

WATER EFFICIENT LANDSCAPING

DOCUMENTATION PACKAGE AND GUIDELINES



NOVEMBER 3, 2016

CITY OF ARCADIA

DEVELOPMENT SERVICES DEPARTMENT

240 W. HUNTINGTON DRIVE

ARCADIA, CA 91007

CITY OF ARCADIA
WATER EFFICIENT LANDSCAPING - ORDINANCE NO. 2330
LANDSCAPE DOCUMENTATION PACKAGE AND GUIDELINES

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THE LANDSCAPE DOCUMENTATION PACKAGE MUST BE COMPLETED AND SUBMITTED WITH YOUR PLANS. IF YOU HAVE ANY QUESTIONS OR NEED ANY ADDITIONAL ASSISTANCE, PLEASE CONTACT THE CITY OF ARCADIA DEVELOPMENT SERVICES DEPARTMENT AT (626) 574-5423.

CITY OF ARCADIA

WATER EFFICIENT LANDSCAPING ORDINANCE

APPLICABILITY

Your action is required to conserve water supplies in compliance with State law. The City of Arcadia adopted Ordinance No. 2330 on November 3, 2015, to comply with State law. As of December 1, 2015, and consistent with the Governor's Executive Order No. B-29-15, Ordinance No. 2330 applies to all of the following landscape projects:

- New construction projects with an aggregate landscape area equal to or greater than 500 square feet requiring a building or landscape permit, plan check, or design review.
- Rehabilitated landscape projects with an aggregate landscape area equal to or greater than 2,500 square feet requiring a building or landscape permit, plan check, or design review.
- Any public agency project.

Projects with an aggregate landscape area of 2,500 square feet or less may comply with the Ordinance by completing the Worksheet (Section C) or the Prescriptive Measures Compliance Option (Section D) of the Landscape Documentation Package.



CITY OF ARCADIA
ORDINANCE NO. 2330 – WATER EFFICIENT LANDSCAPING
PROCESS FOR COMPLIANCE

In order to comply with the City of Arcadia's Water Efficient Landscaping Ordinance, the following documents must be prepared by a licensed landscape architect or other appropriately licensed professional(s) in accordance with the criteria and requirements of the Ordinance and submitted during design review and/or plan check, and must be approved by the City of Arcadia in order for the design review and/or plan check to be approved and the relevant permit(s) to be issued:

- Landscape Design Plan
- Irrigation Design Plan and Schedule
- Grading Design Plan with stormwater management practices and rainwater retention measures
- Soil Management Report
- Landscape Documentation Package
 - Section A. Project Information
 - Section B. Project Contacts
 - Section C. Worksheet
 - Section D. Prescriptive Measures Compliance Option

- - -

Prior to a final inspection sign-off and/or the issuance of a Certificate of Occupancy for any project subject to the Water Efficient Landscaping Ordinance, the following documents must be provided in accordance with the criteria and requirements of the Ordinance:

- Regular Landscape and Irrigation Maintenance Schedule
- Copy of the approved Landscape Documentation Package with record/as-built drawings and any other relevant information as to the actual installation of the landscaping and irrigation
- Certificate of Completion signed by a licensed landscape architect or certified irrigation designer and the property owner certifying that the landscaping has been installed and will be maintained in accordance with the approved plans and that the maintenance schedule has been completed and will be followed, including acknowledgement that the landscaping and irrigation may be subject to inspection and a Landscape Irrigation Audit at any time to verify that it is being maintained in compliance with Ordinance No. 2330 and State law.
- Property Owner's Acknowledgment of Receipt of Required Documents

**CITY OF ARCADIA
WATER EFFICIENT LANDSCAPING - ORDINANCE NO. 2330
LANDSCAPE DOCUMENTATION PACKAGE - SECTION A**

PROJECT INFORMATION

Date: _____

Project Name: _____

Project Applicant: _____

Project Address and Location:

Street Address		Assessor Parcel Number
Arcadia		Tract/Parcel Map No. and Lot Number(s)
California	9100__	Nearest Cross Street

Project Type (Please check all that apply):

- | | | |
|---|---|--|
| <input type="checkbox"/> New | <input type="checkbox"/> Rehabilitation | <input type="checkbox"/> Single-Family Residential |
| <input type="checkbox"/> Private | <input type="checkbox"/> Public | <input type="checkbox"/> Multiple-Family Residential |
| <input type="checkbox"/> Commercial / Industrial | | <input type="checkbox"/> Mixed-Use |
| <input type="checkbox"/> Institutional (i.e., hospital, school, etc.) | | <input type="checkbox"/> Other _____ |

Please fill in the information below to describe the landscape project:

- Total landscaped area _____ (sq. feet)
- Total turf area _____ (sq. feet)
- Total non-turf area _____ (sq. feet)
- Total active recreational areas _____ (sq. feet)
- Total area of Special Landscaped Areas _____ (sq. feet)
- Total irrigated landscape area _____ (sq. feet)
- Total non-irrigated landscape area _____ (sq. feet)

Please check the Water Supplier for this project:

- City of Arcadia Water Services – 11800 Goldring Road, Arcadia, CA 91006 – (626) 256-6650
- East Pasadena Water Company – 3725 Mountain View Ave., Pasadena, CA 91107 – (626) 793-6189
- Sunny Slope Water Company – 1040 El Campo Dr., Pasadena, CA 91107 – (626) 568-4266
- California American Water – 2020 Huntington Drive, San Marino, CA 91108 – (831) 646-3252
- Golden State Water Company – 110 E. Live Oak Avenue, Arcadia, CA 91006 – (626) 446-1372
- Other _____ – Address _____ -- Phone _____

Acknowledgment:

I agree to comply with the requirements of the City of Arcadia Water Efficient Landscaping Ordinance and submit a complete Landscape Documentation Package.

Applicant's Signature _____

Date _____

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WATER EFFICIENT LANDSCAPING - ORDINANCE NO. 2330
LANDSCAPE DOCUMENTATION PACKAGE - SECTION B

PROJECT CONTACTS – The project applicant and other individuals may receive inquiries or notifications of all proceedings regarding the Water Efficient Landscaping Documentation Package. Please provide the name, mailing address, email address, and telephone no(s), etc. of each person to receive such inquiries and notifications.

1. Project Applicant

Name	Telephone and Fax Number(s)	
Title	Email Address	
Company	Mailing Address	
City	State	Zip Code

2. Property Owner

Name(s)	Telephone and Fax Number(s)	
Mailing Address	Email Address	
City	State	Zip Code

3. Licensed Landscape Architect

Name	Title	
Company	License No.	
Mailing Address	Telephone and Fax Number(s)	
City	Email Address	
State	Zip Code	Website

4. Certified Irrigation Designer

Name	Title	
Company	License No.	
Mailing Address	Telephone and Fax Number(s)	
City	Email Address	
State	Zip Code	Website

- Continued on next page -

CITY OF ARCADIA
WATER EFFICIENT LANDSCAPING - ORDINANCE NO. 2330
LANDSCAPE DOCUMENTATION PACKAGE - SECTION B (continued)

5. Landscape Installation Contractor

Name		Title
Company		License No.
Mailing Address		Telephone and Fax Number(s)
City		Email Address
State	Zip Code	Website

6. Irrigation Installation Contractor

Name		Title
Company		License No.
Mailing Address		Telephone and Fax Number(s)
City		Email Address
State	Zip Code	Website

7. Landscape & Irrigation Maintenance Contractor

Name		Title
Company		License No.
Mailing Address		Telephone and Fax Number(s)
City		Email Address
State	Zip Code	Website

8. Certified Irrigation Auditor

Name		Title
Company		License No.
Mailing Address		Telephone and Fax Number(s)
City		Email Address
State	Zip Code	Website

CITY OF ARCADIA WATER EFFICIENT LANDSCAPING - ORDINANCE NO. 2330 WORKSHEET - SECTION C

THIS WORKSHEET IS REQUIRED TO BE FILLED OUT BY THE PROJECT APPLICANT

Reference Evapotranspiration (ETo) Rate = 50.2 inches per year

The ETo for the Arcadia area is based on the State Department of Water Resource, Reference Evapotranspiration rate (ETo) for the City of Monrovia – Appendix 'A' of the State MWEL0.

Hydrozone # & Planting Description	Plant Factor (PF)	Irrigation Method	Irrigation Efficiency (IE)	ETAF (PF ÷ IE)	Hydrozone Area in sq. ft.	ETAF x Area	Estimated Total Water Use (ETWU)
Regular Landscape Areas							
1)							
2)							
3)							
4)							
5)							
				Totals	(A)	(B)	
Special Landscape Areas (SLAs) - Includes areas irrigated with recycled water							
				1			
				1			
				1			
				Totals	(C)	(D)	
						ETWU Total	
						MAWA	

Hydrozone # & Planting Description – e.g., 1) Lawn/Turf, 2) Low Water Use Plantings, 3) Medium Water Use Plantings, etc.

Plant Factor (PF) –

Irrigation Method – Overhead Spray or Drip

Irrigation Efficiency (IE) – 0.75 for Overhead Spray, 0.81 for drip

ETWU (Annual Gallons Required) = ETo (50.2) x 0.62 x ETAF x Area

MAWA (Annual Gallons Allowed) = ETo (50.2) x 0.62 x [(ETAF x Area) + ((1-ETAF) x SLA)]

0.62 is a conversion factor to convert acre - inches per acre, to gallons per square foot per year

Area is the total Regular Landscape Areas

SLA is the total Special Landscape Areas

ETAF is 0.55 for residential areas, and 0.45 for non-residential areas

ETAF Calculations

Regular Landscape Areas: Average ETAF for Regular Landscape Areas must be 0.55

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

All Landscape Areas

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

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WATER EFFICIENT LANDSCAPING - ORDINANCE NO. 2330
PRESCRIPTIVE MEASURES COMPLIANCE OPTION - SECTION D

As an option to completing the Worksheet (Section C) and prior to the approval of any Design Review and/or Plan Check for a project that meets the thresholds for this Option, compliance with all of the following items is mandatory and must be documented on a landscape plan.

- 1) Submit Sections A & B of the Landscape Documentation Package which includes the following elements:
 - A) Date
 - B) Project Applicant
 - C) Project Address
 - D) Total Landscape Area in Square Feet, including a breakdown of turf and plant material
 - E) Project Type
 - F) Water Supply Type (e.g., potable, recycled) and Water Supplier
 - G) Contact Information
 - H) Applicant Signature and Date with Statement: "I agree to comply with the requirements of the City of Arcadia Water Efficient Landscaping Ordinance and submit a complete Landscape Documentation Package."
- 2) Incorporate compost at a rate of at least four cubic yards per 1,000 square feet to a depth of six inches into landscape areas, unless contra-indicated by a soils test
- 3) Plant Material shall comply with the following:
 - A) Install climate adapted plants that require occasional, little, or no summer water (average WUCOLS plant factor of 0.3) excluding edibles and areas using recycled water, for 75% of the residential planting areas, and 100% of the non-residential planting areas
 - B) A minimum three-inch layer of mulch shall be applied on all exposed soil surfaces of planting areas, except in turf areas, creeping or rooting groundcover areas, or direct seeding application areas where mulch is contra-indicated
- 4) Turf shall comply with all of the following:
 - A) Turf shall not exceed 25% of the landscape area in residential areas, and there shall be no turf in non-residential areas
 - B) Turf shall not be planted on sloped areas that exceed a slope of one-foot vertical elevation change for every four feet of horizontal length
 - C) Turf is prohibited in parkways less than 10 feet wide, unless the parkway is adjacent to a parking strip and used to enter and exit vehicles. Any turf in parkways must be irrigated by sub-surface irrigation or by other technology that creates no overspray or runoff
- 5) Irrigation systems shall comply with the following:
 - A) Automatic irrigation controllers are required and must use evapotranspiration or soil moisture sensor data
 - B) Irrigation controllers shall be of a type that does not lose programming data in the event the primary power source is interrupted
 - C) Pressure regulators shall be installed on the irrigation system to ensure the dynamic pressure of the system is within the manufacturer's recommended pressure range
 - D) Manual shut-off valves (e.g., a gate valve, ball valve, or butterfly valve) shall be installed as close as possible to the point of connection to the water supply
 - E) All irrigation emission devices must meet the requirements set in the ANSI standard, ASABE/ICC 802-2014, "Landscape Irrigation Sprinkler and Emitter Standard." All sprinkler heads installed in the landscape must document a distribution uniformity low quarter of 0.65 or higher using the protocol defined in ASABE/ICC 802-2014.
- 6) At the time of final inspection, the applicant must provide the owner of the property with a **Certificate of Completion** (see page 8), including the Irrigation Schedule, and Schedule of Landscape and Irrigation Maintenance.



**CITY OF ARCADIA
WATER EFFICIENT LANDSCAPING - ORDINANCE NO. 2330
CERTIFICATE OF COMPLETION**

This certificate is to be filled out by the project applicant and acknowledged by the property owner(s) upon completion of the landscaping project.

1. Project Information

Date of Project Completion	Permit Type and No.
Project Name and/or Address	
Project Applicant and Title	Property Owner
Company Name & Mailing Address	Mailing Address
Telephone and Fax No(s).	Telephone and Fax No(s).
Email Address	Email Address

2. Answer the questions below:

- Date the Landscape Documentation Package was submitted to the City of Arcadia _____
- Date the Landscape Documentation Package was approved by the City of Arcadia _____
- Date that a copy of the Water Efficient Landscape Worksheet or Prescriptive Measures Compliance Option was submitted to the project water supplier _____

3. Project Applicant – Certification – The signer of the landscape design plan, signer of the irrigation plan, or the licensed landscape contractor(s) that installed the landscaping and/or irrigation is to certify that the landscape project has been constructed/installed in accordance with the approved Landscape Documentation Package and in compliance with Ordinance No. 2330 and State law. Where there have been significant changes made in the field during construction/installation, “as-built” or record drawings shall be included with this certification.

“I/we certify that based upon periodic site observations, the work has been completed in accordance with Ordinance No. 2330 and State law, and that the landscape planting and irrigation installation conform with the criteria and specifications of the approved Landscape and Irrigation Plans and Landscape Documentation Package and acknowledge that the project may be subject to inspection and a Landscape Irrigation Audit to verify that the project is maintained in compliance with Ordinance No. 2330 and State law.”

Signature	Date
Name (print)	Telephone and Fax No(s).
Title	License No. or Certification No.
Company	Email Address
Mailing Address	

4. Property Owner - Acknowledgment

“I/we certify that I/we have received copies of all the documents within the Landscape Documentation Package and the Certificate of Completion for our project and that it is our responsibility to see that the project is maintained in accordance with the Landscape and Irrigation Maintenance Schedule for our project, including a diagram of the irrigation plan that shows the hydrozones posted with the irrigation controller, in compliance with Ordinance No. 2330 and State law, and I/we acknowledge that the project may be subject to inspection and a Landscape Irrigation Audit at any time to verify that the project is being maintained in compliance with Ordinance No. 2330 and State law.”

Property Owner(s) Signature(s) _____ Date _____

5. Include the following documents with this Certificate:

- Irrigation Schedule – The parameters for setting the irrigation schedule on the controller(s) per Ordinance Section 7554.5.C.
- Schedule of landscape and irrigation maintenance per Ordinance Section 7554.5.
- Soil Analysis and Management Report(s), if not previously submitted with the Landscape Documentation Package per Ordinance Section 7554.4.
- Verification of implementation of recommendations from soil analysis report per Ordinance Sections 7554.4 and 7554.6.

CITY OF ARCADIA

WATER EFFICIENT LANDSCAPING GUIDELINES

DROUGHT TOLERANT TURF

ARTIFICIAL TURF

- *Not allowed in the City's parkways.*
- *Must be part of a coordinated landscape plan subject to City approval.*
- *Front and Street-Side Yards:*
 - A maximum of 15% of artificial turf may be used in the entire front and/or street-side yards. Artificial turf is not considered hardscape. (i.e., it is not part of the 40% maximum for paving.)
 - Artificial turf shall not be used within 10 feet of a sidewalk or within 20 feet from the curb if there is not a sidewalk.



General Specifications

- Blade height – Minimum 1½ inch.
- Style of the fiber, color, and texture should resemble fescue, rye, and other common natural grass blades.
- Color of the grass must be green.



SAMPLE LAWN TYPES (Warm Season Turf)

Specie	Specifications
Bahia Grass	Full Sun – Grows in Poor Soil Course and Thick – Good Traffic Tolerance
Bermuda Grass	Full Sun – Needs Lots of Mowing Good Traffic Tolerance
Buffalo Grass	Full Sun – Tolerates Cold and Hot Temperatures Slow Grower - Moderate Traffic Tolerance
St. Augustine Grass	Dappled Shade – Requires Low Maintenance Moderate Traffic Tolerance



CITY OF ARCADIA WATER EFFICIENT LANDSCAPING GUIDELINES

INTRODUCTION

The purpose of this Guide is to present practical standards for landscape and irrigation design for projects in the City of Arcadia. Additionally, this Guide is designed to assist landscape architects, irrigation designers, contractors, planners and the public in the selection of plant materials and irrigation methods that meet the objectives of the City's Water Efficient Landscaping Ordinance in order to conserve water in this drought prone state of California.

Arcadia's commitment to water conservation is exemplified in the adoption of standards and the implementation of guidelines which result in a reduction of landscape related water usage citywide. It is the City's goal to reduce landscape related water usage as much as possible per site, through implementation of the Guide. To meet this goal, Planting Plans and Irrigation Plans are to be prepared using the Water Budget Formula found in the City's Landscape Documentation Package.

WHY DO I NEED THIS GUIDE?

The Water Efficient Landscaping Ordinance and the Governor's Executive Order No. B-29-15 apply to all projects that require permits, plan checks, and/or design reviews, and includes both public and private developments. Specifically, it applies to new projects with landscape areas larger than 500 square feet, and rehabilitation/remodel projects with 2,500 or more square feet of landscape areas.

Landscaping and proper irrigation are critical components of any successful development project. Landscaping should define a sense of space by making a statement, ensuring community continuity, complementing good architectural design, and creating a cohesive finished product. The City of Arcadia

emphasizes design elements that can achieve aesthetic objectives while acknowledging the practical water constraints of this unique geographic environment.

WHAT ARE THE GENERAL LANDSCAPING DESIGN GUIDELINES I SHOULD FOLLOW?

Landscape plans should incorporate the following design guidelines relative to their respective product types and use of drought-tolerant and water-efficient plants to reduce water demand – see the lists of Drought Tolerant Plants beginning on page 17. A rich variety of plantings and hardscape can enhance the landscape design based on their intended uses.



Adenium Obesum

A. Single-Family Residential Design Guidelines:

1. Trees, shrubs, and groundcover shall be incorporated within single family development projects to create a comfortable and aesthetically pleasing environment for residents and those viewing from public areas. Acceptable planting palette examples can be found in the Single Family Residential Design Guidelines, in this handout, and on the Department of Water Resource Water Use Classification of Landscape Species (WUCOLS) website at <http://ucanr.edu/sites/WUCOLS/files/183488.pdf>
2. Landscape architects and designers are encouraged to use clinging vines, espaliers, trellises, and shrubs to enhance the architecture and define attractive private open spaces.
3. Front yard areas can be designed using landscape elements pertaining to the form, horizontal and vertical lines, hardscape and softscape, and ornate qualities that are compatible with the primary structure. Visual openness and water efficiency should be maintained. Special attention should be given to selecting appropriate trees and plants that, at their maturity, will be in scale with the house and yard.
4. Landscape architects and designers can use visual focal points such as boulders, landscape mounds, planter beds, etc.
5. Use of vegetative ground cover that will absorb rainwater and reduce runoff is strongly encouraged. Permeable surfaces shall be used wherever possible to reduce paving.
6. Landscaping should be included as part of the design for a fence or wall. It should be used to soften and screen large masses of blank wall surface area and deter graffiti.

7. Turf areas should be used sparingly in response to functional needs and shall be in compliance with the water budget formula.

B. Multiple-Family Residential Design Guidelines:

1. Trees, shrubs, and groundcover should be incorporated within multi-family development projects to create a comfortable and aesthetically pleasing environment for residents and those viewing from public areas.
2. Landscape architects and designers can use clinging vines, espaliers, trellises, and shrubs to enhance the architecture and define useful public and private spaces.
3. Landscape architects and designers can integrate visual focal points such as boulders, landscaped mounds or berms, sculpture, and public art into their planting designs.
4. Planting plans should utilize hardy native or drought tolerant trees, shrubs, and groundcover that are easy to water and maintain.



5. Landscaping should be included as part of the design for a fence or wall. It should be used to soften and screen large masses of blank wall surface area and deter graffiti.

6. Planting plans should complement the landscape elements between the proposed project, surrounding streetscapes, and adjacent publicly maintained landscaping to ensure community continuity and character.

7. Turf areas should be used sparingly in response to functional needs and shall be in compliance with the water budget formula.

C. Commercial, Mixed-Use, & Industrial Design Guidelines:

1. Landscaping should be in scale with adjacent buildings and be of appropriate size at maturity to accomplish its intended purpose. A balance of deciduous and evergreen trees can be used.
2. Landscaping should be incorporated around the base of building(s) (except loading or service areas) to soften the edge between the parking lot, structure(s), and street. Such landscaping should be accentuated at entrances to provide a focal point.
3. New projects proposed adjacent to existing residential uses should incorporate adequate landscape screening/buffering.

4. Landscaping should be included as part of the design for a fence or wall. It should be used to soften and screen large masses of blank wall surface area and deter graffiti.
5. Turf areas should be used sparingly in response to functional needs and shall be in compliance with the water budget formula.
6. Landscaping plans should complement the landscape and hardscape elements between the proposed project, surrounding streetscapes, and adjacent publicly maintained landscaping to ensure community continuity and character.

WHAT SHOULD I KNOW BEFORE I PREPARE MY PLANTING PLAN?

- Plants should be selected based on their level of maintenance, durability, mature widths and heights, aesthetic appeal, and thematic qualities.
- A greater percentage of “low” or “very low” water use plant species is strongly encouraged.
- Shade trees are ideal for residential, commercial and industrial building parking lots and open space areas. They should be incorporated to provide natural cooling opportunities and for the purpose of energy and water conservation.
- All non-turf planting areas (except hydroseeded areas) should be mulched on a regular basis to retain moisture, suppress weeds, and moderate soil temperature.
- Turf should be minimal, but if used, it should serve as a functional recreational element and not solely as an aesthetic element.
- Plants should be grouped and irrigated on separate valve zones (hydrozones) based on their water use requirements, slope aspect, and sun/shade microclimate.
- Shrubs should be designed so that their mature width will not require excessive pruning, which is discouraged.
- To prevent graffiti, clinging vines should be planted to ensure full coverage of the public facing side of all walls.





WHAT SHOULD I KNOW BEFORE I PREPARE MY IRRIGATION PLAN?

- Irrigation systems shall be designed, constructed, managed, and maintained to achieve the highest overall efficiency possible.
 - Irrigation that delivers water through the air; that is, sprayers, rotors, misters, etc., are prohibited.
- Irrigation should be designed and installed to avoid over-watering and runoff onto paved surfaces, structures, and non-vegetated areas.
 - For drip line installations, in-line pressure regulators should be used per factory recommendations for the specific irrigation products being used.
 - Irrigation systems should be zoned according to plant water use, slope aspect, and sun/shade microclimate.
 - All irrigation plans should be designed for rainwater capture and/or recycled water use in the future.
 - Projects should include a “smart” irrigation controller with the following attributes:
 - a. Real time, weather-based program adjustment capability with rain sensors, or soil moisture sensors;
 - b. On-site weather station or external ETo input;
 - c. Rain sensors should be placed within an unobstructed natural rainfall area and located above the irrigation system;
 - d. Flow sensor;
 - e. Multiple start times; and
 - f. Minimum of two programs.
 - Systems should be scheduled so that the irrigation rate does not exceed the infiltration rate of the soil.

The Landscape Documentation Package must be completed and submitted with your plans. If you have any questions or need any additional assistance, please contact the City of Arcadia Development Services Department at (626) 574-5423.