Appendix D (5) Prescriptive Path

Non-potable water distribution systems must comply with Chapters 15 and 16 of the California Plumbing code
(http://epubs.iapmo.org/2019/CPC/#p=12)
## Guidebook: Prescriptive Pathway

### SAMPLE Model Water Efficient Landscape Ordinance: Prescriptive Pathway Process Flowchart
(new construction and rehabilitated landscapes 500 to 2,500 square feet)

<table>
<thead>
<tr>
<th>Building Permit: Construction Documents</th>
<th>Construction</th>
<th>Project Completion: Prior to Sign-off &amp; Occupancy</th>
<th>Reporting</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Applicant</strong></td>
<td></td>
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</tr>
<tr>
<td>Submit/Re-submit Landscape Documentation Package:</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>1. Project Information</td>
<td>Construct according to approved plans</td>
<td>Request final inspection</td>
<td></td>
</tr>
<tr>
<td>2. Landscape Plan</td>
<td>Re-submit plans, if there are significant changes</td>
<td>Submit Certificate of Completion:</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>2. Irrigation Schedule</td>
<td></td>
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<td></td>
<td></td>
<td>3. Schedule of Landscape</td>
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<tr>
<td></td>
<td></td>
<td>Provide copy of Certificate of Completion to property owner and water provider</td>
<td></td>
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<tr>
<td><strong>Agency</strong></td>
<td></td>
<td></td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Review Construction Documents</td>
<td>Perform open-trench inspection, if required</td>
<td>Review Certificate of Completion</td>
<td></td>
</tr>
<tr>
<td>Track data for annual reporting</td>
<td></td>
<td>Perform final inspection, if required</td>
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<td></td>
<td></td>
<td>Submit Annual Report to DWR by January 31st Each Year</td>
<td></td>
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</tbody>
</table>
Guidebook: Prescriptive Pathway

**SAMPLE** Prescriptive Pathway Flowchart – Model Water Efficient Landscape Ordinance
(new construction and rehabilitated landscapes 500 to 2,500 square feet)

### Applicant (owner or designee) Requirements
- Review MWELO Requirements
- Submit Landscape Documentation Plan
  - Project Information
  - Landscape Plan
  - Soil Analysis Report (optional)
- Construct according to approved plans
- Resubmit if significant changes
- Request open-trench inspection, if required
- Request final Inspection
- Submit Certificate of Completion:
  1. Certificate of Installation
  2. Irrigation Schedule
  3. Schedule of Landscape
- At time of final inspection, provide Certificate to property owner and water provider
- Not Applicable

### Local Agency Requirements
- Determine if proposed project triggers MWELO & Pathway
- Review & Comment on Construction Documents
- Track data for annual report
- Perform open-trench inspection, if required
- Review Certificate of Completion and approve or deny
- Perform final Inspection
- Complete Permit
- Track data for annual reporting
- Submit Annual Report to DWR by January 31st each year
**Guidebook: Prescriptive Pathway**

<table>
<thead>
<tr>
<th>Certificate of Completion</th>
<th>Who Prepares Documents?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Certificate of Installation</td>
<td>Does not specify</td>
</tr>
<tr>
<td>Irrigation Schedule (with controller)</td>
<td>Does not specify</td>
</tr>
<tr>
<td>Irrigation &amp; Landscape Maintenance Schedule</td>
<td>Does not specify</td>
</tr>
</tbody>
</table>
Guidebook: Prescriptive Pathway

H2/5.2 Landscape Plan Requirements:
Table 2. Prescriptive Path Requirements
PLACEHOLDER Table 2 Prescriptive Path Requirements

**Note:** A sample landscape plan is included in Appendix S.

**Design:** A soil test may be performed to determine the compost application rate. If the test shows the soil needs more or less than 4 cu. yd. per 1,000 sq. ft., submit the soil analysis report. Otherwise, indicate that the 4 cu. yd. per 1,000 sq. ft. at a depth of 6 in. will be applied.

**Applicant:** The Certificate of Completion must be submitted after the project is complete and before the permit is closed and must include the following:

*Certificate of Installation
*Irrigation Schedule
*Schedule of Landscape and Irrigation Maintenance
Guidebook: Additional Sections

• Recycled water, graywater, stormwater management and rainwater retention
• Existing landscape requirements
• Reporting
  • Starting 1/31/2021 all MWEO reports will be submitted using the WUE Data online portal (link in guidebook)
• Public Education
Guidebook: Considerations for Enforcing MWELO

- A list of questions to help local agencies prepare for or better enforce MWELO.

**Example**

How Will The Agency Perform Plan Check/Review And Permitting?

1. Who on your staff will review the plans? Do you need more than one person trained? Do you hire a consultant to review the plans instead?
2. Do you need to adjust your fee schedule for review and inspections?
3. Do you need to update your permitting software? Is there funding available? Who will make the updates and when?
4. Will you require the applicant to provide more detailed information than what is required in the ordinance? Will you require a cover sheet, site plan, specifications, notes, and details to facilitate quick review of all the landscape elements?
Guidebook Layout: Appendices

- Index
- 2015 MWELO Ordinance
- Landscape, Irrigation and Water Budget Overview
- Updated Water Efficient Landscape Worksheet
- Flowcharts
- Checklists
- Samples
- Resources for agencies
- Applicant Brochure
### Guidebook Layout: Appendices

#### Performance Pathway Checklist

<table>
<thead>
<tr>
<th>APPLICANT:</th>
<th>ITEM</th>
<th>FOR REVIEWER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sheet Number</td>
<td>Project Information</td>
<td>PASS</td>
</tr>
<tr>
<td></td>
<td>Water Efficient Landscape Worksheet</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Soil Management Report (if significant mass grading is planned, submit after construction)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Landscape Design Plan, plant legend and specifications, details, notes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>a. Statement and signature by approved party: &quot;I have compiled with the criteria of the ordinance and applied them for the efficient use of water in the Landscape Design Plan.&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Irrigation Design Plan and specifications, details, notes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>a. Statement and signature by approved party: &quot;I have compiled with the criteria of the ordinance and applied them for the efficient use of water in the Irrigation Design Plan.&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hydromonic Plan (see Irrigation Design Plan or Landscape Design Plan)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Grading Design Plan and specifications, details, notes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>a. The following statement is on the plan and signed by the appropriate party: &quot;I have complied with the criteria of the...&quot;</td>
<td></td>
</tr>
</tbody>
</table>
Guidebook Layout: Appendices
Guidebook Layout: Appendices

Performance Pathway Water Efficient Landscape Worksheet
Guidebook Layout: Appendices
Irrigation Scheduling Parameters Worksheet

1) Irrigation scheduling will be regulated using a weather-based irrigation controller located _______. The controller has a non-volatile memory.

2) Irrigation watering will occur typically between the hours of 6pm – 10am unless otherwise dictated by weather, drought emergency, system, maintenance, repair and or testing.

3) Irrigation schedules will be designed and implemented to meet the California Model Water Efficient Landscape Ordinance or local ordinance’s Estimated Total Water Use calculations from approved Landscape Documentation Package. The total annual applied water shall not exceed the Maximum Applied Water Allowance from approved Landscape Documentation package.

4) An establishment irrigation schedule: Attached.

5) A permanent irrigation schedule: Attached.

6) Temporary irrigated areas schedule: Applicable □ Yes or □ No.

7) The following additional parameters are in place for each hydrozone/station:

   a) Interval between water runs.

   b) Station run times to prevent run off.

   c) Number of cycles to prevent run off.

   d) A monthly water budget.

   e) Type of emission device and application rate.

   f) Root depth target.

   g) Soil type.

   h) Slope.

   i) Micro-climate.

   j) Distribution uniformity.

---

Signature*: ___________________________ Date: ________________

Name (print): ___________________________ Telephone No.: ________________

Fax No.: ____________________________

Title: ___________________________ Email Address: ____________________________

License No. or Certification No.: ____________________________

Company: ___________________________ Street Address: ____________________________
## Irrigation Audit Checklist & Report

### A. Audit Report

<table>
<thead>
<tr>
<th>Item</th>
<th>FOR AUDITOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Separate landscape customer service water meter or private submeter has been installed as applicable:</td>
<td></td>
</tr>
<tr>
<td>a. Non-residential projects: Greater than 1,600 sq ft landscape area</td>
<td></td>
</tr>
<tr>
<td>b. Residential projects: Greater than 5,000 sq ft landscape area</td>
<td></td>
</tr>
<tr>
<td>2. The irrigation audit report includes:</td>
<td></td>
</tr>
<tr>
<td>a. System inspection</td>
<td></td>
</tr>
<tr>
<td>b. Inspect for leaks</td>
<td></td>
</tr>
<tr>
<td>c. System tune-up</td>
<td></td>
</tr>
<tr>
<td>d. Test the operating pressure of the irrigation system</td>
<td></td>
</tr>
<tr>
<td>e. Test to determine distribution uniformity</td>
<td></td>
</tr>
<tr>
<td>f. Test to determine precipitation rate of representative overhead irrigation valves</td>
<td></td>
</tr>
<tr>
<td>g. Confirm matched precipitation rates on valves with sprinkler heads, rotors and other emission devices</td>
<td></td>
</tr>
<tr>
<td>h. Report of any overspray or broken irrigation equipment</td>
<td></td>
</tr>
<tr>
<td>i. Report of overspray or runoff that causes overland flow</td>
<td></td>
</tr>
<tr>
<td>j. Written recommendations to improve</td>
<td></td>
</tr>
</tbody>
</table>
Sample Residential Landscape Plans

SAMPLE WATER EFFICIENT RESIDENTIAL LANDSCAPE PLANS

The following sample set of landscape plans meets the minimum requirements of the Model Water Efficient Landscape Ordinance (MWELO) as enforced by the East Bay Municipal Utility District. Contact your local City or County planning office for its landscape design and installation requirements.
Guidebook Layout: Appendices

Sample Residential Landscape Plans

Sample Plan East Bay Municipal Utility District
https://www.ebmud.com/customers/new-meter-installation/regulations/
Guidebook Layout: Appendices

Sample Residential Landscape Plans

Sample Plan East Bay Municipal Utility District
https://www.ebmud.com/customers/new-meter-installation/regulations/
## Landscape Inspection Checklist

<table>
<thead>
<tr>
<th>APPLICANT</th>
<th>ITEM</th>
<th>PASS</th>
<th>FAIL</th>
<th>CORRECTED</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1. Installed planting matches Landscape Design Plan</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td></td>
<td>2. No turf on slopes over 25%</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td></td>
<td>3. No turf in planting areas less than 10 feet wide</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td></td>
<td>4. No invasive plants are installed <a href="http://calipg.org/landscape/dpo0">http://calipg.org/landscape/dpo0</a></td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td></td>
<td>5. Delivery tags/receipts for compost submitted verifying a rate of 4 CY/1,000 sf or as prescribed by soil lab recommendations</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td></td>
<td>6. 3 inches of mulch installed in all non-turf planting areas, unless prohibited by fire code</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td></td>
<td>7. Mulch is aged tree trimmings,</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>
## Prescriptive Path (Appendix D) Checklist

For projects with 500 to 2,500 sq. ft. of total landscape area.

### A. Project Information

<table>
<thead>
<tr>
<th>Field</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Submittal Date</td>
<td></td>
</tr>
<tr>
<td>Application Number</td>
<td></td>
</tr>
<tr>
<td>Project Address</td>
<td></td>
</tr>
<tr>
<td>Project Type*</td>
<td>Residential</td>
</tr>
<tr>
<td>Applicant Name</td>
<td></td>
</tr>
<tr>
<td>Applicant Email</td>
<td></td>
</tr>
<tr>
<td>Applicant Phone</td>
<td></td>
</tr>
<tr>
<td>Property Owner Name</td>
<td></td>
</tr>
<tr>
<td>Property Owner Email</td>
<td></td>
</tr>
<tr>
<td>Property Owner Phone</td>
<td></td>
</tr>
<tr>
<td>Water Supply Type</td>
<td></td>
</tr>
<tr>
<td>Water Supplier</td>
<td></td>
</tr>
<tr>
<td>Total Landscape Area (sq ft) *</td>
<td></td>
</tr>
<tr>
<td>Total Turf Area (sq ft)</td>
<td></td>
</tr>
<tr>
<td>Total Non-turf Planting Area (sq ft)</td>
<td></td>
</tr>
</tbody>
</table>

* Information required in an annual report to the State Department of Water Resources from the permitting agency.
## Guidebook Layout: Appendices

### Standard Correction Sheet

<table>
<thead>
<tr>
<th>Requires Correction</th>
<th>Code Sec. No.</th>
<th>Ordinance Description</th>
<th>Correction/Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>492.3</td>
<td></td>
<td>Landscape Documentation Package</td>
<td></td>
</tr>
<tr>
<td>492.4</td>
<td></td>
<td>Water Efficient Landscape Worksheet</td>
<td></td>
</tr>
<tr>
<td>492.5</td>
<td></td>
<td>Soil Management Report</td>
<td></td>
</tr>
<tr>
<td>492.6</td>
<td></td>
<td>Landscape Design Plan</td>
<td></td>
</tr>
<tr>
<td>492.7</td>
<td></td>
<td>Irrigation Design Plan</td>
<td></td>
</tr>
<tr>
<td>492.8</td>
<td></td>
<td>Grading Design Plan</td>
<td></td>
</tr>
<tr>
<td>492.9</td>
<td></td>
<td>Certificate of Completion</td>
<td></td>
</tr>
<tr>
<td>492.14</td>
<td></td>
<td>Recycled Water</td>
<td></td>
</tr>
<tr>
<td>492.15</td>
<td></td>
<td>Graywater Systems</td>
<td></td>
</tr>
</tbody>
</table>
Guidebook Layout: Appendices

MWELO Website Landing Page Template

What is the Model Water Efficient Landscape Ordinance (MWELO)?

MWELO is a statewide water efficiency law for new and renovated landscapes in California. It sets limits on high water use plants and irrigation equipment and incentivizes a holistic approach to landscaping that incorporates alternative water supplies like graywater, harvested rainwater, and recycled water.

Why is MWELO needed?

Traditionally designed landscapes incorporate plants and irrigation that waste water, contribute to polluted water runoff into streams, lakes, and the ocean; overspray causing water damage to buildings, fences, streets; and create a lot of plant and trimming green waste.

These landscapes can be beautiful and functional. Research has shown that creating and maintaining landscapes that meet MWELO use 50% less water; require 60% less maintenance; produce 50% less yard waste.

Does this mean the landscapes need to be rocks and cactus?

No, the ordinance encourages the use of a variety of plants including natives, climate-appropriate plants. Limited size lawns and non-adapted plants can be planted.

Who needs to comply?

Any single-family or multi-family residential, public, institutional, or commercial project that requires a permit, plan review or check from the local review agency AND meets one of these size thresholds:

- New construction project with a total landscape area greater than 500 sq. ft.
- Rehabilitation of existing landscape with a total landscape area greater than 1,500 sq. ft.
Guidebook Layout: Appendices

**Irrigation**

Hunter:  

Rain Bird:  https://www.rainbird.com/agency/mwelo

**Landscape Design Templates**

Landscape and Irrigation Design Templates - City of Santa Monica:  
https://www.smgov.net/Departments/OSE/Categories/Landscape/Airport_Avenue_Demonstration_Gardens.aspx

How to Access Guidebook & Provide Comments
Accessing Draft Guidebook

• Visit DWR’s Model Water Efficient Landscape Ordinance web page:
  https://water.ca.gov/Programs/Water-Use-And-Efficiency/Urban-Water-Use-Efficiency/Model-Water-Efficient-Landscape-Ordinance
Guidebook: Comments & Feedback

Please review and provide comments by **February 12, 2021**

- What’s Missing?
- Errors?
- Are the resources, checklists, samples useful? If not, how can we make them better?
- Is the terminology correct, i.e. plans vs construction documents?
Guidebook: Excel Comment Form

*Instructions for use:* Please include as much information in each requested field (columns A-G) as possible. Use one row for each new comment, idea or suggestion. Your completed excel form can be submitted via email to meagan.wylie@csus.edu no later than *Friday February 12, 2020*. Only comments received in this format will be compiled for review and consideration. Thank you!

<table>
<thead>
<tr>
<th>Name</th>
<th>Affiliation</th>
<th>Your Stakeholder Category or Profession</th>
<th>Guidebook Page # or Appendix Title</th>
<th>Reference Paragraph, Section, or Graphic</th>
</tr>
</thead>
</table>


Guidebook: Comments & Feedback

- Please use the provided Excel sheet only

- Email completed comment forms to Meagan.Wylie@csus.edu by February 12, 2021

- Every comment will be reviewed

- Final will be published on DWR website in spring/summer 2021
Guidebook: Q&A

Email: kim@ocainconsulting.com
(424) 272-0766