

GUIDELINES OF THE  
MISSION SPRINGS WATER DISTRICT  
ESTABLISHING WATER  
EFFICIENT LANDSCAPING GUIDELINES

Sections:

- 0.00.010 Purpose and intent.
- 0.00.020 Definitions.
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- 0.00.050 Fees for initial review and program monitoring.
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**0.00.010 Purpose and intent.**

- A. The purpose of these guidelines is to establish effective water efficient landscape requirements for newly installed and rehabilitated landscapes. It is the intent of the District to promote water conservation through climate appropriate plant material and efficient irrigation practices.

**0.00.020 Definitions.**

The words used in this chapter have the meanings set forth below:

- A. “Anti-drain valve” or “check valve” means a valve located under a sprinkler head to hold water in the system so it minimizes drainage from the lower elevation sprinkler heads.
- B. “Application rate” means the depth of water applied to a given area, usually measured in inches per hour. Also known as precipitation rate (sprinklers) or emission rate (drippers/microsprayers) in gallons per hour.
- C. “Applied water” means the portion of water supplied by the irrigation system to the landscape.
- D. “Automatic controller” means a mechanical or solid-state timer, capable of operating valve stations to set the days and length of time of a water application.

- E. “Backflow prevention device” means a safety device used to prevent pollution or contamination of the water supply due to the reverse flow of water from the irrigation system.
- F. “Conversion factor (0.62)” means a number that converts the maximum applied water allowance from acre-inches per acre per year to gallons per square foot per year. The conversion factor is calculated as follows:

$$(325,851 \text{ gallons}/43,560 \text{ square feet})/12 \text{ inches} = (0.62)$$

$$325,851 \text{ gallons} = \text{one acre-foot}$$

$$43,560 \text{ square feet} = \text{one acre}$$

$$12 \text{ inches} = \text{one foot}$$

To convert gallons per year to 100 cubic feet per year, the common billing unit for water, divide gallons per year by 748. (748 gallons = 100 cubic feet)

- G. “Ecological restoration project” means a project where the site is intentionally altered to establish a defined, indigenous, historic ecosystem.
- H. “Effective precipitation” or “usable rainfall” means the portion of total natural precipitation that is used by the plants. Precipitation is not a reliable source of water in the desert.
- I. “Emitter” means drip irrigation fittings that deliver water slowly from the system to the soil.
- J. “Established landscape” means the point at which plants in the landscape have developed roots into the soil adjacent to the root ball.
- K. “Establishment period” means the first year after installing the plant in the landscape.
- L. “Estimated annual applied water use” means the portion of the estimated annual total water use that is derived from applied water. The estimated annual applied water use shall not exceed the maximum applied water allowance.
- M. “Estimated total water use” means the annual total amount of water estimated to be needed to keep the plants in the landscaped area healthy. It is based upon such

factors as the local evapotranspiration rate, the size of the landscaped area, the types of plants, and the efficiency of the irrigation system.

- N. “ET adjustment factor” means a factor of 0.6 that, when applied to reference evapotranspiration, adjusts for plant factors and irrigation efficiency, two major influences upon the amount of water that needs to be applied to the landscape. A combined plant mix with a site-wide average 0.45 is the basis of the plant factor portion of this calculation. The irrigation efficiency for purposes of the ET adjustment factor is 0.75. Therefore, the ET adjustment factor  $(0.6) = (0.45/0.75)$ .
- O. “Evapotranspiration” means the quantity of water evaporated from adjacent soil surfaces and transpired by plants during a specific time.
- P. “Flow rate” means the rate at which water flows through pipes and valves (gallons per minute or cubic feet per second).
- Q. “Hydrozone” means a portion 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 nonirrigated. For example, a naturalized area planted with native vegetation that will not need supplemental irrigation once established is a nonirrigated hydrozone.
- R. “Infiltration rate” means the rate of water entry into the soil expressed as a depth of water per unit of time (inches per hour).
- S. “Irrigation efficiency” means the measurement of the amount of water beneficially used divided by the amount of water applied. Irrigation efficiency is derived from measurements and estimates of irrigation system characteristics and management practices. The minimum irrigation efficiency for purposes of this chapter is 0.75. Greater irrigation efficiency can be expected from well-designed and maintained systems.
- T. “Landscape irrigation audit” means a process to perform site inspections, evaluate irrigation systems, and develop efficient irrigation schedules.
- U. “Landscaped area” means the entire parcel less the building footprint, driveways, nonirrigated portions of parking lots, hardscapes such as decks and patios, and

other nonporous areas. Water features are included in the calculation of the landscaped area.

- V. “Lateral line” means the water delivery pipeline that supplies water to the emitters or sprinklers from the valve.
- W. “Main line” means the pressurized pipeline that delivers water from the water meter to the valve or outlet.
- X. “Service line” means the pressurized pipeline that delivers water from the water source to the water meter.
- Y. “Maximum applied water allowance” means for design purposes, the upper limit of annual applied water for the established landscaped area. It is based upon the area’s reference evapotranspiration, the ET adjustment factor, and the size of the landscaped area. The estimated applied water use shall not exceed the maximum applied water allowance.
- Z. “Mined-land reclamation projects” means any surface mining operation with a reclamation plan approved in accordance with the Surface Mining and Reclamation Act of 1975.
- AA. “Mulch” means any material such as gravel, small rocks, pebbles, decorative sand, decomposed granite, bark, straw or other material left loose and applied to the soil surface for the beneficial purpose of reducing evaporation.
- BB. “Operating pressure” means the manufacturer’s recommended pressure at which a system of sprinklers, bubblers, drippers or microsprayers is designed to operate.
- CC. “Overhead sprinkler irrigation systems” means those with high flow rates (pop-ups, impulse sprinklers, rotors, etc.).
- DD. “Overspray” means the water which is delivered beyond the landscaped area, wetting pavements, walks, structures, or other non-landscaped areas.
- EE. “Plant factor” means a factor that when multiplied by reference evapotranspiration, estimates the amount of water used by plants. For purposes of these guidelines, the average plant factor of very low water using plants ranges from 0.01 to 0.10, for low water using plants the range is 0.10 to 0.35, for

moderate water using plants the range is 0.35 to 0.60 and for high water using plants, the range is 0.60 to 0.90.

- FF. “Rain sensing device” means a system which automatically shuts off the irrigation system when it rains.
- GG. “Record drawing” or “as-builts” means a set of reproducible drawings which show significant changes in the work made during construction which are usually based on drawings marked up in the field and other data furnished by the contractor.
- HH. “Recreational area” means areas of active play or recreation such as golf courses, sports fields, school yards, picnic grounds, or other areas with intense foot traffic.
- II. “Recycled water,” “reclaimed water” or “treated sewage effluent water” means treated or recycled waste water of a quality suitable for nonpotable uses such as landscape irrigation; not intended for human consumption.
- JJ. “Reference evapotranspiration” or “ET<sub>o</sub>” means a standard measurement of environmental parameters which affect the water use of plants. ET<sub>o</sub> is given in inches per day, month, or year, and is an estimate of the evapotranspiration of a large field of cool-season grass that is well watered. Reference evapotranspiration is used as a basis of determining the maximum applied water allowances so that regional differences in climate can be accommodated. For purposes of these guidelines, 93.9 inches per year will be used for ET<sub>o</sub>.
- KK. “Rehabilitated landscape” means any relandscaping project whose choice of new plant material and/or new irrigation system components is such that the calculation of the site’s estimated water use will be significantly changed. The new estimated water use calculation must not exceed the maximum applied water allowance calculated for the site using a 0.6 ET adjustment factor.
- LL. “Runoff” means water which is not absorbed by the soil or landscape to which it is applied and flows from the planted area. For example, runoff may result from water that is applied at too great a rate (application rate exceeds infiltration rate), when there is a severe slope or when water is misapplied to hardscapes.

- MM. “Soil moisture sensing device” means a device that measures the amount of water in the soil.
- NN. “Soil texture” means the classification of soil based on the percentage of sand, silt and clay in the soil.
- OO. “Sprinkler head” means a device which sprays water through a nozzle.
- PP. “Static water pressure” means the pipeline pressure when water is not flowing.
- QQ. “Station” means an area served by one valve or by a set of valves that operates simultaneously.
- RR. “Turf” means a surface layer of earth containing mowed grass with its roots. Perennial and Annual Ryegrass are examples of cool season grasses. Hybrid and common Bermuda grass, are examples of warm season grasses.
- SS. “Valve” means a device used to control the flow of water in the irrigation system.
- TT. “Water Efficient Landscape Checklist” means a one-page checklist and a narrative summary of the project.
- UU. “Water Feature” means any water applied to the landscape for non-irrigation decorative purposes. Fountains, streams, ponds and lakes are considered water features. Water features use more water than efficiently irrigated turfgrass and are assigned a plant factor value of 1.1 for a stationary body of water and 1.2 for a moving body of water. The assigned factors assume that water is recirculated in the water feature.
- VV. “Recreational Turfgrass” means turfgrass that serves as a playing surface for sports and recreational activities. Athletic fields, golf courses, parks and school playgrounds are all examples of areas featuring recreational turfgrass.
- WW. “Recreational Turfgrass ET adjustment factor” means a factor of 0.82 that, when applied to reference evapotranspiration, adjusts for the additional stress of high traffic on recreational turfgrass and the higher irrigation efficiencies of long range rotary sprinklers. These are the two major influences upon the amount of water that needs to be applied to a recreational landscape. A mixed cool/warm season turfgrass with a seasonal average of 0.7 is the basis of the plant factor portion of this calculation. The irrigation efficiency of long range sprinklers for purposes of

the ET adjustment factor is 0.85. Therefore, the ET adjustment factor is  $0.82 = 0.7/0.85$ .

**0.00.030 Submittal Requirements for Landscape Documentation Package.**

A. Landscape Documentation Package.

1. Each landscape documentation package shall include the following elements, which are described separately in Exhibit 1 attached.
  - a. Water efficient landscape checklist;
  - b. Calculation of the maximum applied water allowance;
  - c. Calculation of the estimated applied water use;
  - d. Calculation of the estimated total water use;
  - e. Landscape design plan;
  - f. Irrigation design plan;
  - g. Grading design plan;
  - h. Soil analysis (optional);
  - i. Certificate of substantial completion. (To be submitted by certified landscape designer, auditor or landscape architect after installation of the project.) See Exhibit 2.
2. Three copies of the landscape documentation package conforming to this chapter shall be submitted to the District. Final approval of infrastructure and acceptance by the District shall not be given until the District reviews and approves the landscape documentation package.
3. A copy of the approved landscape documentation package shall be provided to the property owner or site manager along with the record drawings and any other information normally forwarded to the property owner or site manager.
4. Upon completion of construction, a copy of the water efficient landscape checklist and the certificate of substantial completion shall be sent by the project manager to the District and the City of Desert Hot Springs.

B. Public Education.

1. The landscape architect will provide a site-specific landscape irrigation package for the homeowner or irrigation system operator. The package will include a set of drawings, a recommended monthly irrigation schedule and a recommended irrigation system maintenance schedule. A copy of the drawings shall also be provided to the City of Desert Hot Springs.
2. Irrigation Schedules. Irrigation schedules shall be submitted as part of the landscape irrigation package. An annual irrigation program with monthly irrigation schedules shall be required for the plant establishment period, for the established landscape, and for any temporarily irrigated areas. The irrigation schedule shall:
  - i. Include run time (in minutes per cycle), suggested number of cycles per day, and frequency of irrigation for the station; and
  - ii. Provide the amount of applied water (in hundred cubic feet) recommended on a monthly and annual basis.
  - iii. Whenever possible, irrigation scheduling shall incorporate the use of evapotranspiration data such as those from the California Irrigation Management Information System (CIMIS) weather stations to apply the appropriate levels of water for different climates.
  - iv. Whenever possible, landscape irrigation shall be scheduled between 10:00 p.m. and 5:00 a.m. to minimize water waste caused by irrigating during times of high wind, high temperature, etc.
3. Maintenance Schedules. A regular maintenance schedule satisfying the following conditions shall be submitted as part of the landscape documentation package:
  - i. Landscapes shall be maintained to ensure water efficiency. A regular maintenance schedule shall include but not be limited to checking, adjusting, cleaning and repairing equipment; resetting the automatic controller, aerating and dethatching turf areas; replenishing mulch; fertilizing; pruning; and weeding in all landscaped areas.

- ii. Repair of irrigation equipment shall be done with the originally specified materials or their approved equivalents.

**0.00.040 Provisions for audits.**

- A. Water Management. All landscaped areas covered by these guidelines which exceed 1.0 acre (43,560 square feet), including golf courses, green belts, common areas, multifamily housing, schools, businesses, public works, parks, and cemeteries may be subject to a landscape irrigation audit at the discretion of the District if the District has determined that the annual maximum applied water allowance has been exceeded for a minimum of 2 consecutive years. At a minimum, the audit shall be conducted by a certified landscape irrigation auditor and shall be in accordance with the California Landscape Irrigation Auditor Handbook, the entire document which is hereby incorporated by reference. (See Landscape Irrigation Audit Handbook, Department of Water Resources, Water Conservation Office (June, 1990, Version 5.5.)
- B. Water Waste Prevention. Water waste resulting from inefficient landscape irrigation including run-off, low-head drainage, overspray, or other similar conditions where water flows onto adjacent property, non-irrigated areas, walks, roadways, or structures shall be prohibited. All broken heads and pipes must be repaired within a reasonable time following notification, within 72 hours is expected.

**0.00.050 Fees for initial review and program monitoring.**

Fees are deemed necessary to review landscape documentation packages and monitor landscape irrigation audits and shall be imposed on the subject applicant, property owner or designee.

- A. A landscape documentation package review fee will be due at the time the initial project application is submitted to the District.
- B. The Board of Directors, by resolution, shall establish the amount of the above-referenced fees in accordance with applicable law.

**0.00.060 Appeals.**

Decisions made by District personnel may be appealed by an applicant, property owner(s), or designee(s) of any applicable project to the General Manager and thereafter to a committee designated by the Board of Directors. Appeals shall be made in writing to the General Manager, within fifteen days from the date of notification of decision.

**REPEALS:**

These guidelines will become effective upon Board adoption. All plans approved on or after adoption are subject to the provisions of these guidelines. All other ordinances or parts of ordinances in conflict with the provisions of these guidelines are hereby expressly repealed.

## **EXHIBIT 1**

### **Landscape Documentation Package**

1. Water Efficient Landscape Checklist. Each landscape documentation package shall include a cover sheet, referred to as the Water Efficient Landscape Checklist similar to the following example. It serves to verify that the elements of the landscape documentation package have been completed and provides a narrative summary of the project.
2. Supporting documents. Following the Water Efficient Landscape Checklist shall be the items 1-7 as identified on the Checklist.. In completing these items, the applicant will provide the water calculations used to determine the Maximum Annual Applied Water Allowance, Estimated Annual Applied Water Use by Hydrozone and Estimated Annual Total Water Use for the project, as well as all other supporting documents required by the Water Efficient Landscape Checklist.

WATER EFFICIENT LANDSCAPE CHECKLIST

Project Site: \_\_\_\_\_ Case Number: \_\_\_\_\_

Project Location: \_\_\_\_\_

Landscape Architect/Irrigation Designer/Contractor: \_\_\_\_\_

Included in this project submittal package are:  
(Check to indicate completion)

- \_\_\_ 1. Maximum Annual Applied Water Allowance:  
 Conventional Landscape: \_\_\_\_\_ 100 cubic feet/year  
 + Recreational Turfgrass Landscape: \_\_\_\_\_ 100 cubic feet/year(if applicable)  
 Total Maximum Annual Applied Water Allowance: \_\_\_\_\_ 100 cubic feet/year
- \_\_\_ 2. Estimated Annual Applied Water Use by Hydrozone:  
 Turfgrass: \_\_\_\_\_ 100 cubic feet/year  
 Recreational Turfgrass: \_\_\_\_\_ 100 cubic feet/year  
 Annuals/Groundcovers: \_\_\_\_\_ 100 cubic feet/year  
 Exotic Trees/Shrubs \_\_\_\_\_ 100 cubic feet/year  
 Desert Plants: \_\_\_\_\_ 100 cubic feet/year  
 Water features: \_\_\_\_\_ 100 cubic feet/year  
 Other \_\_\_\_\_: \_\_\_\_\_ 100 cubic feet/year
- \_\_\_ 3. Estimated Annual Total Water Use:  
 \_\_\_\_\_ 100 cubic feet/year
- \_\_\_ 4. Landscape Design Plan
- \_\_\_ 5. Irrigation Design Plan
- \_\_\_ 6. Grading Design Plan (as pertains to greenbelts and slopes)
- \_\_\_ 7. Soil Chemical Analysis (optional)

Description of Project:

(Briefly describe the planning and design actions that are intended to achieve conservation and efficiency in water use.)

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Date: \_\_\_\_\_ Prepared by: \_\_\_\_\_

1. The Annual Maximum Applied Water Allowance.

- a. A project's annual maximum applied water allowance shall be calculated using the following formula:

MAWA = (ETo) (0.6) (LA) (0.62) where:  
MAWA = Maximum applied water allowance (gallons per year)  
ETo = Reference evapotranspiration (i.e. 93.9 inches per year)  
0.6 = ET adjustment factor  
LA = Landscaped area (square feet)  
0.62 = Conversion factor (to gallons per square foot)

- b. An example calculation of the annual maximum applied water allowance is:

Project site: Landscape area of 50,000 square feet

MAWA = (ETo) (.6) (LA) (.62)  
= (93.9 inches) (.6) (50,000 square feet) (.62)

Maximum applied water allowance = 1,746,540 gallons per year, 2,335 hundred-cubic-feet per year (billing units), 5.36 Acre Feet/Acre per year or 64.3" of water per year.

2. Estimated Annual Applied Water Use.

- a. The annual estimated applied water use shall not exceed the annual maximum applied water allowance.  
b. A calculation of the estimated annual applied water use shall be submitted with the landscape documentation package.  
c. The estimated annual total water use for each hydrozone is calculated from the following formula:

$$EWU \text{ (hydrozones)} = \frac{(ETo) (PF) (HA) (.62)}{748}$$
  
(in 100 cubic feet) (IE)

EWU (hydrozone) = Estimated water use (gallons per year)

ETo = Reference evapotranspiration of 93.9 inches per year)  
PF = Plant factor (see definitions)  
HA = Hydrozone area (square feet)  
(.62) = Conversion factor  
(IE) = Irrigation efficiency (see definitions)  
748 = Conversion to billing units (100 cubic feet)

3. Estimated Annual Total Water Use. A calculation of the estimated annual total hydrozone water use shall be submitted with the landscape documentation package. The estimated annual total water use for the entire landscaped area equals the sum of the estimated annual water use (EWU) of all hydrozones in that landscaped area.
4. Landscape Design Plan. A landscape design plan meeting the following requirements shall be submitted as part of the landscape documentation package.
  - a. Plant Selection and Grouping.
    - i. Any plants may be used in the landscape, providing the estimated annual applied water use recommended does not exceed the maximum annual applied water allowance and that the plants meet the specifications set forth in (ii), (iii) and (iv).
    - ii. Plants having similar water use shall be grouped together in distinct hydrozones.
    - iii. Plants shall be selected appropriately based upon their adaptability to the climate, geologic, and topographical conditions of the site. Protection and preservation of native species and natural areas are encouraged. The planting of trees is encouraged whenever it is consistent with the other provisions of this chapter.
    - iv. Fire prevention needs shall be addressed in areas that are fire prone. Information about fire prone areas and appropriate landscaping for fire safety is available from the fire marshal.
  - b. Water Features.
    - i. Recirculating water shall be used for decorative water features.
  - c. Landscape Design Plan Specifications. The landscape design plan shall be drawn on project base sheets at a scale that accurately and clearly identifies:
    - i. Designation of hydrozones;
    - ii. Landscape materials, trees, shrubs, groundcover, turf and other vegetation. Planting symbols shall be clearly drawn and plants labeled by botanical name, common name, water use classification, container size, spacing and quantities of each group of plants indicated;
    - iii. Property lines and street names;
    - iv. Streets, driveways, walkways and other paved areas;
    - v. Pools, ponds, water features, fences and retaining walls;
    - vi. Existing and proposed buildings and structures including elevation, if applicable;
    - vii. Location of all overhead and underground utilities.
    - viii. Natural features including but not limited to rock outcroppings, existing trees and shrubs that will remain;
    - ix. Tree staking, plant installation, soil preparation details, and any other applicable planting and installation details;

- x. A calculation of the total landscaped area;
  - xi. Designation of recreational areas.
5. Irrigation Design Plan. An irrigation design plan meeting the following conditions shall be submitted as part of the landscape documentation package.
- a. Irrigation Design Criteria.
    - i. Runoff and Overspray. Soil types and infiltration rate shall be considered when designing irrigation systems. All irrigation systems shall be designed to avoid runoff, low-head drainage, overspray, or other similar conditions where water flows onto adjacent property, nonirrigated areas, walks, roadways or structures. Proper irrigation equipment and schedules, including features such as repeat cycles, shall be used to closely match application rates to infiltration rates therefore minimizing runoff.  
  
Special attention shall be given to avoid runoff on slopes and to avoid overspray in planting areas with a width less than ten feet. No overhead sprinkler irrigation systems shall be installed in median strips or islands.
    - ii. Irrigation Efficiency. For the purpose of determining the maximum applied water allowance, irrigation efficiency is assumed to be 0.75. Mixed irrigation system types shall be designed, maintained and managed to meet or exceed an average of 0.75 efficiency.
    - iii. Equipment.
      - 1. Water Meters. Separate landscape water meters shall be installed for all projects except for single-family homes or any project with a landscaped area of less than twenty five hundred square feet.
      - 2. Controllers. Automatic control systems (solar or electric) shall be required for all irrigation systems and must be able to accommodate all aspects of the design. Mechanical irrigation controllers are prohibited.
      - 3. Valves. Plants which require different amounts of water shall be irrigated by separate valves. If one valve is used for a given area, only plants with similar water use shall be used in that area.
      - 4. Anti-drain (check) valves shall be installed in strategic points to prevent low-head drainage.
      - 5. Sprinkler Heads. Heads shall have application rates appropriate to  
  
the plant water use requirements within each control valve circuit. Sprinkler heads shall be selected for proper area coverage, application rate, matched precipitation rate nozzles, operating pressure, adjustment capability and ease of maintenance.

6. Scheduling Aids: Soil Moisture Sensing Devices. It is required that soil moisture sensing devices be installed on all turfgrass sites exceeding 1.0 acres(43,560 square feet) of planted area.
  7. Scheduling Aids: ETo Controllers. It is recommended that ETo controllers be considered for installation on all sites.
  8. Equipment in Publicly Maintained Areas. Irrigation equipment in areas which may or will be maintained by the District shall conform to specifications of the District.
  9. Emitters. Emitters shall have application rates appropriate to the plant water use requirements within each control valve circuit. Emitters shall be selected for specific area coverage (individual plants), application rates, operating pressure, adjustment capability and ease of maintenance.
- b. Recycled Water.
- i. The installation of recycled water irrigation systems (dual distribution systems) shall be required to allow for the future use of recycled water, unless a written exemption has been granted as described in the following subsection ii.
  - ii. Irrigation systems shall make use of recycled water unless a written exemption has been granted by the District, stating that recycled water meeting all health standards is not available and will not be available in the foreseeable future.
  - iii. Recycled water irrigation systems shall be designed and operated in accordance with all local and state codes and be applicable to all of the provisions of these guidelines.
- c. Irrigation Design Plan Specifications. Irrigation systems shall be designed to be consistent with hydrozones. The irrigation design plan shall be drawn on project base sheets. It shall be separate from, but use the same format as, the landscape design plan. The scale shall be the same as that used for the landscape design plan. The irrigation design plan shall accurately and clearly identify:
- i. Location and size of separate water meters for the landscape;
  - ii. Location, type, and size of all components of the irrigation system, including automatic controllers, main and lateral lines, valves, sprinkler heads, moisture sensing devices, rain switches, quick couplers, and backflow prevention devices;
  - iii. Static water pressure at the point of connection to the water supply;
  - iv. Flow rate (gallons per minute), application rate (inches per hour), and design operating pressure (psi) for each station;

- v. Recycled water irrigation systems.
  - vi. The recommended irrigation schedule for the landscaped area shall also be included at the time the Certificate of Substantial Completion is filed.
- 6. Grading Design Plan. Grading design plans satisfying the city grading ordinance and the following conditions shall be submitted as part of the landscape documentation package.
  - a. A grading design plan shall be drawn on project base sheets. It shall be separate from but use the same format as the landscape design plan.
  - b. The grading design plan shall indicate finished configurations and elevations of the landscaped area, including the height of graded slopes, drainage patterns, pad elevations, and finish grade.
- 7. Soil Analysis. (Optional)
  - a. A soil analysis satisfying the following conditions should be submitted as part of the landscape documentation package:
    - i. Determination of soil texture, indicating the available water holding capacity.
    - ii. An approximate soil infiltration rate (either) measured or derived from soil texture/infiltration rate tables. A range of infiltration rates shall be noted where appropriate.
    - iii. Measure of pH and total soluble salts.

## **EXHIBIT 2**

### **Certificate of Substantial Completion**

1. A licensed landscape architect or designer of record shall conduct a final field observation and shall provide a certificate of substantial completion to the District and the City of Desert Hot Springs. The certificate shall specifically indicate that plants were installed as specified, that the irrigation system was installed as designed, and that an irrigation audit has been performed, along with a list of any observed deficiencies. The recommended irrigation schedule shall be included with the certificate.
2. Certification shall be accomplished by completing a certificate of substantial completion and delivering it to the District, to the City of Desert Hot Springs, and to the owner of record. A sample of such a form, which shall be provided by the District is as follows:

**CERTIFICATE OF SUBSTANTIAL COMPLETION**

Project Site: \_\_\_\_\_ Project Number: \_\_\_\_\_

Project Location: \_\_\_\_\_

Preliminary Project Documentation Submitted: (Check indicating submittal)

- \_\_\_ 1. Total Maximum Applied Water Allowance:  
    \_\_\_ (100 cubic feet per year)
  
- \_\_\_ 2. Estimated Applied Water Use by Hydrozone:  
    Turfgrass: \_\_\_ 100 cubic feet/year  
    Recreational Turfgrass: \_\_\_ 100 cubic feet/year  
    Annuals/Groundcovers: \_\_\_ 100 cubic feet/year  
    Exotic Trees/Shrubs: \_\_\_ 100 cubic feet/year  
    Desert Plants: \_\_\_ 100 cubic feet/year  
    Water features: \_\_\_ 100 cubic feet/year  
    Other \_\_\_\_\_: \_\_\_ 100 cubic feet/year
  
- \_\_\_ 3. Estimated Total Water Use:  
    \_\_\_ (100 cubic feet per year)
  
- \_\_\_ 4. Landscape Design Plan
  
- \_\_\_ 5. Irrigation Design Plan
  
- \_\_\_ 6. Grading Design Plan
  
- \_\_\_ 7. Soil Analysis (optional)

Post-Installation Inspection: (Check indicating substantial completion)

- \_\_\_ A. Plants installed as specified
  
- \_\_\_ B. Irrigation system installed as designed  
    \_\_\_ dual distribution system for recycled water  
    \_\_\_ minimum run-off or overspray
  
- \_\_\_ C. Recommended irrigation system provided.

\_\_\_ Project submittal package and a copy of this certification has been provided to the owner/manager, City of Desert Hot Springs and Mission Springs Water District.

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**EXAMPLE CERTIFICATE OF SUBSTANTIAL COMPLETION (Page No. 2)**

Comments:

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I/we certify that work has been installed in accordance with the contract documents:

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Contractor	Signature	Date	State License Number
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I/we certify that based upon periodic site observations, the work has been substantially completed in accordance with the Water Efficient Landscape Guidelines and that the landscape planting and irrigation installation conform with the plans and specifications approved by Mission Springs Water District for this project.

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Landscape Architect or Designer of Record	Signature	Date	State License Number
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I/we certify that I/we have received all of the contract documents and that it is our responsibility to see that the project is maintained in accordance with the contract documents.

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Property Owner	Signature	Date
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I/we certify that I/we have received all of the contract documents and that is our responsibility to see that the project is maintained in accordance with the contract documents.

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Property Owner	Signature	Date
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