MODEL WATER EFFICIENT LANDSCAPE ORDINANCE COMPLIANCE CHECKLIST

The City of Rancho Cucamonga has adopted Rancho Cucamonga Municipal Code (RCMC) Chapter 17.82, to comply with the State's Model Water Efficient Landscape Ordinance (MWELO) (Department of Water Resources [DWR], Title 23, Chapter 2.7). These regulations were adopted to ensure landscape projects meet the State's requirements for design, installation, and maintenance in order to address the State's limited water supply. This document is intended as a guide regarding the Rancho Cucamonga local compliance requirements. Each project will have specific requirements, which may be enforced as deemed appropriate to RCMC Chapter 17.

SECTION 1: MWELO Compliance Instructions

Landscape Ordinance Triggers:

The applicability includes residential, commercial, industrial and mixed-use projects that require a Site Development Review (SDR), design review, and/or Landscape Plan Review (LSPR), including the following square footage thresholds:

- ❒ New development projects that include landscape areas of 500 sq. ft. or more
- ❒ Rehabilitated projects that include landscape areas of 2,500 sq. ft. or more

Submit Landscape Documentation Package:

1. Complete all instruction requirements found in this document. *There are two pathways for compliance:*

A. Performance Compliance Pathway (See Section 2, Page 3)
B. Prescriptive Compliance Pathway (See Section 3, Page 9) This is a streamlined compliance pathway available only to projects with a landscaped area of less than 2,500 square feet).

2. Submit conceptual plans and all required information found in the Compliance Pathway with the corresponding Development Review application through Planning.
3. For new landscapes, submit for final Landscape Plan Review through Planning.
4. Begin construction according to the approved plans.

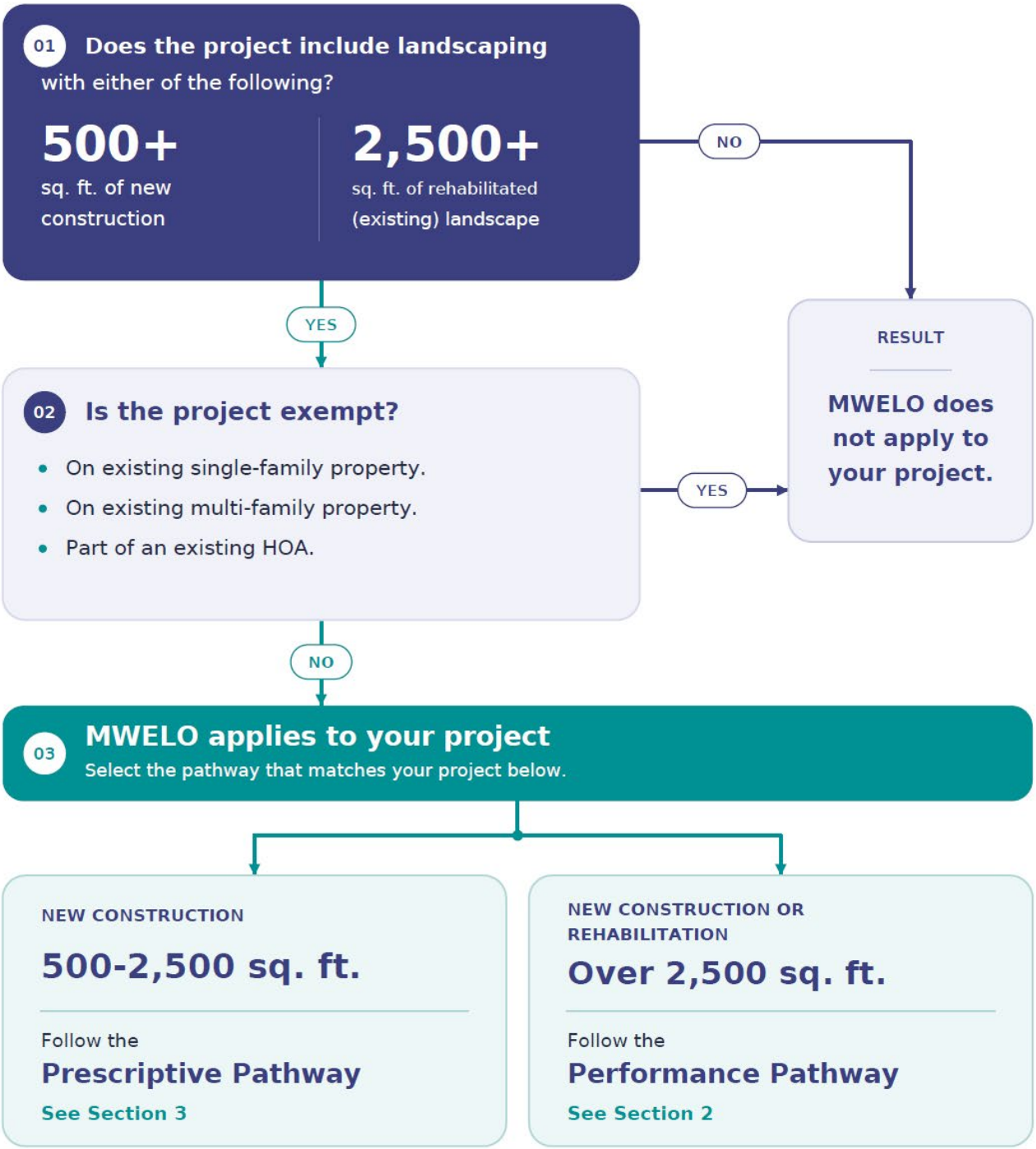
Inspection: The post-construction inspection process is the same for both Compliance Pathways.

1. Email the Planning Department at Planning@CityofRC.us to schedule a Landscape Inspection.
2. Follow the Water Efficient Landscape Inspection Checklist (See Section 7, Page 24).
3. Projects must submit a copy of the 'Certificate of Completion of the Landscape Documentation Package' (See Section 6, Page 20) and submit all required submittals shown on the certificate to the project owner.

CITY OF RANCHO CUCAMONGA

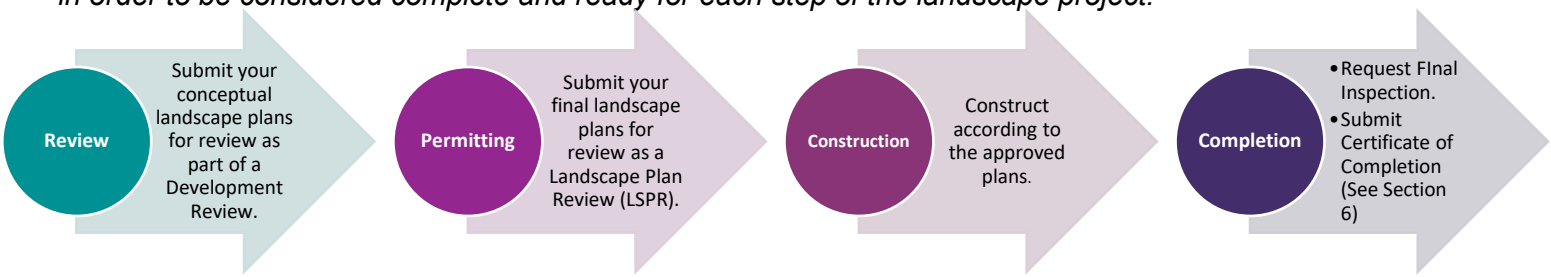
Does your project need to follow MWELO?

Model Water Efficient Landscape Ordinance



SECTION 2: Performance Compliance Pathway

If the project includes 2,500 square feet or more of new or existing landscape, except on existing single-family, multi-family, or HOA properties, the Performance Pathway is triggered. The following process must be followed in order to be considered complete and ready for each step of the landscape project.



Listed below are the documents and contents required to complete the Performance Compliance Pathway. Please review and provide all required information on the plans.

1. PROJECT DESCRIPTION

- ❒ Date
- ❒ Project applicant
- ❒ Project Address (if available, parcel and/or lot number(s))
- ❒ Total Landscape Areas (square feet)
- ❒ Project Type (e.g. new, rehabilitated, public, private, cemetery, homeowner-installed)
- ❒ Water Supply Type (e.g., potable, recycled, well and identify local retail water purveyor if the applicant is not served by a public well)
- ❒ Check list of all documents in the Landscape Documentation Package
- ❒ Project Contacts to include contact information for the project applicant and property owner.

2. MWELO WATER EFFICIENT LANDSCAPE WORKSHEET (See Section 4, Page 13)

- ❒ Provide the Estimated Total Water Use (ETWU) of the entire project area.
- ❒ Provide the Maximum Allowable Water Allowance (MAWA) for the entire project area.

3. SOIL MANAGEMENT REPORT (DWR Title 23, Chapter 2.7, 493.1)

- ❒ The soil analysis shall include:
  - ❒ Soil texture
  - ❒ Infiltration rate determined by laboratory test or soil test\texture infiltration rate table.
  - ❒ Ph
  - ❒ Total soluble salts
  - ❒ Sodium
  - ❒ Percent organic matter
  - ❒ Recommendations
- ❒ In projects with multiple landscape installations (i.e. production home developments) a soil sampling rate of 1 in 7 lots or approximately 15% will satisfy this requirement.

4. LANDSCAPE DESIGN PLAN (DWR Title 23, Chapter 2.7, 493.2)

- ❒ Plant Material
  - ❒ Any plant may be selected for the landscape providing the Estimated Total Water Use in the

landscape area does not exceed the Maximum Applied Water Allowance.

- ❒ Each hydrozone shall have plant materials with similar water use.
- ❒ Plants shall be selected and planted appropriately based upon their adaptability to the climatic, geologic, and topographical conditions of the project site.
- ❒ Turf is not allowed on slopes greater than 25% (4:1) where the toe of the slope is adjacent to impermeable hardscape.
- ❒ High water use plants, characterized by a plant factor of 0.7 to 1.0, are prohibited in street medians.
- ❒ Methods to achieve water efficiency shall include one or more of the following:
  - Protection and preservation of native species and natural vegetation.
  - Selection of plants based on local climate suitability, disease, and pest resistance.
  - Selection of water-conserving plants, trees, and turfgrass species, especially local native plants.
  - Selection of trees based on applicable local tree ordinances or tree shading guidelines, and size at maturity as appropriate for the planting area.
  - Selection of plants from local and regional landscape program recommended plant lists.
  - Selection of plants from local Fuel Modification Plan Guidelines.
- ❒ Plants shall be selected and planted appropriately based upon their adaptability to the climatic, geologic, and topographical conditions of the project site. Methods to achieve water efficiency shall include one or more of the following:
  - Use the Sunset Western Climate Zone System, 2007, which is herein incorporated by reference, which considers temperature, humidity, elevation, terrain, latitude, and varying degrees of continental and marine influence on local climate.
  - Recognize the horticultural attributes of plants (i.e., mature plant size, invasive surface roots) to minimize damage to property or infrastructure (e.g., buildings, sidewalks, power lines); allow for adequate soil volume for healthy root growth.
  - Consider the solar orientation for plant placement to maximize summer shade and winter solar gain.
- ❒ The architectural guidelines of a common interest development shall not prohibit or include conditions that have the effect of prohibiting the use of low water use plants as a group.

❒ Water Features

- ❒ Recirculating water systems shall be used for water features.
- ❒ Where available, recycled water shall be used as a source of water.
- ❒ Surface area of a water feature shall be included in the high water use hydrozone area of the water budget calculation
- ❒ Pool and spa covers are highly recommended.

❒ Soil Preparation, Mulch and Amendments

- ❒ Prior to planting of any materials, compacted soils shall be transformed into a friable condition.
- ❒ Soil amendments shall be incorporated according to recommendation of the soils report.
- ❒ Amend soil at a rate of a minimum of four cubic yards per 1,000 square feet of permeable area to a depth of six inches into the soil.
- ❒ A minimum of three inch (3”) layer of mulch shall be applied on all exposed soils surfaces of planting areas, except in turf areas, creeping or rooting ground covers or direct seeding applications.

- To provide habitat for beneficial insects, and other wildlife, up to 5% of the landscape area may be left without mulch.

- ❒ The mulching portion of the seed/mulch slurry in hydro-seeded applications shall meet the mulching requirement in Section 493.2(d)(4).
- ❒ Stabilizing mulching products shall be used on slopes that meet current engineering standards.
- ❒ Organic mulch shall take precedence over inorganic materials or virgin forest products unless the recycled post-consumer products are not locally available.
    - Organic mulches are not required where prohibited by local Fuel Modification Plan Guidelines or other applicable local ordinances. (Public Resources Code section 4291).

❒ The Landscape Design Plan, at a minimum, shall:

- ❒ Delineate and label each hydrozone by letter, number or other method.
- ❒ Identify each hydrozone as low, moderate, high water, or mixed water use.
- ❒ Identify recreational areas.
- ❒ Identify areas permanently and solely dedicated to edible plants.
- ❒ Identify areas irrigated with recycled water.
- ❒ Identify type of mulch and application depth.
- ❒ Identify soil amendments, type, and quantity.
- ❒ Identify type and surface area of water features.
- ❒ Identify hardscapes (pervious and non-pervious).
- ❒ Identify location, installation detail, and 24-hour retention or infiltration capacity of any applicable stormwater best management practices that encourage on-site retention and infiltration of stormwater.
- ❒ Identify any applicable rain harvesting or catchment technologies.
- ❒ Identify any applicable gray water discharge piping, system components and area(s) of distribution.
- ❒ Contain the following statement: “I have complied with the criteria of the ordinance and applied them for the efficient use of water in the landscape design plan.”
- ❒ Bear the signature of a licensed landscape architect, licensed landscape contractor, or any other person authorized to design a landscape.

5. **GRADING DESIGN PLAN** (DWR Title 24, Chapter 2.7, 493.2.1)

❒ The project applicant shall submit a landscape grading plan that indicates finished configurations and elevations of the landscape area including:

- ❒ Height of graded slopes.
- ❒ Drainage patterns.
- ❒ Pad elevations.
- ❒ Finish grade.
- ❒ Stormwater retention improvements, if applicable.

❒ To prevent excessive erosion and runoff, it is highly recommended that project applicants:

- ❒ Grade so that all irrigation and normal rainfall remain within property lines and does not drain on to non-permeable hardscapes.
- ❒ Avoid disruption of natural drainage patterns and native soil.
- ❒ Avoid soil compaction in landscape areas.

❒ The grading design plan shall contain the following statement: “I have complied with the criteria of the ordinance and applied them accordingly for the efficient use of water in the grading design plan” and shall bear the signature of a licensed professional as authorized by law.

6. IRRIGATION DESIGN PLAN (DWR Title 23, Chapter 2.7, 493.2.2)

- ❒ This section applies to landscaped areas requiring permanent irrigation, not areas that require temporary irrigation solely for the plant establishment period. For the efficient use of water, an irrigation system shall meet all the requirements listed in this section and the manufacturers' recommendations. The irrigation system and its related components shall be planned and designed to allow for proper installation, management, and maintenance. An irrigation design plan meeting the following design criteria shall be submitted as part of the Landscape Documentation Package.
- ❒ Irrigation System Efficiency
  - ❒ The irrigation system must be designed and installed to meet, at a minimum, the irrigation efficiency criteria as described in Section 493.3 regarding the Maximum Applied Water Allowance.
  - ❒ For determining Estimated Total Water Use, average irrigation system efficiency is assumed to be:
    - 0.75 for overhead irrigation systems.
    - 0.81 for drip irrigation systems.
  - ❒ Sprinkler head spacing shall be designed to achieve the highest possible distribution uniformity using the manufacturer's recommendations. Head-to-head coverage is recommended.
- ❒ The irrigation design plan, at a minimum, shall contain the following:
  - ❒ Location and size of separate water meters and submeters.
  - ❒ Location, type, and size of all components of the irrigation system, including controllers, main and lateral lines, valves, emission devices, moisture sensing devices, rain sensors, quick couplers, pressure regulating devices, 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 the emission devices controlled by each station.
  - ❒ Identification of special landscape areas irrigated with and water features using recycled water as specified in Section 490.1(a)(3).
  - ❒ Identification of any applicable graywater discharge piping, system components, and landscape areas where graywater is distributed.
  - ❒ Identification of hydrozone areas shall be designated by number, letter, or other designation as identified on the landscape design plan.
    - Each valve shall irrigate a hydrozone, or part of a hydrozone, with similar site, slope, sun exposure, soil conditions, and plant materials with similar water use.
  - ❒ The following statement: "I have complied with the performance compliance option criteria of the MWELO and applied them accordingly for the efficient use of water in the irrigation design plan."
  - ❒ The signature of the designer of record. (See Division 3, Chapter 3.5, Article 3 of the Business and Professions Code).
- ❒ General Design Criteria
  - ❒ Backflow prevention devices shall be required to protect the water supply from contamination by the irrigation system as specified in the California Plumbing Code (Cal. Code Regs., Title 24, Part 5, Chapter 6). A project applicant shall refer to the applicable local agency code (i.e., public health) for additional backflow prevention requirements.
  - ❒ The design of the irrigation system shall conform to the hydrozones of the landscape design plan.
  - ❒ Emission devices shall be selected based on what is appropriate for the plant type within that hydrozone.
  - ❒ Where feasible, trees shall be placed on separate stations from hydrozones that include shrubs, groundcovers, and turfgrass to facilitate the appropriate irrigation of trees. The mature size and extent of the root zone shall be considered when designing irrigation for the tree.
  - ❒ In mulched planting areas, the use of low-pressure and low volume irrigation systems is required to maximize water infiltration into the root zone.
  - ❒ Areas less than 10 feet in width in any direction shall be irrigated with subsurface irrigation or other means that produce no water waste, runoff, or overspray.

- ❒ Individual hydrozones that use a mix of plants with low and moderate plant factors, or moderate and high plant factors, may be allowed if the plant factor used in the calculation of the estimated water use (EWU) is either:
    - Plant factor calculation is based on the proportions of the respective plant factors.
    - The highest plant factor is used.
- ❒ Individual hydrozones that use a mix of plants with high and low plant factors shall not be permitted.
- ❒ Relevant information from the soil management plan, such as soil type and infiltration rate, shall be utilized when designing irrigation systems.
- ❒ Overhead irrigation shall not be permitted within 24 inches of any non-pervious surface. Allowable irrigation within the setback from non-permeable surfaces may include drip irrigation, or other low flow non-spray technology. The setback area may be planted or unplanted. The surfacing of the setback may be mulch, gravel, or other porous material. These restrictions may be modified if:
    - No runoff occurs.
    - The adjacent non-pervious surfaces are designed and constructed to drain entirely to landscaping.
    - The irrigation designer specifies an alternative design or technology, as part of the Landscape Documentation Package, and clearly demonstrates strict adherence to the prevention of water waste. Prevention of overspray and runoff must be confirmed during the irrigation audit.
- ❒ Restrictions regarding overspray and runoff in any irrigation system may be modified if:
    - The landscape area is adjacent to pervious surfacing and no runoff occurs.
    - The adjacent non-pervious surfaces are designed and constructed to drain entirely to landscaping.
- ❒ Slopes greater than 25% shall not be irrigated with an irrigation system using an application rate exceeding 0.75 inches per hour.
    - This restriction may be modified if the landscape designer specifies an alternative design or technology, as part of the Landscape Documentation Package, and clearly demonstrates no runoff or erosion will occur. Prevention of runoff and erosion must be confirmed during the irrigation audit.
- ❒ It is highly recommended that the project applicant or local agency inquire with the local water purveyor about peak water operating demands (on the water supply system) or water restrictions that may impact the effectiveness of the irrigation system.

❒ Irrigation System Components.

- ❒ Meters
    - Pursuant to California Water Code section 535, a water purveyor with 15 or more service connections shall install a dedicated irrigation meter(s) for new retail water service to a property with more than 5,000 sq. ft. of irrigated landscape excluding single-family residential connections and connections for the commercial production of agricultural crops or livestock.
    - For the purposes of this model ordinance, a submeter or dedicated irrigation meter shall be installed and may be used to assist with leak detection and water management for:

        1. Non-residential landscapes with an irrigated landscape of 1,000 sq. ft. but not more than 5,000 sq. ft.

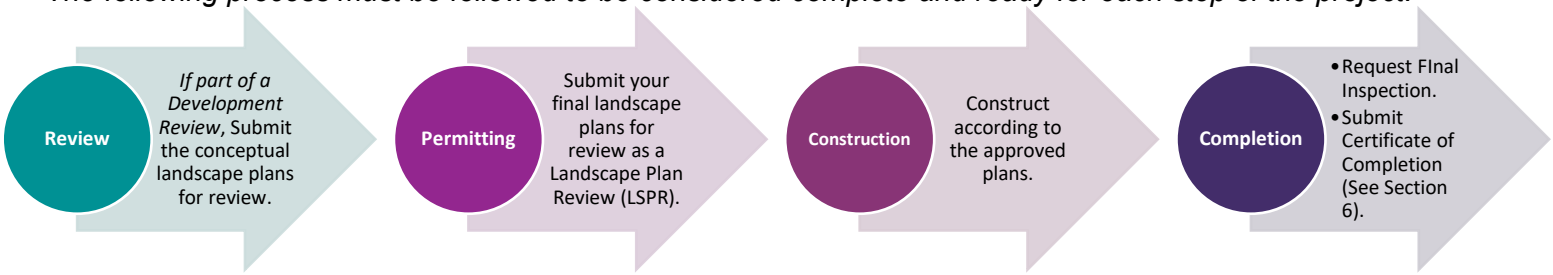
        2. Residential landscapes with an irrigated landscape of 5,000 sq. ft. or more.

- ❒ Water Pressure
    - Static water pressure, dynamic or operating pressure, and flow reading of the water supply shall be measured at the point of connection. These pressure and flow measurements shall be conducted at the design stage. If the measurements are not available at the design stage, the measurements shall be conducted at installation.
    - If the static pressure is above or below the required dynamic pressure of the irrigation system, pressure-regulating devices such as inline pressure regulators, booster pumps,

or other devices shall be installed to meet the required dynamic pressure of the irrigation system.
    - If the water pressure is below or exceeds the recommended pressure range of the specified emission devices, the installation of a pressure-regulating device is required to ensure that the dynamic pressure at each emission device is within the manufacturer's recommended pressure range for optimal performance.
- ❒ Water Waste Prevention Equipment
    - The irrigation system shall be designed to prevent water waste.
    - Master shut-off valves are required on all projects except landscapes that make use of technologies that allow for the individual control of sprinklers that are individually pressurized in a system equipped with low pressure shut down features.
    - Manual shut-off valves (such as a gate valve, ball valve, or butterfly valve) 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 (such as a break in the pressurized pipeline that delivers water from the water source to the valve or outlet) or routine repair.
    - Check valves or anti-drain valves are required on all sprinkler heads where low point drainage could occur.
    - Swing joints or other riser-protection components are required on all risers subject to damage that are adjacent to hardscapes or in high traffic areas of turfgrass.
    - Flow sensors that detect high flow conditions created by system damage or malfunction are required for all non-residential landscapes and residential landscapes of 5000 sq. ft. or larger.
- ❒ Emission Devices
    - Emission devices shall have matched precipitation rates, unless otherwise directed by the manufacturer's recommendations.
    - All irrigation emission devices must meet the requirements set in the American National Standards Institute (ANSI) standard, American Society of Agricultural and Biological Engineers'/International Code Council's (ASABE/ICC) 802-2020 “Landscape Irrigation Sprinkler and Emitter Standard,” which is herein incorporated by reference.
        1. All overhead irrigation systems installed in the landscape must document a low quarter distribution uniformity of 0.65 or higher using the protocol defined in ASABE/ICC 802-2020.
    - Non-rotating spray sprinkler bodies are required to meet standards described in California Code of Regulations, Title 20, Division 2, Chapter 4, Section 1605.3(x).
- ❒ System Controls
    - Automatic irrigation controllers utilizing either evapotranspiration or soil moisture sensor data utilizing non-volatile memory shall be required for scheduling irrigation events.
    - Sensors (rain, freeze, wind, etc.), either integral or auxiliary, that suspend or alter irrigation operation during unfavorable weather conditions shall be required on all irrigation systems, as appropriate for local climatic conditions. Irrigation should be avoided during windy or freezing weather or during rain.

SECTION 3: Prescriptive Compliance Pathway

*This is a streamlined compliance pathway available only to projects with **new** landscape areas of 500 to 2,500 square feet. If you are renovating an existing landscape of less than 2,500 square feet, no review is required. The following process must be followed to be considered complete and ready for each step of the project.*



Listed below are the documents and contents required to complete the Prescriptive Compliance Pathway. Please review and provide all required information on the plans.

1. PROJECT DESCRIPTION

- ❒ Date
- ❒ Project Applicant
- ❒ Project Contacts to include contact information for the project applicant and property owner.
- ❒ Project Address (if available, parcel and/or lot number(s))
- ❒ Total Landscape Areas (square feet)
- ❒ Project Type (e.g. new, rehabilitated, public, private, cemetery, homeowner-installed)
- ❒ Water Supply Type (e.g., potable, recycled, well and identify local retail water purveyor if the applicant is not served by a public well)
- ❒ Applicant signature and date with statement: "I agree to comply with the requirements of the prescriptive compliance option to the MWELO."

2. LANDSCAPE DESIGN PLAN

- ❒ *The Landscape Design Plan, at a minimum, shall:*
  - ❒ Delineate and label each hydrozone by letter, number or other method.
  - ❒ Identify each hydrozone as low, moderate, high water, or mixed water use.
  - ❒ Identify recreational areas.
  - ❒ Identify areas permanently and solely dedicated to edible plants.
  - ❒ Identify areas irrigated with recycled water.
  - ❒ Identify type of mulch and application depth.
  - ❒ Identify soil amendments, type, and quantity.
  - ❒ Identify type and surface area of water features.
  - ❒ Identify hardscapes (pervious and non-pervious).
  - ❒ Identify location, installation detail, and 24-hour retention or infiltration capacity of any applicable stormwater best management practices that encourage on-site retention and infiltration of stormwater.
  - ❒ Identify any applicable rain harvesting or catchment technologies.
  - ❒ Identify any applicable gray water discharge piping, system components and area(s) of distribution.
  - ❒ Contain the following statement: "I have complied with the criteria of the ordinance and applied them for the efficient use of water in the landscape design plan."
  - ❒ Bear the signature of a licensed landscape architect, licensed landscape contractor, or any other person authorized to design a landscape.

3. SOIL MANAGEMENT REPORT – *Optional for Prescriptive Plan*

- ❒ The soil analysis shall include:
  - ❒ Soil texture
  - ❒ Infiltration rate determined by laboratory test or soil test\texture infiltration rate table.
  - ❒ Ph
  - ❒ Total soluble salts
  - ❒ Sodium
  - ❒ Percent organic matter
  - ❒ Recommendations
- ❒ In projects with multiple landscape installations (i.e. production home developments) a soil sampling rate of 1 in 7 lots or approximately 15% will satisfy this requirement.

4. Plant material shall comply with the following:

- ❒ For residential areas, install climate adapted plants that require occasional, little or no summer water (average WUCOLS plant factor of 0.3) for 75% of the plant area excluding edibles and areas using recycled water. For non-residential areas, install climate adapted plants that require occasional, little or no summer water (average WUCOLS plant factor of 0.3) for 100% of the plant areas, excluding edibles and areas using recycled water.
- ❒ A minimum of three inch (3") layer of mulch shall be applied on all exposed soil surfaces of planting areas except in turf areas, creeping or rooting groundcovers, or direct seeding applications where mulch is contraindicated.

5. Turf shall comply with the following:

- ❒ Turf shall not exceed 25% of the landscape area in residential areas, and there shall be no turf in non-residential areas.
- ❒ Turf shall not be planted on sloped areas that exceed a slope of 1 foot vertical elevation change for every 4 feet of horizontal length.
- ❒ Turf is prohibited in parkways less than 10 feet wide, unless the parkway is adjacent to a parking strip and used to enter or exit vehicles. Any turf in parkways must be irrigated by sub-surface irrigation or by other technology that creates no overspray or runoff.

6. Irrigation systems shall comply with the following:

- ❒ Automatic irrigation controllers are required and must use evapotranspiration or soil moisture sensor data and utilize a rain sensor.
- ❒ Irrigation controllers shall be of a type which does not lose programming data in the event the primary power source is interrupted.
- ❒ Pressure regulators shall be installed on the irrigation system to ensure dynamic pressure of the system is within the manufacturers' recommended pressure range.
- ❒ Manual shut off valves (such as gate valve, ball valve or butterfly valve) shall be installed as close as possible to the point of connection of the water supply.
- ❒ 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 of 0.65 or higher using the protocol defined in ASABE/ICC 802-2014.
- ❒ Areas less than ten (10) feet in width in any direction shall be irrigated with subsurface irrigation or other means that produces no runoff or overspray.
- ❒ For non-residential projects with landscape areas of 1,000 sq. ft. or more, a private submeter(s) to measure landscape water use shall be installed.

7. **The designer of record shall make plants identifiable to an inspector during final inspection. Plants must be identifiable by botanical name, common name or cultivar as specified in Section 53481 of the Food and Agricultural Code.**

8. **At the time of final inspection, the permit applicant must provide the owner of the property with a copy of the Certificate of MWELO Completion and Certificate of Installation.**

SECTION 4: Water Efficient Landscape Worksheet

This is an explanation and example worksheet to be filled out by the project applicant, and it is a required element of the Landscape Documentation Package for the Performance Compliance Pathway. The applicant must use the Water Budget calculations below.

DEFINITIONS:

Estimated Total Water Use (ETWU): The total water used for the landscape based on the plants used and irrigation method selected for the landscape design. The ETWU shall not exceed the MAWA.

Evapotranspiration (ETo): The quantity of water, as measured in average inches per year, that evaporated from adjacent soil surfaces and transpired by plants during a specific time period. ETo for Rancho Cucamonga is listed in the tables below. Evapotranspiration data may be found at California Irrigation Management Information System Website.

Evapotranspiration Adjustment Factor (ETAF): A factor that when applied to reference evapotranspiration adjusts for plant water requirements and irrigation efficiencies, two major influences on the amount of water that is required for a healthy landscape.

Hydrozone: A section or zone of the landscaped area having plants with similar water needs that are served by a valve or set of valves with the same schedule. A hydrozone may be irrigated or non-irrigated. For the purpose of the calculations, the surface area of manmade water features, such as pools, spas, fountains, etc., is included in the high-water use hydrozone.

Irrigation Audit: An in-depth evaluation of the performance of an irrigation system conducted by a professional authorized by the State to perform such work. An irrigation audit includes, but is not limited to inspection, system tune-up, system test with distribution uniformity or emission uniformity, reporting overspray or runoff that causes overland flow, and preparation of an irrigation schedule.

Maximum Applied Water Allowance (MAWA) Water Budget: The upper limit of annual applied water for the established landscaped area expressed in gallons per year. It is based upon the area's reference evapotranspiration (ETo), the evapotranspiration adjustment factor (ETAF), and the size of the landscape area.

Plant Factor (PF): A factor that when multiplied by the average inches per year evapotranspiration rate, estimates the amount of water used by plants. See table below. Plant water use calculations are based on the current Water Use Classification of Landscape Species (WUCOLS) list published by the University of California Cooperative Extension and the California Department of Water Resources: WUCOLS Plant List.pdf *Please use Region 4 South Inland Valley for your calculations.*

Plant Water Use	Plant Factor	Also includes
Very Low	0.0 to 0.1	
Low	0.1-0.3	Temporary Irrigation
Moderate	0.4-0.6	
High	0.7-1.0	Water features
Special Landscape Area	1.0	

Regular Landscape Area (RLA): The entire premises less the area of building footprints, non-irrigated portions of parking lots, driveways, hardscapes, Special Landscape Areas (SLA), and areas designated for habitat preservation.

Special Landscape Area (SLA): An irrigated area that is all or part of the landscape project and is permanently and solely dedicated to edible plants such as orchards and vegetable gardens, recreation areas, areas irrigated with recycled water, or water features using recycled water.

Step 1. DETERMINE THE Maximum Applied Water Allowance (MAWA) - Water Budget Calculation

The MAWA Water Budget is calculated using the following calculation formula:

MAWA Water Budget = (ETo)(0.62)[(ETAF x RLA) + (1 x SLA)] = gallons per year

For residential landscape areas = (ETo)(0.62)[(0.55)(RLA) + (1)(SLA)]

For non-residential landscape areas = (ETo)(0.62)[(0.45)(RLA) + (1)(SLA)]

Legend for MAWA Water Budget Calculation Formula

Symbol	Description of Symbol
ETo	Evapotranspiration (inches per year). *ETo of Rancho Cucamonga is 58.1.*
0.62	Conversion factor to gallons
ETAF 0.55 for residential landscape areas. 0.45 for non-residential landscape areas. 1.0 for new and existing SLA.	Evapotranspiration Adjustment Factor
RLA	Landscape Area (square feet) excluding any SLA.
SLA	Special Landscape Area (square feet)

In the calculation below, provide the values for the water budget calculation used for the proposed project. The ETo for the calculation may be based on the precise location of the project using the ETo Map or it can be based on the provided ETo rate in the table above. Indicate what source you use for the ETo on the worksheet page of the Landscape Plan.

MAWA Water Budget calculation = $(ET_0)(0.62)$ [(ETAF)(RLA) + (1)(SLA)] = gallons per year

Step 2. DETERMINE THE ESTIMATED TOTAL WATER USE (ETWU)

The Estimated Total Water Use (ETWU) is calculated using the following formula:

ETWU = [(ETo)(0.62)] [(PF/IE)(HA)] = gallons per year

ETWU of SLA = (ETo)X(0.62)X(SLA)

Legend for Estimated Total Water Use (ETWU) Calculation Formula

Symbol	**Description of Symbol**
ETo	Evapotranspiration (inches per year) *ETo of Rancho Cucamonga is 58.1*
0.62	Conversion factor to gallons
PF	Plant Factor (0.0-1.0)
HA	Hydrozone Area (square feet)
IE	Irrigation Efficiency (0.81 for Drip System devices) (0.75 for Overhead Spray devices)
SLA	Special Landscape Area (square feet)

Use the following table to track information about each controller or hydrozone in the system. For SLA, add this area to its own hydrozone and use the above ETWU of SLA calculator.

Controller No.	Hydrozone No.	Valve Circuit	Plant Factor (PF)	Hydrozone Area in s.f. (HA)	Irrigation Method	Irrigation Efficiency (IE)	% Total Landscape Area
						Total	

Then plug in the numbers from each controller/hydrozone into the ETWU equation. Then total the gallons per year of each controller/hydrozone for the Estimated Total Water Use per year. **The total ETWU cannot exceed the total Water Budget-MAWA.**

Controller No. or Hydrozone	**ETWU: [(ETo)(0.62)][(PF/IE)(HA)]**	**Result in Gallons per Year**
	Total ETWU gallons per year	

Step 3. PLACE YOUR RESULTS IN THE WORKSHEET

Reference Evapotranspiration (ETo) _____

Hydrozone # /Planting Description	Plant Factor (PF)	Irrigation Method[b]	Irrigation Efficiency (IE)[c]	ETAF (PF/IE)	Landscape Area (sq, ft,)	ETAF x Area	Estimated Total Water Use (ETWU)[e]
Regular Landscape Areas							
				Totals	(A)	(B)	
Special Landscape Areas							
				1			
				1			
				1			
				Totals	(C)	(D)	
						ETWU Total	
						Maximum Allowed Water Allowance (MAWA)[e]	

SECTION 5: Irrigation Scheduling, and Landscape and Irrigation Maintenance

1. Irrigation Scheduling

- ❒ All irrigation schedules shall be developed, managed, and evaluated to utilize the minimum amount of water required to maintain plant health and prevent water waste. Irrigation schedules shall meet the following criteria:
  - ❒ Irrigation scheduling shall be regulated by automatic irrigation controllers.
  - ❒ Parameters used to set the automatic irrigation controller shall be developed and submitted with the Certificate of Completion for each of the following:
    - The plant establishment period.
    - The established landscape.
    - Temporarily irrigated areas.
  - ❒ Each irrigation schedule shall consider for each station all the following parameters that apply:
    - Irrigation interval (days between irrigation events).
    - Irrigation run times (hours or minutes per irrigation event to avoid runoff and prevent water waste).
    - Number of cycle-starts required for each irrigation event to avoid runoff and prevent water waste.
    - Amount of applied water scheduled to be applied on a monthly basis.
    - Application rate.
    - Root depth.
    - Plant type.
    - Soil type.
    - Slope factor.
    - Shade factor.
    - Distribution uniformity or irrigation efficiency.
  - ❒ Overhead irrigation systems shall be scheduled between 8:00 p.m. and 10:00 a.m., unless weather conditions prevent it. If the local agency or water purveyor has watering windows that are different or longer, the stricter of the two shall apply. Operation of the irrigation system outside the normal watering window is allowed for auditing and system maintenance.
  - ❒ Total annual applied water shall be less than or equal to Maximum Applied Water Allowance (MAWA).
    - Actual irrigation schedules shall be regulated by automatic irrigation controllers using current reference evapotranspiration data (e.g., CIMIS) or soil moisture sensor data.
    - For implementation of the irrigation schedule, carefully consider the irrigation run times, emission device, flow rate, and current reference evapotranspiration, so that applied water does not exceed the Estimated Total Water Use.

- ❒ **Landscape and Irrigation Maintenance**
  - ❒ Landscapes shall be maintained to ensure water use efficiency. A regular landscape and irrigation maintenance schedule shall be submitted with the Certificate of Completion Package.
  - ❒ A regular maintenance schedule shall include, but not be limited to, routine inspection, auditing, adjustment, and repair of the irrigation system and its components, aerating and dethatching turfgrass areas, topdressing with compost, replenishing mulch, fertilizing, pruning, weeding in all landscape areas, and removing obstructions to emission devices.
  - ❒ Repair of all irrigation equipment shall be done with replacement parts for the originally installed components or their equivalents, or with components that improve the average irrigation system efficiency.
  - ❒ A project applicant is encouraged to implement established landscape industry sustainable Best Practices for all landscape maintenance activities.

SECTION 6: Certification Documents

PART 1. CERTIFICATE OF COMPLETION OF THE LANDSCAPE DOCUMENTATION PACKAGE

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 or his/her designee:

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

Property Owner

"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

FOR OFFICIAL USE ONLY:

Please answer the questions below:

1. Date the Landscape Documentation Package was submitted to the local agency_____
2. Date the Landscape Documentation Package was approved by the local agency_____

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. I/we certify that the standards within the City of Rancho Cucamonga Developmental Code have been satisfied.

<table>
<tr><td>Signature*</td><td colspan="2">Date</td></tr>
<tr><td rowspan="2">Name (print)</td><td colspan="2">Telephone No.</td></tr>
<tr><td colspan="2">Fax No.</td></tr>
<tr><td>Title</td><td colspan="2">Email Address</td></tr>
<tr><td colspan="3">License No. or Certification No.</td></tr>
<tr><td>Company</td><td colspan="2">Street Address</td></tr>
<tr><td>City</td><td>State</td><td>Zip Code</td></tr>
</table>

*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 493.4.

PART 4. SCHEDULE OF LANDSCAPE AND IRRIGATION MAINTENANCE

Attach schedule of Landscape and Irrigation Maintenance per ordinance Section 493.5.

PART 5. LANDSCAPE IRRIGATION AUDIT REPORT

Attach Landscape Irrigation Audit Report per ordinance Section 493.6.

PART 6. SOIL MANAGEMENT REPORT

Attach soil analysis report, if not previously submitted with the Landscape Documentation Package per ordinance Section 491.4.

Attach documentation verifying implementation of recommendations from soil analysis report per ordinance Section 493.1.

SECTION 7: Water Efficient Landscape Inspection Checklist

This section can be used in preparation for the post installation inspection.

1. **Inspector shall request to see a copy of the following submittals:**
   - ❒ "Certificate of Completion of the Landscape Documentation Package" (See Section 6, Page 22)
     - ❒ The inspector shall review all necessary documents and areas to ensure the complete and accurate installation of the project.
     - ❒ The inspector may ask for any document in the corresponding Completion Pathway.
   - ❒ Irrigation Controller
     - ❒ The inspector shall review the landscape submittals to verify that the controller contains either a weather or soil moisture-based system.
   - ❒ Irrigation Scheduling
     - ❒ Parameters for setting the irrigation schedule on controller per ordinance Section 493.4.
   - ❒ Schedule of Landscape and Irrigation Maintenance
     - ❒ Schedule of Landscape and Irrigation Maintenance per ordinance Section 493.5.
   - ❒ Landscape Irrigation Audit Report
     - ❒ Landscape Irrigation Audit Report per ordinance Section 493.6. To be completed by a third party.

2. **Inspector shall field verify the following:**
   - ❒ Irrigation Meter:
     - ❒ The inspector shall verify that a separate irrigation meter has been installed as shown on the landscape plans, if applicable to the project.
   - ❒ Irrigation Controller:
     - ❒ The inspector shall review the landscape submittals to verify that the controller contains either a weather or soil moisture-based system.
     - ❒ The inspector shall review digital irrigation schedule to verify that the irrigation has been scheduled for times between 8:00 p.m. and 10:00 a.m. only.
     - ❒ The inspector shall field verify that a weather or soil moisture-based controller has been installed (as shown in the landscape submittal).