

CITY OF LEMOORE

Landscape Documentation Package PROJECT CHECKLIST

MODEL WATER EFFICIENT LANDSCAPE ORDINANCE (MWELO)

LANDSCAPE APPLICATION INFORMATION

City of Lemoore Department of Community Development 711 W. Cinnamon Drive Lemoore, CA 93245 559-924-6744



Landscape Documentation Package PROJECT CHECKLIST

MODEL WATER EFFICIENT LANDSCAPE ORDINANCE (MWELO)

The State of California's Model Water Efficient Landscape Ordinance promotes efficient water use in new and retrofitted landscapes. The City of Lemoore requires new landscape areas 500 square feet or larger and rehabilitated landscape areas 2,500 square feet or larger to accurately and fully complete the MWELO Landscape Documentation Package at the start of the project and submit the Certificate of Completion at the end of the project. This toolkit provides the forms and documentation required for permitting.

There are **two** pathways to compliance based on the size of the landscaped area:

- 1. THE PRESCRIPTIVE APPROACH (Projects 500-2,499 square feet). Please submit the following information:
 - □ MWELO Project Information Short Form for Prescriptive Compliance Option pg. 2
 - □ MWELO Prescriptive Submittal Checklist pg. 3

OR

- 2. THE PERFORMANCE APPROACH (Projects 2,500 square feet or larger). Please submit the following information:
 - □ MWELO Project Information for Performance Compliance Option pg. 4
 - □ MWELO Performance Submittal Checklist pg. 5-6
 - □ MWELO Sample Water Efficient Landscape Worksheet pg. 7
 - □ MWELO Water Efficient Landscape Worksheet pg. 8

2a. FORMS DUE AT BUILDING PERMIT FINAL INSPECTION

- □ MWELO Landscape Certification pg. 9
- □ MWELO Certificate of Completion pg. 10-11

The Landscape Documentation Package contained within this Document shall be included as part of the plan check submittal. It shall be embedded onto construction documents. The Landscape Certification and Certificate of Completion shall be attached to plans at the Building Permit Final Inspection. The most current regulations can be found at the following website:

https://water.ca.gov/Programs/Water-Use-And-Efficiency/Urban-Water-Use-Efficiency/Model- Water-Efficient-Landscape-Ordinance.



MWELO PROJECT INFORMATION FORM - PRESCRIPTIVE COMPLIANCE (OPTION #1)

Applicant Information

Name:		
Phone:		
Addres	SS:	
Email:		
.		

Compliance Method

- Option #1 *Prescriptive* (500 2499 sf.) (Include information from Prescriptive Checklist on plans)
- Option #2 *Performance* (2500 sf. or greater) (Include information from Performance Checklist on plans)

Project

Site Address:

Project Type (new dwelling, commercial, or rehab):

□ This project contains landscaping areas of <u>500 - 2,499 sf.</u> The following items provide information for the prescriptive requirements of the landscape submittal package. (*Please provide information on the plans specific to the landscape project areas and utilize the notes and suggestions found on page 4.*)

Total Landscape Area (sq. ft.): ______Turf Area (sq. ft.): _____

Non -Turf Planter Area (sq. ft.): ______Special Landscape Area* (sq. ft.): _____

*Pools, water features, orchards or gardens.

Water Type (potable, recycled, well, other):_____

Name of water purveyor (If not served by private well):

<u>Signature</u>

I certify the above information is correct and agree to comply with the requirements of the MWELO.

Signature of property owner or authorized representative

Date



MWELO - PRESCRIPTIVE COMPLIANCE (OPTION #1) - SUBMITTAL CHECKLIST

Submittal Date:	
Project Address:	
Applicant Name: _	Phone:

The following checklist provides a list of information that must be included on the plans before your permit application can be processed. This checklist covers the *prescriptive* compliance method for landscape areas between **500 and 2,499** square feet. Please provide the appropriate information on construction documents.

Plant Material (Title 23, Chapter 2.7, Appendix D (b) (3))

- □ For *residential* areas, 75% of landscape, (excluding edibles and areas using recycled water), shall consist of plants that average a medium WUCOLS plant factor of 0.3 out of 0.7. To verify WUCOLS selections for Lemoore (Zone 2) refer to the plant database online at: <u>http://ucanr.edu/sites/WUCOLS/</u>.
- □ For *nonresidential* areas, 100% of the plants, (excluding edibles and areas using recycled water), shall consist of plants that average a WUCOLS plant factor of 0.3.
- □ <u>Add a **NOTE**: to plans</u>: "A minimum 3-inch layer of mulch shall be applied on all exposed soil surfaces of planting areas except turf areas, creeping or rooting groundcovers, or direct seeding applications where mulch is excluded."

Turf (Title 23, Chapter 2.7, Appendix D (b) (4))

- □ New turf installations shall not exceed 25% of the landscape area (LA) on residential projects.
- \Box No new turf areas shall be installed in non-residential areas.
- \Box No turf shall be installed on slopes greater than 25%.
- □ No turf shall be installed in parkways or planter areas less than 10 feet wide.

Irrigation (Title 23, Chapter 2.7, Appendix D (b) (5))

- □ Automatic, Et, weather-based or soil-moisture based irrigation controllers shall be installed on the irrigation system.
- □ Pressure regulators shall be installed on the irrigation system to ensure dynamic pressure of the system is within the manufacturer's recommended pressure range.
- Manual-shut-off valves shall be installed as close as possible to the point of connection of the water supply.
- □ Areas less than 10-feet in width in any direction shall be irrigated with subsurface irrigation or other means that produces no runoff or overspray.
- □ Non-residential projects with landscape areas of 500 sq ft. or more, shall install a separate or private sub-meter to measure all landscape water use.



MWELO - PROJECT INFORMATION FORM - PERFORMANCE COMPLIANCE (OPTION #2)

pplicant Information	
lame:	
hone:	
ddress:	
mail:	

Compliance Method

- □ Prescriptive (Items included in Prescriptive Checklist is included on plans)
- Derformance (Items included in Performance Checklist is included on plans)

Project

Site Address: _____

Project Type (new dwelling, commercial, or rehab): _____

□ This project contains landscaping areas of <u>2500 sf. or greater.</u> The following items provide information for the prescriptive requirements of the landscape submittal package. (*Please provide information on the plans specific to the landscape project areas and utilize the notes and suggestions found on page 5 and 6.*)

Total Landscape Area (sq. ft.):	_Turf Area (sq. ft.):
Non -Turf Plan Area (sq. ft.):	_Special Landscape Area (sq. ft.):
Water Type (potable, recycled, well, other):	
Name of water purveyor (If not served by private well):	

Signature

I certify the above information is correct and agree to comply with the requirements of the MWELO.

Signature of property owner or authorized representative

Date



PROJECT CHECKLIST

MWELO PERFORMANCE COMPLIANCE (OPTION #2) - SUBMITTAL CHECKLIST

Submittal Date: _	
Project Address:	
Applicant Name:	Phone:

The following checklist provides a list of information that must be included on the plans before your permit application can be processed. This checklist covers the performance compliance method for landscape areas 2,500 square feet or larger. Please provide the appropriate information on construction documents.

Landscape Documentation Package (Title 23, Chapter 2.7 §492.3)

- □ The project's address, total landscape area, water supply type, and contacts shall be stated on the plans.
- Add, sign and date the following statement on the plans: "I agree to comply with the requirements of the water efficient landscape ordinance and submit a complete Landscape Documentation Package."
- □ Water Efficient Landscape Worksheet that includes a hydrozone information table and water budget calculations shall be submitted for plan check.
- □ A landscape design plan and irrigation design plan shall be submitted for plan check.

Water Efficient Landscape Worksheet (Title 23, Chapter 2.7 §492.4 and §492.13)

- □ Incorporate the Water Efficient Landscape Worksheet into plans. Show that the Maximum Applied Water Allowance (MAWA) meets or exceeds the calculated Estimated Total Water Use (ETWU).
- □ The evapotranspiration adjustment factor (ETAF) for the landscape project shall not exceed a factor of (0.55 for residential areas) (0.45 for nonresidential areas).
- □ The plant factor used shall be from WUCOLS or from horticultural researchers with academic institutions. WUCOLS plants database can be found on-line at: <u>http://ucanr.edu/ sites/WUCOLS/</u>.
- □ All water features shall be included in the high-water use hydrozone. All temporary irrigated areas shall be included in the low water use hydrozone.
- □ All Special Landscape areas shall be identified on the plans. The ETAF for new and existing (non-rehabilitated) Special Landscape Areas shall not exceed 1.0.
- □ For the purpose of calculating ETWU, the irrigation efficiency is assumed to be 0.75 for overhead spray devices and 0.81 for drip system devices.

Landscape Design Plan (Title 23, Chapter 2.7 §492.6)

The landscape design plans, at a minimum, shall contain the following:

- Delineate and label each hydrozone by number, letter, or other method.
- □ Identify each hydrozone as low, moderate, high water, or mixed water use.
- □ Identify recreational areas, areas solely dedicated to edible plants, areas irrigated with recycled water, type and surface area of water features, impermeable and permeable hardscape, and any infiltration systems.
- □ For hydrozone with a mix of both low and moderate water use plants or both moderate and high water use plants, the higher plant factor or the plant factor based on the proportions of the respective plant water uses shall be used. Hydrozones containing a mix of low and high water use plants is not permitted.



Landscape Design Plan (Title 23, Chapter 2.7 §492.6)

- □ Turf is not allowed on slopes greater than 25% where the toe of the slope is adjacent to an impermeable hardscape.
- □ Add NOTE to plans: "Only recirculating water systems shall be used for water features".
- □ <u>Add NOTE to plans:</u> "A minimum 3-inch layer of mulch shall be applied on all exposed soil surfaces of planting areas except turf areas, creeping or rooting groundcovers, or direct seeding applications where mulch is contraindicated."
- □ <u>Add note to plans:</u> "For soils less than 6% organic matter in the top 6 inches of soil, compost at a rate of a minimum of four cubic yards per 1,000 square feet of permeable area shall be incorporated to a depth of six inches into the soil".

Irrigation Design Plan (Title 23, Chapter 2.7 §492.7)

The irrigation plans, at a minimum, shall contain the following:

- □ Location and size of separate water meters for landscape.
- □ Location, type, and size of all components of the irrigation system, including controllers, main and lateral lines, valves, sprinkler heads, moisture sensing devices, rain switches, quick couplers, pressure regulators, and backflow prevention devices.
- □ Static water pressure at the point of connection to the public water supply
- □ Flow rate (gallons per minute), application rate (inches per hour), and design operating pressure (pressure per square inch) for each station.
- □ A dedicated water service meter or private submeter shall be installed for all (nonresidential irrigated landscapes of at least 500sqft) (residential irrigated landscape areas of at least 500 sf).
- □ Add note to plans: "Pressure regulating devices are required if water pressure is below or exceeds the recommended pressure of the specified irrigation devices."
- □ Manual shut-off valves shall be required, as close as possible to the point of connection of the water supply, to minimize water loss in case of an emergency or routine repair.
- Add note to plans: "Check valves or anti-drain valves are required on all sprinkler heads where low point drainage could occur."
- Areas less than 10-feet in width in any direction shall be irrigated with subsurface or drip irrigation.
- □ Overhead irrigation shall not be permitted within 24-in. of any non-permeable surface unless it can be shown to drain back into permeable planting areas without pooling.

Required Statements and Certification (Title 23, Chapter 2.7 §492.6, §492.7 and §492.9)

- □ Add the following statement on the landscape and irrigation plans: "I have complied with the criteria of the ordinance and applied them for the efficient use of water in the landscape design plans".
- □ The final set of landscape and irrigation plans shall bear the signature of a licensed landscape architect, licensed landscape contractor, certified irrigation designer, licensed architect, licensed engineer, licensed land surveyor, or personal property owner.
- Add note to plans: "A diagram of the irrigation plan showing proposed hydrozones shall be kept with the irrigation controller for subsequent management purposes."
- □ Add note to plans: "A Certificate of Completion shall be filled out and certified by either the designer of the landscape plans, irrigation plans, or the licensed landscape contractor for the project".
- □ Add note to plans: "An irrigation audit report shall be completed at the time of final inspection.

Sample Water Efficient Landscape Worksheet EXAMPLE

WATER EFFICIENT LANDSCAPE WORKSHEET

This worksheet is filled out by the project applicant and it is a required element of the Landscape Documentation Package.

Reference Evapotranspiration (ETo) 50.1							
Hydrozone#/ Planting Description ^a	Plant Factor (PF)	Irrigation Method ^b	Irrigation Efficiency (IE) ^c	ETAF (PF/IE)	Landscape Area (sq, ft,)	ETAF x Area	Estimated To- tal Water Use (ETWU)°
Regular Landscape	Areas						
1 / FRONT YARD	.8	Spray	.75	0.94	1,000	940	29,198
2 / SIDE YARD	.5	Drip	.81	0.61	300	183	5,685
3 / REAR YARD	.3	Drip	.81	0.37	3,300	1221	37,927
4 / POOL	1.0	n/a	1	1	400	400	12,425
				Totals	5,000 (A)	2744 (B)	
Special Landscape A	reas						
NONE				1			
				1			
				1			
				Totals	0 (C)	0 (D)	
	1			-		ETWU Total	85,234
			Maximum	Allowed Wa	ter Allowance (M	AWA) ^e	85,420

***Hydrozone #/Planting Description** *E.g* ^bIrrigation Method overhead spray or drip ^cIrrigation Efficiency 0.75 for spray head 0.81 for drip

^dETWU (Annual Gallons Required) = Eto x 0.62 x ETAF x Area

> where 0.62 is a conversion factor that converts acre-inches per acre per year to gallons per square foot per year.

2.) low water use plantings

1.) front lawn

3.) medium water use planting

MAWA (Annual Gallons Allowed) = (Eto*) (0.62) [(*ETAF x LA*) + ((1-*ETAF*) *x SLA*)]

where 0.62 is a conversion factor that converts acreinches per acre per year to gallons per square foot per year, LA is the total landscape area in square feet, SLA is the total special landscape area in square feet, and ETAF is .55 for residential areas and 0.45 for nonresidential areas.

ETAF Calculations

Regular Landscape Area

Total ETAF x Area	(B)	2744
Total Area	(A)	5000
Average ETAF	В÷А	0.549

All Landscape Area

 Total ETAF x Area
 (B+D)
 2,744

 Total Area
 (A+C)
 5,000

 Sitewide ETAF
 (B+D) ÷ (A+C)
 0.549

Average ETAF for Regular Landscape Areas must be 0.55 or below for residential areas, and 0.45 or below for nonresidential areas.

A copy of this form may be obtained from Department of Water Resources website: <u>https://water.ca.gov/Programs/Water</u> -Use-And-Efficiency/Urban-Water-Use-Efficiency/Model-Water-Efficient-Landscape-Ordinance

Water Efficient Landscape Worksheet

This worksheet is filled out by the project applicant and it is a required element of the Landscape Documentation Package.

Reference Evapotranspiration (ETo) 51.7 (see Appendix A)

Hydrozone # / Planting Description ^a	Plant Factor (PF)	Irrigation Method ^b	Irrigation Efficiency (IE) ^c	ETAF (PF/IE)	Landscape Area (sq, ft,)	ETAF x Area	Estimated To- tal Water Use (ETWU) ^e
Regular Landscape A	reas						
				Totals	(A)	(B)	
Special Landscape Ar	eas						
				1			
				1			
				1			
				Totals	(C)	(D)	
						ETWU Total	
			Maximum	Allowed Wat	ter Allowance (MA	AWA) ^e	

^aHydrozone #/Planting Description

^bIrrigation Method overhead spray or drip

^cIrrigation Efficiency 0.75 for spray head 0.81 for drip dETWU (Annual Gallons Required) = Eto x 0.62 x ETAF x Area

> where 0.62 is a conversion factor that converts acre-inches per acre per year to gallons per square foot per year.

2.) low water use plantings

E.g

1.) front lawn

3.) medium water use planting

°MAWA (Annual Gallons Allowed) = (*Eto*) (0.62) [(*ETAF x LA*) + ((1-*ETAF*) *x SLA*)]

> where 0.62 is a conversion factor that converts acreinches per acre per year to gallons per square foot per year, LA is the total landscape area in square feet, SLA is the total special landscape area in square feet, and ETAF is .55 for residential areas and 0.45 for nonresidential areas.

ETAF Calculations

Regular Landscape Area

Average ETAF	В÷А	
Total Area	(A)	
Total ETAF x Area	(B)	

Average ETAF for Regular Landscape Areas must be 0.55 or below for residential areas, and 0.45 or below for nonresidential areas.

All Landscape Area

Total ETAF x Area	(B+D)	
Total Area	(A+C)	
Sitewide ETAF	(B+D) ÷ (A+C)	

A copy of this form may be obtained from Department of Water Resources website: <u>https://water.ca.gov/Programs/Water</u>-Use-And-Efficiency/Urban-Water-Use-Efficiency/Model-Water-Efficient-Landscape-Ordinance



PROJECT CHECKLIST

LANDSCAPE CERTIFICATION FORM - Requ	ired at Final Inspection (Performance Option Only)
Project Information:	
Site Address:	Permit Number:
landscape design and water use calculatic supervision; the landscape design and wat the Model Water Efficient Landscape Ordi complete; OR	California to perform landscape design services; the ons for this project were prepared by me or under my ter use calculations comply with the requirements of nance, and the Landscape Documentation Package is (do not need to complete sections B or C below); OR er Efficient Landscape Ordinance.
Name:	Relationship to Project:
Company Name (if applicable):	State License # (if applicable):
Signature:	Date:
landscape project for this project was instal for the identified property has been installed Landscape Documentation Package and co Efficient Landscape Ordinance; (c) a diagra is kept with the irrigation controllers; (d) the	of California to provide landscape design services; the lled by me or under my supervision; (b) the landscaping d in substantial conformance with the approved omplies with the requirements of the Model Water am of the irrigation plan showing proposed hydrozones e Certificate of Completion has been completed in odel Water Efficient Landscape Ordinance and shall be
Name:	Relation to Project:
Company Name (if applicable):	State License # (if applicable):
Signature:	Date:
Section C: Owner/Representative	
all the documents within the Landscape Do	authorized representative and have received copies of cumentation Package and the Certificate of Completion he project is maintained in accordance with the edule.
Signature:	Date:
the Model Water Efficient Landscape Ordinance in the St Landscape Designers and Irrigation Consultants. Person property they own. (Sections 5500.1, 5615, 5641, 5641.1,	following individuals are authorized to provide services required by tate of California: Landscape Architects, Landscape Contractors, al property owners may design and sign plans for work on any . 5641.2, 5641.3, 5641.4,5641.5, 5641.6, 6701, 7027.5 of the 16 of the California Code of Regulations, and Section 6721 of the



CERTIFICATE OF COMPLETION – Required at Final Inspection (Performance Option Only)

This certificate is filled out by the project applicant upon completion of the landscape project.

PART 1. PROJECT INFORMATION SHEET

Date		
Project Name		
Name of Project Applicant	Telephone No.	
	Fax No.	
Title	Email Address	
Company	Street Address	
City	State	Zip Code

Project Address and Location

Street Address		Parcel, tract or lot number, if available.					
City		Latitude/Longitude (optional)					
State	Zip Code						

Property Owner of his/her designee:

Name	Telephone No.
	Fax No.
Title	Email Address
Company	Street Address
City Property Owner	State Zip Code

"I/we certify that I/we have received copies of all the documents within the Landscape Documentation Package and the Certificate of Completion and that it is our responsibility to see that the project is maintained in accordance with the Landscape and Irrigation Maintenance Schedule."

Property Owner Signature

Date



PROJECT CHECKLIST

CERTIFICATE OF COMPLETION - Required at Final Inspection (Performance Option Only)

PART 2. CERTIFICATION OF INSTALLATION ACCORDING TO THE LANDSCAPE DOCUMENTATION PACKAGE

"I/we certify that based upon periodic site observations, the work has been completed in accordance with the ordinance and that the landscape planting and irrigation installation conform with the criteria and specifications of the approved Landscape Documentation Package."

Signature*	Date						
Name	Telephone No.						
	Fax No.						
Title	Email Address						
License No. or Certification No.							
Company	Street Address						
City	State	Zip Code					

*Signer of the landscape design plan, signer of the irrigation plan, or a licensed landscape contractor.

PART 3. IRRIGATION SCHEDULING

Attach parameters for setting the irrigation schedule on controller per ordinance Section 492.10.

PART 4. SCHEDULE OF LANDSCAPE AND IRRIGATION MAINTENANCE Attach schedule of Landscape and Irrigation Maintenance per ordinance Section 492.11.

PART 5. LANDSCAPE IRRIGATION AUDIT REPORT Attach Landscape Irrigation Audit Report per ordinance Section 492.12.

PART 6. SOIL MANAGEMENT REPORT

Attach soil analysis report, if not previously submitted with the Landscape Documentation Package per ordinance Section 492.6.

Attach documentation verifying implementation of recommendations from soil analysis report per ordinance Section 492.6.



Appendix A. Reference Evapotranspiration (ETo) Table.

Appendix A - Reference Evapotranspiration (ETo) Table*

KINGS	Jan	Fe	Ma	Apr	May	Jun	Jul	Au	Se	Oct	No	Dec	Tota
- ··		b	r					g	р		V		
Caruthers	1.6	2.5	4.0	5.7	7.8	8.7	9.3	8.4	6.3	4.4	2.4	1.6	62.7
Corcoran	1.6	2.2	3.7	5.1	6.8	7.8	8.7	7.8	5.7	4.0	2.1	1.6	57.1
Hanford	0.9	1.5	3.4	5.0	6.6	7.7	8.3	7.2	5.4	3.4	1.4	0.7	51.5
Kettleman	1.1	2.0	4.0	6.0	7.5	8.5	9.1	8.2	6.1	4.5	2.2	1.1	60.2
Lemoore	0.9	1.5	3.4	5.0	6.6	7.7	8.3	7.3	5.4	3.4	1.4	0.7	51.7
Stratford	0.9	1.9	3.9	6.1	7.8	8.6	8.8	7.7	5.9	4.1	2.1	1.0	58.7

* The values in this table were derived from:

1) California Irrigation Management Information System (CIMIS);

- 2) Reference EvapoTranspiration Zones Map, UC Dept. of Land, Air & Water Resources and California Dept of Water Resources 1999; and
- 3) Reference Evapotranspiration for California, University of California, Department of Agriculture and Natural
- 4) Resources (1987) Bulletin 1922, 4) Determining Daily Reference Evapotranspiration, Cooperative Extension UC Division of Agriculture and Natural Resources (1987), Publication Leaflet 21426