CITY OF INDUSTRY

Landscape and Irrigation Plan Standards and Requirements

General

- Landscape and irrigation plans are reviewed and approved by the Planning Department.
- Unless it is strictly a landscape rehabilitation project, landscape and irrigation plans are submitted to the Planning Department **after** approval of the Development Plan application and prior to submittal for building permits.
- Landscape plans must conform to the approved development plan.
- Landscape plans must conform to Chapter 13.18, Water Efficient Landscapes, and the Water Efficient Landscape Guidelines (see attached).
- Water usage should be minimized through the planting of native and low-water species and the utilization of water-efficient and drip irrigation systems.

Process

Step 1 – Code Compliance. Review the City's landscape requirements and determine applicability of Chapter 13.18, Water Efficient Landscapes and the Water Efficient Landscape Guidelines (see attached).

Step 2 – Plan.

- Submit three (3) sets of scaled (recommend 1"=10', 1"=20', 1"=40', or 1"=50' scales) landscape and irrigation plans to the Planning Department for plan check purposes.
- Landscape plan check and permit fees will be determined after the submittal of landscape plans and the applicant will be billed for this cost.
- Upon approval, a stamped set of landscape plans will be sent to the applicant. No changes will be accepted on the approved landscape plans unless a new set of revised plans is submitted and approved. Please note that any re-submittal of landscaping and irrigation plans requires three (3) sets of plans and payment of additional plan check fees.

Step 3 – Installation. Upon receipt of the approved plans, install landscape and irrigation per the approved plan.

Step 4 – Inspection and Final. After building, site, irrigation, and landscape improvements are completed, contact the Planning Department to schedule a final inspection. At this time, the Planning Department will ask that all irrigation systems be activated to verify that everything is in working order and that there is no significant overspray.

Submittal Requirements

- A current California licensed landscape architect must prepare and sign all landscape and irrigation plans for projects that equal or exceed 2,500 square feet of landscaping or are subject to Chapter 13.18, Water Efficient Landscapes.
- If applicable, include all submittal requirements and calculations necessary to comply with Chapter 13.18, Water Efficient Landscapes and the Water Efficient Landscape Guidelines (see attached).
- Landscape Design Plan including a legend listing type of landscape material, size of plant material, quantity of each material, and a symbol that represents each material used on the plan.
- Landscape and irrigation notes and details as necessary to clearly describe plan.
- Irrigation Design Plan on a separate sheet drawn to scale with a legend listing: irrigation equipment, heads, lines, valves, etc... that are linked to the plan through symbols; valve size, radius, and gallons per minute (G.P.M.) for each head type, and; irrigation line sizes. On the plan, each valve shall be numbered to correlate with the automatic controller station that controls that valve.

Guidelines

Landscape Plan:

- If applicable, landscape plans shall comply with the requirements of Chapter 13.18, Water Efficient Landscapes and the Water Efficient Landscape Guidelines (see attached).
- All landscape areas shall be provided with trees, shrubs, ground cover or lawn. The use of gravel, decorative boulders, decomposed granite, concrete and/or other non-plant material as an accent in landscape areas is encouraged to help minimize water use.
- Trees
  - Street trees shall be provided along all street frontages and shall be located behind the required sidewalk.
  - Street trees shall be 24" box in size, planted 30 feet on center.
  - The type of street tree required varies with each street. Contact the City for type of street tree required.
  - All trees shall be provided with support stakes.
- Plant materials
  - Select water-conserving plant species and water-conserving turf
  - Select plants based on disease and pest resistance
  - On-site landscape materials minimum sizes are:
    - trees - 15 gallon
    - shrubs - 5 gallon
  - Plants must be selected and planted appropriately based upon their adaptability to the climatic, geologic, and topographical conditions of the project site. To encourage the efficient use of water, the following is highly recommended for inclusion in the landscape design plan:
    - Use the Sunset Western Climate Zone System which takes into account 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, and power lines); and
    - Consider the solar orientation for plant placement to maximize summer shade and winter solar gain.
- Lawn/turf/groundcover
  - Lawn may consist of hydroseeding or installation of turf.
  - A header or concrete mow strip shall separate any ground cover area from lawn areas.
  - Turf is discouraged on slopes greater than 25% where the toe of the slope is adjacent to an impermeable hardscape and where 25% means 1 foot of vertical elevation change for every 4 feet of horizontal length (rise divided by run x 100 = slope percent).
  - Ground cover may be planted no greater than 12" o.c.
  - A minimum two inch (2") layer of mulch must 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.
- Prohibited plants
  - The use of invasive plant species and/or noxious plant species is prohibited. For reference purposes, a non-exhaustive list of invasive plants can be found at http://www.cal-ipc.org/ip/inventory/index.php.
  - Nerium oleander (oleander)
  - ice plant
  - ivy (hedera) - Hahn's ivy (small leaf) will be accepted

Irrigation Plans:

- If applicable, irrigation plans shall comply with the requirements of Chapter 13.18, Water Efficient Landscapes and the Water Efficient Landscape Guidelines (see attached).
- All landscape areas shall be provided with an automatic irrigation system.
- All plans shall be provided with either quick coupling valves or hose bibs.
- All irrigation heads shall be oriented to spray away from all buildings or walls.
- Dedicated landscape water meters are highly recommended on landscaped areas smaller than 5,000 square feet to facilitate water management.
- Where available and consistent with public health guidelines, irrigation systems must use recycled water.
- The irrigation system must be designed to ensure that the dynamic pressure at each emission device is within the manufacturer's recommended pressure range for optimal performance.
- Sensors (rain, freeze, wind, etc.), either integral or auxiliary, that suspend or alter irrigation operation during unfavorable weather conditions are required on all irrigation systems, as appropriate for local climatic conditions. Irrigation should be avoided during windy or freezing weather or during rain.
- Automatic irrigation controllers utilizing either evapotranspiration or soil moisture sensor data are required for irrigation scheduling in all irrigation systems.
- High flow sensors that detect and report high flow conditions created by system damage or malfunction are recommended.
- Manual shut-off valves (such as a gate valve, ball valve, or butterfly valve) are 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 main line break) or routine repair.
- The irrigation system must be designed to prevent runoff, low head drainage, overspray, or other similar conditions where irrigation water flows onto non-targeted areas, such as adjacent property, non-irrigated areas, hardscapes, roadways, or structures.
- In mulched planting areas, the use of low volume irrigation is required to maximize water infiltration into the root zone.
- Sprinkler heads and other emission devices must have matched precipitation rates, unless otherwise directed by the manufacturer's recommendations.
- Head to head coverage is recommended. However, sprinkler spacing must be designed to achieve the highest possible distribution uniformity using the manufacturer's recommendations.
- Swing joints or other riser-protection components are required on all risers subject to damage that are adjacent to high traffic areas.
- Check valves or anti-drain valves are required for all irrigation systems.
- Overhead irrigation is not permitted within 24 inches of any non-permeable surface. Allowable irrigation within the setback from non-permeable surfaces may include drip, drip line, 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:
  - The landscaped area is adjacent to permeable surfacing and no runoff occurs; or
  - The adjacent non-permeable surfaces are designed and constructed to drain entirely to landscaping; or
  - The irrigation designer for the landscape project specifies an alternative design or technology.
- Slopes greater than 25% may not be irrigated with an irrigation system with a precipitation rate exceeding 0.75 inches per hour. This restriction may be modified if the landscape designer of the landscape project specifies an alternative design or technology and clearly demonstrates no runoff or erosion will occur.

WATER EFFICIENT LANDSCAPE GUIDELINES

FOR IMPLEMENTATION OF THE CITY OF INDUSTRY WATER EFFICIENT LANDSCAPE ORDINANCE

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1. Purpose and Applicability

1.1 Purpose

A. The primary purpose of these Guidelines is to provide procedural and design guidance for applicants proposing new landscape or landscape rehabilitation projects that are subject to Chapter 13.18 of the City of Industry Municipal Code. This document is also intended for use and reference by City staff in reviewing and approving designs and verifying compliance with Chapter 13.18.

B. Other regulations affecting landscape design and maintenance practices are potentially applicable and should be consulted for additional requirements. These regulations include but may not be limited to:

1. State of California Assembly Bill 1881 (Laird, Water Conservation), Chapter No. 559;

2. National Pollutant Discharge Elimination Permit(s) for the Municipal Separate Storm Sewer System;

3. Los Angeles County Fire Code Regulations for fuel modification in landscapes;

4. Water Conservation, Water Supply Shortage and Drought Response Regulations of any other Local Water Purveyor that provides water to the City;

5. State and local regulations governing the use of Recycled Water;

6. Industry Municipal Code (including Building and Zoning Code);

7. Specific Plans, Master Plans, General Plan, or similar land use and planning documents; and

8. Conditions of approval for a specific project.

1.2 Applicability

These Guidelines are applicable to the following landscape projects under Section 13.18.030 of the Industry Municipal Code, which states:

A. New landscape installations or landscape rehabilitation projects by public agencies or private non-residential developers, except for cemeteries, with a landscaped area, including water features but excluding hardscape, equal to or greater than 2,500 square feet, and which are subject to a building, mechanical, plumbing, or electrical permit, landscape permit, grading permit, plan check, or design review.

B. New landscape installations or landscape rehabilitation projects by developers or property managers of single-family and multi-family residential projects or complexes with a landscaped area, including water features but excluding hardscape, equal to

or greater than 2,500 square feet, and which are subject to a building, mechanical, plumbing, or electrical permit, landscape permit, grading permit, plan check, or design review.

C. New landscape installations that are homeowner-installed, including homeowner-hired, in single-family or multi-family residential lots with a total project landscaped area equal to or greater than 5,000 square feet, and which are otherwise subject to a building, mechanical, plumbing, or electrical permit, landscape permit, grading permit, plan check, or design review.

2. Submittal Requirements

2.1 Elements of the Landscape Documentation Package

A. A Landscape Documentation Package is required to be submitted by the applicant for review and approval prior to the issuance of ministerial permits and prior to the start of construction. Unless otherwise directed by the City, the Landscape Documentation Package must include the following elements on fully dimensioned and labeled plan sheets and supplemental pages as directed by the City:

1. A Certification of Landscape Design in accordance with **Exhibit A** of these Guidelines that includes a landscape professional's professional stamp, as applicable, signature, contact information (including email and telephone number), license number, and date, certifying the statement that "The design of this project complies with the requirements of the City's Water Efficient Landscape Ordinance" and must bear the signature of the landscape professional as required by law.

2. Project Information, including, but not limited to, the following:

a. date;

b. project name;

c. project address, parcel, and/or lot number(s);

d. total landscaped area (square feet) and rehabilitated landscaped area (if applicable);

e. project type (e.g., new, rehabilitated, public, private, cemetery, homeowner-installed);

f. water supply type (e.g., potable, recycled, or well) and identification of the local retail water purveyor if the project applicant is not served by a private well;

g. checklist or index of all documents in the Landscape Documentation Package;

h. project contacts, including contact information for the project applicant and property owner; and

i. any other information the City Manager deems relevant for determining whether the landscape project complies with the Water Efficient Landscape Ordinance and these Guidelines.

3. Maximum Applied Water Allowance (MAWA) and Estimated Applied Water Use (EAWU) expressed as annual totals including, but not limited to, the following:

a. a Water Efficient Landscape Worksheet (See Appendix B of these Guidelines) for the landscape project;

b. water budget calculations for the landscape project

c. hydrozone information table for the landscape project;

4. A soil management report or specifications, or specification provision requiring soil testing and amendment recommendations and implementation to be accomplished during construction of the landscape project.

5. A landscape design plan for the landscape project.

6. An irrigation design plan for the landscape project.

7. A grading plan, unless grading information is included in the landscape design plan for the landscape project or unless the landscape project is limited to replacement planting and/or irrigation to rehabilitate an existing landscaped area.

2.2 Water Efficient Landscape Calculations and Alternatives

A. The applicant must provide the calculated Maximum Applied Water Allowance (MAWA) and Estimated Applied Water Use (EAWU) for the landscaped area as part of the Landscape Documentation Package submittal to the City. The MAWA and EAWU must be calculated based on completing the Water Efficient Landscape Worksheets (in accordance with the sample worksheets in **Appendix B**).

B. The EAWU allowable for the landscaped area may not exceed the MAWA. The MAWA must be calculated using an evapotranspiration adjustment factor (ETAF) of 0.7 except for the portion of the MAWA applicable to any special landscaped areas within the landscape project, which must be calculated using an ETAF of 1.0. Where the design of the landscaped area can otherwise be shown to be equivalently water-efficient, the applicant may submit alternative or abbreviated information supporting the demonstration that the annual EAWU is less than the MAWA, at the discretion of and for the review and approval of the City.

C. Water budget calculations must adhere to the following requirements:

1. The MAWA must be calculated using the Water Efficient Landscape Worksheets and equation presented in **Appendix B** on page B-1. The example calculation on page B-1 is a hypothetical example to demonstrate proper use of the equation.

2. The EAWU must be calculated using the Water Efficient Landscape Worksheets and equation presented in Appendix B on page B-2. The example calculation on page B-2 is a hypothetical example.

3. For the calculation of the MAWA and EAWU, a project applicant must use the ETo values from the location listed the Reference Evapotranspiration Table in **Appendix C**.

4. For calculation of the EAWU, the plant water use factor must be determined as appropriate to the project location from the Water Use Efficiency of Landscape Species (WUCOLS) Species Evaluation List. (See definition of WUCOLS in **Appendix E.**) The plant factor is 0.1 for very low water use plants, 0.2 to 0.3 for low water use plants, 0.4 to 0.6 for moderate water use plants, and 0.7 to 1.0 for high water use plants.

5. For calculating the EAWU, the plant water use factor must be determined for each valve hydrozone based on the highest-water-use plant species within the zone. The plant factor for each hydrozone may be required to be further refined as a "landscape coefficient," according to protocols defined in detail in the WUCOLS document, to reflect planting density and microclimate effects on water need at the option of the applicant or the City.

6. For calculation of the EAWU, the area of a water feature is defined as a high water use hydrozone with a plant factor of 1.0.

7. For calculation of the EAWU, a temporarily irrigated hydrozone area, such as an area of highly drought-tolerant native plants that are not intended to be irrigated after they are fully established, is defined as a very low water use hydrozone with a plant factor of 0.1.

8. For calculation of the MAWA, the ETAF for special landscaped areas is set at 1.0. For calculation of the EAWU, the ETAF for special landscaped areas is calculated as the special landscaped area (SLA) plant factor divided by the SLA irrigation efficiency factor.

9. Irrigation efficiency must be calculated using the worksheet and equation presented in **Appendix B** on page B-2.

D. The Maximum Applied Water Allowance must adhere to the following requirements:

1. The Maximum Applied Water Allowance must be calculated using the equation presented in **Appendix B**. The example calculation in **Appendix B** is hypothetical to demonstrate proper use of the equation and does not represent an existing and/or planned landscape project. The reference evapotranspiration (ETo) values used in this calculation are from the Reference Evapotranspiration Table in **Appendix C** and are for planning purposes only. For actual irrigation scheduling, automatic irrigation controllers are required and must use

current ETo data, such as from the California Irrigation Management Information System (CIMIS), other equivalent data, or soil moisture sensor data.

2.3 Soil Management Report

A. In order to reduce runoff and encourage healthy plant growth, a soil management report must be completed by the applicant as follows:

1. Submit soil samples to a certified agronomic soils laboratory for analysis and recommendations.

a. Soil sampling must be conducted in accordance with laboratory protocol, including protocols regarding adequate sampling depth for the intended plants.

b. The soil analysis must include:

(1) soil texture;

(2) infiltration rate determined by laboratory test or soil texture infiltration rate table;

(3) pH;

(4) total soluble salts;

(5) sodium;

(6) percent organic matter; and

(7) recommendations.

2. The applicant must comply with one of the following:

a. If a grading plan is not required as a condition of approval or per Title 15 of the Municipal Code, the soil analysis report must be submitted to the City as part of the Landscape Documentation Package;

b. If a grading plan is required as a condition of approval or per Title 15 of the Municipal Code, the soil analysis report must be submitted to the City in conjunction with the grading plans;

c. The soil analysis report must be made available, in a timely manner, to the professionals preparing the landscape design plans and irrigation design plans in order to make any necessary adjustments to the design plans; or

d. The applicant must submit documentation verifying implementation of soil analysis report recommendations to the City with the Certification of Completion.

2.4 Landscape Design Plan

For the efficient use of water, landscape must be carefully designed and planned for the intended function of the project. A landscape design plan meeting the following design criteria must be submitted as part of the Landscape Documentation Package.

A. Any plant may be selected for the landscaped area provided the EAWU in the landscaped area does not exceed the MAWA. To encourage the efficient use of water, the following is highly recommended:

(1) protection and preservation of non-invasive water-conserving plant species and water-conserving turf;

(2) selection of water-conserving plant species and water-conserving turf;

(3) selection of plants based on disease and pest resistance;

(4) selection of trees based on applicable City tree ordinances; and

(5) selection of plants from local and regional landscape program plant lists.

B. Each hydrozone must have plant materials with similar water use, with the exception of hydrozones with plants of mixed water use, as specified in Section 2.5(a)(2)(d) of these Guidelines.

C. Plants must be selected and planted appropriately based upon their adaptability to the climatic, geologic, and topographical conditions of the project site. To encourage the efficient use of water, the following is highly recommended for inclusion in the landscape design plan:

1. use the Sunset Western Climate Zone System which takes into account temperature, humidity, elevation, terrain, latitude, and varying degrees of continental and marine influence on local climate;

2. 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, and power lines); and

3. consider the solar orientation for plant placement to maximize summer shade and winter solar gain.

D. Turf is discouraged on slopes greater than 25% where the toe of the slope is adjacent to an impermeable hardscape and where 25% means 1 foot of vertical elevation change for every 4 feet of horizontal length (rise divided by run x 100 = slope percent).

E. A landscape design plan for projects in fire-prone areas and fuel modification zones must comply with requirements of the local Fire Authority where applicable. When conflicts between water conservation and fire safety design elements exist, the fire safety requirements have priority.

F. The use of invasive plant species and/or noxious plant species is prohibited. For reference purposes, a non-exhaustive list of invasive plants can be found at http://www.cal-ipc.org/ip/inventory/index.php.

G. The architectural guidelines of a common interest development, which include community apartment projects, condominiums, planned developments, and stock cooperatives, may not prohibit or include conditions that have the effect of prohibiting the use of water efficient plant species as a group.

1. Water Features

a. Recirculating water systems must be used for water features.

b. Where available and consistent with public health guidelines, recycled water must be used as a source for decorative water features.

c. The surface area of a water feature must be included in the high water use hydrozone area of the water budget calculation.

d. Pool and spa covers are highly recommended.

2. Mulch and Amendments

a. A minimum two inch (2") layer of mulch +must 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.

b. Stabilizing mulching products must be used on slopes.

c. The mulching portion of the seed/mulch slurry in hydro-seeded applications must meet the mulching requirement.

d. Soil amendments must be incorporated according to recommendations of the soil report and what is appropriate for the plants selected (see Section 2.3 of these Guidelines).

H. The landscape design plan, at a minimum, must:

1. delineate and label each hydrozone by number, letter, or other method;

2. identify each hydrozone as low, moderate, high water, or mixed water use. Temporarily irrigated areas of the landscaped area must be included in the low water use hydrozone for the water budget calculation;

3. identify recreational areas;

4. identify areas permanently and solely dedicated to edible plants;

5. identify areas irrigated with recycled water;

6. identify type of mulch and application depth;

7. identify soil amendments, type, and quantity;

8. identify type and surface area of water features;

9. identify hardscapes (pervious and non-pervious);

10. identify location and installation details of any applicable storm water best management practices that encourage on-site retention and infiltration of storm water. Storm water best management practices are encouraged in the landscape design plan and examples include, but are not limited to:

a. infiltration beds, swales, and basins that allow water to collect and soak into the ground;

b. constructed wetlands and retention ponds that retain water, handle excess flow, and filter pollutants; and

c. pervious or porous surfaces (e.g., permeable pavers or blocks, pervious or porous concrete, etc.) that minimize runoff.

11. identify any applicable rain harvesting or catchment technologies (e.g., rain gardens, cisterns, etc.);

12. contain the following statement: "I have complied with the criteria of the City of Industry Water Efficient Landscape Ordinance (Industry Municipal Code Chapter 13.18) and applied them for the efficient use of water in the landscape design plan;" and

13. bear the signature of a California-licensed landscape professional.

2.5 **Irrigation Design Plan**

A. For the efficient use of water, an irrigation system must meet all the requirements listed in this section and the manufacturer's recommendations. The irrigation system and its related components must be planned and designed to allow for proper installation, management, and maintenance. An irrigation design plan meeting the following design criteria must be submitted as part of the Landscape Documentation Package.

1. System

a. Dedicated landscape water meters are highly recommended on landscaped areas smaller than 5,000 square feet to facilitate water management.

b. Where available and consistent with public health guidelines, irrigation systems must use recycled water.

c. Automatic irrigation controllers utilizing either evapotranspiration or soil moisture sensor data are required for irrigation scheduling in all irrigation systems.

d. The irrigation system must be designed to ensure that the dynamic pressure at each emission device is within the manufacturer's recommended pressure range for optimal performance.

(1) 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 must be installed to meet the required dynamic pressure of the irrigation system.

(2) Static water pressure, dynamic or operating pressure, and flow reading of the water supply must 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 must be conducted at installation.

e. Sensors (rain, freeze, wind, etc.), either integral or auxiliary, that suspend or alter irrigation operation during unfavorable weather conditions are required on all irrigation systems, as appropriate for local climatic conditions. Irrigation should be avoided during windy or freezing weather or during rain.

f. Manual shut-off valves (such as a gate valve, ball valve, or butterfly valve) are 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 main line break) or routine repair.

g. Backflow prevention devices are required to protect the water supply from contamination by the irrigation system. A project applicant shall refer to the applicable City code (i.e., public health) for additional backflow prevention requirements.

h. High flow sensors that detect and report high flow conditions created by system damage or malfunction are recommended.

i. The irrigation system must be designed to prevent runoff, low head drainage, overspray, or other similar conditions where irrigation water flows onto non-targeted areas, such as adjacent property, non-irrigated areas, hardscapes, roadways, or structures.

j. Relevant information from the soil management plan, such as soil type and infiltration rate, must be utilized when designing irrigation systems.

k. The design of the irrigation system must conform to the hydrozones of the landscape design plan.

l. Average irrigation efficiency for the project must be determined in accordance with the EAWU calculation sheet in **Appendix B**. Unless otherwise indicated by the irrigation equipment manufacturer's specifications or demonstrated by the project applicant, the irrigation efficiency of the irrigation heads used within each hydrozone is assumed to be:

Pop-up stream rotator heads = 75%
Stream rotor heads = 75%
Microspray = 75%
Bubbler = 80%
Drip emitter = 85%
Subsurface irrigation = 90%

m. It is highly recommended that the project applicant 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.

n. In mulched planting areas, the use of low volume irrigation is required to maximize water infiltration into the root zone.

o. Sprinkler heads and other emission devices must have matched precipitation rates, unless otherwise directed by the manufacturer's recommendations.

p. Head to head coverage is recommended. However, sprinkler spacing must be designed to achieve the highest possible distribution uniformity using the manufacturer's recommendations.

q. Swing joints or other riser-protection components are required on all risers subject to damage that are adjacent to high traffic areas.

r. Check valves or anti-drain valves are required for all irrigation systems.

s. Narrow or irregularly shaped areas, including turf, less than eight (8) feet in width in any direction must be irrigated with subsurface irrigation or a low volume irrigation system.

t. Overhead irrigation is not permitted within 24 inches of any non-permeable surface. Allowable irrigation within the setback from non-permeable surfaces may include drip, drip line, 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:

(1) the landscaped area is adjacent to permeable surfacing and no runoff occurs; or

(2) the adjacent non-permeable surfaces are designed and constructed to drain entirely to landscaping; or

(3) the irrigation designer for the landscape project specifies an alternative design or technology, as part of the Landscape Documentation Package, and clearly demonstrates strict adherence to the irrigation system design criteria in Section 2.5 (a)(1)(H) hereof. Prevention of overspray and runoff shall be confirmed during an irrigation audit.

u. Slopes greater than 25% may not be irrigated with an irrigation system with a precipitation rate exceeding 0.75 inches per hour. This restriction may be modified if the landscape designer of the landscape project 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.

2. **Hydrozone**

a. Each valve must irrigate a hydrozone with similar site, slope, sun exposure, soil conditions, and plant materials with similar water use.

b. Sprinkler heads and other emission devices must be selected based on what is appropriate for the plant type within that hydrozone.

c. Where feasible, trees must be placed on separate valves from shrubs, groundcovers, and turf.

d. Individual hydrozones that mix plants of moderate and low water use or moderate and high water use may be allowed if:

(1) the plant factor calculation is based on the proportions of the respective plant water uses and their respective plant factors; or

(2) the plant factor of the higher water using plant is used for the calculations.

e. Individual hydrozones that mix high and low water use plants are not permitted.

f. On the landscape design plan and irrigation design plan, hydrozone areas must be designated by number, letter, or other designation. On the irrigation design plan, designate the areas irrigated by each valve and assign a number to each valve.

g. The irrigation design plan, at a minimum, must contain:

(1) the location and size of separate water meters for landscape;

(2) the location, type, and size of all components of the irrigation system, including controllers, main and lateral lines, valves, sprinkler heads, moisture sensing devices, rain switches, quick couplers, pressure regulators, and backflow prevention devices;