

**MOORPARK CITY COUNCIL
AGENDA REPORT**

TO: The Honorable City Council

FROM: Jeremy Laurentowski, Landscape/Parks Maintenance
Superintendent 

DATE: January 20, 2011 (CC Meeting of February 2, 2011)

SUBJECT: Consider a Resolution Updating the City's Landscape Design Standards and Guidelines, to be Consistent with Municipal Code Chapter 15.23, Water Efficient Landscape Ordinance, and the Model Efficient Landscape Ordinance of the State of California as contained in the California Code of Regulations Title 23. Waters, Division 2. Department of Water Resources, Chapter 2.7. Model Water Efficient Landscape Ordinance, Sections 490 through 494; and rescinding Resolution No. 2004-2244

BACKGROUND

In 1992, the State of California enacted the Water Conservation in Landscaping Act (AB 325), which required the adoption of a water efficient landscape ordinance by every City and County throughout the state. In response to AB 325, the California Department of Water Resources (DWR) developed a Model Water Efficient Landscape Ordinance (MWELo) that established a set of landscape design standards and water use requirements. California Cities and Counties could adopt the DWR ordinance outright, modify the ordinance to meet specific City needs, or adopt an entirely different ordinance. The City of Moorpark never adopted the Model Water Efficient Landscape Ordinance outright. However, on September 15, 2004, the City Council adopted Resolution No. 2004-2244 (City of Moorpark, Landscape Design Standards and Guidelines), which incorporated the water use requirements and landscape design standards outlined in the DWR ordinance.

In 2004 the State of California adopted Assembly Bill 2717 (AB 2717). AB 2717 requested that the California Urban Water Conservation Council (CUWCC) assemble a stakeholder task force, composed of public and private agencies to evaluate and make recommendations in an effort to improve the efficiency of water conservation in

California's urban landscapes. AB 2717 ultimately updated AB 325 and the Model Water Efficient Landscape Ordinance of 1992.

In 2006, the State of California adopted Assembly Bill 1881 (AB 1881), again amending the 1992 Water Conservation in Landscaping Act (Act). AB 1881 required DWR, no later than January 1, 2009 to update the MWELO in accordance with the specific requirements reflected in the provisions of AB 2717. In addition, AB 1881 requires that on or before January 1, 2010, a local agency adopt one of the following:

1. A water efficient landscape ordinance that is, at least as effective in conserving water as the updated MWELO; or
2. The State's updated MWELO in its entirety.

On January 6, 2010, the City Council adopted Ordinance No. 383, adding Chapter 15.23 Water Efficient Landscape Ordinance to Title 15 of the Municipal Code, adopting by reference the Model Water Efficient Landscape Ordinance of the State of California as contained in the California Code of Regulations Title 23 Waters, Division 2 Department of Water Resources, Chapter 2.7 Model Water Efficient Landscape Ordinance, Sections 490 through 494.

DISCUSSION

On September 15, 2004, the City Council adopted the Landscape Design Standards and Guidelines for the City of Moorpark, Resolution 2004-2244. These guidelines outline the landscape plan submittal requirements, planting and irrigation standards, landscape design standards, the plan check process, approved and prohibited plant species and the certification process for installation compliance and final project approval. In addition, the Landscape Design Standards and Guidelines incorporate the water use requirements and landscape design standards outlined in the 1992 Model Water Efficient Landscape Ordinance. However, on January 6, 2010, the City Council directed staff to update the City's Landscape Design Standards and Guidelines to ensure compliance with Assembly Bill 1881 and the newly adopted Model Water Efficient Landscape Ordinance.

The 2009 State Model Water Efficient Landscape Ordinance establishes a structure for designing, installing, maintaining and managing water efficient landscapes in new and rehabilitated projects that require a building permit, landscape permit, plan check or design review and exceed 2,500 square feet or more of landscaped area. The MWELO also applies to new single-family housing projects that exceed 5,000 square feet or more of landscape area. The intent of the ordinance is to reduce irrigation water use through water-efficient landscape practices. In addition to specific planting and irrigation design requirements, the MWELO regulates water-use by incorporating a set of water use calculations that determine a maximum water budget for each project based on local evapotranspiration data (ET_o), plant types and irrigation efficiency.

The MWELO also requires local agencies to review and approve the landscape documentation package based on the following submittal process:

1. Project Information including project type, water supply and total landscape area.
2. Water Efficient Worksheets that include the water budget, irrigation scheduling, plant types and hydrozone areas.
3. Soil Management Report.
4. Landscape Design Plan.
5. Irrigation Design Plan.
6. Grading Plan.

The 2004 Resolution adopted by City Council already includes many of the items required by the new MWELO. However, the new ordinance incorporates many specific items required to reduce irrigation water use such as irrigation equipment that utilizes real time local ETo data, rain shut off devices, regulating irrigation runoff, incorporating bark mulch into planting areas and soil conditioning practices.

In addition, staff has taken the opportunity to update the Landscape Design Standards and Guidelines to address City specific needs which include the following items:

1. Installation verification for commercial, industrial, residential and homeowners association maintained landscape areas and City maintained landscape areas, including a mandatory 90-day maintenance period for private maintained landscape areas and 365-day maintenance period for City maintained landscape areas, including those placed in landscape maintenance districts.
2. Elimination of turf in non-recreational areas within Commercial, Industrial and multi-family housing projects.
3. Parking lot design standards that increases planter island width from 5' to 8' and includes 18" wide decorative concrete step-outs adjacent to parking spaces.
4. Increasing the minimum tree size for median islands and street trees from 15-gallon to 24" box size.
5. Updating the General Recommended Plant List to increase the variety of California native and drought tolerant plant species.

The proposed Landscape Design Guidelines and Standards are not presented with the changes made to the current Landscape Design Guidelines and Standards in legislative format due to the quantity of formatting and text changes. Staff has provided a copy of the current Landscape Design Guidelines and Standards under separate cover.

PROCESSING TIME LIMITS

Since this resolution was initiated by the City, the processing time limits under the Permit Streamlining Act (Government Code Title 7, Division 1, Chapter 4.5), the

Subdivision Map Act (Government Code Title 7, Division 2), and the California Environmental Quality Act Statutes and Guidelines (Public Resources Code Division 13, and California Code of Regulations, Title 14, Chapter 3) are not applicable.

ENVIRONMENTAL DETERMINATION

In accordance with the City's environmental review procedures adopted by resolution, the Planning Director determines the level of review necessary for a project to comply with the California Environmental Quality Act (CEQA). Some projects may be exempt from review based upon a specific category listed in CEQA. Other projects may be exempt under a general rule that environmental review is not necessary where it can be determined that there would be no possibility of significant effect upon the environment. A project which does not qualify for an exemption requires the preparation of an Initial Study to assess the level of potential environmental impacts.

The Community Development Director has reviewed this project and found it to qualify for a General Rule Exemption in accordance with Section 15061 of California Code of Regulations (CEQA Guidelines). No further environmental documentation is required.

FISCAL IMPACT

There will be no impact to the General Fund. Staff time for landscape plan review will be charged to the developer based on actual review time.

STAFF RECOMMENDATION

1. Adopt Resolution No. 2011- _____

Attachments:

1. Resolution No. 2011 - _____
2. Model Water Efficient Landscape Ordinance

RESOLUTION NO. 2011 - ____

A RESOLUTION OF THE CITY COUNCIL OF
THE CITY OF MOORPARK, CALIFORNIA,
UPDATING THE CITY'S LANDSCAPE DESIGN
STANDARDS AND GUIDELINES AND
RESCINDING RESOLUTION NO. 2004-2244

WHEREAS, on September 15, 2004, the City of Moorpark identified the need to establish a uniform policy for landscaping private development projects and City maintained landscape projects and adopted Resolution No. 2004-2244, Landscape Design Standards and Guidelines; and

WHEREAS, on January 6, 2010, the City Council adopted Ordinance No. 383, adding Chapter 15.23 Water Efficient Landscape Ordinance to Title 15 of the Municipal Code, adopting by reference the Model Water Efficient Landscape Ordinance of the State of California as contained in the California Code of Regulations Title 23. Waters, Division 2. Department of Water Resources, Chapter 2.7. Model Water Efficient Landscape Ordinance; and

WHEREAS, at it's meeting of January 6, 2010, the City Council direct staff to update the City's Landscape Design Standards and Guidelines to ensure consistency with State of California Assembly Bill 1881 and Ordinance No. 383; and

WHEREAS, the City Council concurs with the Community Development Director's determination that this project is exempt from the provisions of the California Environmental Quality Act by the general rule that CEQA only applies to projects that may have a significant effect on the environment.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF MOORPARK DOES HEREBY RESOLVE AS FOLLOWS:

SECTION 1. ADOPTION OF GUIDELINES: in recognition of the requirement to comply with State of California Assembly Bill 1881 and Ordinance No. 383, the City of Moorpark hereby adopts the Landscape Design Standards and Guidelines, attached hereto as Exhibit A

SECTION 2. Resolution No. 2004-2244 is hereby rescinded upon the effective date of this Resolution.

SECTION 3. The City Clerk shall certify to the adoption of this resolution and shall cause a certified resolution to be filed in the book of original resolutions.

PASSED AND ADOPTED this 16th day of February, 2011.

Janice S. Parvin, Mayor

ATTEST:

Maureen Benson, City Clerk

Attachments:

Exhibit A: Landscape Design Standards and Guidelines

EXHIBIT A

**LANDSCAPE DESIGN STANDARDS AND
GUIDELINES**

CITY OF MOORPARK

Community Development Department
799 Moorpark Avenue
Moorpark, CA 93021
805-517-6224

**Adopted by City Council on ____
Resolution No. 2011-____**

TABLE OF CONTENTS

SECTION 1. GENERAL INFORMATION

- 1.1 Applicability
- 1.2 Water Conservation
- 1.3 Ecological Viability
- 1.4 Development of Community Character
- 1.5 Public Access and Enjoyment
- 1.6 Fire Mitigation

SECTION 2. PROCESSING PROCEDURES

- 2.1 Pre-Submittal Meeting
- 2.2 Conceptual Landscape Package Submittal
- 2.3 Conceptual Plan Review and Approval
- 2.4 Guarantee/Surety and Exoneration of Surety
- 2.5 Installation and Inspection
- 2.6 Compliance

SECTION 3. LANDSCAPE PLAN SUBMITTAL REQUIREMENTS

- 3.1 Plan Check Fees
- 3.2 General Plan Preparation Requirements
- 3.3 Planting Plan Requirements
- 3.4 Soils Analysis
- 3.5 Irrigation Plan Requirements
- 3.6 Landscape and Irrigation Maintenance Schedule

SECTION 4. INSTALLATION VERIFICATION

- 4.1 Approved Plans/Conditions
- 4.2 Landscape Condition Compliance Review

SECTION 5. CONTINUED COMPLIANCE REQUIRED

SECTION 6. WATER BUDGET

- 6.1 Water Efficient Landscape Worksheet
- 6.2 Effective Precipitation
- 6.3 Irrigation Scheduling
- 6.4 Irrigation Audit, Irrigation Survey, and Irrigation Water Use Analysis

SECTION 7. PUBLIC RIGHT-OF-WAY

- 7.1 Parkways and Streetscapes
- 7.2 Median Island Planting Requirements

SECTION 8. COMMERCIAL, INDUSTRIAL, AND MULTI-FAMILY PROJECTS

SECTION 9. UTILITIES

SECTION 10. PARKING AREAS

SECTION 11. EROSION CONTROL AND NATURAL AREAS

SECTION 12. RESIDENTIAL DEVELOPMENTS

12.1 Water Efficient Model Home Requirement

12.2 Private Front Yards

12.3 Street Trees

12.4 Streetscape Concept

12.5 Walls and Fencing

ATTACHMENTS:

I. LANDSCAPE PLAN REVIEW CHECKLIST

- General Plan Requirements
- Slope Planting Plan Requirements
- Planting Plan Requirements
- Irrigation Plan Requirements
- Landscape Inspection Requirements (City Maintained Areas)
- Landscape Inspection Requirements (Homeowners Association, Commercial, and Other Non-City Maintained Areas)
- City Approval Block (must be on title sheet)

II. GENERAL RECOMMENDED PLANT LIST

III. PROVISIONALLY ACCEPTABLE PLANT LIST

IV. INVASIVE AND PROHIBITED PLANT LIST

V. RECOMMENDED TREES FOR STREETS

VI. REIMBURSEMENT AGREEMENT FOR LANDSCAPE PLAN REVIEW

VII. CERTIFICATES OF COMPLIANCE

VIII. SAMPLE WATER EFFICIENT LANDSCAPE WORKSHEETS

- Hydrozone Information Table
- Effective Precipitation (Eppt)
- Maximum Applied Water Allowance (MAWA)
- Estimated Total Water Use (ETWU)

IX. CITY STANDARD PLANTING DETAILS (PLATES 1-1 THROUGH 1-5)

1-1 Tree Planting Detail

1-2 Tree Guying Detail

1-3 Tree Planting on Slope Detail

- 1-4 Shrub Planting Detail
- 1-5 Shrub on Slope Planting Detail

X. CITY STANDARD IRRIGATION DETAILS

- 2-1 Remote Control Valve Detail
- 2-2 Anti-siphon Valve Detail
- 2-3 Backflow Preventer Detail
- 2-4 Bubbler Detail
- 2-5 Pop-up Rotor Detail
- 2-6 Rotor On Slope Detail
- 2-7 Pop-up Spray Head Detail
- 2-8 Riser Spray Detail

XI. PLANTING DESIGN REQUIREMENT FIGURES

- 12-1 Slope Planting w/View Fence (Elevation)
- 12-2 Slope Planting w/Screen Wall (Elevation)
- 12-3 Slope Planting at Single-Family Residence (Plan View)
- 12-4 Slope Planting a Multi-Family Residence (Plan View)

SECTION 1. GENERAL INFORMATION

The purpose of this guide is to assist in the preparation of landscape plans while incorporating water conservation measures, design aesthetics, and landscape consistency throughout the City of Moorpark. It has been prepared by the City of Moorpark Community Development Department as a guide for use by landscape architects and others involved with the development of projects within the City. These standards and guidelines include water use and landscape plan submittal requirements as outlined in the California Code of Regulations, Title 23, Waters, Division 2, Department of Water Resources, Chapter 2.7, Model Water Efficient Landscape Ordinance (MWELO) adopted by the State of California on September 10, 2009, as well as the City's minimum landscape standards established to create a sense of community character. The landscape plans must meet the basic criteria within these standards and guidelines. Items which utilize mandatory language ("shall") are considered standards and must be adhered to. Additionally, certain projects may be required to exceed the minimum standards to achieve specific objectives. The items which utilize directory language ("should") are considered guidelines, and may be interpreted with some flexibility to meet goals which result in community benefit.

1.1 Applicability: These standards and guidelines apply to all of the following landscape projects:

- New construction and rehabilitated landscapes for public agency projects and private development projects with a landscape area equal to or greater than 2,500 square feet requiring a building or landscape permit, plan check or design review;
- New construction and rehabilitated landscapes which are developer-installed in single-family and multi-family projects, with a landscape area equal to or greater than 2,500 square feet requiring a building or landscape permit, plan check, or design review;
- New construction landscapes which are homeowner-provided and/or homeowner-hired in single-family and multi-family residential projects with a total project landscape area equal to or greater than 5,000 square feet requiring a building or landscape permit, plan check or design review; and
- New and rehabilitated cemeteries.
- Water quality treatment facilities, including but not limited to basins and swales. Final review and approval subject to relevant permitting agency.

These standards and guidelines do not apply to:

- Registered local, state, or federal historical sites;
- Ecological restoration projects that do not require a permanent irrigation system;
- Mined-land reclamation projects that do not require a permanent irrigation system;
- Plant collections, as part of botanical gardens and arboretums open to the public;
- New construction and rehabilitated landscapes which are developer-installed in single-family and multi-family projects with a landscape area equal to or

less than 2,499 square feet requiring a building or landscape permit, plan check, or design review; and

- New construction landscapes which are homeowner-provided and/or homeowner-hired in single-family and multi-family residential projects with a total project landscape area equal to or less than 4,999 square feet requiring a building or landscape permit, plan check, or design review.

1.2 Water Conservation: Water conservation through landscaping offers the greatest single opportunity for water savings in the urban area. About forty percent (40%) of urban water is used to irrigate landscaped areas in California. A water-efficient landscape includes water efficient (drought tolerant) plants, efficient irrigation systems, proper soil preparation, responsive maintenance and watering schedules, and reuse of water (wherever possible) such as grey water, reclaimed or recycled water systems. Water-efficient design can both reduce project costs and reduce the amount of water usage for landscaping. Due to the increasing demand for water and the limited supply in Ventura County and within the City of Moorpark, water-efficient landscaping shall be required in new developments and existing developments undergoing significant modifications.

Included within these standards and guidelines are Water Budget and Projected Water Use Calculations as well as a list of City approved plants and their suggested landscape use. The applicant may expand upon the material list with approval by the Community Development Director, but all suggestions must meet the basic criteria within the standards and guidelines, including:

- Drought tolerant planting;
- Limitation of lawn areas;
- Efficient irrigation;
- Automatic irrigation controllers utilizing either evapotranspiration or soil moisture sensor data;
- Proper soil preparation, including use of mulch;
- Responsive maintenance and watering schedule;
- Use of surfaces that allow percolation of stormwater, such as turfcrete, gravel, porous pavements, vegetative groundcover, mulch, etc;
- Surface drainage through bioswales; and
- Stormwater storage for reuse onsite, such as cisterns.

1.3 Ecological Viability: The landscape plans should incorporate sensible conservation of public resources, including water, soil, biodiversity, energy resources, air quality, agricultural, recreational and wildlife open space, and other such resources in the public interest. Judicious conservation is cost-effective in both project construction and maintenance. Landscape plans that incorporate conservation also integrate with the character of the City's community and environs. The applicant is encouraged to take full advantage of the wide range of possibilities in design and technology within the framework established by this guide.

A list of invasive and prohibited plants is provided (Attachment IV). The Community Development Director or his/her designee may allow usage of select

plants on this list in landscape areas that do not interface with sensitive ecological zones. Methods of increasing ecological viability include:

- Reduced disturbance of soil and natural terrain through minimizing grading and working with the natural topography as much as possible;
- Narrower road design and layouts with shorter road lengths, to reduce infrastructure costs and impermeable surfaces, as well as to increase opportunity to conserve natural resources, viewsheds and other space-requiring amenities in newly developed areas;
- Native topsoil conservation and renewal, by saving topsoil and replacing it after grading, by re-vegetating with native plants, and other landscape regeneration methods;
- Minimization of runoff via on-site stormwater retention/infiltration through open-bottom and vegetated swales and/or detention/retention basins, and other aesthetically enriching project amenities;
- Slope stabilization with appropriate vegetation;
- Use of drought-tolerant non-invasive native plants adjacent to designated natural resource areas and waterways;
- Use of recycled materials of local origin for hardscaping, mulching and/or soil amendments;
- Protection of viewsheds and open space areas; and
- Multiple uses for landscapes, such as stormwater parks, to maximize available land area and natural resources, and to increase the quality of public service or economic opportunity.

1.4 Development of Community Character: It is the intent of these standards and guidelines to provide a sense of community character that is compatible with the City's culture and environment, and to strengthen the perception of the community as a unique place. The aim of community character development is to create and enhance a community identity, to increase the enjoyment and sense of community among the public, and to enhance the image of the community as a desirable place to live, work and shop.

A. Design with consistency and maintain a high standard of aesthetics:

1. Design elements should compliment the architectural theme;
2. Private and public uses should be visually separate, but aesthetically consistent;
3. Public and private streets should take on an individual appearance with a common street tree and design intent; and
4. Landscape areas and streetscape should include 'surprises' such as a large focal tree.

B. Introduce design ideas that compliment the City's cultural heritage and natural history such as:

1. "Ranch" style and early Spanish architecture;
2. Natural landscape elements such as native trees and shrubs;
3. Natural building material such as river rock and boulders;
4. The City's agricultural heritage;

5. The railroad;
6. The arroyo; and
7. Local chaparral and riparian plant communities.

C. Integrate conservation and efficiency whenever possible, to enhance enjoyment of the unique characteristics of the area, such as:

1. Mild, sunny climate;
2. Maritime weather patterns;
3. Distinctive shape of the existing terrain;
4. Viewsheds;
5. Beauty of local natural history; and
6. Local building materials.

1.5 Public Access and Enjoyment: The landscape plans shall meet all Title 24 and ADA accessibility requirements as well as all applicable codes for fire and building in order to promote health, safety and community welfare. The intent of these standards and guidelines is to universally provide safe access for use and enjoyment, on new projects and on modifications of existing projects.

A. ADA accessibility and Title 24 requirements shall be incorporated for public, commercial and industrial projects, for both new projects and modification of existing projects.

B. Landscapes shall be viable, functional and attractive, to provide universal access, use and enjoyment. Landscapes shall provide for the health, safety and welfare of the community, through compliance with all applicable ordinances for fire, health and safety.

C. In addition to ADA accessibility, landscapes should be designed for specific user populations as needed, whether for an elderly population, youth, or for specific disabilities such as blindness. Specific landscape functions and amenities should be considered. Examples include:

1. Raised beds to wheelchair height and reach for handicapped and elderly access in a community garden;
2. Casual seating located along pedestrian ways positioned for "people watching", such as benches, steps, planters or grassy slopes, with a view onto a park, plaza or street; and
3. Textured surfaces along pedestrian ways to guide non-sighted pedestrians.

D. Landscapes shall enhance the microclimate and character of pedestrian ways and gathering places by adequately providing the following:

1. Shade, from trees or from overhead structures;
2. Screening;
3. Seating;
4. Lighting;
5. Circulation, including adequate separation of pedestrian, bicycle, equestrian and vehicular circulation; and

6. Attractive gathering spaces with focal amenities.

1.6 Fire Mitigation: A Fuel Modification Plan may be required when a proposed project contains or is bounded by hazardous native vegetation as determined by the Ventura County Prevention District. This plan will demonstrate how the proposed project will mitigate potential fire hazards. The final Fuel Modification Plan shall be submitted in conjunction with landscape plans prior to review by the City. The final approved Fuel Modification Plan may take precedence over these standards and guidelines.

SECTION 2. PROCESSING PROCEDURES

2.1 Pre-Submittal Meeting: A pre-submittal meeting familiarizes the applicant with the review process, and identifies the information and materials necessary to file landscape plans. A pre-submittal meeting can be arranged by contacting the case planner at the Community Development Department.

2.2 Conceptual Landscape Package Submittal: After the applicant has prepared all the information identified during the pre-submittal meeting, the landscape package shall be formally submitted with the required fee deposit in accordance with fee schedule and signed Reimbursement Agreement. (See Attachment VI)

A. Elements to be included in the conceptual landscape plan package are as follows:

1. Existing trees and shrubs to be removed and/or protect in place;
2. Structures or buildings to be removed and/or protect in place;
3. Tree, shrub and groundcover plant palette;
4. Street tree plan;
5. General plant sizes and locations;
6. All design elements, site features and flatwork, including elevations or perspective drawings of those features;
7. Project entry monumentation layout and elevations or perspective drawings.
8. Walls and fences including details;
9. Paving and walkways;
10. Color and material schedule. Samples should be included for City to review;
11. All site amenities. At a minimum, the site amenities should reference color and material (i.e. wood, metal, etc.);
12. Site and landscape lighting;
13. Preliminary parking lot shading plan if applicable. Plan should Address all four seasons (refer to Section 10); and
14. Preliminary utility screening plan (refer to Section 9).

2.3 Conceptual Plan Review and Approval: Upon receipt of the landscape package, the City's case planner shall review it for completeness and forward it to the City's landscape representative as designated in writing by the City Manager (herein after referenced as City's landscape representative) for review. The City's landscape representative's review, which normally takes two weeks,

consists of an on-site inspection and package review for consistency with City standards as outlined by this guide. Upon completion of the review, the consultant returns the package to the Planning Division with recommendations for approval or modification. This process is repeated until approval is achieved. Based upon the recommendations of the City's landscape representative and case planner, the Community Development Director shall approve the project's landscape package.

2.4 Guarantee/Surety and Exoneration of Surety: A surety bond may be required as a condition of approval in the following cases:

- A. To assure plant viability at least one year after installation.
- B. To assure installation of plants after issuance of a Zoning Clearance by the Planning Division and Certificate of Occupancy by Building and Safety. (This would normally be allowed only on non-sloped areas of residential projects where the applicant is providing landscaping).

If, upon final landscape inspection, the Community Development Director determines that the landscaping and irrigation have been installed in accordance with the approved plans, the Community Development Director may recommend that the guarantee/surety be returned to the applicant.

2.5 Installation and Inspection: Landscaping for commercial, industrial, residential, Homeowners Association areas, City Parks, City maintained landscape areas and Landscape Maintenance Districts shall be installed prior to issuance of a Certificate of Occupancy by the City Building and Safety Division unless otherwise approved by the Community Development Director. The applicant's landscape architect shall be required to certify in writing to the Community Development Director that all work has been installed in accordance with the approved plans and specifications. The City's landscape representative shall conduct the final landscape inspection after receipt of the certification. (See Section 4 – Installation Verification and Attachment I – Landscape Submittal Plan Checklist & Landscape Inspection Requirements). For Commercial, industrial, residential and Homeowner's Association landscape areas a 90 day maintenance period is required, and for City Maintained areas and Landscape Maintenance Districts a one year maintenance period is required upon installation of new landscaping and irrigation to ensure survivability and maintenance of new landscaped areas prior to final approval (as also noted in forthcoming Sections 3.3.e; 4.2.a.2 and 4.2.b.1).

2.6 Compliance: Discretionary development permits may be conditioned for follow-up inspections to verify a maintenance program, water management auditing, or compliance with environmental mitigation measures. Failure by the applicant, successor in interest, or homeowner's association to maintain installed common area landscaping and/or irrigation systems will constitute a violation of the Conditions of Approval and/or Mitigation Measures of the development permit.

SECTION 3. LANDSCAPE PLAN SUBMITTAL REQUIREMENTS

The project's landscape package shall be prepared by a California Registered Landscape Architect. Plans must be wet-stamped, signed and dated. The plan submittal shall include the following (see Attachment I – Landscape Plan Review Checklist):

3.1 Plan Check Fees: The applicant shall pay the deposit fee in accordance with the fee schedule and submit a signed reimbursement agreement to cover landscape review and inspection. Fees shall include costs of any required follow-up inspections. (See Attachment VI – Reimbursement Agreement for Plan Review)

3.2 General Plan Preparation Requirements: (See Attachment I – Landscape Plan Review Checklist)

A. Base Sheets:

1. Plans shall be drawn on clear and legible base sheets prepared especially for the landscape submittal.
2. Plans shall not exceed 30" x 42" or be less than 22" x 36" in size.
3. Base Sheets should accurately and clearly show the following existing and proposed features:
 - a) property lines;
 - b) streets, street rights-of-way, access easements and/or public or private driveways, walkways, bike paths, and any other paved areas;
 - c) all existing and proposed buildings and structures;
 - d) parking areas, lighting, striping, curbs and wheel stops;
 - e) all existing and proposed trees, shrubs and other significant landscape features; i.e., water courses, rock outcroppings, etc.;
 - f) grading areas; top and toe of slopes, slope direction (engineer's Precise Grading plans must included with submittal);
 - g) all Utilities, including street lighting, fire hydrants, transformers, electric meters, irrigation equipment, air conditioning units, etc.;
 - h) existing native vegetation, on-site and on contiguous parcels, may be shown in a generalized manner; and
 - i) fire clearance zone, if applicable (Approved Fuel Modification Plan must be included with submittal).

B. Scale: The scale shall not be smaller than 1"=20' unless prior approval is received from the Community Development Director.

C. Title Block: A title block shall be included on all plans indicating the names, addresses and phone numbers of the applicant and the landscape architect. The title block shall include a north arrow, scale for each sheet, date, project applicant's name, address and phone number, property owner's name, address and phone number and project address. The title block shall include the California Registered Landscape Architect's seal. Each sheet shall be 'wet-signed' for final approval.

- D. Title Sheet: Content of the Title Sheet shall include the following:
1. Project title;
 2. Title block;
 3. Vicinity map;
 4. Location map;
 5. Sheet index;
 6. Total landscape area, in square feet;
 7. Project type (e.g., new, rehabilitated, public, private, cemetery, homeowner-installed, homeowner's association);
 8. Water supply type (e.g., potable, recycled, well water) and identify the local retail water purveyor;
 9. Applicant's signature and date with the statement 'I agree to comply with the requirements of the Model Water Efficient Landscape Ordinance';
 10. Landscape approval block (see Attachment I – Landscape Plan Review Checklist); and
 11. Landscape inspection schedule (see Attachment I – Landscape Plan Review Checklist).
- E. Other Items:
1. One (1) copy of the engineer's precise grading plans shall be included with the landscape submittal.
 2. One (1) copy of the architectural elevations and floor plans shall be included with the landscape submittal.
 3. The final Fuel Modification Plan shall be included with the landscape submittal if applicable.

3.3 Planting Plan Requirements: (See Attachment I – Landscape Plan Review Checklist) Plan Preparation Requirements:

- A. Plant Material:
1. Plant material chosen for a particular project shall be selected from the General Recommended Plant List (Attachment II), Recommended Trees for Streets (Attachment V) or the Provisional Plant List (Attachment III) with approval by the Community Development Director, provided the Estimated Total Water Use in the landscape area does not exceed the Maximum Applied Water Allowance (See Section 6). To encourage the efficient use of water, the following is highly recommended:
 - a) protection and preservation of native species and natural vegetation;
 - b) selection of water-conserving plant and turf species; and
 - c) selection of plants based on disease and pest resistance.
 2. Each hydrozone shall have plant materials with similar water use.
 3. Plants shall 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:

- a) 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;
 - b) 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]; and
 - c) consider the solar orientation for plant placement to maximize summer shade and winter solar gain.
4. Turf is not allowed 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).
 5. A landscape design plan for projects in fire-prone areas shall address fire safety and prevention. A defensible space or zone around a building or structure is required per Public Resources Code Section 4291(a) and (b). Avoid fire-prone plant materials and highly flammable mulches.
 6. The use of invasive and/or noxious plant species is not allowed.
 7. The architectural guidelines of a common interest development, which includes community apartment projects, condominiums, planned developments, and stock cooperatives, shall not prohibit or include conditions that have the effect of prohibiting the use of low-water use plants as a group.

B. Water Features:

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

C. Mulch and Amendments:

1. A minimum two inch (2") 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.
2. Stabilizing mulching products shall be used on slopes.
3. The mulching portion of the seed/mulch slurry in hydro-seeded applications shall meet the mulching requirement.

- D. Soil amendments shall be incorporated according to recommendations of the soil report and what is appropriate for the plants selected (See Section 3.4 below)
- E. A Horticultural Soils Analysis with recommendations shall be included on the landscape plans and shall incorporate recommendations specific to the plants selected for the project. (See Section 3.4 below)
- F. Planting plans for commercial, industrial, residential and Homeowners Association areas must include notation that a ninety (90) day maintenance period is required and that expenses are to be paid for by the owner. The City's landscape representative shall inspect all landscape areas for installation and maintenance compliance after the ninety (90) day maintenance period has ended. 100% plant survivability shall be required. (See Section 4.2, Landscape Condition Compliance Review)
- G. Planting plans for City maintained areas and Landscape Maintenance Districts must include notation that a one (1) year maintenance period is required and that the expenses are to be paid for by the owner. The City's landscape representative shall inspect the landscape areas for installation and maintenance compliance after the one (1) year maintenance period has ended. 100% plant survivability and 100% coverage shall be required. (See Section 4.2, Landscape Condition Compliance Review)
- H. The planting plan shall include a Maintenance Schedule on either the plans or in the specifications. (See Section 3.6 below)
 - 1. Planting notes and specifications shall be included.
 - 2. Existing and proposed grades and drainage elements are shown.
 - 3. All hydrozones shall be delineated by number, letter, or other method.
 - 4. Each hydrozone shall be identified as low, moderate, high water, or mixed water use. Temporarily irrigated areas of the landscape shall be included in the low water use hydrozone for the water budget calculation.
 - 5. All design elements shown on the approved Landscape Concept Plan shall be identified; i.e. recreational areas, outdoor eating areas, trails, etc.
 - 6. Areas permanently and solely dedicated to edible plants shall be identified on the plans.
 - 7. Areas irrigated with recycled water shall be identified on the plans.
 - 8. Types of pervious and non-pervious surfaces shall be identified on the plans.
 - 9. Location and spacing of all plants are clearly identified.
 - 10. Common and botanical names of all plants are listed in the plant legend.
 - 11. The WUCOLS plant factor for each plant species identified on the plan shall be listed in the plant legend.
 - 12. Size and quantity of all plants are listed.
 - 13. Seed mix information including:

- a) rate;
 - b) mix;
 - c) mulch;
 - d) binder;
 - e) fertilization; and
 - f) inoculation.
14. Planting details and general planting notes shall be included.
 15. Identify the location and installation details of any applicable stormwater best management practices that encourage on-site retention and infiltration of stormwater. Stormwater 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.
 16. Identify any applicable rain harvesting or catchment technologies (e.g., rain gardens, cisterns, etc.).
 17. 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". Statement shall be signed and dated by the project landscape architect.
 18. The planting plan shall bear the California Registered Landscape Architect's name, seal and registration number and each sheet shall be 'wet-signed'.

3.4 Soils Analysis: A soils report performed by a laboratory that is a member of the California Association of Agricultural Laboratories shall be attached to the landscape plans. The soil sample tested shall be taken after site grading and the date of the sample shall be included on the report. The planting backfill mixture and soil amendments shall be based on this analysis. Use of soil amendments produced from recycled yard trimmings and/or organic wastes of local origin is encouraged, whenever feasible.

- A. Submit soil samples to a laboratory for analysis recommendations:
 1. Soil sampling shall be conducted in accordance with laboratory protocol, including protocols regarding adequate sampling depth for the intended plants.
 2. The soil analysis shall include the following:
 - a) infiltration rate determined by laboratory test or soil texture infiltration rate table;
 - b) Determination of soil texture indicating the percentage of organic matter;
 - c) Measure of pH and total soluble salts shall be indicated;
 - d) Percentage of sodium.
 - e) Amendments and recommendations for improving water-holding properties shall be noted.

- B. The project applicant, or his/her designee, shall comply with one of the following:
 - 1. If significant mass grading is not planned, the soil analysis report shall be included on the landscape plans; or
 - 2. If significant mass grading is planned, the soil analysis report shall be submitted as part of the Certificate of Completion.
- C. The soil analysis report shall be made available, in a timely manner, to the professionals preparing the landscape design plans and irrigation design plans to make any necessary adjustments to the design plans.
- D. The project applicant, or his/her designee, shall submit documentation verifying implementation of soil analysis report recommendations with the Certificate of Completion.

3.5 Irrigation Plan Requirements: (See Attachment I – Landscape Plan Review Checklist) All landscape areas shall be provided with an approved irrigation system that meets the requirements of this section. Specific site conditions and proposed landscape materials will determine the design of the irrigation system. The irrigation system shall deliver water efficiently and uniformly. All equipment shall be designed for installation per manufacturer's recommendation, and conform to Uniform Plumbing Codes and all local regulations. 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:

- A. Irrigation System:
 - 1. Dedicated landscape water meters are highly recommended on landscape areas smaller than 5,000 square feet to facilitate water management.
 - 2. Landscape areas exceeding 5,000 square feet shall be installed on a designated water meter. A separate meter provides for monitoring of landscape irrigation efficiency.
 - 3. Automatic irrigation controllers utilizing either evapotranspiration or soil moisture sensor data shall be required for irrigation scheduling in all irrigation systems.
 - 4. The irrigation system shall be designed to ensure that the dynamic pressure at each emission device is within the manufacturer's recommended pressure range for optimal performance.
 - 5. 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.
 - 6. 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.
7. 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.
 8. 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 main line break) or routine repair.
 9. Backflow prevention devices shall be required to protect the water supply from contamination by the irrigation system. A project applicant shall contact the County of Ventura, Environmental Health Division for additional backflow prevention requirements. Notation shall be on the landscape plan that the backflow device must be tested at a minimum of once a year. All backflow devices shall be installed in a mesh enclosure with green or tan powder coating or stainless steel construction..
 10. Quick coupling valves are required at one hundred foot (100') intervals throughout the project.
 11. High flow sensors that detect and report high flow conditions created by system damage or malfunction are required.
 12. The irrigation system shall 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.
 13. Relevant information from the soil management plan, such as soil type and infiltration rate, shall be utilized when designing irrigation systems.
 14. The design of the irrigation system shall conform to the hydrozones of the landscape design plan.
 15. The irrigation system must be designed and installed to meet, at a minimum, the irrigation efficiency criteria as described in Section 6 regarding the Maximum Applied Water Allowance.
 16. The project landscape architect shall inquire with the Ventura County Water Works District about peak water operating demands (on the water supply system) or water restrictions that may impact the effectiveness of the irrigation system.
 17. In mulched planting areas, the use of low volume irrigation is required to maximize water infiltration into the root zone.
 18. Sprinkler heads and other emission devices shall have matched precipitation rates, unless otherwise directed by the manufacturer's recommendations.
 19. Head to head coverage is recommended. However, sprinkler spacing shall be designed to achieve the highest possible distribution uniformity using the manufacturer's recommendations.
 20. Swing joints or other riser-protection components are required on all risers subject to damage that are adjacent to high traffic areas.
 21. Check valves or anti-drain valves are required for all irrigation systems.

22. Plastic (PVC) mainline piping requires placement not less than 18" below final grade and minimum twenty-four inches (24") below finish surface of streets, with lateral lines requiring 12" depth. UVR (Ultra Violet Resistant) above ground pipe shall only be installed on slope areas. All piping at the toe-of-slope condition shall be installed below grade. Galvanized lines shall be above ground. Other piping shall be considered for drip or temporary irrigation. Piping for reclaimed water systems shall follow current County Health and State Health standards for pipe color, depth and separation. All irrigation piping under streets or flatwork shall be sleeved with sch 40 PVC minimum two (2) times the diameter of the pipe enclosed.
23. Drip emitters or bubblers with a designated control valve shall be installed for all trees on slopes exceeding 3:1.
24. The irrigation system shall be installed with a back-up system should an operating valve fail to shutoff or a break in the mainline occurs. The back up system shall consist of a master valve with flow meter.
25. Narrow or irregularly shaped areas, including turf, less than eight (8) feet in width in any direction shall be irrigated with subsurface irrigation or low volume irrigation system.
26. If reclaimed water is available, and if installation is determined to be feasible and is approved by the Ventura County Environmental Health Division in conjunction with the local water purveyor, a reclaimed irrigation system shall be installed. Reclaimed irrigation equipment shall be clearly labeled with appropriate identification symbols, tags, purple pipe color, etc. Applicant shall Contact the Ventura County Environmental Health Division for irrigation equipment identification requirements.
27. Overhead irrigation shall not be 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:
 - a) the landscape area is adjacent to permeable surfacing and no runoff occurs; or
 - b) the adjacent non-permeable surfaces are designed and constructed to drain entirely to landscaping; or
 - c) the irrigation designer specifies an alternative design or technology, as part of the Landscape Documentation Package and clearly demonstrates strict adherence to irrigation system design criteria described in this section. Prevention of overspray and runoff must be confirmed during the irrigation audit.
28. Slopes greater than 25% shall 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 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.

29. The installation of recycled water irrigation systems shall allow for the current and future use of recycled water, unless a written exemption has been granted by the local water purveyor stating that recycled water meeting all public health codes and standards is not available and will not be available for the foreseeable future.
30. Irrigation systems and decorative water features shall use recycled water unless a written exemption has been granted by the local water purveyor stating that recycled water meeting all public health codes and standards is not available and will not be available for the foreseeable future.
31. All recycled water irrigation systems shall be designed and operated in accordance with all applicable local and State laws.
32. Landscape areas using recycled water are considered Special Landscape Areas. The ET adjustment factor for Special Landscape Areas shall not exceed 1.0.

B. Hydrozone:

1. Each valve shall irrigate a hydrozone with similar site, slope, sun exposure, soil conditions, and plant materials with similar water use.
2. Sprinkler heads and other emission devices shall be selected based on what is appropriate for the plant type within that hydrozone.
3. Where feasible, trees shall be placed on separate valves from shrubs, groundcovers, and turf.
4. Individual hydrozones that mix plants of moderate and low water use, or moderate and high water use, may be allowed if:
 - a) the irrigation system is designed to separate the individual water needs of each specific plant species; and
 - b) plant factor calculation is based on the proportions of the respective plant water uses and their plant factor; or
 - c) the plant factor of the higher water using plant is used for calculations.
5. Individual hydrozones that mix high and low water use plants shall not be permitted.
6. On the landscape design plan and irrigation design plan, hydrozone areas shall 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. Use this valve number in the Hydrozone Information Table (see Attachment VIII). This table can also assist with the irrigation audit and programming the controller.

C. The irrigation design plan shall at a minimum contain the following:

1. location and size of separate water meters for landscape purposes;
2. 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;
3. static water pressure at the point of connection to the public water supply

4. The plans shall include the landscape inspection requirements. The inspection schedule shall be included on the Title Sheet. (See Attachment I)
5. Worst case pressure loss calculation for the circuit with the highest demand, farthest distance from the POC and highest elevation shall be provided.
6. Details and specifications shall be provided for all irrigation system components.
7. flow rate (gallons per minute), application rate (inches per hour), and design operating pressure (pressure per square inch) for each station;
8. recycled water irrigation systems as applicable;
9. the following statement: "I have complied with the criteria of the ordinance and applied them accordingly for the efficient use of water in the irrigation design plan". Statement shall be signed and dated by the project landscape architect.; and
10. The irrigation plan shall bear the name of the certified irrigation designer or the California Registered Landscape Architect's name, seal and registration number and each sheet shall be 'wet-signed'

3.6 Landscape and Irrigation Maintenance Schedule: Landscapes of residential common areas, commercial or industrial projects, Homeowners Association area, City maintained landscape areas and Landscape Maintenance Districts shall be carefully and competently maintained to ensure water efficiency and high quality appearance. A watering schedule encased in plastic shall be kept inside each controller (with reduced as-built plans showing hydro-zones). Maintenance guideline notes must appear on the planting plan drawings. Using these standards and guidelines, a schedule for ongoing maintenance shall be prepared and shown on the planting plan. The maintenance guidelines shall be as follows:

- A. Any alterations to the landscape must be approved by the Community Development Director.
- B. Control all harmful diseases and pests. All chemical applications must be per state licensed advisors and applications.
- C. Pruning shall be done to keep plants within special limitations, removal of deadwood, cross-branching, etc., per International Society of Arboriculture (ISA) standards. Plants shall never be sheared unless specified on the approved plan. Trees are to be allowed to grow to the designed size to provide maximum shading of paved areas.
- D. Water shall be applied for optimum plant growth with zero runoff or overspray. Adjust controllers per current California Irrigation Management Information System (CIMIS) data. Information can be obtained at www.cimis.ca.gov.
- E. Always replace heads with the same kind of head, or head with a matching precipitation rate.

- F. Repair of all irrigation equipment shall be done with the originally installed components or their equivalents.
- G. Backflow device shall be tested and certified annually by the Ventura County Environmental Health Division.
- H. Inspect tree supports frequently, and remove as soon as the plants will stand without support and will be able to resist wind damage. Never allow support materials to girdle the trunk or branches.
- I. Landscape irrigation shall be scheduled during the night or early morning hours.
- J. A regular maintenance schedule shall include, but not limited to, routine inspection, adjusting, and repairing the irrigation equipment; aerating and de-thatching turf areas; replenishing mulch; fertilizing; pruning; weeding; removing litter in all landscaped areas; and removing obstructions to emission devices. Operation of the irrigation system outside the normal watering window is allowed for auditing and system maintenance only. Verify with the Ventura County Water Works District for current allowable time for irrigation water use.

SECTION 4. INSTALLATION VERIFICATION

- 4.1 Approved Plans/Conditions:** Copies of the approved landscape plans and conditions are kept and available at the City of Moorpark, Community Development Department.
- 4.2 Landscape Condition Compliance Review:** Prior to completion of the landscape installation and prior to final inspection, the City's landscape representative and case planner shall inspect the site and certify that the landscape complies with these standards and guidelines per the attached inspection schedule (see Attachment I). The applicant shall notify the City a minimum of forty-eight (48) hours prior to inspection.

Upon completion of the installation of the landscaping and prior to final inspection, the applicant's landscape consultant shall inspect the site and certify that the landscape complies with these standards and guidelines. Certification shall be accomplished by completing the Certificate of Compliance checklists (see attachment VII). Concurrently or afterwards, the City's landscape representative and case planner shall inspect the landscape planting and irrigation installation for final conformance with the approved plans and specifications.

- A. Commercial, industrial, residential, and Homeowners Association landscape areas:
 - 1. The applicant's landscape architect shall be required to certify in writing to the Community Development Director that all work has been installed in accordance with the approved plans and specifications. The City's landscape representative shall conduct a

preliminary landscape inspection upon receipt of the certification. (See Section 4, Attachment I – Landscape Submittal Plan Checklist & Landscape Inspection Requirements and Attachment VII – Preliminary Certificate of Compliance)

2. Upon written preliminary acceptance by the City's landscape representative, the landscape areas shall be maintained by the applicant for a period of ninety (90) days. After the ninety (90) day maintenance period, the project landscape architect shall re-inspect the landscape areas for compliance with the approved landscape plans and specifications and certify in writing to the Community Development Director that all work has been installed and maintained in accordance with the approved plans and specifications. The City's landscape representative shall conduct the final landscape inspection after receipt of the certification. (See Attachment VII – Final Certificate of Compliance)
 - a) 100% plant survivability shall be required and all irrigation system components, landscape materials, site features, hardscape and drainage devices shall be inspected and in optimum operating condition.
 - b) As-built plans, backflow assembly test reports, soils analysis reports, four (4) sets of controller keys, laminated and color coded irrigation control charts and all relevant product data and warranties shall be submitted to the HOA, owner and/or property management company.

B. City parks, City maintained areas and Landscape Maintenance Districts:

1. The project landscape architect shall be required to certify in writing to the Community Development Director that all work has been installed in accordance with the approved plans and specifications. The City's landscape representative will conduct a preliminary landscape inspection after receipt of the certification. (See Section 4, Attachment I – Landscape Submittal Plan Checklist & Landscape Inspection Requirements and Attachment VII – Preliminary Certificate of Compliance)

Upon written preliminary acceptance by the City's landscape representative, the Landscape Maintenance District areas shall be maintained by the applicant for a one (1) year prior to final acceptance. After the one (1) year period, the project landscape architect shall re-inspect the landscape areas for compliance with the approved landscape architect plans and specifications and certify in writing to the Community Development Director that all work has been installed and maintained in accordance with the approved plans and specifications. The City's landscape representative will conduct the final landscape inspection after receipt of the certification. (See Attachment VII – Final Certificate of Compliance)

- a) 100% plant survivability and 100% coverage shall be required.
- b) All irrigation system components shall be installed per plan, inspected and in optimum operating condition.

- c) All landscape materials, site features, hardscape and drainage devices shall be inspected and in optimum operating condition.
- d) As-built plans, backflow assembly test reports, soils analysis reports, four (4) sets of controller keys, laminated and color coded irrigation control charts and all relevant product data and warranties shall be submitted to the City.
- e) Digital files in both pdf and AutoCAD file format shall be submitted to the City of all landscape and as-built plans or other format as required by the City's landscape representative.

SECTION 5. CONTINUED COMPLIANCE REQUIRED

The applicant, successor in interest, or homeowner's association shall maintain installed landscaping and efficient irrigation systems in compliance with the Conditions of Approval and/or Mitigation Measures of the development permit.

SECTION 6. WATER BUDGET

6.1 Water Efficient Landscape Worksheet

- A. The project landscape architect shall complete the Water Efficient Landscape Worksheet which contains two sections (See Attachment VIII):
 - 1. Hydrozone information table (See Attachment VIII) for the landscape project; and
 - 2. Water budget calculations (See Attachment VIII) for the landscape project.

For the calculation of the Maximum Applied Water Allowance and Estimated Total Water Use, a project applicant shall use an ETo value of 51.1 for the City of Moorpark as found in the CIMIS Reference Evapotranspiration Zones Map, Department of Water Resources, 1999.

- B. Water budget calculations shall adhere to the following requirements:
 - 1. The plant factor used shall be from WUCOLS. The plant factor ranges from 0 to 0.3 for low water use plants, from 0.4 to 0.6 for moderate water use plants, and from 0.7 to 1.0 for high water use plants.
 - 2. All water features shall be included in the high water use hydrozone and temporarily irrigated areas shall be included in the low water use hydrozone.
 - 3. All Special Landscape Areas shall be identified and their water use calculated as described below.
 - 4. ETAF for Special Landscape Areas shall not exceed 1.0.
- C. Maximum Applied Water Allowance (MAWA): The Maximum Applied Water Allowance shall be calculated using the equation:

$$\text{MAWA} = (\text{ETo}) (0.62) [(0.7 \times \text{LA}) + (0.3 \times \text{SLA})]$$

The example calculations below are hypothetical to demonstrate proper use of the equations and do not represent an existing and/or planned landscape project. The ETo values used in these calculations are for demonstration purposes only. For actual irrigation scheduling, automatic irrigation controllers are required and shall use current reference evapotranspiration data, such as from the California Irrigation Management Information System (CIMIS), other equivalent data, or soil moisture sensor data.

Example (1): MAWA calculation: a hypothetical landscape project in Fresno, CA with an irrigated landscape area of 50,000 square feet without any Special Landscape Area (SLA= 0, no edible plants, recreational areas, or use of recycled water). To calculate MAWA, the annual reference evapotranspiration value for Fresno is 51.1 inches.

$$\text{MAWA} = (\text{ETo}) (0.62) [(0.7 \times \text{LA}) + (0.3 \times \text{SLA})]$$

MAWA = Maximum Applied Water Allowance (gallons per year)

ETo = Reference Evapotranspiration (inches per year)

0.62 = Conversion Factor (to gallons)

0.7 = ET Adjustment Factor (ETAF)

LA = Landscape Area including SLA (square feet)

0.3 = Additional Water Allowance for SLA

SLA = Special Landscape Area (square feet)

$$\text{MAWA} = (51.1 \text{ inches}) (0.62) [(0.7 \times 50,000 \text{ square feet}) + (0.3 \times 0)]$$

$$= 1,108,870 \text{ gallons per year}$$

To convert from gallons per year to hundred-cubic-feet per year:

$$= 1,108,870/748 = 1,482 \text{ hundred-cubic-feet per year}$$

(100 cubic feet = 748 gallons)

Example (2): In this next hypothetical example, the landscape project in Fresno, CA has the same ETo value of 51.1 inches and a total landscape area of 50,000 square feet. Within the 50,000 square foot project, there is now a 2,000 square foot area planted with edible plants. This 2,000 square foot area is considered to be a Special Landscape Area.

$$\text{MAWA} = (\text{ETo}) (0.62) [(0.7 \times \text{LA}) + (0.3 \times \text{SLA})]$$

$$\text{MAWA} = (51.1 \text{ inches}) (0.62) [(0.7 \times 50,000 \text{ square feet}) + (0.3 \times 2,000 \text{ square feet})]$$

$$= 31.68 \times [35,000 + 600] \text{ gallons per year}$$

$$= 31.68 \times 35,600 \text{ gallons per year}$$

$$= 1,127,808 \text{ gallons per year or } 1,508 \text{ hundred-cubic-feet per year}$$

- D. Estimated Total Water Use (ETWU): The Estimated Total Water Use shall be calculated using the equation below. The sum of the Estimated Total Water Use calculated for all hydrozones shall not exceed MAWA.

$$\text{ETWU} = (\text{ETo})(0.62) \left(\frac{\text{PF} \times \text{HA}}{\text{IE}} + \text{SLA} \right)$$

Where:

- ETWU = Estimated Total Water Use per year (gallons)
- ETo = Reference Evapotranspiration (inches)
- PF = Plant Factor from WUCOLS
- HA = Hydrozone Area [high, medium, and low water use areas] (square feet)
- SLA = Special Landscape Area (square feet)
- 0.62 = Conversion Factor
- E = Irrigation Efficiency (minimum 0.71)

For the purpose of determining Maximum Applied Water Allowance and Estimated Total Water Use, average irrigation efficiency is assumed to be 0.71. Irrigation systems shall be designed, maintained, and managed to meet or exceed an average landscape irrigation efficiency of 0.71.

Example (1) ETWU calculation: landscape area is 50,000 square feet; plant water use type, plant factor, and hydrozone area are shown in the table below. The ETo value is 51.1 inches per year. There are no Special Landscape Areas (recreational area, area permanently and solely dedicated to edible plants, and area irrigated with recycled water) in this example.

Hydrozone	Plant Water Use Type(s)	Plant Factor (PF)*	Hydrozone Area (HA) (square feet)	PF x HA (square feet)
1	High	0.8	7,000	5,600
2	High	0.7	10,000	7,000
3	Medium	0.5	16,000	8,000
4	Low	0.3	7,000	2,100
5	Low	0.2	10,000	2,000
			Sum	24,700

*Plant Factor from WUCOLS

$$ETWU = (51.1)(0.62) \left(\frac{24,700}{0.71} + 0 \right)$$

= 1,102,116 gallons per year

Compare ETWU with MAWA: For this example MAWA = (51.1) (0.62) [(0.7 x 50,000) + (0.3 x 0)] = 1,108,870 gallons per year. The ETWU (1,102,116 gallons per year) is less than MAWA (1,108,870 gallons per year). In this example, the water budget complies with the MAWA.

Example (2) ETWU calculation: total landscape area is 50,000 square feet, 2,000 square feet of which is planted with edible plants. The edible plant area is considered a Special Landscape Area (SLA). The reference evapotranspiration value is 51.1 inches per year. The plant type, plant factor, and hydrozone area are shown in the table below.

Hydrozone	Plant Water Use Type(s)	Plant Factor (PF)*	Hydrozone Area (HA) (square feet)	PF x HA (square feet)
1	High	0.8	7,000	5,600
2	High	0.7	9,000	6,300
3	Medium	0.5	15,000	7,500
4	Low	0.3	7,000	2,100
5	Low	0.2	10,000	2,000
			Sum	23,500
6	SLA	1.0	2,000	2,000

*Plant Factor from WUCOLS

$$ETWU = (51.1)(0.62) \left(\frac{23,500}{0.71} + 2,000 \right)$$

$$= (31.68) (33,099 + 2,000)$$

$$= 1,111,936 \text{ gallons per year}$$

Compare ETWU with MAWA. For this example:
 MAWA = (51.1) (0.62) [(0.7 x 50,000) + (0.3 x 2,000)]
 = 31.68 x [35,000 + 600]
 = 31.68 x 35,600
 = 1,127,808 gallons per year

The ETWU (1,111,936 gallons per year) is less than MAWA (1,127,808 gallons per year). For this example, the water budget complies with the MAWA.

- 6.2 Effective Precipitation:** A local agency may consider Effective Precipitation (25% of annual precipitation) in tracking water use and may use the following equation to calculate Maximum Applied Water Allowance: MAWA= (ETo - Eppt) (0.62) [(0.7 x LA) + (0.3 x SLA)].
- 6.3 Irrigation Scheduling:** For the efficient use of water, all irrigation schedules shall be developed, managed, and evaluated to utilize the minimum amount of water required to maintain plant health. Irrigation schedules shall meet the following criteria:
- A. Irrigation scheduling shall be regulated by automatic irrigation controllers.
 - B. Applicant shall contact the Ventura County Water Works District to obtain current allowable hours of irrigation. In no case shall irrigation scheduling occur before 8:00 PM and 6:00 AM. Operation of the irrigation system

outside the normal watering window is allowed for auditing and system maintenance only.

- C. For implementation of the irrigation schedule, particular attention must be paid to irrigation run times, emission device, flow rate, and current reference evapotranspiration, so that applied water meets the Estimated Total Water Use. 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.
- D. Parameters used to set the automatic controller shall be developed and submitted for each of the following:
 - 1. The plant establishment period;
 - 2. The established landscape; and
 - 3. Temporarily irrigated areas.
- E. Each irrigation schedule shall consider for each station all of the following that apply:
 - 1. Irrigation interval (days between irrigation);
 - 2. Irrigation run times (hours or minutes per irrigation event to avoid runoff);
 - 3. Number of cycle starts required for each irrigation event to avoid runoff;
 - 4. Amount of applied water scheduled to be applied on a monthly basis;
 - 5. Application rate setting;
 - 6. Root depth setting;
 - 7. Plant type setting;
 - 8. Soil type;
 - 9. Slope factor setting;
 - 10. Shade factor setting; and
 - 11. Irrigation uniformity or efficiency setting.

6.4 Irrigation Audit, Irrigation Survey, and Irrigation Water Use Analysis

- A. All landscape irrigation audits shall be conducted by a certified landscape irrigation auditor.
- B. For new construction and rehabilitated landscape projects installed after January 1, 2010:
 - 1. the project applicant shall submit an irrigation audit report with the Certificate of Completion to the local agency that may include, but is not limited to: inspection, system tune-up, system test with distribution uniformity, reporting overspray or run off that causes overland flow, and preparation of an irrigation schedule;

2. The local agency shall administer programs that may include, but not be limited to, irrigation water use analysis, irrigation audits, and irrigation surveys for compliance with the Maximum Applied Water Allowance.

SECTION 7. PUBLIC RIGHT-OF-WAY

Special attention should be given to the planning and design of areas that are to be maintained by the City and/or are within the public right-of-way. These areas should utilize drought tolerant planting material, planting material that is low maintenance and utilize water conservation techniques without compromising the aesthetics of the design.

7.1 Parkways and Streetscapes: The design and layout of the streetscape is not only important to identify and individualize the project area, but also to capture the characteristics of Moorpark. The following goals should be considered:

- A. The street tree should be of the same species for each street to promote consistency and area identity.
- B. The streetscape must be designed with parkways.
- C. Sidewalks should meander whenever possible.
- D. Secondary trees outside of the right-of-way should consist of randomly spaced tree groves and informal massings.
- E. Trees and shrubs should be chosen to provide varying texture, color and form.
- F. The landscaping should be consistent with the architectural theme.
- G. Shrub plantings should consist of layers of planting of varying heights.
- H. General Streetscape Requirements:
 1. There shall be a minimum of one (1) shrub or perennial per ten (10) s.f. and one (1) tree per four-hundred (400) s.f., exclusive of street trees located within the parkway area.
 2. Shrubs shall be minimum 5-gallon size.
 3. Accent and perennials shall be located in groupings or massings along the planting edges at a distance not to exceed twenty feet (20)' on center. The accent and perennial groupings are exclusive of the shrub-planting requirement. Accent and perennial plant massings shall consist of minimum 1-gallon container size plants with a minimum of fifty (50) plants per grouping. Larger groupings at a distance greater than thirty feet (30') may be installed with City approval provided the plant quantities are met.
 4. With the exception of street trees and median island trees, the minimum tree size is 24" box.

5. All shrub areas shall be installed with flatted groundcover unless the landscape is installed with container plantings that will fill in within one year.
6. All shrub areas shall be installed with minimum two-inch (2") depth of bark mulch.
7. All planting shall be drought tolerant and low maintenance.
8. Six-inch (6") wide concrete headers shall be installed between turf and shrub areas and shall delineate landscape maintenance areas.

I. Street Tree Requirements:

1. Street trees should be spaced according to the mature canopy size of the tree, but in no circumstance should the spacing exceed thirty feet (30') on center without City approval.
2. Street trees shall be minimum 24" box size with minimum 1 ¼" caliper. Trees shall be between eight (8') to twelve (12)' height with a minimum two foot (2') wide spread.
3. Trees shall be standard trunk, not multi-trunk.
4. All street trees within ten feet (10') of walks, curbs, or other hardscape areas shall be installed with a linear root barrier ten feet (10') in length by twenty-four inch (24") in depth installed against the hardscape area centered on the tree trunk.
5. Trees shall be located per the sight distance requirements established by the City Engineer at intersections. Unless otherwise determined by the City Engineer, street trees shall not be closer than twenty-five (25') to the back of curb return.
6. Street trees shall be located no less than five feet (5') from curbs, sidewalks and other hardscape areas, unless they are located in parkways. Trees within parkways shall be centered in the parkway.
7. Street trees shall be located no less than ten feet (10') from utility poles and light standards, fire hydrants, utility structures and driveway aprons.
8. Trees that may exceed twenty feet (20') vertical height at maturity shall not be located under utility lines.

7.2 Median Island Planting Requirements

A. General Requirements:

1. There shall be a minimum of one (1) shrub per ten (10) s.f. and one (1) tree per four-hundred (400) s.f.
2. Shrubs shall consist of minimum 5-gallon container sizes.
3. In median islands ten feet (10') wide or greater, accent and perennials shall be located in massings along the planting edges at a distance not to exceed thirty feet (30') on center and shall be exclusive of the shrub-planting requirement. Accent and perennial plant massings shall consist of minimum 1-gallon container size plants with a minimum of twenty-five (25) plants per grouping. Larger groupings at a distance greater than thirty feet (30') may be installed provided the plant quantities are met.
4. Median island trees shall be minimum 24" box size.

5. All shrub areas shall be installed with flatted groundcover unless the landscape is installed with container plantings that will fill in within one year.
6. All shrub areas shall be installed with minimum two-inch (2") depth of bark mulch.
7. Turf is not allowed in the median islands.
8. All planting shall be drought tolerant and low maintenance.
9. All trees shall be installed with a linear root barrier ten feet (10') in length by twenty-four inch (24") in depth installed against the hardscape area centered on the tree trunk.

B. Planting Design Requirements:

1. Median island trees shall consist of a variety of tree species of varying form, texture and color. Flowering and canopy trees are encouraged.
2. Trees shall be located per the sight distance requirements established by the City Engineering Department. Trees shall not be installed adjacent to a turn pocket.
3. Shrubs located adjacent to the turn pocket shall not exceed eighteen inches (18") in height. Larger shrubs are permitted at a distance of twenty feet (20') from the beginning of the turn pocket, but shall not exceed thirty inches (30") in height.
4. Turf is not permitted in median islands.
5. An eighteen-inch (12") wide decorative hardscape edge shall be installed along the entire length of the median island adjacent to the curb for maintenance. The hardscape band shall consist of either colored, stamped concrete, or concrete pavers, to match the architectural theme of the project.

SECTION 8. COMMERCIAL, INDUSTRIAL AND MULTI-FAMILY PROJECTS

Landscape screening is particularly important with respect to commercial, industrial and multi-family street frontages. The large building mass, parking areas and maintenance staging areas are all relatively visible from the street frontage and require landscaping to soften the architecture and screen utility structures.

A. General Planting Requirements:

1. Minimum percentage of landscape coverage shall be provided within on-site parking areas consistent with Chapter 17.32 of the Moorpark Municipal Code.
2. There shall be a minimum of one (1) shrub per one-hundred (100) s.f. and one (1) tree per five-hundred (500) s.f., exclusive of street trees located within the parkway area.
3. Shrubs shall consist of eighty percent (80%) 5-gallon and twenty percent (20%) 1-gallon of each variety.
4. Turf shall only be allowed in passive or active 'recreational' areas, provided the project Water Budget is achieved (See Section 6). Turf shall not exceed ten percent (10%) of the total landscape area without prior City approval.

5. Large groupings of accent, perennials and annuals are required.
6. Trees shall be a minimum seventy-five percent (75%) 24" box and twenty-five percent (25%) 15-gallon.
7. All shrub areas shall be installed with flatted groundcover unless the landscape is installed with container plantings that will fill in within one year.
8. All shrub areas shall be installed with minimum two-inch (2") depth of bark mulch.
9. The planting palette shall be consistent with these standards and guidelines.
10. Turf shall not be installed on slopes that exceed 4:1.

B. Planting Design Requirements:

1. The landscape buffer shall consist of tall vertical trees adjacent to the building and lower canopy trees adjacent to the street frontage.
2. The tree planting shall consist of a mixture of evergreen, deciduous and flowering trees.
3. All utilities, trash enclosures, maintenance staging areas, etc. shall be screened from view.
4. A parkway with street trees shall be installed at the street frontage.
5. Large specimen trees and enhanced landscaping shall be located at the entry locations. Specimen trees shall be minimum 36" box size.
6. Parking areas should be screened from public view from the street.

SECTION 9. UTILITIES

To reduce the visibility of generally unattractive utility equipment, landscape screening shall be incorporated. For the purpose of these standards and guidelines, utility structures are any appurtenances that are above ground and have been installed in conjunction with new construction or are existing and part of a newly renovated project (i.e. electric meters, transformers, irrigation equipment, air conditioning units, etc.). The landscape plans shall identify all utility structures on site and provide appropriate screening.

A. General Design Requirements:

1. All utility structures shall be screened from view with appropriate landscaping. Minimum 15-gallon container size shrubs are required.
2. Utility structures shall utilize camouflage, disguising the facility as a natural or more aesthetically pleasing man-made object to soften its visual impact on its surroundings.
3. Access to utility structures shall be maintained, while at least seventy-five percent (75%) of the structure shall be screened from view.
4. Bollards shall not be installed with any new utility equipment unless required by governing agency.
5. All utility equipment shall be located at the rear of the property.
6. All utility equipment shall be located in shrub areas with a minimum of three feet (3') clear distance around all sides for appropriate landscape screening.

7. Screening shall take into consideration traffic sight distance requirements established by the City Engineer.

SECTION 10. PARKING AREAS

Parking lots should be designed to provide ease of access and safety as well as to enhance the visual quality of the City. The ultimate goal of the design is to provide a safe environment, minimize the visual appearance of the large expanse of asphalt and to reduce glare, ambient temperature and traffic noise.

A. General Design Requirements:

1. A minimum of ten percent (10%) of the total parking area shall consist of landscaping. Landscaping shall be computed on the basis of the net parking facility, which includes parking stalls (covered and uncovered), aisles and walkways, but does not include required landscaping adjacent to streets and within the public right-of-way.
2. All parking rows shall terminate with a planter or island that is a minimum of eight-foot (8') width with a twelve inch (12") decorative concrete step-out adjacent to each curb face, for a step out which has a total width of eighteen inches (18"), parallel to the parking stalls. Parking rows shall not exceed forty feet (40') in length without the addition of a diamond planter, planter finger or island.
3. A minimum of one (1) tree per every four (4) stalls is required to meet the shade requirement.
4. There shall be a minimum of one (1) shrub per ten (10) s.f.
5. Shrubs shall consist of eighty percent (80%) 5-gallon size and twenty percent (20%) 1-gallon size.
6. Interior shrub planting shall not exceed thirty inches (30") in height.
7. Turf is not allowed in parking areas.
8. Additional groupings of accent plants and perennials are required.
9. The minimum tree size is 24" box.
10. All shrub areas shall be installed with flatted groundcover unless the landscape is installed with container plantings that will fill in within one year.
11. All shrub areas shall be installed with minimum two-inch (2") depth of bark mulch.
12. The planting palette shall be consistent with these standards and guidelines.

B. Planting Design Requirements:

1. The parking area and parked cars shall be adequately screened from view from the street frontage with landscaping or Low profile walls, not exceeding three and one-half (3 1/2) feet in height, consisting of decorative concrete, stone, brick, or similar types of masonry materials consistent with the architecture of the on-site buildings and combined with on-site landscaping.
2. There shall be a minimum of fifty percent (50%) tree shade coverage of the parking area. This is determined at two-thirds (2/3) tree maturity or fifteen (15) years after installation.

3. A shade coverage exhibit must be submitted to the Community Development Director for review and approval.
4. A minimum of one (1) planter, eight feet (8') in width with a twelve inch (12") decorative concrete, or decorative paver step-out adjacent to each curb face, parallel to the parking stalls, shall be provided at a minimum of every forty (40) lineal feet, and at the terminus of every parking aisle.
5. A minimum of one (1) 'diamond' planter shall be provided at a minimum of every fourth stall within the parking area or adjacent to pedestrian or landscape areas, or near buildings as needed to obtain the shade coverage requirements.
6. A minimum of one (1) planter, eight feet (8') in width with a twelve inch (12") decorative concrete, or decorative paver step-out adjacent to each curb face, parallel to the parking stalls, shall be provided at every eight (8) stalls adjacent to the building or street frontage. Additional tree massings shall be included adjacent to these areas to provide the shade coverage required.
7. Decorative paving material is required to break up the large expanse of concrete or asphalt to the satisfaction of the Community Development Director.
8. Landscape areas shall be designed so as to discourage pedestrians from crossing any landscape areas to reach building entrances or parked vehicles.
9. Landscape islands shall be designed with walkways that encourage pedestrian circulation through the parking area.
10. Wheel stops are not allowed.
11. An eighteen inch (18") wide decorative concrete band adjacent to the access side of the vehicle shall be installed adjacent to median islands and planter curbs for pedestrian access.
12. Median islands shall be a minimum of five feet (5') wide without a walkway and fifteen feet (15') wide with a five-foot (5'), walkway not including the curb. When the access side of a vehicle is parallel to a median island, the median island width shall be increased to accommodate an eighteen inch (18") decorative concrete step-out adjacent to the curb, (including the six inch wide curb).

SECTION 11. EROSION CONTROL AND NATURAL AREAS

Erosion control landscaping is required to reduce soil erosion and excessive runoff due to construction activities. Erosion control landscaping can also provide an aesthetically pleasing hillside with the proper selection of plant material and design intent.

A. General Design Requirements:

1. Slope planting design should incorporate three (3) levels of vegetation: ground cover, shrubs and trees. Each planting level should provide varying levels of height, texture and color.
2. 'Ornamental' orchards are strongly discouraged and shall only be considered on a case-by-case basis and accompanied by a long-term care and maintenance plan.
3. A minimum five-foot (5') wide Transition Zone of ornamental planting shall separate streets or sidewalks from native areas. The planting species

- chosen for these areas shall not be invasive or subject to naturalizing and shall be drought tolerant.
4. Pepper Trees are strongly discouraged except as specimen trees within the historic downtown area.
 5. Eucalyptus Trees are strongly discouraged and shall only be considered on a case-by-case basis.
 6. All manufactured slopes, three feet (3') or greater in vertical height, shall be planted with groundcover from cuttings, shrubs and trees. Hydroseed may be considered adjacent to naturalized areas with prior City approval.
 7. All manufactured slopes, five feet (5') or greater in vertical height, shall be installed with jute mesh or equal per City approval.
 8. Shrubs on slopes shall be planted at a minimum of one (1) shrub per one-hundred (100) square feet.
 9. Trees on slopes shall be planted at a minimum of one (1) tree per three-hundred-fifty (350) square feet.
 10. Minimum tree size is seventy-five percent (75%) 15-gallon and twenty-five percent (25%) 24" box.
 11. Minimum shrub size is sixty percent (60%) 5-gallon and forty percent (40%) 1-gallon.
 12. All slopes planted with cuttings shall be treated with a pre-emergent herbicide per the manufacturer's recommendations and must be identified on the landscape plans.
 13. Any existing slope area cleared by construction activity shall, at a minimum, be "re-vegetated" with a hydroseed mix, shrubs and trees and an automatic temporary irrigation system. The restoration requirement for cleared areas will be per the City's discretion. At a minimum, the cleared area shall be restored to its original condition and shall meet the minimum tree and shrub size and quantity requirements of this section.
 14. All existing vegetation shall be retained to the greatest extent possible. The City shall determine mitigation measures for the loss of existing trees.
 15. To the greatest extent possible, existing trees that cannot be preserved shall be relocated on site.
 16. All manufactured slopes shall be permanently irrigated with an automatic irrigation system.
 17. Unimproved disturbed and slope areas shall be landscaped within one-hundred-eighty (180) days following the issuance of a grading permit and/or within thirty (30) days prior to the issuance of a Certificate of Occupancy.
 18. Temporary slope erosion control plans are required if the unimproved areas are not permanently planted and irrigated through the rainy season.
 19. All slope erosion control plans, temporary slope erosion control plans and landscape plans that include disturbed areas, shall be approved prior to the issuance of a building permit and shall be submitted prior to the issuance of a grading permit.
 20. All hardscape structures such as bench drains and slough walls shall be designed to blend into the hillside with matching colored concrete or masonry color.
 21. All hardscape structures shall be screened with plant material.
 22. Slope landscaping for City maintained landscape areas shall not be accepted by the City until 100% planting coverage has been attained.

B. Planting Design Requirements:

1. Slope planting shall promote varying height, mass, texture, color and form. Large masses of shrubs shall be designed in groupings.
2. The slope planting must reinforce the theme of the hillside area.
3. Plant material shall reinforce the natural hillside terrain and/or general manufactured topography.
4. Low growing and medium size shrubs shall be placed at the lower slope areas in large massings. Medium and large shrub massings should be intermingled at the mid and upper slopes areas. Plantings must respect neighboring views (see fig. 12.1 & 12.2 in Attachment IX).
5. Canopy trees shall be placed at the lower slope areas and shall not grow above the height of the top of slope at view conditions. Canopy trees shall be placed in random clusters adjacent to property lines to open view corridors. Vertical trees shall be located at the upper slope areas adjacent to property lines at view conditions (see fig. 12.3, 12.4 in Attachment IX).
6. Trees located on large slopes shall be grouped in clusters to maintain a natural appearance.
7. Transitional planting must be provided between areas of introduced landscaping and areas to remain natural so that there is no stark break between ornamental landscaped areas and native areas.

C. Irrigation Design Standards:

1. All manufactured slopes shall be installed with a permanent, automatic irrigation system.
2. UVR PVC, or "browline", may be installed only on homeowner association or City maintained slopes with City approval. However, all toe-of-slope conditions shall be buried and installed with pop-up heads.
3. Private slopes shall be installed with buried PVC pipe.
4. All slope irrigation shall be installed with an approved means of backflow prevention.
5. Separate circuits shall be installed for top, toe and mid slope conditions.
6. Spray heads shall be designed to avoid bench drains. Heads shall be installed on both sides to maintain coverage.
7. Spray heads shall be designed with respect to the topography.
8. A master valve with flow sensor is required at all point of connections.
9. Rain sensing override devices are required.
10. Worst case pressure loss calculations shall be included for the circuit with the highest volume, the circuit with the longest run from the POC and the circuit at the highest elevation.
11. An irrigation schedule and laminated color coded controller chart shall be included within the irrigation controller box.
12. All necessary means shall be taken to prevent low head drainage. The plans must specify that any head that drains for more than sixty (60) seconds requires a check valve.

SECTION 12. RESIDENTIAL DEVELOPMENTS

12.1 Water-Efficient Model Home Requirements

- A. General: These requirements apply to all Residential Zones whenever model homes are involved. If there are two or more model homes, one shall be designed to meet the water-saving landscaping condition for residential tracts. Each "water-saving" model home shall contain exclusively low-water use plant materials and efficient irrigation systems with appropriate signs and information for prospective home buyers.
- B. Water Meter: Each model in the complex, including the low-water use model, shall be equipped with a water meter to generate records on how much water the landscape uses. The information will be used in public information materials about the model and the water-saving potential for low-water use landscapes.
- C. Plant Material: All plants used are to be low-water using types and readily available in Ventura County or other nearby sources. The plants used should be attractive, including some flowering types, require relatively little maintenance once established, and enhance the appearance of the model.
- D. Use of Lawn: The Water-Efficient model shall meet the Water Budget requirements of Section 6. In no case shall the turf area of the Water-Efficient model exceed fifteen percent (15%) of the net landscaped area. The net landscaped area is the gross area minus the house foot print, the driveway, detached garage, attached covered patio, slopes of 4:1 ratio or steeper. Low-water use varieties of lawn shall be used.
- E. Irrigation System: The irrigation system serving a low-water use landscape shall include a bubbler and/or drip irrigation system. Any sprinklers shall be located properly to minimize overspray onto unplanted areas. Moisture sensors shall be used with a sign and diagram indicating their locations. The moisture sensor will override the controller if the soil is too wet to require irrigation. The irrigation controller shall utilize real time evapotranspiration data.
- F. Signs: Signs identifying aspects of the landscape design and irrigation shall be placed around the model. These signs should be clearly marked on the landscape plan for the model. The criteria below should be used in developing and placing the signs.
 - 1. Entrance Sign: A maximum four (4) square foot sign shall be located in front of or at the entrance to the model home. The sign shall indicate that the model is landscaped with low-water using or drought tolerant plant materials and that an efficient irrigation system has been used.
 - 2. Identification Signs: Small, maximum one (1) square foot, Identification signs shall be placed throughout the landscaped area identifying the irrigation system used, the different sub-areas of the landscape, and any other features that contribute to the overall water conservation theme (hardscapes, redwood bark, mulch). One (1) sign shall identify the moisture sensor in the display.

3. Interior Signs or Displays: A drawing or combination of drawings should be displayed inside the model providing a schematic of the landscape. These drawings should include a key identifying the plants in the yard. It is suggested that this schematic also be printed in a one (1) page handout to be available at the model or the sales office. The drawings could be simplified renderings of the landscape plan itself, using common names rather than the botanical names for the plants. The drawings should be colorful, easy to read, and framed for protection.

- G. Literature: A package of literature describing water conserving landscaping shall be given out to individuals upon purchase of a home in the tract. This literature and additional materials shall be displayed inside the model home, also enclosed in a frame, with a note indicating where this material can be obtained.

12.2 Private Front Yards: Residential landscapes are those which occur on private property outside the street right-of-way. These areas are installed and maintained by the homeowner. Front yard landscapes that are maintained by a homeowners association shall meet the requirements of Section 8. In addition, homeowners association maintained landscape areas or private maintained landscape areas that exceed five thousand (5,000) square feet, shall meet the Water Budget requirements of Section 6.

The following suggestions are provided to assist the homeowner in establishing a well conceived and balanced landscape design with the emphasis on allowing the maximum amount of creativity as possible while still meeting the intent of these guidelines:

A. Water Conservation:

1. Turf areas should be limited to one-third (1/3) of the total landscape area. The remaining area should include one-third (1/3) shrubs/groundcover and one-third (1/3) hardscape.
2. Irrigated areas should be separated between turf and shrub/groundcover areas. This allows for different watering schedules to meet the various water needs of different plant materials.
3. Automated irrigation controllers and remote control valves should be utilized to efficiently monitor watering schedules. This prevents accidental all night watering and also provides freedom to leave the landscape for prolonged periods of time without creating stress conditions.
4. Irrigation design should include properly sized sprinkler heads (spray radius) and provide head to head spacing of sprinklers to insure adequate coverage.
5. Water overspray should be kept to a minimum of one foot (1') to two feet (2') on hardscape surfaces and avoid spraying on walls and fences.
6. Bubbler and drip irrigation is encouraged for use in small landscape areas.

7. Turf varieties should be selected for durability and reduced water needs. Alta fescue and Bermuda hybrids (with perennial rye grass used as a "nurse crop" in winter) are encouraged.
8. Shrubs selected should be compatible with the climatic conditions of the inland valleys (hot and cold) and drought tolerant.

B. Planting:

1. Trees should be selected based on their size at maturity.
2. A balance of evergreen and deciduous (leafless in winter) trees should be planted to provide a seasonally changed landscape.
3. Shrubs and groundcovers should be selected based on their eventual size to avoid an "overgrown" or butchered appearance.
4. Foreground and background relationships should be utilized in shrub and groundcover plantings.
5. Screening (planting of trees and/or shrubs of undesirable views is encouraged).
6. View opportunities should be maintained as a courtesy to adjacent property owners.

C. Installation: All planting areas should be loosened to a depth of six inches (6") and rototilled in two (2) directions with soil amendments and conditioners as required by soil type.

D. Maintenance:

1. Landscape areas should be maintained in an attractive condition at all times.
2. Regular fertilization with a well-balanced fertilizer should be done to avoid stressed conditions and prevent disease.

E. Safety:

1. Water overspray on hardscape areas should be avoided and kept to a minimum.
2. Pop-up sprinkler heads on swing joints should be used along walkways to avoid a "trip hazard".

12.3 Street Trees: It is the goal of the City of Moorpark to create an overall cohesive theme in terms of street tree design and species selection. Street trees should be incorporated into the overall landscape theme of the development. The designer shall refer to the approved Street Tree List. The following guidelines serve to create a visible community character that will foster a unique image:

A. Planting Design: Within all residential projects, minimum 24" box size street trees shall be planted as follows:

1. Cul-de-sac: minimum one tree per street frontage (maximum thirty feet (30') on center).
2. Interior Lot: minimum one tree per street frontage (maximum thirty feet (30') on center).

3. Corner Lot: minimum three trees per street frontage (maximum thirty feet (30') on center).

12.4 Streetscape Concept: The Streetscape Concept is the primary landscape framework for the City of Moorpark. The intention is to establish the theme for each major street in the City. The streetscape components consist of sidewalks, street trees, landscape areas behind the sidewalk, and median islands where they occur. Larger specimen trees should be planted at highly-visible focal points, such as entry gates, major intersections and other landmarks. Median islands along arterials should be planted with the same palette as adjacent parkways. A different, but complementary palette should be used along collector streets within the project and another different, but complementary palette along residential streets. Each palette may differ from area to area, but they should reflect the theme which is established by the arterial and collector streets. The designer shall verify final tree selection with the Community Development Director.

12.5 Walls and Fencing: The perimeter wall acts as a divider between residential and commercial areas from a street. The wall blocks noise and creates privacy. The treatment of wall can add special dimension to the streetscape concept. The design of walls should be consistent throughout neighborhoods of the City to create a community theme. The following are guidelines for walls which are located along streets, public space, the rear street of double frontage lots, and the side street yard of double frontage lots:

- A. Wall niches are prohibited. A minimum five-foot (5') planter area shall be provided for trees, shrubs and vines adjacent to all walls.
- B. Chain link, plastic and wood fencing is not permitted, except in rural areas, subject to Community Development Director approval.
- C. The minimum wall setback shall be determined by the Conditions of Approval for the project. Walls shall vary in setback to provide areas for landscape features that create interest and reduce the linear aspect of appearance of a walled street.
- D. Use of decorative masonry block, pilaster, wrought iron and other decorative treatments are required.
- E. Precision concrete is not permitted for walls adjacent to a street.
- F. The texture and color of walls shall match the theme of the development or adjacent surroundings.
- G. In residential areas the wall height shall be a minimum of six feet (6') when located in a street side yard. Wall heights in excess of six feet (6') shall require adjacent landscaping on the street side to soften the overall height.
- H. Walls over six feet (6') high and retaining walls over three feet (3') high require certification by a Registered Engineer.

- I. The use of vines, shrubs, and trees shall be required to break the monotonous pattern of the wall. Landscaping shall be approved by the Community Development Director.

ATTACHMENT I

**LANDSCAPE PLAN REVIEW CHECKLIST
(GENERAL REQUIREMENTS)**

APPLICANT'S NAME: _____

PROJECT NAME: _____

PERMIT/ENTITLEMENT NUMBER(S): _____

DATE: _____

1. Engineer's precise or rough grading plan must be included with submittal.
2. Architectural elevations and floor plans.
3. Fuel Modification Plan if applicable.
4. Plans are prepared by a California Licensed Landscape Architect. California Landscape Architect's seal is on all sheets. (all sheets must be wet signed for final approval)
5. Landscape Architect's company name, address, and phone number on all sheets.
6. Owner's name, address and phone number on all sheets.
7. Sheet index on title sheet.
8. Project type identified (e.g., public, private, homeowners association, etc.).
9. Water supply (e.g. potable, recycled, well water) and water purveyor with contact information is identified on the plan.
10. Applicant's signature and date with the statement 'I agree to comply with the requirements of the Model Water Efficient Landscape Ordinance.'
11. All sheets clearly labeled.
12. Vicinity map and location map with project site clearly identified.
13. North arrow and scale on all applicable sheets.
14. 'landscape inspection schedule' on title sheet (see attached)
15. Signature block on title sheet (see attached)
16. All property lines, easements, public r.o.w., sidewalks, curbs and gutters are clearly identified.
17. All slopes, include top and toe, are clearly identified.
18. All site utilities are clearly identified.
19. All existing and proposed structures are clearly identified. Notation is included identifying which structures are to be removed and which will be protected in place.
20. All existing and proposed trees and shrubs are clearly labeled. Notation is included identifying which are to be removed and which will be protected in place.

Comments: _____

LANDSCAPE PLAN REVIEW CHECKLIST
(SLOPE PLANTING PLAN REQUIREMENTS)

APPLICANT'S NAME: _____
PROJECT NAME: _____
PERMIT/ENTITLEMENT NUMBER(S): _____
DATE: _____

1. A horticultural soils analysis with recommendations is attached to the plans. The soils analysis is performed by a laboratory of the California Association of Agricultural Laboratories. Soil sample is taken after site grading and date is included on the report.
2. All slopes greater than 3' vertical height are planted with groundcover from cuttings, shrubs and trees. Hydromulch is used in areas only with prior city approval.
3. All slopes greater than 5' vertical height are installed with jute mesh or equal.
4. Shrubs on slopes are planted at a minimum of 1 shrub per 100 square feet.
5. All slopes adjacent to major roads, 'entry' to projects sites and other highly visible areas are 'enhanced' with shrubs and trees that exceed the minimum quantity and size requirement.
6. Trees on slopes are planted at a minimum of 1 tree per 350 square feet.
7. A calculation is provided showing total slope landscape area, total number of trees with tree sizes and total number of shrubs with shrub sizes.
8. Plant material is suitable for climatic conditions.
9. Each hydrozone shall have plant materials with similar watering needs.
10. Plant material is suitable for slope areas.
11. Plant material is consistent with City approved plant list.
12. Minimum tree size on slopes is seventy-five percent (75%) 15-gallon and twenty-five percent (25%) 24" box.
13. Minimum shrub size on slopes is (60%) 5 gal., (40%) 1 gal.
14. Plans clearly identify plant locations.
15. Plant quantity and sizes are clearly identified on the plans and in legend.
16. Planting legend identifies botanical and common name.
17. Groundcover spacing is shown in the legend.
18. A pre-emergent herbicide is identified on the landscape plans for all landscape areas where hydroseed is not proposed.
19. Hydroseed mix is included if applicable. Mix identifies seed type and lbs. /acre.
20. Planting details are consistent with city standards.
21. Planting notes and specifications are provided.
22. Notation is included that trees planted within 10' of sidewalk, curb or other hardscape areas must have a linear root barrier installed. Root barrier must extend 5 feet in both directions from the center of the tree and be a minimum of 24" depth.
23. A Planting and Irrigation Maintenance Schedule is provided.
24. Planting plans for commercial, industrial, residential and Homeowners Association areas must include notation that a ninety (90) day maintenance period is required and that expenses are to be paid for by the owner. The City's landscape representative shall inspect all landscape areas for installation and

- maintenance compliance after the ninety (90) day maintenance period has ended. 100% plant survivability shall be required.
25. Planting plans for City maintained areas and Landscape Maintenance Districts must include notation that a one (1) year maintenance period is required and that the expenses are to be paid for by the owner. The City's landscape representative shall inspect the landscape areas for installation and maintenance compliance after the one (1) year maintenance period has ended. 100% plant survivability and 100% coverage shall be required.
 26. The WUCOLS plant factor for each plant species identified on the plan shall be listed in the plant legend.
 27. The plans 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". Statement shall be signed and dated by the project landscape architect.

Comments: _____

LANDSCAPE PLAN REVIEW CHECKLIST
(PLANTING PLAN REQUIREMENTS)

APPLICANT'S NAME: _____
PROJECT NAME: _____
PERMIT/ENTITLEMENT NUMBER(S): _____
DATE: _____

1. A horticultural soils analysis with recommendations is attached to the plans. The soils analysis is performed by a laboratory of the California Association of Agricultural Laboratories. Soil sample is taken after site grading and date is included on the report.
2. All above ground utilities are shown with adequate plant screening or camouflaging. Minimum 15-gallon size screen plants are specified.
3. All maintenance staging areas and utilitarian structures such as trash enclosures and maintenance buildings are shown with adequate plant screening.
4. Plant material is suitable for climatic conditions.
5. Plant material is consistent with City approved plant list.
6. Each hydrozone shall have plant materials with similar watering needs.
7. A 2" layer of bark mulch is specified for all shrub planting areas.
8. Minimum shrub sizes are met.
9. All planting areas adjacent to major roads, 'entry' to projects sites and other highly visible areas are 'enhanced' with shrubs and trees that exceed the minimum quantity and size requirement.
10. Plans clearly identify plant locations.
11. Plant quantities and sizes are clearly identified on the plans and in legend.
12. Planting legend identifies botanical and common name.
13. Groundcover spacing is shown in the legend.
14. A pre-emergent herbicide is identified on the landscape plans for all landscape areas where hydroseed is not proposed.
15. Planting details are consistent with city standards.
16. Planting notes/specifications are provided.
17. Notation is included that all trees planted within 10' of sidewalk, curb or other hardscape areas must have a linear root barrier installed. Root barrier must extend 5 feet in both directions from the center of the tree and be a minimum of 24" depth.
18. All street trees are planted minimum 5' from walks or other hardscape areas unless within parkways. Trees within parkways shall be centered within the parkways.
19. All street trees are planted minimum 10' from utility poles and light standards, fire hydrants, sewer lines and utility structures.
20. All lots have minimum (1) one street tree and minimum (1) secondary tree per lot.
21. All street trees are minimum 24" box size. All secondary trees are minimum 15-gallon size.
22. All corner lots have minimum (3) three street trees per lot. Tree spacing does not exceed 30' on center.
23. Minimum plant quantity for multi-family or commercial projects is one (1) tree per 500 square feet and one (1) shrub per one hundred (100) square feet, exclusive of street trees.

24. Tree size for multi-family or commercial projects is seventy-five percent (75%) 24" box and twenty-five percent (25%) 15-gallon.
25. Shrub size for multi-family or commercial projects is eighty percent (80%) 5-gallon and twenty (20%) 1-gallon.
26. Turf does not exceed 10% of the total landscape area, is only allowed in designate passive or active 'recreational' areas and must meet the project Water Budget.
27. Street tree spacing does not exceed 30' on center.
28. Parking areas have minimum 50% shade coverage at 2/3 tree maturity or 15-years growth or one (1) tree per every 4 stalls in a row.
29. Parking area trees are minimum 24" box size.
30. A minimum of one (1) planter, eight feet (8') in width with an eighteen inch (18") decorative concrete step-out adjacent to each curb face, parallel to the parking stalls, is provided at a minimum of every forty (40) lineal feet, and at the terminus of every parking aisle.
31. A minimum of one (1) 'diamond' planter is provided at every fourth stall within the parking area or as needed to obtain the shade coverage requirement.
32. A minimum of one (1) planter, eight feet (8') in width with an eighteen inch (18") decorative concrete step-out adjacent to each curb face, parallel to the parking stalls, is provided at every eight (8) stalls adjacent to the building or street frontage. Additional tree massings are included adjacent to these areas to provide the shade coverage required and soften the architectural façade.
33. Parks have a minimum of 55 trees per gross acre. However, the minimum requirement may be reduced if the park has 'active' recreational activities.
34. Park trees are minimum forty percent (40%) 24" box and sixty percent (60%) 15-gallon.
35. A calculation is provided showing total project area, total landscaped area, total number of trees with tree sizes and total number of shrubs with shrub sizes.
36. A Planting and Irrigation Maintenance Schedule is provided.
37. Planting plans for commercial, industrial, residential and Homeowners Association areas must include notation that a ninety (90) day maintenance period is required and that expenses are to be paid for by the owner. The City's landscape representative shall inspect all landscape areas for installation and maintenance compliance after the ninety (90) day maintenance period has ended. 100% plant survivability shall be required.
38. Planting plans for City maintained areas and Landscape Maintenance Districts must include notation that a one (1) year maintenance period is required and that the expenses are to be paid for by the owner. The City's landscape representative shall inspect the landscape areas for installation and maintenance compliance after the one (1) year maintenance period has ended. 100% plant survivability and 100% coverage shall be required.
39. The WUCOLS plant factor for each plant species identified on the plan shall be listed in the plant legend.
40. The plans 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". Statement shall be signed and dated by the project landscape architect.

Comments: _____

LANDSCAPE PLAN REVIEW CHECKLIST
(IRRIGATION PLAN REQUIREMENTS)

APPLICANT'S NAME: _____

PROJECT NAME: _____

PERMIT/ENTITLEMENT NUMBER(S): _____

DATE: _____

1. The irrigation system is automatic.
2. The plans identify the location and size of a designated water meter for irrigation water use.
3. The irrigation controller utilizes either evapotranspiration or soil moisture data.
4. A rain override device is specified on the plans.
5. The worst case pressure loss is calculated and shown for the valve with the most volume, the valve farthest from the water meter and the valve at the highest elevation.
6. The irrigation system is 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.
7. Drip emitters or bubblers with a designated control valve shall be installed for all trees on slopes exceeding 3:1.
8. The project Water Budget calculations are shown on the plans.
9. Overhead irrigation is not shown within 24 inches of any non-permeable surface unless the non-permeable surface drains to the landscape area. Allowable irrigation within the setback from non-permeable surfaces may include drip, drip line, or other low flow non-spray technology where runoff is eliminated.
10. An irrigation schedule is provided and shown on the plans. The irrigation schedule is designed so that the operating window is not within 8 hours of peak demand periods.
11. Notation is included stating that the backflow device must be tested a minimum of once a year.
12. Irrigation equipment is shown in shrub areas with adequate plant screening.
13. The locations and sizes of all water meters are shown. The plans reference who is responsible for the water meter and hook-up.
14. Spray heads are designed to provide full coverage.
15. All valves are designed with matched precipitation rates.
16. The irrigation system is designed to irrigation individual hydrozones.
17. The symbol, manufacturer, model #, and size of all irrigation equipment are clearly labeled in the legend.
18. The location of all irrigation equipment is clearly identified on the plan.
19. The backflow preventer is identified in the legend with a powder coated mesh or stainless steel enclosure. The model # and size of the enclosure is clearly labeled.
20. A master valve and flow meter are identified in the legend with model # and size clearly labeled.
21. Spray heads are listed in the legend with symbol, manufacturer, model #, radius, flow, pressure and precipitation rate.
22. Rotor heads are listed in the legend with nozzles grouped for matched precipitation rates.
23. Details are consistent with city standards.

24. Irrigation specifications are included.
25. The class and/or schedule for mainline, lateral line, and irrigation sleeves is shown in the legend.
26. The size of the mainline, lateral line and irrigation sleeves is shown on the plan.
27. Valve callouts identify the station and controller #, valve size and maximum gpm.
28. Operating pressure is within manufacturer's recommendations.
29. Flow velocities do not exceed 5' per second.
30. Irrigation system is matched per individual hydrozone.
31. Top and bottom of slopes must be irrigated separately.
32. Equipment used is within manufacturer's recommendations.
33. All pipes and wires under paving must be sleeved. Sleeves must be of sufficient size for number of wires and size of pipe (minimum 2x's diameter of pipe enclosed).
34. Pop-up heads are installed adjacent to pedestrian traffic. System must be designed to minimize overspray.
35. Riser heads are not installed where highly visible from public view.
36. Head radius must not be reduced more than 15% of nozzle size to minimize overspray.
37. The following statement: "I have complied with the criteria of the ordinance and applied them accordingly for the efficient use of water in the irrigation design plan" is signed and dated by the project landscape architect shown on the plan.

Comments: _____

LANDSCAPE PLAN REVIEW CHECKLIST
LANDSCAPE INSPECTION REQUIREMENTS
(CITY MAINTAINED AREAS)

SCHEDULE:

The City's landscape representative will inspect for installation compliance with the approved landscape plans. Contractor shall notify the City's landscape representative 48 hours in advance of each of the required inspection:

1. Pressure test of irrigation mainline. To be completed prior to backfilling trenches.
2. Irrigation coverage tests. Coverage test shall be completed prior to any planting.
3. After trees and shrubs are spotted, but prior to planting.
4. Final inspection: at the start of the one-year maintenance period. Preliminary Certificate of Compliance may be granted at this time.
5. Document submittal: As-built plans, backflow assembly certifications, soils analysis reports, four (4) sets of controller keys, laminated controller charts, product data and warranties. Digital pdf and AutoCAD file format of all landscape and as-builts plans. 60 days prior to the end of the maintenance period.
6. Final Certificate of Compliance: at the end of the one-year maintenance period or as specified by the City's Community Development Director.

*must be included on the title sheet

LANDSCAPE PLAN REVIEW CHECKLIST
LANDSCAPE INSPECTION REQUIREMENTS
(HOMEOWNERS ASSOCIATION, COMMERCIAL
AND OTHER NON-CITY MAINTAINED LANDSCAPE AREAS)

SCHEDULE:

The City's landscape representative will inspect construction for compliance with the approved landscape plans. Contractor shall notify the City's landscape representative 48 hours in advance of each of the required inspections:

1. Irrigation coverage test and planting inspection. The irrigation coverage test shall be completed concurrently with the planting inspection.
2. Final inspection: at the start of the 90-day maintenance period. Preliminary Certificate of Compliance may be granted at this time.
3. Document submittal: As-built plans, backflow assembly certifications, soils analysis reports, four (4) sets of controller keys, laminated controller charts, product data and warranties. 30 days prior to the end of the maintenance period.
4. Final Certificate of Compliance: at the end of the 90-day maintenance period or as specified by the City's Community Development Director.

*must be included on the title sheet

**LANDSCAPE PLAN REVIEW CHECKLIST
CITY APPROVAL BLOCK
(Must be included on Title Sheet)**

**APPROVED
CITY OF MOORPARK**

These plans have been reviewed and found to be in compliance with relevant sections of the Moorpark Municipal Code and the Conditions of Approval for (Permit Case No.) and (Permit Case No.). Landscaping and Irrigation shall be installed on the subject property substantially as shown herein.

Approved by: _____
Community Development Director

ATTACHMENT II

GENERAL RECOMMENDED PLANT LIST

The City reserves the right to approve or reject any of the plant species listed at any time. Prior City approval is required. Note that plant species listed in bold are native to California, and those noted with (f) are fire retardant and may be suitable for use in fuel modification zones.

TREES

Botanical Name:

Aesculus californica
Agonis flexuosa
Albizia julibrissin
Alnus rhombifolia
Arbutus 'Marina'
Arbutus menziesii
Arbutus unedo
Bauhinia variegata
Brachichiton acerifolius
Brachychiton populneus
Callistemon citrinus (f)
Calocedrus decurrens
Callistemon viminalis (f)
Cassia leptophylla
Cedrus deodara
Cercidium floridum
Cercidium microphyllum
Cercidium praecox
Cercis Canadensis
Cercis occidentalis (f)
Cercocarpus betuloides
Chilopsis linearis
Chitalpa x tashkentnesis
Cinnamomum Camphora
Cupaniopsis Anacardiodes
Cupressus arizonica
Cupressus forbesii
Cupressus glabra
Cupressocyparis leylandi
Dracaena draco
Eriobotrya japonica
Eriobotrya deflexa
Fraxinus ornus 'Raywood'
Fraxinus veluntina 'Modesto'
Fraxinus veluntina 'Rio Grande'
Geijera parviflora
Ginko biloba (Male only)
Gleditsia triacanthos spp.

Common Name:

California Buckeye
Peppermint Myrtle
Silk Tree
White Alder
NCN
Madrone
Strawberry Tree
Purple Orchid Tree
Flame Tree
Bottle Tree
Lemon Bottlebrush
Incense Cedar
Weeping Bottlebrush
Gold Medallion Tree
Deodar Cedar
Blue Palo Verde
Foothill Palo Verde
Sonoran Palo Verde
Eastern Redbud
Western Redbud
Mountain Mahogany
Desert Willow
Chitalpa
Camphor Tree
Carrotwood
Arizona Cypress
Tecate Cypress
Smooth Arizona Cypress
Leyland Cypress
Dragon Tree
Loquat
Bronze Loquat
Raywood Ash
Modesto Ash
Rio Grande Ash
Australian Willow
Maidenhair Tree (grafted male)
Honey Locust

Heteromeles arbutifolia
Jacaranda mimosifolia
Juglans hindsii
Juglans californica
Koelreuteria paniculata
Lagerstroemia indica
Laurus nobilis
Leptospermum laevigatum
Ligustrum japonicum
Liquidambar styraciflua (cultivars)
Liriodendron tulipifera
Lophostemon confertus
Lyonathamnus floribundus var. asplenifolius
Magnolia grandiflora var.
Maytenus boaria 'Green Showers'
Melaleuca linarifolia
Melaleuca nesophila
Melaleuca styphelioides
Melaleuca quinquenervia
Metrosideros excelsus
Myrica californica
Olea europaea (fruitless)
Olneya tesota
Parkinsonia aculeate
Photinia serrulata
Pinus spp.
Pistacia chinensis
Pittosporum rhombifolium
Platanus acerifolia 'Bloodgood' (f)
Platanus acerifolia 'Yarwood' (f)
Platanus racemosa (f)
Podocarpus gracilior
Podocarpus macrophyllus
Populus fremontii (f)
Prosopis alba
Prosopis chilensis
Prosopis glandulosa
Prosopis juliflora
Prunus caroliniana (f)
Prunus ilicifolia
Prunus lyonii
Prunus cerasifera 'Atropurpurea'
Prunus cerasifera 'Krauter Vesuvius'
Prunus lyonii (f)
Pyrus calleyana 'Aristocrat'
Pyrus calleryana 'Bradford'
Pyrus calleyana 'Capitol'
Pyrus calleyana 'Red Spire'
Pyrus calleyana 'Chanticleer'
Pyrus kawakamii
Quercus douglasii.

Toyon
Jacaranda
Northern California Black Walnut
California Black Walnut
 Golden Rain Tree
 Crape Myrtle
 Sweet Bay
 Australian Tea Tree
 Japanese Privet
 Sweet Gum
 Tulip Tree
 Brisbane Box
Island (Catalina) Ironwood
 Southern Magnolia
 Showers Mayten Tree
 Flaxleaf Paperbark
 Pink Melaleuca
 Black Tea Tree
 Cajeput Tree
 New Zealand Christmas Tree
Pacific Wax Myrtle
 Olive
Desert Ironwood
Mexican Palo Verde
 Chinese Photinia
Pine
 Chinese Pistache
 Queensland Pittosporum
 Bloodgood Plane Tree
 Yarwood Plane Tree
California Sycamore
 Fern Pine
 Yew Pine
Western Cottonwood
 Argentine Mesquite
 Chilean Mesquite
Texas Mesquite
Mesquite
 Carolina Laurel Cherry
Hollyleaf Cherry
Catalina Cherry
 Purple Leaf Plum
 Black-leaf Plum
 Catalina Cherry
 Aristocrat Pear
 Bradford Pear
 Capitol Pear
 Red Spire Pear
 Chanticleer Pear
 Evergreen Pear
Blue Oak

Quercus agrifolia
Quercus engelmannii
Quercus ilex
Quercus lobata
Quercus suber
Quercus virginiana
Raphiolepis 'Majestic Beauty'
Rhus laurina (f)
Sambucus mexicana
Sambucus caerulea
Sapium sebiferum
Sequoia sempervirens
Sophora japonica
Tabebuia chrysotricha
Tabebuia impetiginosa
Ulmus parvifolia
Umbellularia californica

Coast Live Oak
Mesa Oak
Holly Oak
Valley Oak
Cork Oak
Southern Live Oak
Raphiolepis Tree
Laurel Sumac
Mexican Elderberry
Blue Elderberry
Chinese Tallow Tree
Coast Redwood
Japanese Pagoda Tree
Gold Trumpet Tree
Pink Trumpet Tree
Evergreen Elm
California Laurel

SHRUBS

Botanical Name:
Abelia grandiflora
Adenostoma fasciculatum
Agave spp.
Alyogyne cuneiformis
Alyogyne hakeifolia
Alyogyne huegelii
Arbutus unedo 'Compacta'
Arctostaphylos spp.
Arctostaphylos densiflora
Arctostaphylos edmundsii
Arctostaphylos 'Emerald Carpet'
Arctostaphylos hookeri
Arctostaphylos 'Pacific Mist'
Arctostaphylos uva-ursi
Baccharis spp.
Baccharis 'Centennial'
Baccharis pilularis
Baccharis sarathroides
Berberis pinnata
Bougainvillea spp.
Caesalpinia gilliesii
Caesalpinia mexicana
Caesalpinia pulcherrima
Calliandra californica
Calliandra eriophylla
Calliandra inaequilatera
Calliandra peninsularis
Callistemon spp. (f)
Callistemon citrinus (f)
Carpenteria californica

Common Name:
Abelia
Chamise
Agave
NCN
Red Centered Hibiscus
Blue Hibiscus
Dwarf Strawberry Tree
Manzanita
Manzanita
Little Sur Manzanita
Emerald Carpet
Monterey Manzanita
NCN
Bearberry
Coyote Bush
NCN
Coyote Bush
Desert Broom
California Barberry
Bougainvillea
Bird of Paradise Bush
Mexican Poinciana
Barbados Pride
Baja Fairy Duster
Fairy Duster
Pink Powder Puff
NCN
Bottlebrush
Lemon Bottlebrush
Bush Anemone

Cassia artemisioides	Feathery Cassia
Cassia nemophila	Desert Cassia
Cassia odorata	NCN
Cassia phyllodinea	Silvery Cassia
Ceanothus spp. (f)	California Lilac
Ceanothus arboreus	Catalina Ceanothus
Ceanothus 'Concha'	NCN
Ceanothus 'Dark Star'	NCN
Ceanothus 'Frosty Blue'	NCN
Ceanothus gloriosus	Point Reyes Ceanothus
Ceanothus griseus	Carmel Ceanothus
Ceanothus impressus	Santa Barbara Ceanothus
Ceanothus 'Joyce Coulter'	NCN
Ceanothus 'Julia Phelps'	NCN
Ceanothus maritimus	Maritime Ceanothus
Ceanothus 'Ray Hartman'	NCN
Ceanothus rigidus	Monterey Ceanothus
Ceanothus thyrsoiflorus	Blue Blossom
Ceanothus 'Wheeler Canyon'	NCN
Chamelaucium uncinatum	Geraldton Wax Flower
Cistus spp. (f)	Rockrose
Cistus 'Doris Hibberson'	NCN
Cistus hybridus	White Rockrose
Cistus ladanifer	Crimson-spot Rockrose
Cistus purpureus (f)	Orchid Rockrose
Cistus salviifolius	Sageleaf Rockrose
Cistus skanbergii	NCN
Cistus Sunset	NCN
Cleome isomeris	Bladderpod
Comarostaphylis diversifolia	Summer Holly
Coprosma kirkii	NCN
Cordia boissieri	Wild Olive
Cordia parvifolia	NCN
Correa alba	White Correa
Correa 'Dusky Bells'	NCN
Correa 'Ivory Bells'	NCN
Correa pulchella	NCN
Correa schlechtendalii	NCN
Cotoneaster lacteus	Parney Cotoneaster
Cuphea hyssopifolia	False Heather
Dendromecon harfordii	Island Bush Poppy
Dendromecon rigida	Bush Poppy
Dodonaea viscosa 'Purpurea'	Purple Hopseed Bush
Echium Fastuosum	Pride of Madiera
Encelia californica	Bush sunflower
Euphorbia characias	Mediterranean Spurge
Euphorbia ingens	Candelabra Tree
Euphorbia rigida	Narrow-leaf Glaucus
Escallonia spp.	Escallonia
Feijoa sellowiana	Pineapple Guava
Fremontodendron spp.	Flannel Bush

Fremontodendron californicum	California Flannel Bush
Fremontodendron mexicanum	Mexican Fremontia
Fremontodendron hybrids	NCN
Fremontodendron 'California Glory'	'California Glory' Fremontia
Fremontodendron 'Pacific Sunset'	NCN
Fremontodendron 'San Gabriel'	NCN
Fremontodendron 'Ken Taylor'	NCN
Grevillea banksii	Red Silky Oak
Grevillea 'Canberra Gem'	NCN
Grevillea lanigera	Woolly Grevillea
Grevillea noelii	Noel's Grevillea
Grevillea 'Poorinda Constance'	NCN
Grevillea thelemanniana	Hummingbird Bush
Grevillea victoriae	Royal Grevillea
Hakea suaveolens	Sweet Scented Hakea
Haplopappus spp.	Various Goldenbush (Mock Heather)
Heteromeles arbutifolia (f)	Toyon
Hybiscus syriacus	Rose of Sharon
Jasminum officinale	Common White Jasmine
Juniperus spp.	Juniper
Lavatera assurgentiflora	California Tree Mallow
Lavatera bicolor	NCN
Leptospermum scoparium	New Zealand Tea Tree
Leucophyllum candidum	Violet Silverleaf
Leucophyllum frutescens	Texas Ranger
Leucophyllum frutescens 'Compacta'	Dwarf Texas Ranger
Leucophyllum laevigatum	Chihuahuan Sage
Leptodactylon californicum	Prickly Phlox
Lobelia laxiflora	Mexican Bush Lobelia
Ligustrum lucidum	Glossy Privet
Lotus scoparius	Deerweed
Mahonia aquifolium	Oregon Grape
Mahonia 'Golden Abundance'	'Golden Abundance' Oregon Grape
Mahonia nevinii	Nevin's Barberry
Mahonia pinnata	California Grape
Mahonia repens	Creeping Mahonia
Malacothamnus fasciculatus	Bush Mallow
Malosma laurina	Laurel Sumac
Mimulus longiflorus	Sticky (Bush) Monkeyflower
Myrtus communis	Myrtle
Pithecellobium flexicaule	Texas Ebony
Pittosporum spp.	Mock Orange (some species)
Photinia fraseri	Photinia
Plecostachys serpyllifolia	NCN
Plumbago auriculata	Cape Plumbago
Prunus caroliniana (f)	Carolina Cherry
Prunus ilicifolia	Hollyleaf Cherry
Prunus lyonii (f)	Catalina Cherry
Punica granatum	Pomegranate
Pyracantha coccinea	NCN
Pyracantha 'Mohave'	NCN

Pyracantha 'Red Elf'	NCN
Pyracantha 'Ruby Mound'	NCN
Pyracantha 'Santa Cruz'	NCN
Pyracantha 'Teton'	NCN
Pyracantha 'Tiny Tim'	NCN
Quercus dumosa	Scrub Oak
Rhaphiolepis indica	India Hawthorne
Rhamnus alaternus (f)	Italian Buckthorn
Rhamnus californica (f)	Coffeeberry
Rhamnus crocea ilicifolia	Hollyleaf Coffeeberry
Rhaphiolepis spp.	Indian Hawthorn
Rhus integrifolia	Lemonade Berry
Rhus laurina	Laurel Sumac
Rhus ovata	Sugar Bush
Ribes aureum	Golden Currant
Ribes indecorum	Wild-flowered Currant
Ribes malvaceum	Chapparal Currant
Ribes speciosum	Fuchsia Flowering Currant
Rives viburnifolium	Evergreen Currant
Romneya coulteri	Matilija Poppy
Rosmarinus spp.	Rosemary
Ruellia californica	NCN
Ruellia peninsularis	NCN
Simmondsia chinensis	Goatnut
Sollya heterophylla	Australian Bluebells
Tagetes lemmonii	Mexican Bush Marigold
Tamarix pentandra, T. parviflora	Salt Cedar Tamarisks
Tecomaria capensis	Cape Honeysuckle
Trichostema lanatum	Woolly Blue Curls
Vitex agnus-castus	Chaste Tree
Westringia fruticosa	Coast Rosemary
Westringia longifolia	NCN
Westringia 'Wynyabbie Gem'	NCN
Xylosma congestum	Shiny Xylosma
Yucca spp.	Yucca

GROUND AND SLOPE COVER

Botanical Name:	Common Name:
Achillea spp. (f)	Yarrow
Arctostaphylos spp. (f)	Manzanita
Arctotheca calendula (f)	Yellow capeweed
Armeria merittima	Sea Pink
Artemisia spp.	Sagebrush
Atriplex spp.	Saltbush
Atriplex semibaccata	Creeping Saltbush
Baccharis pilularis (f)	Dwarf Coyote Brush
Baccharis 'Twin Peaks' or 'Pigeon Point'	Coyote Brush
Bougainvillea spp.	Bougainvillea
Carpobrotus Chilensis	Ice Plant
Carpobrotus edulis	Ice Plant

Ceanothus spp. (f)	California Lilac
Ceanothus griseus var. horizontalis	Carmel Creeper
Ceanothus griseus horizontalis 'Hurricane Pt.'	NCN
Ceanothus griseus horizontalis 'Yankee Pt.'	NCN
Ceanothus griseus 'Louis Edmonds'	NCN
Ceanothus griseus 'Santa Ana'	NCN
Cephalophyllum 'Red Spike'	Red Spike Iceplant
Cerastium tomentosum (f)	Snow in Summer
Cistus spp. (f)	Rockrose
Convolvulus cneorem	Bush Morning Glory
Convolvulus mauritanicus	Ground Morning Glory
Coprosma 'Verde Vista'	NCN
Cotyledon orbiculata	NCN
Cotyledon teretifolia	NCN
Cotyledon undulata	NCN
Cowania mexicana	Cliff Rose
Crassula falcate	Sickle Plant
Crassula multicava	NCN
Coreopsis aruiculata 'Nana'	Dwarf Coreopsis
Dalea greggii	Trailing Indigo Bush
Delsperma 'Alba'	White Trailing Iceplant
Drosanthemum floribundum	Rosea Ice Plant
Drosanthemum hispidum	NCN
Dymondia margaretae	Dymondia
Euonymus fortunei radicans (f)	Common Winter Creeper
Grevillea 'Noelli'	Noel Grevillea
Hypericum calycinum (f)	Creeping St. John's Wort
Iva hayesiana	Hayes Iva
Jasminum grandiflorum	Spanish Jasmine
Jasminum humile	Italian Jasmine
Jasminum mesnyi	Primrose Jasmine
Juniperus spp.	Juniper
Lantana montevidensis and hybrids (f)	Lavender Lantana and hybrids
Limonium pectinatum	Petite Sea Lavender
Lonicera japonica halliana	Hall's Honeysuckle
Maleophora spp.	Ice Plant
Mimulus longiflorus	Sticky (Bush) Monkeyflower
Myoporum pacificum	Prostrate Myoporum
Myoporum parvifolium (f)	Prostrate Myoporum
Oenothera berlandieri	Mexican Evening Primrose
Oenothera caespitosa	Tufted Evening Primrose
Oenothera stubbii	Baja Evening Primrose
Osteopermum fruticosum (f)	Trailing African Daisy
Polygonum aubertii	Silver Lace Vine
Pyracantha spp.	Firethorn
Ribes viburnifolium	Catalina Perfume
Rosa banksiae	Lady Bank's Rose
Rosmarinus officinalis var. (f)	Dwarf Rosemary
Scaevola 'Mauve Clusters'	NCN
Sedum spp.	Stonecrop
Senecia mandraliscae	NCN

Sophora secundiflora	Texas Mountain Laurel
Tecomaria capensis	Cape Honeysuckle
Teucrium chamaedrys 'Prostratum' (f)	Prostrate Germander
Thymus praecox	Mother-of-Thyme
Thymus pseudolanuginosus	Wooly Thyme
Thymus vulgaris	Common Thyme
Trachelospermum jasminoides	Star Jasmine
Verbena peruviana	NCN
Verbena rigida	Vervain
Verbena tenuisecta	Moss Verbena

FLOWERING PLANTS, SUCCULENTS, PERENNIALS, AND ACCENT PLANTS

Botanical Name:	Common Name:
Achillea spp.	Yarrow
Achillea clavennae	Silvery Yarrow
Achillea filipendulina	Fernleaf Yarrow
Achillea millefolium	Common Yarrow
Achillea taygetea	Yarrow
Achillea tomentosa	Woolly Yarrow
Adenostoma fasciculatum	Chamise
Aeonium spp.	NCN
Aesculus californica	California Buckeye
Agave spp.	Century Plant
Agave americana	Century Plant
Agave attenuate	Foxtail Agave
Agave deserti	Desert Agave
Agave shawii	Shaw's Century Plant
Agave victoriae-reginae	NCN
Agave vilmoriniana (f)	Octopus Agave
Aloe spp. (f)	Aloe
Aloe arborescens	Tree Aloe
Aloe bainesii	NCN
Aloe brevifolia (f)	Short-leaved Aloe
Aloe candelabrum	Candelabra Aloe
Aloe ciliaris	NCN
Aloe nobilis	Dwarf Aloe
Aloe striata	Coral Aloe
Aloe vera	Medicinal Aloe
Anigozanthos cultivars	Kangaroo Paws
Anisacanthus thurberi	Desert Honeysuckle
Anisodonteia hypomandarum	Dwarf Pink Hibiscus
Artemisia spp.	Sagebrush
Artemisia arborescens	Shrubby Wormwood
Artemisia californica	California Sagebrush
Artemisia 'Powis Castle'	NCN
Artemisia pycnocephala	Sandhill Sage
Asparagus sprengeri	Asparagus Fern
Asparagus myeri	Myer's Asparagus
Asteriscus maritimus	Gold Cup
Asteriscus sericeus	NCN

Atriplex spp.

Atriplex canescens

Atriplex glauca

Atriplex hymenelytra

Atriplex lentiformis

Baileya multiradiata

Brachycome multifida

Buddleia marrubiiifolia

Calochortus spp.

Centaurea cineraria

Centaurea gymnocarpa

Centranthus ruber

Cheiranthus 'Bowles Mauve'

Cistus spp.

Clarkia spp.

Convolvulus cneorum

Convolvulus mauritanicus

Coreopsis auriculata

Coreopsis gigantea

Coreopsis grandiflora

Coreopsis lanceolata

Coreopsis maritime

Coreopsis verticillata

Cotinus coggygria

Dalea frutescens

Dalea pulchra

Dietes bicolor

Dietes vegeta

Diplacus hybrids

Dudleya brittoni

Dudleya virens

Dudleya viscida

Echeveria agavoides

Echeveria crenulata

Echeveria imbricata

Echium fastuosum

Elymus condensatus 'Canyon Pride'

Encelia californica

Encelia farinose

Epilobium californica

Epilobium cana

Erigeron glaucus

Erigeron karvinskianus

Eriogonum spp.

Eriogonum arborescens

Eriogonum cinereum

Eriogonum crocatum

Eriogonum fasciculatum

Eriogonum giganteum

Eriogonum grande ssp. Rubescens

Eriogonum parvifolium

Saltbush

Four-wing Salt Bush

NCN

Desert Holly

Quail Bush

Desert Marigold

Cut-leaf Daisy

Woolly Butterfly Bush

Mariposa lily

Dusty Miller

Velvet Centaurea

Red Valerian

Shrubby Wallflower

Rockrose

Clarkia

Bush Morning Glory

Ground Morning Glory

Golden Coreopsis

Giant Coreopsis

NCN

NCN

Sea Dahlia

Thread-leafed Coreopsis

Smoke Tree

Black Dalea

Indigo Bush

Fortnight Lily

Fortnight Lily

Monkey Flower

Chalk Dudleya

Island Live-forever

NCN

NCN

NCN

NCN

Pride of Madeira

Wild Rye

California Encelia

Desert Encelia

California Fuchsia

Hoary California Fuchsia

Seaside Daisy

Mexican Daisy

Buckwheat

Santa Cruz Island Buckwheat

Ashyleaf Buckwheat

Conejo Buckwheat

Common Buckwheat

St. Catherine's Lace

Red Buckwheat

Coastal Buckwheat

Eriogonum umbellatum

Escallonia spp.

Eschscholzia californica

Festuca ovina glauca

Gaillardia grandiflora

Galvezia speciosa

Gaura lindheimeri

Helianthes tuberosus

Helianthemum nummularium

Helictotrichon sempervirens

Hemerocallis hybrids

Hesperaloe parvifolia

Heuchera maxima

Heuchera sanguinea

Iris douglasiana (f)

Keckiella antirrhinoides

Keckiella cordifolia

Kniphofia uvaria

Lantana spp.

Lavandula angustifolia

Lavandula dentate

Lavandula intermedia

Lavandula latifolia

Lavandula pinnata

Lavandula stoechas

Leonotis leonurus

Limonium perezii

Lupinus spp.

Melampodium leucanthum

Muhlenbergia rigens

Oenothera speciosa childsii

Optunia basilaris.

Opuntia ficus-indica

Opuntia lindheimeri var. linguiformis

Opuntia robusta

Penstemon centranthifolius

Penstemon eatoni

Penstemon heterophyllus

Penstemon Plameri

Penstemon Parryi

Penstemon Spectabilis

Penstemon superbus

Perovskia atriplicifolia

Phacelia spp.

Phlomis fruticosa

Phlomis lanata

Phormium cookianum var.

Phormium tenax var.

Plumbago auriculata

Portulaca grandiflora

Romneya coulteri

Sulphur Flower

Escallonia

California Poppy

Blue Fescue

Blanket Flower

Island Bush-snapdragon

Guara

Jerusalem Artichoke

Sunrose

Blue Oat Grass

Daylily

Red Yucca

Island Alum Root

Coral Bells

Pacific Coast Iris

Yellow Penstemon

Heart-leaved Penstemon

Red Hot Poker

Lantana

English Lavender

French Lavender

Lavandin

Spike Lavender

NCN

Spanish Lavender

Lion's Tail

Sea Lavender

Lupine

Blackfoot Daisy

Deer Grass

Mexican Evening Primrose

Beaver Tail Cactus

Indian Fig

Cow's Tongue

NCN

Scarlet Bugler

Firecracker Penstemon

Foothill Penstemon

NCN

NCN

Showy Penstemon

NCN

Russian Sage

Phacelia

Jerusalem Sage

NCN

Mountain Flax

New Zealand Flax

Cape Plumbago

Rose Moss

Matilija Poppy

Rosa spp.
 Salvia 'Allen Chickering'
Salvia apiana
 Salvia chamaedryoides
Salvia clevelandii
 Salvia greggii
 Salvia leucantha
Salvia leucophylla
Salvia mellifera
Salvia munzii
 Salvia officinallis
Salvia sonomensis
Salvia spathacea
 Santolina chamaecyparissus
 Santolina pinnata
 Santolina virens
 Senecio cineraria
 Sisyrinchium bellum
Sphaeralcea ambigua
 Stachys byzantina
 Tagetes lemmonii
 Teucrium chamaedrys
 Teucrium cossonii
 Teucrium fruiticans
 Tulbaghia violacea
 Verbena hybrids
 Vitis spp.
 Yucca gloriosa
 Yucca recurvifolia
Yucca whipplei
Zauschneria californica

Rose
 Allen Chickering Sage
White Sage
 NCN
Cleveland Sage
 Autumn Sage
 Mexican Bush Sage
Purple Sage
Black Sage
San Miguel Mountain Sage
 Garden Sage
Creeping Sage
Hummingbird Sage
 Lavender Cotton
 NCN
 NCN
 Dusty Miller
 Blue-eyed Grass
Dessert Mallow
 Lamb's Ear
 Mountain Marigold
 NCN
 NCN
 Bush Germander
 Society Garlic
 Verbena
 Grape
 Soft-tip Yucca
 Curveleaf Yucca
Chapparal Yucca (Our Lord's Candle)
California Fuschia

VINES

Botanical Name:
 Bougainvillea cultivars
 Campsis spp.
 Clytostoma callistegiodes
 Distictis buccinatorius
 Hardenbergia violacea
 Hibbertia scandens
 Keckiella cordifolia
 Jasminum spp.
 Macfadyena unguis-cati
 Parthenocissus tricuspidata
 Rosa spp.
 Solandra maxima
 Solanum jasminoides (f)
 Tecomaria capensis
 Vitis vinifera
 Wisteria spp.

Common Name:
 Bougainvillea cultivars
 Trumpet Creeper
 Violet Trumpet Vine
 Scarlet Trumpet Vine
 Lilac Vine
 Guinea Gold Vine
 Heart-leaved Penstemon
 Jasmine
 Cats Claw
 Boston Ivy
 Climbing Rose
 Cup of Gold Vine
 Potato Vine
 Cape Honeysuckle
 Wine Grape
 Wisteria

ATTACHMENT III

PROVISIONALLY ACCEPTABLE PLANT LIST

The following list of plants are generally unacceptable, but may be approved on a case-by-case basis by the City's Landscape Architect. In no case are these plants to be used in or adjacent to natural or open space areas.

TREES

Botanical Name:	Common Name:
Acacia spp.	NCN
Eucalyptus spp.	Red Gum
Koelreuteria bipinnata	Chinese Flame Tree
Rhus lancea	African Sumac
Robinia (tree form)	Locust
Schinus molle	Peruvian pepper tree
Schinus terebinthifolius	Brazilian pepper tree

Shrubs

Botanical Name	Common Name
Elaeagnus spp.	Elaeagnus

Ground and Slope Cover

Botanical Name	Common Name
Acacia redolens prostrate	Prostrate Acacia
Cotoneaster spp.	Cotoneaster
Cynodon dactylon	Bermuda grass
Vinca spp.	Periwinkle

FLOWERING PLANTS, PERENNIALS, and ACCENT PLANTS

Botanical Name:	Common Name:
Pennisetum setaceum	Fountain Grass
Spartium junceum.	Spanish Broom

ATTACHMENT IV

INVASIVE AND PROHIBITED PLANT LIST

The following plant species are not to be used in landscape plans within the City.

Botanical Name:

Ageratina adenophora
Agrostis stolonifera
Ailanthus altissima
Ammophila arenaria
Andropogon virginicus
Anthriscus caucalis
Aponogeton distachyon
Aptenia cordifolia
Arundo donax
Atriplex semibiccata
Avena barbata
Avena fatua
Berula erecta
Brassica nigra
Brassica rapa
Brassica tournefortii
Bromus diandrus
Bromus hordeaceus
Bromus madritensis
Bromus tectorum
Carderia chalapense
Carderia draba
Carderia pubescens
Carduus pycnocephalus
Carpobrotus edulis
Catharanthus roseus
Centaurea melitensis
Centaurea solstitialis
Ceratophyllum demersum
Chenopodium album
Chenopodium murale
Chrysanthemum coronarium
Cirsium arvense
Cirsium vulgare
Conicosia pugioniformis
Conium maculatum
Cortaderia jubata
Cortaderia selloana
Cotula coronopifolia
Cynara cardunculus
Cytisus scoparius
Cytisus striatus
Datisca glomerata

Common Name:

Sticky eupatory
Creeping bentgrass
Tree of heaven
European beachgrass
Broomsedge bluestem
Bur chervil
Cape pondweed
Baby sun rose
Giant reed
Australian saltbush
Slender wild oat
Wild oat
Cutleaf water parsnip
Black mustard
Field mustard, Turnip
Moroccan mustard
Rippgut grass
Soft chess
Foxtail chess
Cheatgrass
Lens-pod
Hoary cress
White-top
Italian thistle
Hottentot-fig
Madagascar periwinkle
Tocalote
Yellow star-thistle
Aquatic hornwort
Lamb's quarters, Pigweed
Nettle-leaved goosefoot
Garland or crown daisy
Canada thistle
Bull thistle
Narrow-leaved ice plant
Poison hemlock
Andean pampas grass, jubatagrass
Pampas grass
Brass buttons
Artichoke thistle, Cardoon
Scotch broom
Portuguese broom
Durango root

<i>Delairia odorata</i> (=Senecio milkanioides)	Cape ivy (German ivy)
<i>Descurainia sophia</i>	Tansy mustard
<i>Egeria densa</i>	Brazilian waterweed
<i>Ehrharta calycina</i>	Veldt grass
<i>Eichhornia crassipes</i>	Water hyacinth
<i>Elodea canadensis</i>	Common waterweed
<i>Erodium cicutarium</i>	Red-stemmed filaree
<i>Eucalyptus globulus</i>	Blue gum
<i>Euphorbia esula</i>	Leafy spurge
<i>Ficus carica</i>	Edible fig
<i>Foeniculum vulgare</i>	Fennel
<i>Genista monspessulana</i> (=Cytisus monspessulanus)	French broom
<i>Gunnera tinctoria</i>	Gunnera
<i>Hedera helix</i>	English ivy
<i>Hedera canariensis</i>	Algerian ivy
<i>Hippurus vulgaris</i>	Mare's tail
<i>Hirschfeldia incana</i>	Shortpod mustard
<i>Hordeum jubatum</i>	Foxtail barley
<i>Hydrilla verticillata</i>	Hydrilla
<i>Lactuca serriola</i>	Prickly lettuce
<i>Lepidium latifolium</i>	Perennial pepperweed
<i>Lobularia maritima</i>	Sweet alyssum
<i>Lythrum</i> spp.	Loosestrife
<i>Lythrum hyssopifolium</i>	Loosestrife
<i>Lythrum salicaria</i>	Purple loosestrife
<i>Malva parviflora</i>	Cheeseweed, Little mallow
<i>Marrubium vulgare</i>	Horehound
<i>Melilotus alba</i>	White sweetclover
<i>Mentha pulegium</i>	Pennyroyal
<i>Mesembryanthemum crystallinum</i>	Crystalline iceplant
<i>Myoporum laetum</i>	Myoporum
<i>Myriophyllum aquaticum</i>	Parrot's feather
<i>Myriophyllum spicatum</i>	Eurasian milfoil
<i>Nerium oleander</i>	Oleander
<i>Nicotiana glauca</i>	Tree tobacco
<i>Ottelia alismoides</i>	Ottelia
<i>Oxalis pes-caprae</i>	Bermuda buttercup
<i>Parentucellia viscosa</i>	Parentucellia
<i>Phalaris aquatica</i>	Harding grass
<i>Phoenix dactylifera</i>	Date palm
<i>Phragmites australis</i> (=communis)	Common reed
<i>Phyla</i> (=Lippia) nodiflora	Lippia
<i>Picris echioides</i>	Bristly ox-tongue
<i>Piptatherum miliaceum</i>	Smilo grass
<i>Pistia stratiotes</i>	Water lettuce
<i>Poa pratensis</i>	Kentucky bluegrass
<i>Raphanus sativus</i>	Radish
<i>Ranunculus aquatilis</i> var. <i>aquatilis</i>	Water buttercup
<i>Ranunculus muricatus</i>	Buttercup
<i>Ricinus communis</i>	Castor bean

Robinia pseudocacia	Black locust
Rorippa nasturtium-aquaticum	Watercress
Rubus procerus (=discolor)	Himalayan blackberry
Rumex conglomeratus	Whorled dock
Rumex crispus	Curly dock
Salix alba	White willow
Salsola spp.	Tumbleweed
Salsola soda	Tumbleweed
Salsola tragus	Russian thistle, Tumbleweed
Scirpus spp.	Bulrush, alkali bulrush
Senecio mikanioides	German-ivy
Silybum marianum	Milk thistle
Sisymbrium irio	London rocket
Sisymbrium officinale	Hedge mustard
Sisymbrium orientale	Oriental mustard
Sonchus oleraceus	Common sow thistle
Sorghum halepense	Johnsongrass
Spartina alterniflora	European/Atlantic cord grass
Spartina densiflora	Cord grass
Spartina patens	Cord grass
Taeniatherum caput-medusae	Medusa-head
Tamarix aphylla	Athel
Tamarix ramosissima, T. chinensis, T. gallica, T. parviflora	Salt cedar, tamarisk
Taraxacum officinale	Common dandelion
Tribulus terrestris	Puncture vine
Tropaeolum majus	Garden nasturtium
Ulex eruopaeus	Gorse
Varbascum spp.	Mullein
Veronica ssp. (incl. V. Anagallis-aquatica, V. beccabunga, V. catenata)	Speedwell, Brooklime
Washingtonia filifera	Fan palm
Xanthium spinosum	Spiny cocklebur
Xanthium strumarium	Cocklebur
Zantedeschia aethiopica	Calla lily

¹ Sources include: California Native Plant Society. 1992. Non-native invasive plants in the Santa Monica Mountains; Dudley, T. 1998. Exotic plant invasions in California riparian areas and wetlands. Fremontia 26(4): 24-29; California Exotic Pest Plant Council. 1996. List of exotic pest plants of greatest ecological concern in California.

ATTACHMENT V**RECOMMENDED TREES FOR STREETS**

The City reserves the right to approve or reject any of the plant species listed at any time. Other species may be approved by the City. Note that several plant species listed are included on the provisional list. These plants are only intended to be installed in urban areas away from native hillsides or natural areas. Prior City approval is required.

TREES

Agonis flexuosa	Peppermint Myrtle
Arbutus unedo	Strawberry Tree
Bauhinia variegata	Purple Orchid Tree
Brachychiton populneus	Bottle Tree
Callistemon citrinus	Lemon Bottlebrush
Callistemon viminalis	Weeping Bottlebrush
Cassia excelsa	Crown of Gold Tree
Cassia leptophylla	Gold Medallion Tree
Chitalpa x tashkentensis	Chitalpa
Cinnamomum Camphora	Camphor Tree
Fraxinus ornus 'Raywood'	Raywood Ash
Geijera parviflora	Australian Willow
Ginko biloba (Male only)	Maidenhair Tree (grafted male)
Gleditsia triacanthos 'var.'	Honey Locust
Jacaranda mimosifolia	Jacaranda
Koelreuteria paniculata	Golden Rain Tree
Lagerstroemia indica	Crape Myrtle
Liriodendron tulipifera	Tulip Tree
Magnolia grandiflora var.	Southern Magnolia
Melaleuca linarifolia	Flaxleaf Paperbark
Melaleuca quinquenervia	Cajeput Tree
Photinia serrulata	Chinese Photinia
Pinus eldarica	Mondell Pine
Pinus halepensis	Aleppo Pine
Pinus pinea	Italian Stone Pine
Pistacia chinensis	Chinese Pistache
Platanus acerifolia 'Bloodgood'	London Plane
Platanus acerifolia 'Yarwood'	Yarwood Plane Tree
Podocarpus glacilior	Fern Pine
Podocarpus macrophyllus	Yew Pine
Prunus cerasifera 'Atropurpurea'	Purple Leaf Plum
Prunus c. 'Krauter Vesuvius'	Black-leaf Plum
Prunus serrulata 'Amanogawa'	Columnar Flowering Cherry
Pyrus calleryana 'Aristocrat'	Aristocrat Pear
Pyrus calleryana 'Bradford'	Bradford Pear
Pyrus calleryana 'Chanticleer'	Chanticleer Pear
Pyrus kawakamii	Evergreen Pear
Quercus agrifolia	Coast Live Oak
Quercus ilex	Holly Oak

Sapium sebiferum
Sophora japonica
Tristania conferta
Ulmus parvifolia

Chinese Tallow Tree
Japanese Pagoda Tree
Brisbane Box
Evergreen Elm

ATTACHMENT VI

REIMBURSEMENT AGREEMENT FOR LANDSCAPE PLAN REVIEW

PERMIT/ENTITLEMENT NUMBER(S): _____

I, the undersigned Applicant, hereby authorize the City of Moorpark, California to review the Landscape Plans submitted for the above referenced permit/entitlement request(s) in accordance with the City of Moorpark Ordinance Code. I am herewith depositing \$_____ in accordance with adopted fee schedule to cover consultant review (plus 15% city administrative charge), staff review, coordination and processing, the unused portion of the deposit will be refunded to me. I further understand that, if the final cost is more than the deposit fee, I shall pay the balance due.

Name of Applicant*: _____
Please print or type

Phone: (__) _____

Address of Applicant _____
(Do not use P.O. Box)

Phone: (__) _____

Name of Corporation or Agency

Address of Corporation or Agency _____
(Do not use P.O. Box)

Signature Date

*If corporation or agency, list person(s) authorized to act on behalf of corporation or agency.

ATTACHMENT VII

CERTIFICATES OF COMPLIANCE

**PRELIMINARY CERTIFICATE OF COMPLIANCE
(prior to completion of maintenance period)**

Project Number _____ Assessor's Parcel No.: _____

Landscape Contractor: _____

Landscape Architect: _____

Applicant: _____

I certify that:

Post-Installation Inspection: (check to indicate compliance)

- A. Plants installed as specified including proper staking & root control boxes
- B. Soils amended as noted in soils report (Invoices attached)
- C. Irrigation system installed as designed an adjusted

I certify that this project complies with the City of Moorpark Landscape Design Guidelines. The landscape planting and irrigation installation conforms with the approved plans and specifications with the following exceptions: (Itemize all exceptions on attached sheets)

Signature, Applicant's Landscape Architect of Record	State License Number	Date
---	----------------------	------

**CITY OF MOORPARK
Landscape Verification**

I certify that this project:

- Complies,
- Does not comply, with the approved Landscape Plans with the following exceptions:
(Use attached sheets, if necessary)

Signature, City's landscape representative	Date
--	------

**FINAL CERTIFICATE OF COMPLIANCE
(post-maintenance period)**

Project Number _____ Assessor's Parcel No.: _____

Landscape Contractor: _____

Landscape Architect: _____

Applicant: _____

I certify that:

- A. Post-Installation inspection was performed and a Preliminary Certificate of Compliance was completed. Date: _____
- B. Maintenance Period conforms with Landscape Maintenance Schedule (90-day maintenance period for non-City maintained landscape areas and 360-day maintenance period for all City maintained landscape areas).
- C. Planting installed per plan w/100% plant survivability
- D. Irrigation system installed per plan and in optimum operating condition
- D. Laminated color coded controller charts in controller cabinets
- E. As-built plans provided to owner/manager
- F. Backflow Prevention Test

I certify that this project complies with the City of Moorpark Landscape Design Guidelines.

Signature, Applicant's Landscape Architect of Record	State License Number	Date
--	----------------------	------

CITY OF MOORPARK
Landscape Verification

I certify that this project:

- Complies,
- Does not comply

Signature, City's landscape representative	Date
--	------

ATTACHMENT VIII

SAMPLE WATER EFFICIENT LANDSCAPE WORKSHEETS

WATER EFFICIENT LANDSCAPE WORKSHEET

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

Please complete all sections (A and B) of the worksheet.

HYDROZONE INFORMATION TABLE

Please complete the hydrozone table(s) for each hydrozone. Use as many tables as necessary to provide the square footage of landscape area per hydrozone.

Hydrozone*	Zone or Valve	Irrigation Method**	Area (Sq. Ft.)	% of Landscape Area
Total				100%

****Irrigation Method**

- MS = Micro-spray
- S = Spray
- R = Rotor
- B= Bubbler
- D= Drip
- O = Other

*** Hydrozone**

- HW = High Water Use Plants
- MW = Moderate Water Use Plants
- LW = Low Water Use Plants

WATER BUDGET CALCULATIONS

Maximum Applied Water Allowance (MAWA)

The project's Maximum Applied Water Allowance shall be calculated using this equation:

$$MAWA = (ET_o) (0.62) [(0.7 \times LA) + (0.3 \times SLA)]$$

where:

MAWA = Maximum Applied Water Allowance (gallons per year)

- ET_o = Reference Evapotranspiration from Appendix A (inches per year)
- 0.7 = ET Adjustment Factor (ETAF)
- LA = Landscaped Area includes Special Landscape Area (square feet)
- 0.62 = Conversion factor (to gallons per square foot)
- SLA = Portion of the landscape area identified as Special Landscape Area (square feet)
- 0.3 = the additional ET Adjustment Factor for Special Landscape Area (1.0 - 0.7 = 0.3)

Maximum Applied Water Allowance = _____ gallons per year

Show calculations.

Effective Precipitation (Eppt)

If considering Effective Precipitation, use 25% of annual precipitation. Use the following equation to calculate Maximum Applied Water Allowance:

$$MAWA = (ET_o - Eppt) (0.62) [(0.7 \times LA) + (0.3 \times SLA)]$$

Maximum Applied Water Allowance = _____ gallons per year

Show calculations.

Estimated Total Water Use (ETWU)

The project's Estimated Total Water Use is calculated using the following formula:

$$ETWU = (ET_o)(0.62) \left(\frac{PF \times HA}{IE} + SLA \right)$$

Where:

ETWU = Estimated total water use per year (gallons per year)

- ET_o = Reference Evapotranspiration (inches per year)
- PF = Plant Factor from WUCOLS (see Definitions)
- HA = Hydrozone Area [high, medium, and low water use areas] (square feet)
- SLA = Special Landscape Area (square feet)
- 0.62 = Conversion Factor (to gallons per square foot)
- IE = Irrigation Efficiency (minimum 0.71)

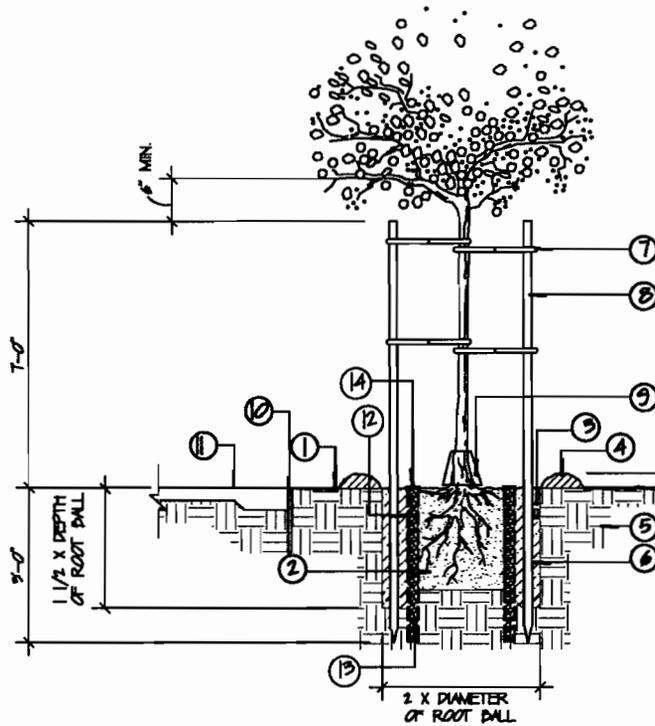
Hydrozone Table for Calculating ETWU

Please complete the hydrozone table(s). Use as many tables as necessary.

Hydrozone	Plant Water Use Type(s)	Plant Factor (PF)	Area (HA) (square feet)	PF x HA (square feet)
			Sum	
	SLA			

Estimated Total Water Use = _____gallons

Show calculations.



KEY

- ① FINISH GRADE
- ② ROOTBALL
- ③ AGRIFORM OR EQ. PLANT TABS (TOP 1/2 OF ROOT BALL-4 PER 15-GAL., 6 PER 24"/36" BOX, 8 PER 48" BOX AND GREATER)
- ④ TEMPORARY 6" WATERING BASIN
- ⑤ NATIVE SOIL
- ⑥ BACKFILL MIX (PER SOILS ANALYSIS)
- ⑦ TREE TIES (MIN. 4 REQUIRED) SECURE TO POLE W/GALV. NAIL
- ⑧ 2" DIA TREATED LODGEPOLE PINE STAKE (3" DIA FOR 36" BOX TREE OR GREATER)
- ⑨ PLASTIC TREE GUARD IN TURF.
- ⑩ 2' DEPTH X 10' LENGTH LINEAR ROOT BARRIER ADJACENT TO ALL HARDSCAPE SURFACES
- ⑪ HARDSCAPE SURFACE
- ⑫ 4" PERFORATED PIPE WRAPPED IN FILTER FABRIC
- ⑬ 3/4" GRAVEL
- ⑭ PVC CAP

NOTE:

- STAKES SHALL NOT PIERCE ROOTBALL AND SHALL EXTEND INTO UNDISTURBED SOIL

- PLACE PRE-MANU. TIES ACCORDING TO MANU. RECOMMENDATIONS.

- CITY APPROVED ROOT BARRIERS SHALL BE INSTALLED ON ALL TREES WITHIN 10'-0" ALL WALKS, DRIVEWAYS, WALLS AND OTHER HARDSCAPE AREAS AND STRUCTURES.

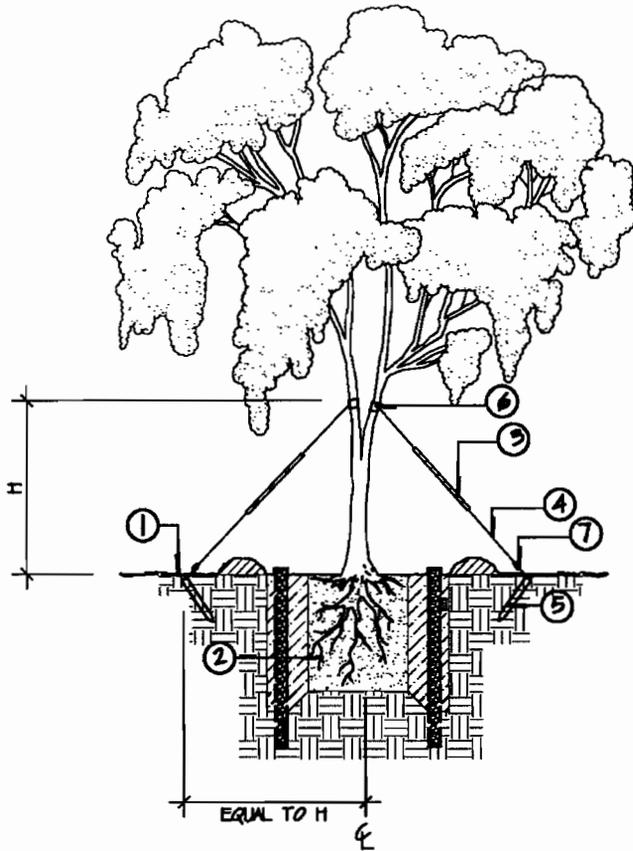
TREE PLANTING DETAIL (PLATE 1-1)



City of Moorpark
Community Development
Department

Tree Planting
Detail

Plate 1-1



KEY

- ① FINISH GRADE
- ② ROOTBALL
- ③ PROVIDE WHITE PLASTIC TUBING OVER GUY WIRE
- ④ #12 GAUGE GALVANIZED WIRE DOUBLE STRAND. MINIMUM 3 GUYS EQUALLY SPACED 120 DEGREES AROUND TREE
- ⑤ ANCHORS: 2X2X36" RWD. STAKES, INSTALL MIN. 1" BELOW FINISH GRADE
- ⑥ TYPICAL TREE TIE: ATTACH TO MAJOR BRANCHES ONLY.
- ⑦ TURNBUCKLE AT FINISH GRADE ADJUST TO TAKE UP SLACK ONLY

NOTE:

- GUYING OF BOXED SPECIMEN TREES DEPENDS ON BRANCHING STRUCTURE AND WIND EXPOSURE. THE LANDSCAPE ARCHITECT RESERVES THE RIGHT TO MAKE THE FINAL DECISION REGARDING GUYING REQUIREMENTS.
- SEE TREE PLANTING DETAIL FOR ROOTBARRIERS, PLANT TABS, DEEP ROOT SLEEVES.

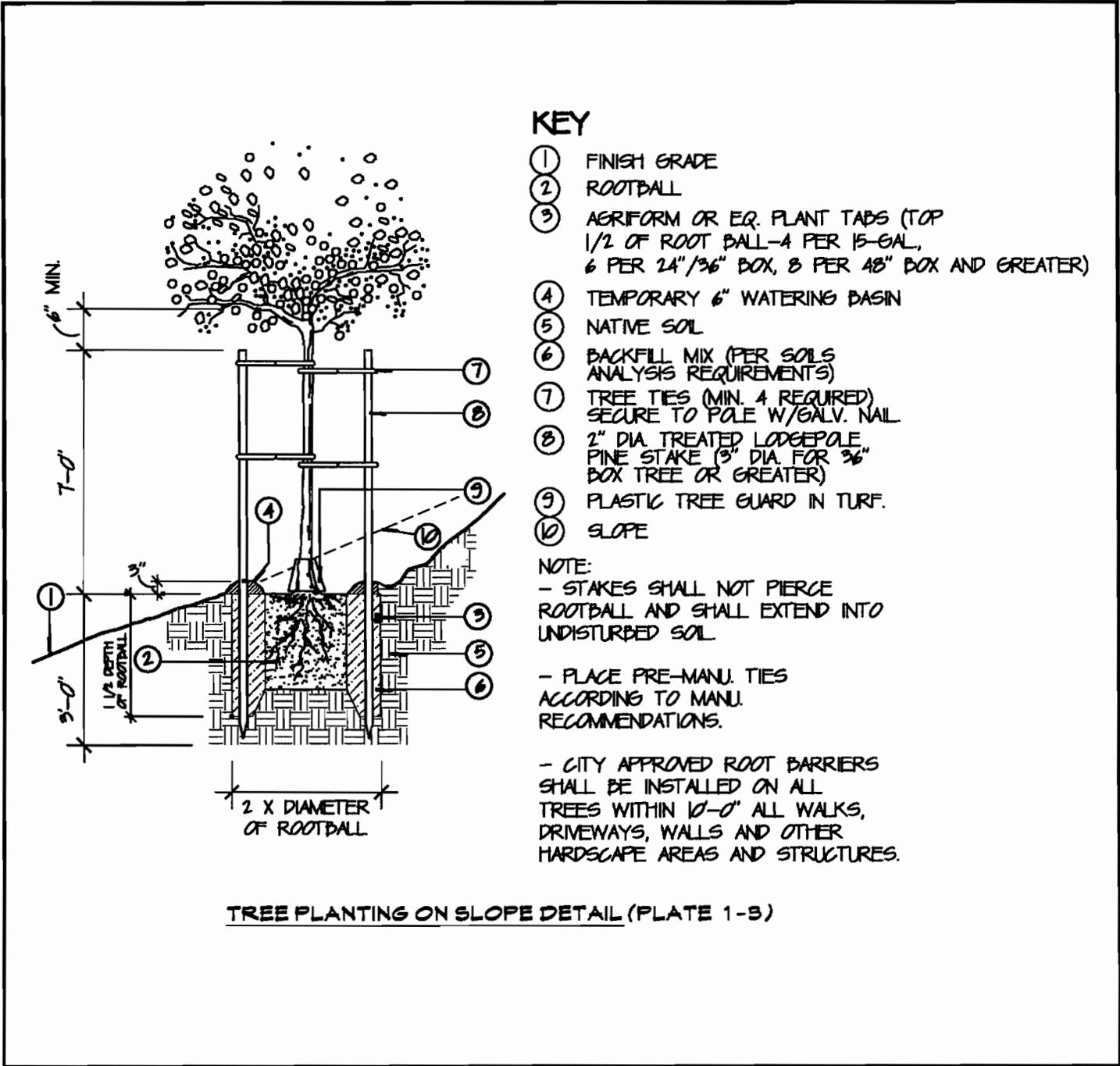
TREE GUYING DETAIL (PLATE 1-2)



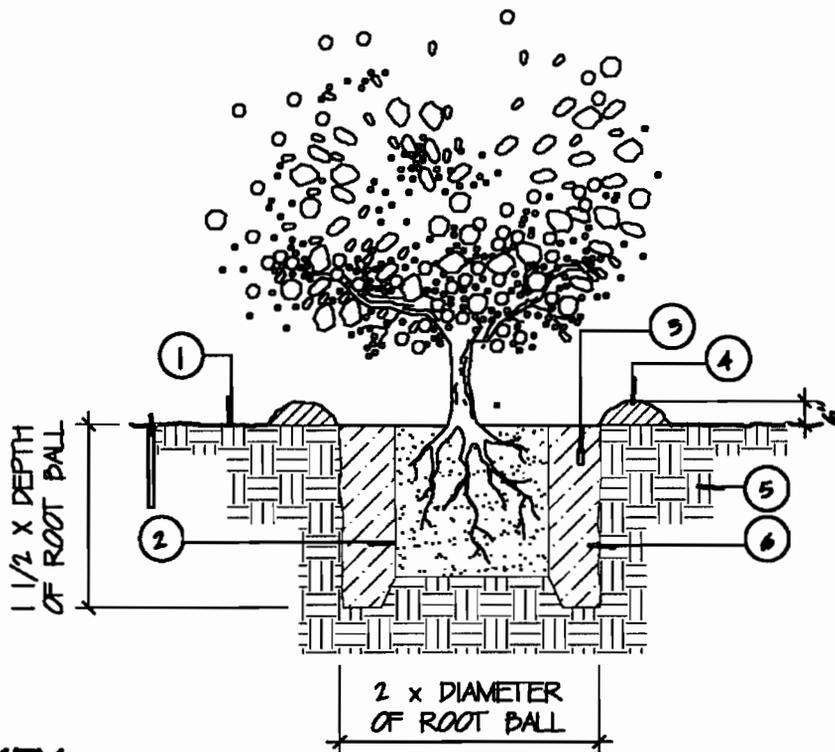
City of Moorpark
Community Development
Department

Tree Guying
Detail

Plate 1-2



	<p>City of Moorpark Community Development Department</p>	<p>Tree Planting on Slope Detail</p>	<p>Plate 1-3</p>
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KEY

- | | |
|--|---|
| ① FINISH GRADE | ④ 6" WATERING BASIN
(TO BE REMOVED PRIOR
TO END OF MAINTENANCE) |
| ② ROOTBALL | ⑤ NATIVE SOIL |
| ③ AGRIFORM PLANT TABS OR EQ.
(TOP 1/2 OF ROOT BALL)
(1 PER 1-GAL, 2 PER 5-GAL,
4 PER 15-GAL, 6 PER BOX CONTAINER) | ⑥ BACKFILL MIX (PER
SOILS REPORT RECOMMENDATIONS) |

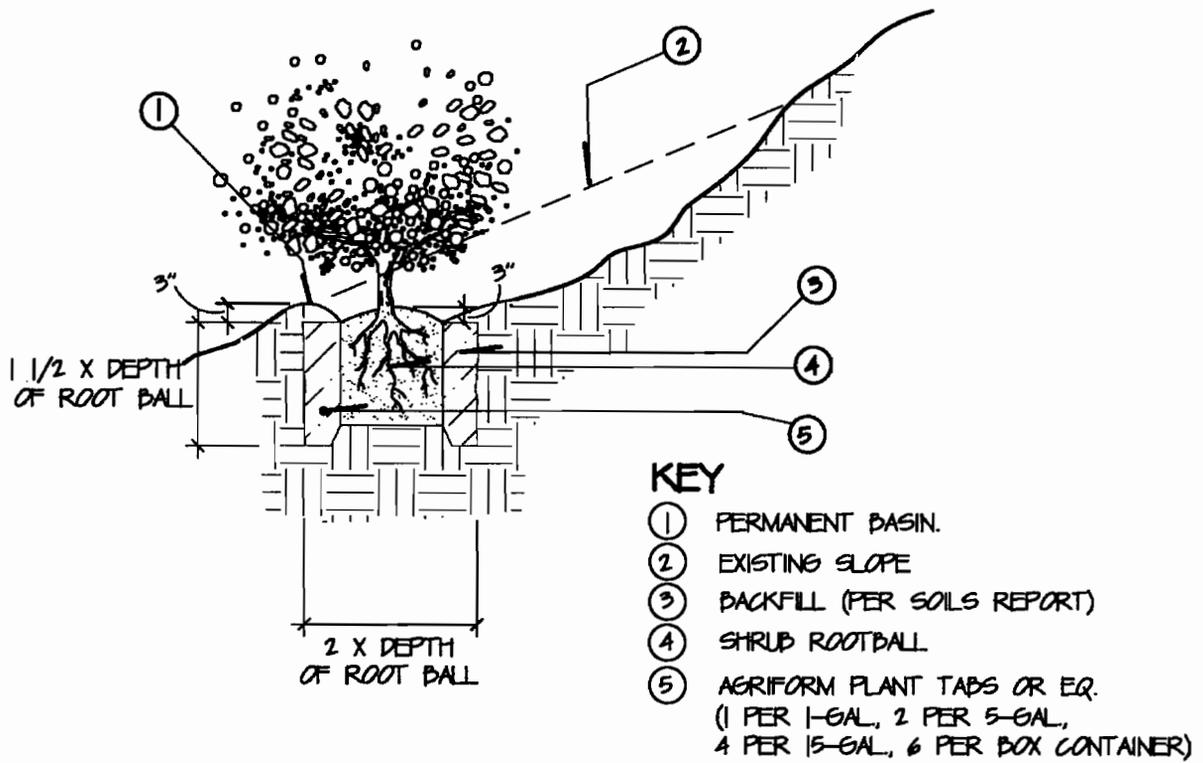
SHRUB PLANTING DETAIL (PLATE 1-4)



City of Moorpark
 Community Development
 Department

Shrub Planting
 Detail

Plate 1-4



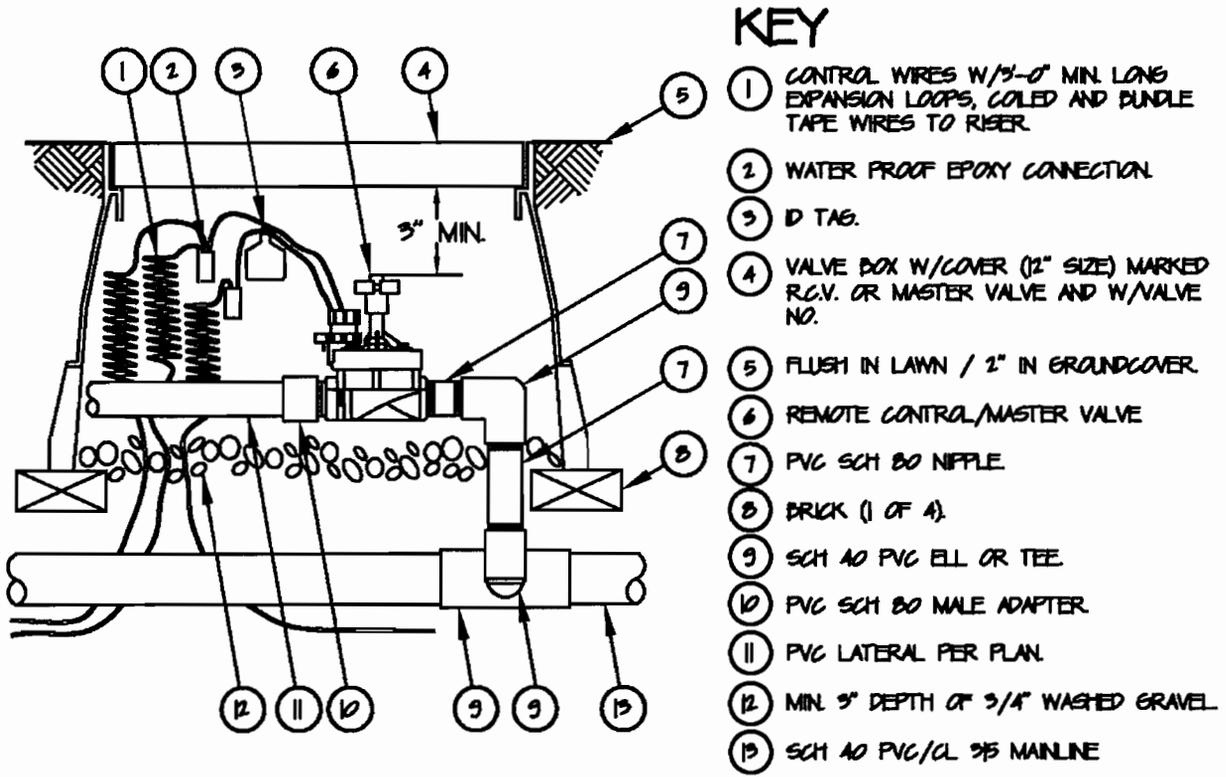
SHRUB ON SLOPE PLANTING DETAIL (PLATE 1-5)



City of Moorpark
Community Development
Department

Shrub Planting
on Slope Detail

Plate 1-5



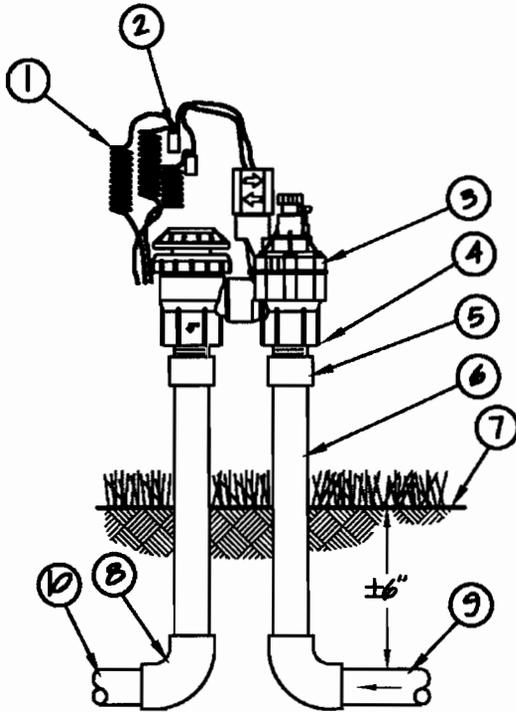
REMOTE CONTROL VALVE DETAIL (PLATE 2-1)



City of Moorpark
Community Development
Department

Remote Control
Valve Detail

Plate 2-1



KEY

- ① 30-INCH LINEAR LENGTH OF WIRE, COILED
- ② WATER PROOF CONNECTION (W/EPOXY CONNECTION CONTROL WIRES W/3' MIN. LONG EXPANSION LOOPS - BUNDLE TAPE WIRES TO RISERS).
- ③ REMOTE CONTROL ANTI-SIPHON VALVE:
- ④ INSTALL 12 INCH MIN. ABOVE HIGHEST POINT OF DISCHARGE
- ⑤ UV RADIATION RESISTANT PVC SCH 80 MALE ADAPTER (1 OF 2)
- ⑥ UV RADIATION RESISTANT PVC SCH 80 RISER (1 OF 2)
- ⑦ FINISH GRADE/TOP OF MULCH
- ⑧ PVC SCH 40 ELL (1 OF 2)
- ⑨ PVC SCH 40 MAINLINE PIPE (CL 3/5 FOR 2" AND GREATER)
- ⑩ PVC LATERAL LINE (SIZE PER PLAN)

NOTES:

- 1. BUNDLE TAPE CONTROL WIRES AT TEN FOOT INTERVALS.
- 2. FOR TRENCHING AT STREET CROSSINGS, CONSULT LOCAL STANDARDS FOR DEPTH, BACKFILL MATERIAL AND COMPACTION REQUIREMENTS.
- 3. BACKFILL SHALL BE COMPACTED SUCH THAT NO SETTLING OCCURS AFTER PROJECT COMPLETION.
- 4. REFER TO TRENCHING DETAIL/IRRIGATION SPECIFICATIONS FOR LATERAL LINE AND MAINLINE DEPTH.

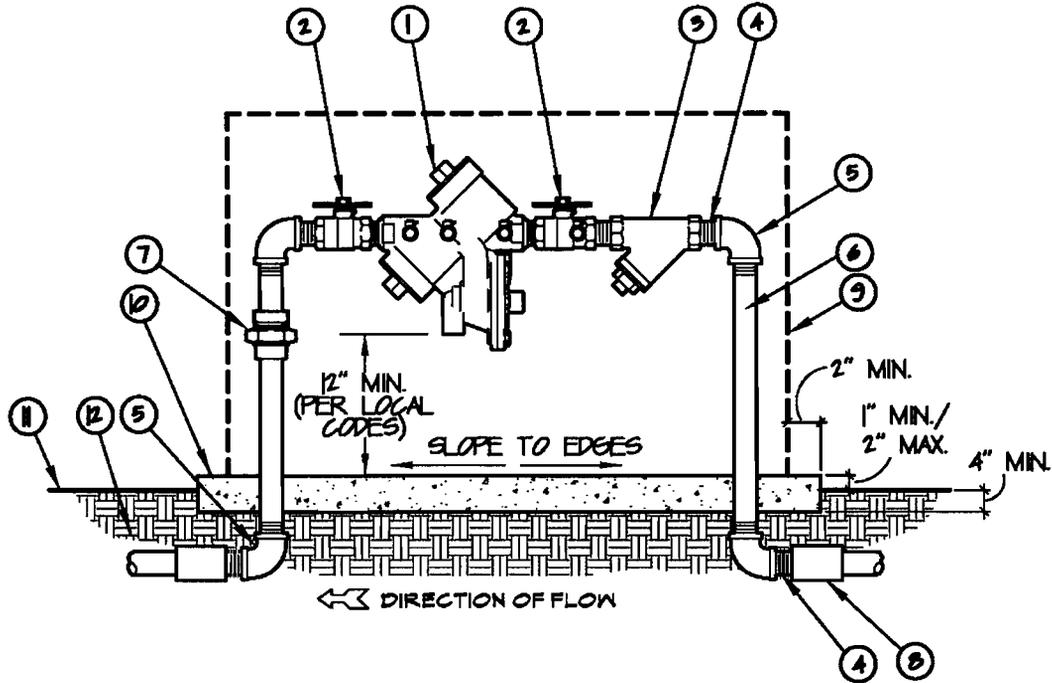
ANTI-SIPHON VALVE DETAIL (PLATE 2-2)



City of Moorpark
Community Development
Department

Anti-siphon Valve
Detail

Plate 2-2



KEY

- | | | |
|---------------------------------------|------------------------------|---|
| ① REDUCED PRESSURE BACKFLOW PREVENTER | ④ SHORT BRASS NIPPLE | ⑧ PVC COUPLING (TYP) |
| ② BALL VALVE | ⑤ BRASS ELL (TYP) | ⑨ BACKFLOW PREVENTER ENCLOSURE (POWDER COATED MESH) |
| ③ BRASS WTE STRAINER W/60 MESH SCREEN | ⑥ THREADED BRASS RISER (TYP) | ⑩ CONCRETE FOOTING |
| | ⑦ BRASS UNION (TYP) | ⑪ FINISH GRADE |
| | | ⑫ 95% COMPACTED SUBGRADE |

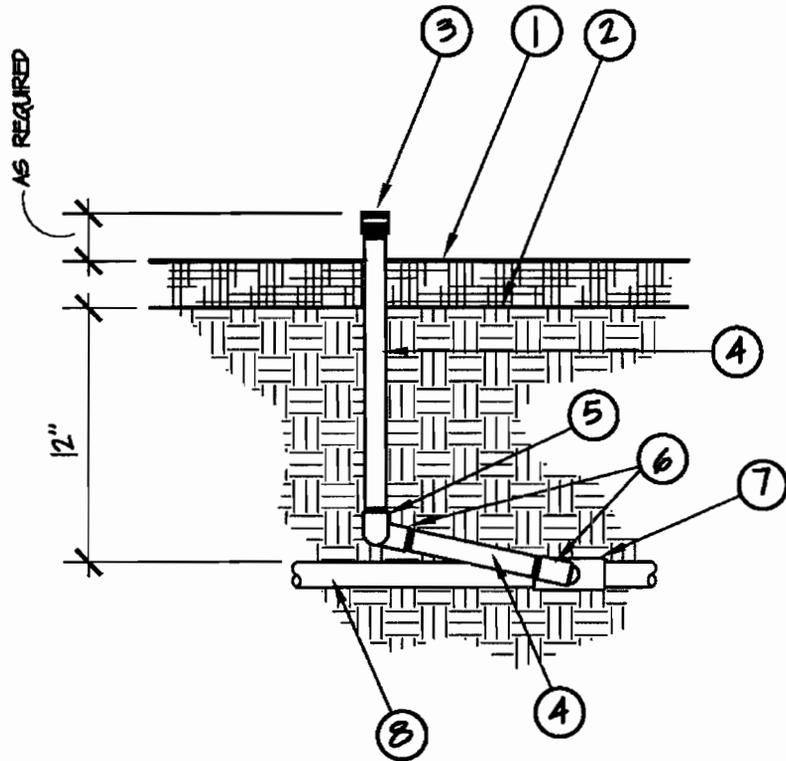
BACKFLOW PREVENTER DETAIL (PLATE 2-3)



City of Moorpark
 Community Development
 Department

Backflow
 Preventer Detail

Plate 2-3



KEY

- ① TOP OF MULCH
- ② FINISH GRADE
- ③ LOW GALLONAGE BUBBLER
- ④ PVC SCH 80 NIPPLE (LENGTH AS REQUIRED)
- ⑤ PVC SCH 40 ELL
- ⑥ PVC SCH 40 STREET ELL
- ⑦ PVC SCH 40 TEE OR ELL
- ⑧ PVC LATERAL PIPE

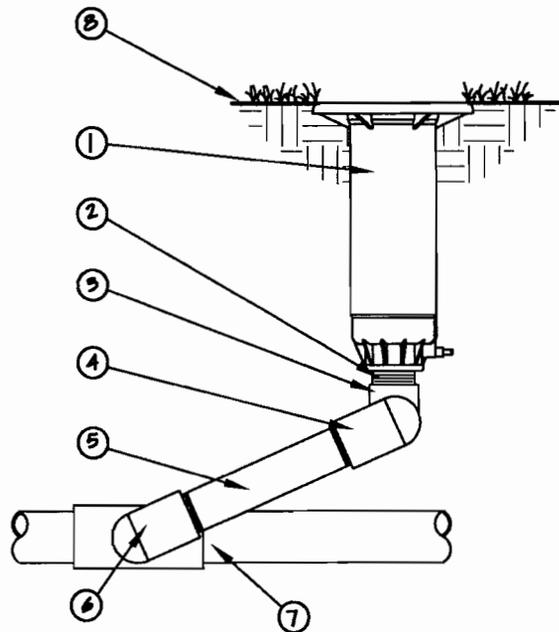
BUBBLER DETAIL (PLATE 2-4)



City of Moorpark
Community Development
Department

Bubbler
Detail

Plate 2-4



KEY

- ① POP-UP GEAR DRIVEN SPRINKLER
- ② PVC SCH 80 NIPPLE
- ③ PVC SCH 40 90 DEG. ELL
- ④ MARLEX STREET ELL OR EQUAL
- ⑤ PVC SCH 80 NIPPLE 12"
- ⑥ STREET ELL
- ⑦ PVC LATERAL LINE AND FITTINGS
- ⑧ FINISH GRADE

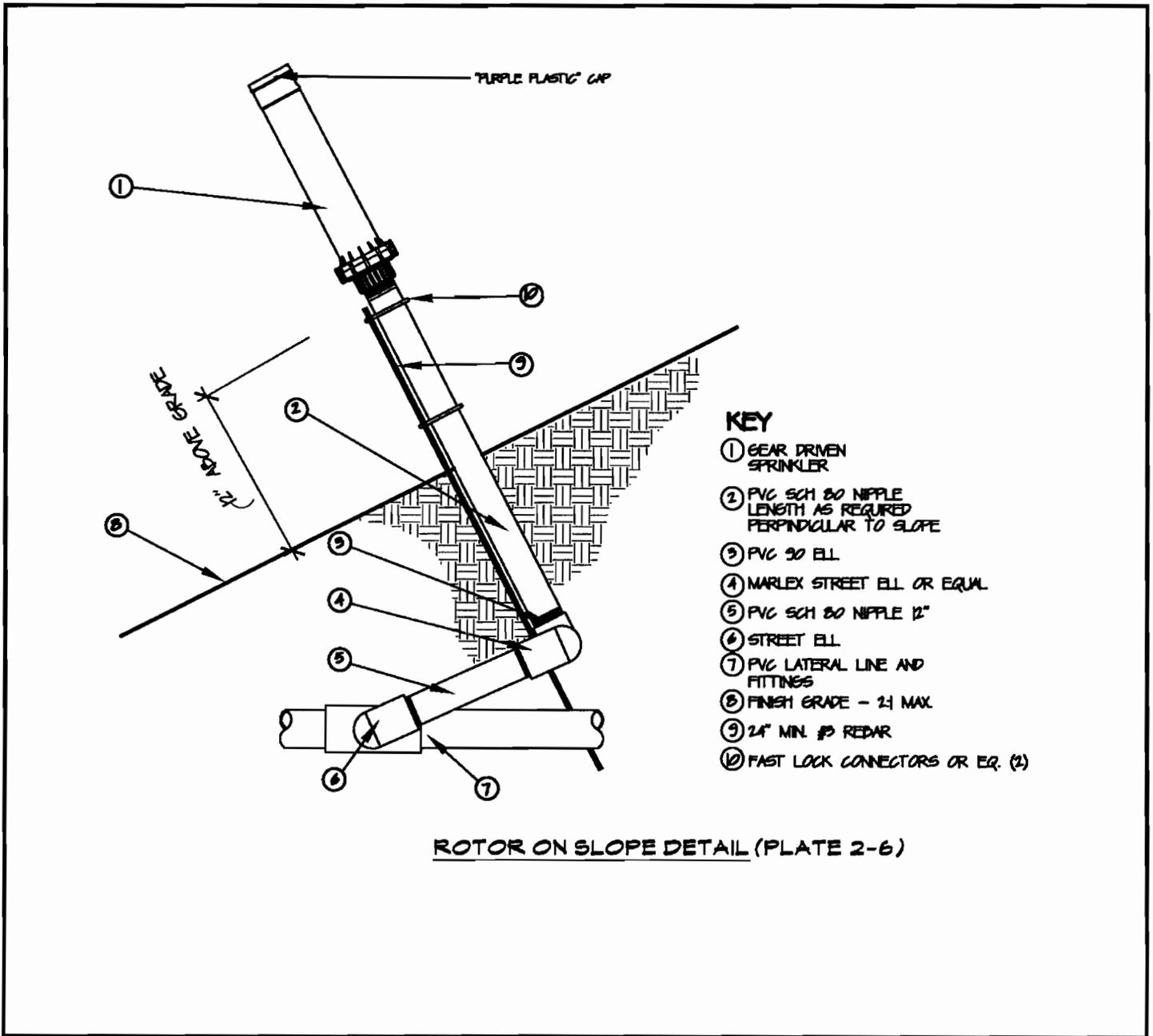
POP-UP ROTOR DETAIL (PLATE 2-5)



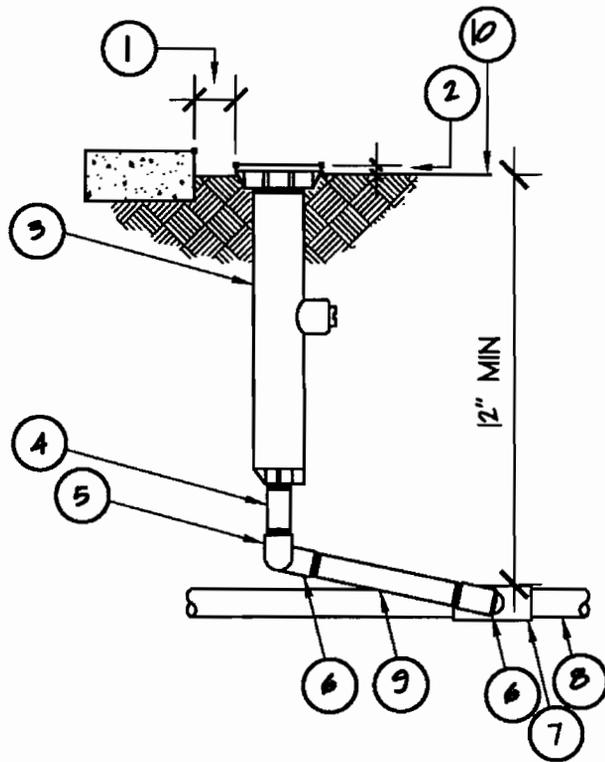
City of Moorpark
Community Development
Department

Pop-up Rotor
Detail

Plate 2-5



	<p>City of Moorpark Community Development Department</p>	<p>Rotor on Slope Detail</p>	<p>Plate 2-6</p>
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KEY

- ① 1/4" MIN./2" MAX AT EDGE OF PAVING OR WALL
- ② 1/4" CLEARANCE
- ③ POP-UP SPRAY HEAD
- ④ PVC SCH 80 NIPPLE (LENGTH AS REQUIRED, 2" MIN.)
- ⑤ PVC SCH 40 ELL
- ⑥ PVC SCH 40 STREET ELL
- ⑦ PVC SCH 40 TEE OR ELL
- ⑧ PVC LATERAL PIPE
- ⑨ PVC SCH 80 NIPPLE (LENGTH AS REQUIRED, 6" MIN.)
- ⑩ FINISH GRADE

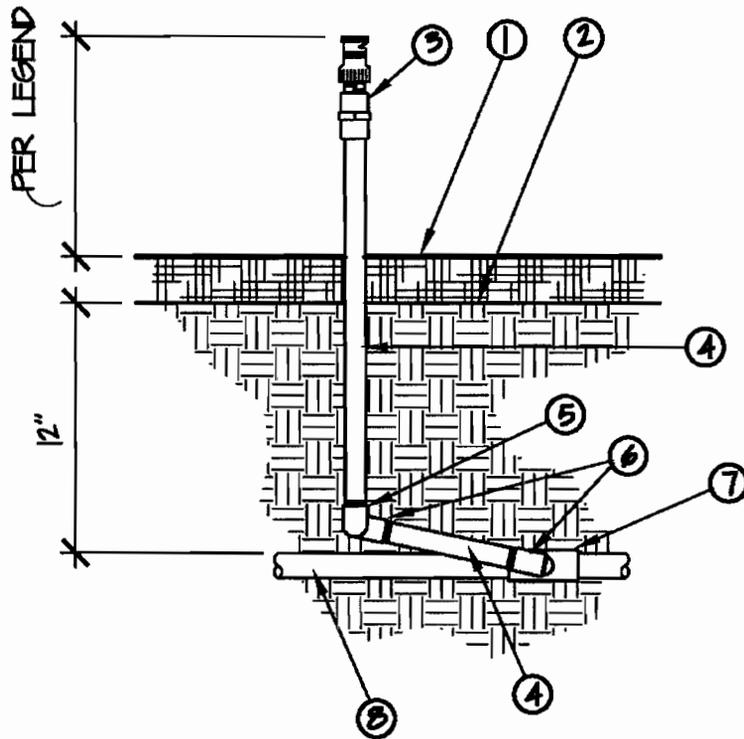
POP-UP SPRAY HEAD DETAIL (PLATE 2-7)



City of Moorpark
 Community Development
 Department

Pop-up Spray
 Head Detail

Plate 2-7



KEY

- ① TOP OF MULCH
- ② FINISH GRADE
- ③ RISER SPRAY HEAD
- ④ PVC SCH 80 NIPPLE
(LENGTH AS REQUIRED)
- ⑤ PVC SCH 40 ELL
- ⑥ PVC SCH 40 STREET ELL
- ⑦ PVC SCH 40 TEE OR ELL
- ⑧ PVC LATERAL PIPE

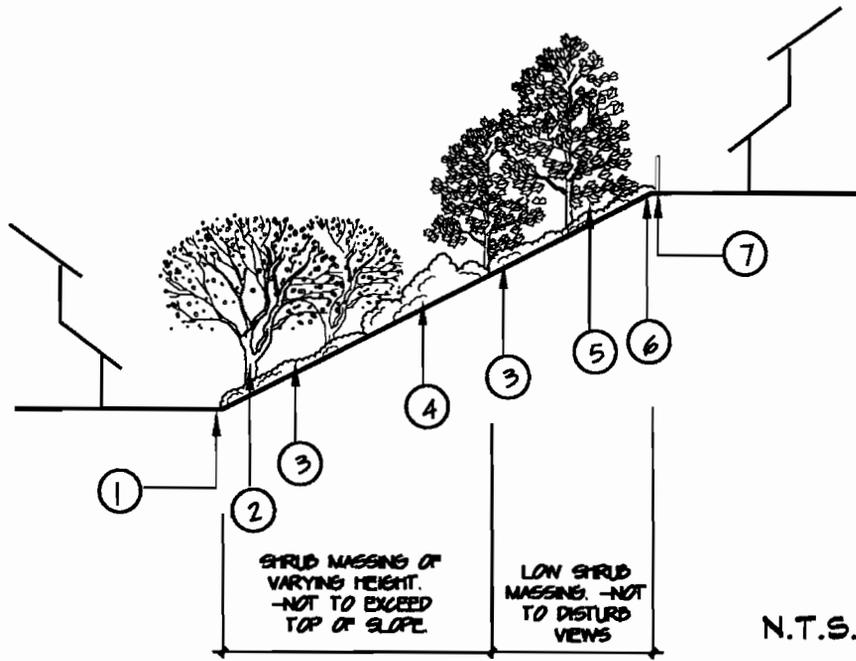
RISER SPRAY DETAIL (PLATE 2-8)



City of Moorpark
 Community Development
 Department

Riser Spray Head
 Detail

Plate 2-6



- ① TOE OF SLOPE
- ② CANOPY TREE ON LOWER SLOPE. MATURE HEIGHT OF TREES SHALL NOT EXCEED TOP OF SLOPE
- ③ LOW GROWING SHRUBS
- ④ LARGE SHRUBS
- ⑤ VERTICAL TREE NEAR SIDEYARD LOTLINES OR BUILDING EDGE TO SOFTEN ARCHITECTURE. CARE SHALL BE TAKEN TO ENSURE CANOPY OF MATURE TREE DOES NOT ENCRoACH PROPERTY LINE.
- ⑥ TOP OF SLOPE
- ⑦ VIEW FENCE

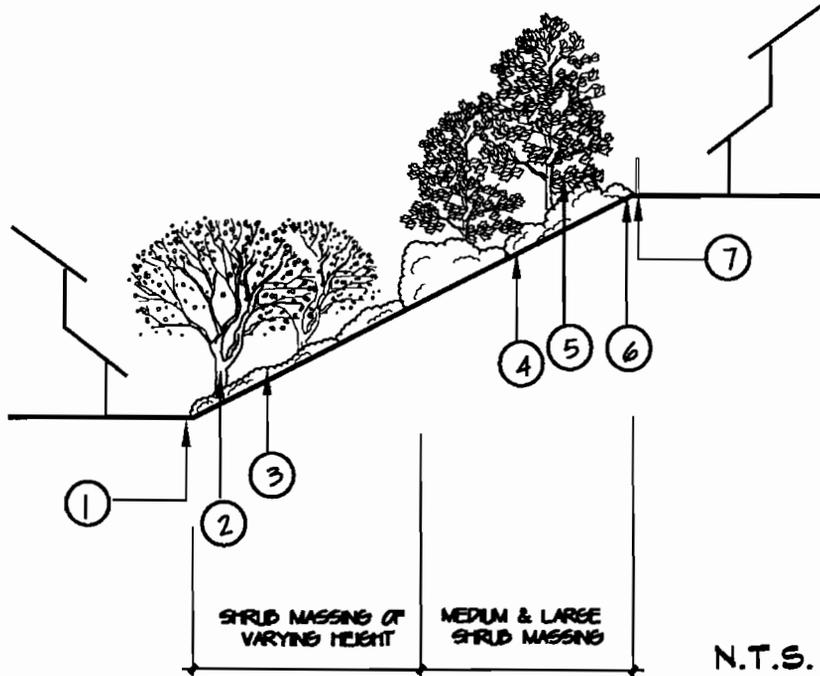
SLOPE PLANTING W/ VIEW FENCE (ELEVATION) (FIG. 12.1)



City of Moorpark
Community Development
Department

Slope Planting
w/View Fence
(elevation)

Fig. 12.1



- ① TOE OF SLOPE
- ② CANOPY TREE ON LOWER SLOPE
- ③ LOW GROWING SHRUBS
- ④ LARGE SHRUBS
- ⑤ VERTICAL TREE NEAR SIDEYARD LOTLINES OR BUILDING EDGE TO SOFTEN ARCHITECTURE. CARE SHALL BE TAKEN TO ENSURE CANOPY OF MATURE TREE DOES NOT ENCR OACH PROPERTY LINE.
- ⑥ TOP OF SLOPE
- ⑦ SCREEN WALL

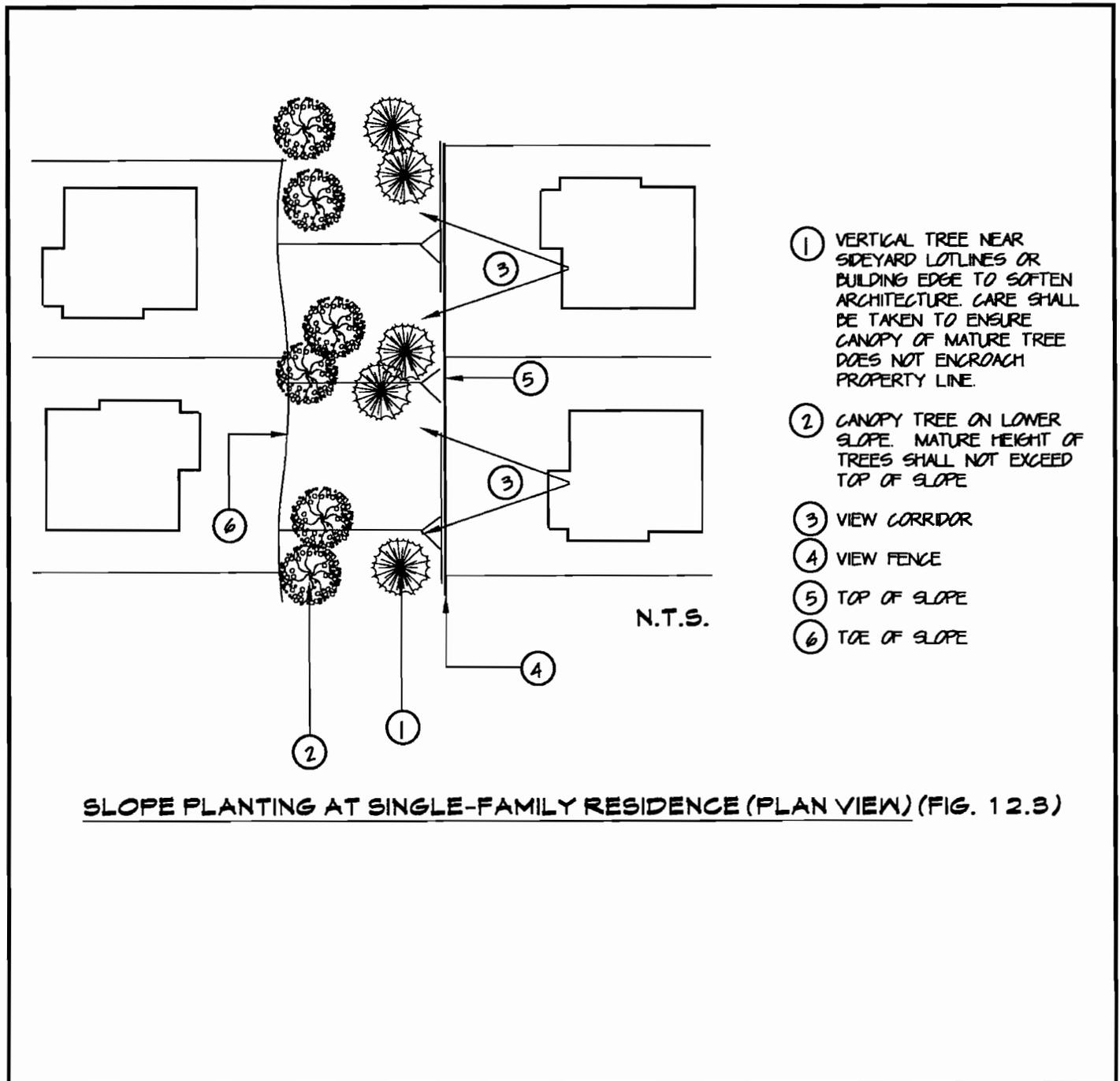
SLOPE PLANTING W/ SCREEN WALL (ELEVATION) (FIG. 12.2)



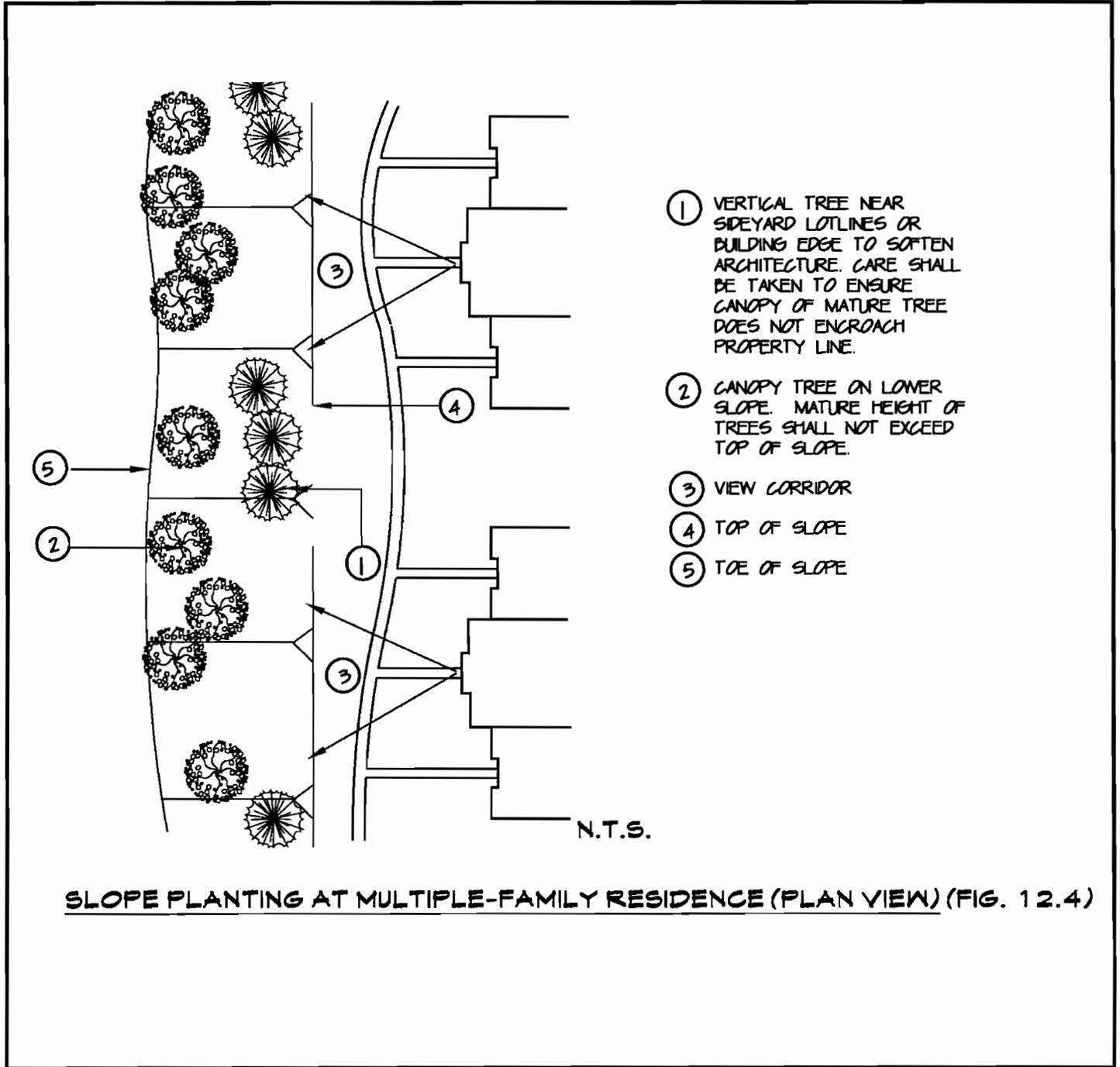
City of Moorpark
Community Development
Department

Slope Planting
w/Screen Wall
(elevation)

Fig. 12.2



	<p>City of Moorpark Community Development Department</p>	<p>Slope Planting at Single-family Residence (elevation)</p>	<p>Fig. 12.3</p>
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	<p>City of Moorpark Community Development Department</p>	<p>Slope Planting at Multi-family Residence (plan view)</p>	<p>Fig. 12.4</p>
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Model Water Efficient Landscape Ordinance

California Code of Regulations
Title 23. Waters
Division 2. Department of Water Resources
Chapter 2.7. Model Water Efficient Landscape Ordinance

§ 490. Purpose.

(a) The State Legislature has found:

- (1) that the waters of the state are of limited supply and are subject to ever increasing demands;
- (2) that the continuation of California's economic prosperity is dependent on the availability of adequate supplies of water for future uses;
- (3) that it is the policy of the State to promote the conservation and efficient use of water and to prevent the waste of this valuable resource;
- (4) that landscapes are essential to the quality of life in California by providing areas for active and passive recreation and as an enhancement to the environment by cleaning air and water, preventing erosion, offering fire protection, and replacing ecosystems lost to development; and
- (5) that landscape design, installation, maintenance and management can and should be water efficient; and
- (6) that Section 2 of Article X of the California Constitution specifies that the right to use water is limited to the amount reasonably required for the beneficial use to be served and the right does not and shall not extend to waste or unreasonable method of use.

(b) Consistent with these legislative findings, the purpose of this model ordinance is to:

- (1) promote the values and benefits of landscapes while recognizing the need to invest water and other resources as efficiently as possible;
- (2) establish a structure for planning, designing, installing, maintaining and managing water efficient landscapes in new construction and rehabilitated projects;
- (3) establish provisions for water management practices and water waste prevention for existing landscapes;
- (4) use water efficiently without waste by setting a Maximum Applied Water Allowance as an upper limit for water use and reduce water use to the lowest practical amount;
- (5) promote the benefits of consistent landscape ordinances with neighboring local and regional agencies;
- (6) encourage local agencies and water purveyors to use economic incentives that promote the efficient use of water, such as implementing a tiered-rate structure; and
- (7) encourage local agencies to designate the necessary authority that implements and enforces the provisions of the Model Water Efficient Landscape Ordinance or its local landscape ordinance.

Note: Authority cited: Section 65593, Government Code. Reference: Sections 65591, 65593, 65596, Government Code.

§ 490.1 Applicability

(a) After January 1, 2010, this ordinance shall apply to all of the following landscape projects:

- (1) new construction and rehabilitated landscapes for public agency projects and private development projects with a landscape area equal to or greater than 2,500 square feet requiring a building or landscape permit, plan check or design review;
- (2) new construction and rehabilitated landscapes which are developer-installed in single-family and multi-family projects with a landscape area equal to or greater than 2,500 square feet requiring a building or landscape permit, plan check, or design review;
- (3) new construction landscapes which are homeowner-provided and/or homeowner-hired in single-family and multi-family residential projects with a total project landscape area equal to or greater than 5,000 square feet requiring a building or landscape permit, plan check or design review;
- (4) existing landscapes limited to Sections 493, 493.1 and 493.2; and
- (5) cemeteries. Recognizing the special landscape management needs of cemeteries, new and rehabilitated cemeteries are limited to Sections 492.4, 492.11 and 492.12; and existing cemeteries are limited to Sections 493, 493.1 and 493.2.

(b) This ordinance does not apply to:

- (1) registered local, state or federal historical sites;
- (2) ecological restoration projects that do not require a permanent irrigation system;
- (3) mined-land reclamation projects that do not require a permanent irrigation system; or
- (4) plant collections, as part of botanical gardens and arboretums open to the public.

Note: Authority Cited: Section 65595, Government Code. Reference: Section 65596, Government Code.

§ 491. Definitions.

The terms used in this ordinance have the meaning set forth below:

- (a) "applied water" means the portion of water supplied by the irrigation system to the landscape.
- (b) "automatic irrigation controller" means an automatic timing device used to remotely control valves that operate an irrigation system. Automatic irrigation controllers schedule irrigation events using either evapotranspiration (weather-based) or soil moisture data.
- (c) "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.
- (d) "Certificate of Completion" means the document required under Section 492.9.
- (e) "certified irrigation designer" means a person certified to design irrigation systems by an accredited academic institution a professional trade organization or other program such as the US Environmental Protection Agency's WaterSense irrigation designer certification program and Irrigation Association's Certified Irrigation Designer program.
- (f) "certified landscape irrigation auditor" means a person certified to perform landscape irrigation audits by an accredited academic institution, a professional trade organization or other program such as the US Environmental Protection Agency's WaterSense irrigation auditor certification program and Irrigation Association's Certified Landscape Irrigation Auditor program.
- (g) "check valve" or "anti-drain valve" means a valve located under a sprinkler head, or other location in the irrigation system, to hold water in the system to prevent drainage from sprinkler heads when the sprinkler is off.
- (h) "common interest developments" means community apartment projects, condominium projects, planned developments, and stock cooperatives per Civil Code Section 1351.
- (i) "conversion factor (0.62)" means the number that converts acre-inches per acre per year to gallons per square foot per year
- (j) "drip irrigation" means any non-spray low volume irrigation system utilizing emission devices with a flow rate measured in gallons per hour. Low volume irrigation systems are specifically designed to apply small volumes of water slowly at or near the root zone of plants.
- (k) "ecological restoration project" means a project where the site is intentionally altered to establish a defined, indigenous, historic ecosystem.
- (l) "effective precipitation" or "usable rainfall" (Eppt) means the portion of total precipitation which becomes available for plant growth.
- (m) "emitter" means a drip irrigation emission device that delivers water slowly from the system to the soil.
- (n) "established landscape" means the point at which plants in the landscape have developed significant root growth into the soil. Typically, most plants are established after one or two years of growth.
- (o) "establishment period of the plants" means the first year after installing the plant in the landscape or the first two years if irrigation will be terminated after establishment. Typically, most plants are established after one or two years of growth.
- (p) "Estimated Total Water Use" (ETWU) means the total water used for the landscape as described in Section 492.4.
- (q) "ET adjustment factor" (ETAF) means a factor of 0.7, 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 of 0.5 is the basis of the plant factor portion of this calculation. For purposes of the ETAF, the average irrigation efficiency is 0.71. Therefore, the ET Adjustment Factor is $(0.7) = (0.5/0.71)$. ETAF for a Special Landscape Area shall not exceed 1.0. ETAF for existing non-rehabilitated landscapes is 0.8.

(r) "evapotranspiration rate" means the quantity of water evaporated from adjacent soil and other surfaces and transpired by plants during a specified time.

(s) "flow rate" means the rate at which water flows through pipes, valves and emission devices, measured in gallons per minute, gallons per hour, or cubic feet per second.

(t) "hardscapes" means any durable material (pervious and non-pervious).

(u) "homeowner-provided landscaping" means any landscaping either installed by a private individual for a single family residence or installed by a licensed contractor hired by a homeowner. A homeowner, for purposes of this ordinance, is a person who occupies the dwelling he or she owns. This excludes speculative homes, which are not owner-occupied dwellings.

(v) "hydrozone" means a portion of the landscaped area having plants with similar water needs. A hydrozone may be irrigated or non-irrigated.

(w) "infiltration rate" means the rate of water entry into the soil expressed as a depth of water per unit of time (e.g., inches per hour).

(x) "invasive plant species" means species of plants not historically found in California that spread outside cultivated areas and can damage environmental or economic resources. Invasive species may be regulated by county agricultural agencies as noxious species. "Noxious weeds" means any weed designated by the Weed Control Regulations in the Weed Control Act and identified on a Regional District noxious weed control list. Lists of invasive plants are maintained at the California Invasive Plant Inventory and USDA invasive and noxious weeds database.

(y) "irrigation audit" means an in-depth evaluation of the performance of an irrigation system conducted by a Certified Landscape Irrigation Auditor. 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.

(z) "irrigation efficiency" (IE) 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 average irrigation efficiency for purposes of this ordinance is 0.71. Greater irrigation efficiency can be expected from well designed and maintained systems.

(aa) "irrigation survey" means an evaluation of an irrigation system that is less detailed than an irrigation audit. An irrigation survey includes, but is not limited to: inspection, system test, and written recommendations to improve performance of the irrigation system.

(bb) "irrigation water use analysis" means an analysis of water use data based on meter readings and billing data.

(cc) "landscape architect" means a person who holds a license to practice landscape architecture in the state of California Business and Professions Code, Section 5615.

(dd) "landscape area" means all the planting areas, turf areas, and water features in a landscape design plan subject to the Maximum Applied Water Allowance calculation. The landscape area does not include footprints of buildings or structures, sidewalks, driveways, parking lots, decks, patios, gravel or stone walks, other pervious or non-pervious hardscapes, and other non-irrigated areas designated for non-development (e.g., open spaces and existing native vegetation).

(ee) "landscape contractor" means a person licensed by the state of California to construct, maintain, repair, install, or subcontract the development of landscape systems.

(ff) "Landscape Documentation Package" means the documents required under Section 492.3.

(gg) "landscape project" means total area of landscape in a project as defined in "landscape area" for the purposes of this ordinance, meeting requirements under Section 490.1.

(hh) "lateral line" means the water delivery pipeline that supplies water to the emitters or sprinklers from the valve.

(ii) "local agency" means a city or county, including a charter city or charter county, that is responsible for adopting and implementing the ordinance. The local agency is also responsible for the enforcement

of this ordinance, including but not limited to, approval of a permit and plan check or design review of a project.

(jj) "local water purveyor" means any entity, including a public agency, city, county, or private water company that provides retail water service.

(kk) "low volume irrigation" means the application of irrigation water at low pressure through a system of tubing or lateral lines and low-volume emitters such as drip, drip lines, and bubblers. Low volume irrigation systems are specifically designed to apply small volumes of water slowly at or near the root zone of plants.

(ll) "main line" means the pressurized pipeline that delivers water from the water source to the valve or outlet.

(mm) "Maximum Applied Water Allowance" (MAWA) means the upper limit of annual applied water for the established landscaped area as specified in Section 492.4. It is based upon the area's reference evapotranspiration, the ET Adjustment Factor, and the size of the landscape area. The Estimated Total Water Use shall not exceed the Maximum Applied Water Allowance. Special Landscape Areas, including recreation areas, areas permanently and solely dedicated to edible plants such as orchards and vegetable gardens, and areas irrigated with recycled water are subject to the MAWA with an ETAF not to exceed 1.0.

(nn) "microclimate" means the climate of a small, specific area that may contrast with the climate of the overall landscape area due to factors such as wind, sun exposure, plant density, or proximity to reflective surfaces.

(oo) "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.

(pp) "mulch" means any organic material such as leaves, bark, straw, compost, or inorganic mineral materials such as rocks, gravel, and decomposed granite left loose and applied to the soil surface for the beneficial purposes of reducing evaporation, suppressing weeds, moderating soil temperature, and preventing soil erosion.

(qq) "new construction" means, for the purposes of this ordinance, a new building with a landscape or other new landscape, such as a park, playground, or greenbelt without an associated building.

(rr) "operating pressure" means the pressure at which the parts of an irrigation system are designed by the manufacturer to operate.

(ss) "overhead sprinkler irrigation systems" means systems that deliver water through the air (e.g., spray heads and rotors).

(tt) "overspray" means the irrigation water which is delivered beyond the target area.

(uu) "permit" means an authorizing document issued by local agencies for new construction or rehabilitated landscapes.

(vv) "pervious" means any surface or material that allows the passage of water through the material and into the underlying soil.

(ww) "plant factor" or "plant water use factor" is a factor, when multiplied by ETo, estimates the amount of water needed by plants. For purposes of this ordinance, the plant factor range for low water use plants is 0 to 0.3, the plant factor range for moderate water use plants is 0.4 to 0.6, and the plant factor range for high water use plants is 0.7 to 1.0. Plant factors cited in this ordinance are derived from the Department of Water Resources 2000 publication "Water Use Classification of Landscape Species".

(xx) "precipitation rate" means the rate of application of water measured in inches per hour.

(yy) "project applicant" means the individual or entity submitting a Landscape Documentation Package required under Section 492.3, to request a permit, plan check, or design review from the local agency. A project applicant may be the property owner or his or her designee.

(zz) "rain sensor" or "rain sensing shutoff device" means a component which automatically suspends an irrigation event when it rains.

(aaa) "record drawing" or "as-builts" means a set of reproducible drawings which show significant changes in the work made during construction and which are usually based on drawings marked up in the field and other data furnished by the contractor.

(bbb) "recreational area" means areas dedicated to active play such as parks, sports fields, and golf courses where turf provides a playing surface.

(ccc) “recycled water”, “reclaimed water”, or “treated sewage effluent water” means treated or recycled waste water of a quality suitable for non-potable uses such as landscape irrigation and water features. This water is not intended for human consumption.

(ddd) “reference evapotranspiration” or “ETo” means a standard measurement of environmental parameters which affect the water use of plants. ETo is expressed in inches per day, month, or year as represented in Section 495.1, and is an estimate of the evapotranspiration of a large field of four- to seven-inch tall, cool-season grass that is well watered. Reference evapotranspiration is used as the basis of determining the Maximum Applied Water Allowance so that regional differences in climate can be accommodated.

(eee) “rehabilitated landscape” means any re-landscaping project that requires a permit, plan check, or design review, meets the requirements of Section 490.1, and the modified landscape area is equal to or greater than 2,500 square feet, is 50% of the total landscape area, and the modifications are completed within one year.

(fff) “runoff” means water which is not absorbed by the soil or landscape to which it is applied and flows from the landscape area. For example, runoff may result from water that is applied at too great a rate (application rate exceeds infiltration rate) or when there is a slope.

(ggg) “soil moisture sensing device” or “soil moisture sensor” means a device that measures the amount of water in the soil. The device may also suspend or initiate an irrigation event.

(hhh) “soil texture” means the classification of soil based on its percentage of sand, silt, and clay.

(iii) “Special Landscape Area” (SLA) means an area of the landscape dedicated solely to edible plants, areas irrigated with recycled water, water features using recycled water and areas dedicated to active play such as parks, sports fields, golf courses, and where turf provides a playing surface.

(jjj) “sprinkler head” means a device which delivers water through a nozzle.

(kkk) “static water pressure” means the pipeline or municipal water supply pressure when water is not flowing.

(lll) “station” means an area served by one valve or by a set of valves that operate simultaneously.

(mmm) “swing joint” means an irrigation component that provides a flexible, leak-free connection between the emission device and lateral pipeline to allow movement in any direction and to prevent equipment damage.

(nnn) “turf” means a ground cover surface of mowed grass. Annual bluegrass, Kentucky bluegrass, Perennial ryegrass, Red fescue, and Tall fescue are cool-season grasses. Bermudagrass, Kikuyugrass, Seashore Paspalum, St. Augustinegrass, Zoysiagrass, and Buffalo grass are warm-season grasses.

(ooo) “valve” means a device used to control the flow of water in the irrigation system.

(ppp) “water conserving plant species” means a plant species identified as having a low plant factor.

(qqq) “water feature” means a design element where open water performs an aesthetic or recreational function. Water features include ponds, lakes, waterfalls, fountains, artificial streams, spas, and swimming pools (where water is artificially supplied). The surface area of water features is included in the high water use hydrozone of the landscape area. Constructed wetlands used for on-site wastewater treatment or stormwater best management practices that are not irrigated and used solely for water treatment or stormwater retention are not water features and, therefore, are not subject to the water budget calculation.

(rrr) “watering window” means the time of day irrigation is allowed.

(sss) “WUCOLS” means the Water Use Classification of Landscape Species published by the University of California Cooperative Extension, the Department of Water Resources and the Bureau of Reclamation, 2000.

Note: Authority Cited: Section 65595, Government Code. Reference: Sections 65592, 65596, Government Code.

§ 492. Provisions for New Construction or Rehabilitated Landscapes.

(a) A local agency may designate another agency, such as a water purveyor, to implement some or all of the requirements contained in this ordinance. Local agencies may collaborate with water purveyors to define each entity’s specific responsibilities relating to this ordinance.

Note: Authority Cited: Section 65595, Government Code. Reference: Section 65596, Government Code.

§ 492.1 Compliance with Landscape Documentation Package.

- (a) Prior to construction, the local agency shall:
 - (1) provide the project applicant with the ordinance and procedures for permits, plan checks, or design reviews;
 - (2) review the Landscape Documentation Package submitted by the project applicant;
 - (3) approve or deny the Landscape Documentation Package;
 - (4) issue a permit or approve the plan check or design review for the project applicant; and
 - (5) upon approval of the Landscape Documentation Package, submit a copy of the Water Efficient Landscape Worksheet to the local water purveyor.
- (b) Prior to construction, the project applicant shall:
 - (1) submit a Landscape Documentation Package to the local agency.
- (c) Upon approval of the Landscape Documentation Package by the local agency, the project applicant shall:
 - (1) receive a permit or approval of the plan check or design review and record the date of the permit in the Certificate of Completion;
 - (2) submit a copy of the approved Landscape Documentation Package along with the record drawings, and any other information to the property owner or his/her designee; and
 - (3) submit a copy of the Water Efficient Landscape Worksheet to the local water purveyor.

Note: Authority Cited: Section 65595, Government Code. Reference: Section 65596, Government Code.

§ 492.2 Penalties.

- (a) A local agency may establish and administer penalties to the project applicant for non-compliance with the ordinance to the extent permitted by law.

Note: Authority Cited: Section 65595, Government Code. Reference: Section 65596, Government Code.

§ 492.3 Elements of the Landscape Documentation Package.

- (a) The Landscape Documentation Package shall include the following six (6) elements:
 - (1) project information;
 - (A) date
 - (B) project applicant
 - (C) project address (if available, parcel and/or lot number(s))
 - (D) total landscape area (square feet)
 - (E) project type (e.g., new, rehabilitated, public, private, cemetery, homeowner-installed)
 - (F) water supply type (e.g., potable, recycled, well) and identify the local retail water purveyor if the applicant is not served by a private well
 - (G) checklist of all documents in Landscape Documentation Package
 - (H) project contacts to include contact information for the project applicant and property owner
 - (I) applicant signature and date with statement, "I agree to comply with the requirements of the water efficient landscape ordinance and submit a complete Landscape Documentation Package".
 - (2) Water Efficient Landscape Worksheet;
 - (A) hydrozone information table
 - (B) water budget calculations
 - 1. Maximum Applied Water Allowance (MAWA)

2. Estimated Total Water Use (ETWU)

- (3) soil management report;
- (4) landscape design plan;
- (5) irrigation design plan; and
- (6) grading design plan.

Note: Authority Cited: Section 65595, Government Code. Reference: Section 65596, Government Code.

§ 492.4 Water Efficient Landscape Worksheet.

(a) A project applicant shall complete the Water Efficient Landscape Worksheet which contains two sections (see sample worksheet in Appendix B):

- (1) a hydrozone information table (see Appendix B, Section A) for the landscape project; and
- (2) a water budget calculation (see Appendix B, Section B) for the landscape project. For the calculation of the Maximum Applied Water Allowance and Estimated Total Water Use, a project applicant shall use the ETo values from the Reference Evapotranspiration Table in Appendix A. For geographic areas not covered in Appendix A, use data from other cities located nearby in the same reference evapotranspiration zone, as found in the CIMIS Reference Evapotranspiration Zones Map, Department of Water Resources, 1999.

(b) Water budget calculations shall adhere to the following requirements:

- (1) The plant factor used shall be from WUCOLS. The plant factor ranges from 0 to 0.3 for low water use plants, from 0.4 to 0.6 for moderate water use plants, and from 0.7 to 1.0 for high water use plants.
- (2) All water features shall be included in the high water use hydrozone and temporarily irrigated areas shall be included in the low water use hydrozone.
- (3) All Special Landscape Areas shall be identified and their water use calculated as described below.
- (4) ETAF for Special Landscape Areas shall not exceed 1.0.

(c) Maximum Applied Water Allowance

The Maximum Applied Water Allowance shall be calculated using the equation:

$$\text{MAWA} = (\text{ETo}) (0.62) [(0.7 \times \text{LA}) + (0.3 \times \text{SLA})]$$

The example calculations below are hypothetical to demonstrate proper use of the equations and do not represent an existing and/or planned landscape project. The ETo values used in these calculations are from the Reference Evapotranspiration Table in Appendix A, for planning purposes only. For actual irrigation scheduling, automatic irrigation controllers are required and shall use current reference evapotranspiration data, such as from the California Irrigation Management Information System (CIMIS), other equivalent data, or soil moisture sensor data.

(1) Example MAWA calculation: a hypothetical landscape project in Fresno, CA with an irrigated landscape area of 50,000 square feet without any Special Landscape Area (SLA= 0, no edible plants, recreational areas, or use of recycled water). To calculate MAWA, the annual reference evapotranspiration value for Fresno is 51.1 inches as listed in the Reference Evapotranspiration Table in Appendix A.

$$\text{MAWA} = (\text{ETo}) (0.62) [(0.7 \times \text{LA}) + (0.3 \times \text{SLA})]$$

MAWA = Maximum Applied Water Allowance (gallons per year)

ETo = Reference Evapotranspiration (inches per year)

0.62 = Conversion Factor (to gallons)

0.7 = ET Adjustment Factor (ETAF)

LA = Landscape Area including SLA (square feet)

0.3 = Additional Water Allowance for SLA

SLA = Special Landscape Area (square feet)

$$\text{MAWA} = (51.1 \text{ inches}) (0.62) [(0.7 \times 50,000 \text{ square feet}) + (0.3 \times 0)]$$

$$= 1,108,870 \text{ gallons per year}$$

To convert from gallons per year to hundred-cubic-feet per year:

= 1,108,870/748 = 1,482 hundred-cubic-feet per year
 (100 cubic feet = 748 gallons)

(2) In this next hypothetical example, the landscape project in Fresno, CA has the same ETo value of 51.1 inches and a total landscape area of 50,000 square feet. Within the 50,000 square foot project, there is now a 2,000 square foot area planted with edible plants. This 2,000 square foot area is considered to be a Special Landscape Area.

$$MAWA = (ETo) (0.62) [(0.7 \times LA) + (0.3 \times SLA)]$$

$$MAWA = (51.1 \text{ inches}) (0.62) [(0.7 \times 50,000 \text{ square feet}) + (0.3 \times 2,000 \text{ square feet})]$$

$$= 31.68 \times [35,000 + 600] \text{ gallons per year}$$

$$= 31.68 \times 35,600 \text{ gallons per year}$$

$$= 1,127,808 \text{ gallons per year or } 1,508 \text{ hundred-cubic-feet per year}$$

(d) Estimated Total Water Use.

The Estimated Total Water Use shall be calculated using the equation below. The sum of the Estimated Total Water Use calculated for all hydrozones shall not exceed MAWA.

$$ETWU = (ETo)(0.62) \left(\frac{PF \times HA}{IE} + SLA \right)$$

Where:

ETWU = Estimated Total Water Use per year (gallons)

ETo = Reference Evapotranspiration (inches)

PF = Plant Factor from WUCOLS (see Section 491)

HA = Hydrozone Area [high, medium, and low water use areas] (square feet)

SLA = Special Landscape Area (square feet)

0.62 = Conversion Factor

IE = Irrigation Efficiency (minimum 0.71)

(1) Example ETWU calculation: landscape area is 50,000 square feet; plant water use type, plant factor, and hydrozone area are shown in the table below. The ETo value is 51.1 inches per year. There are no Special Landscape Areas (recreational area, area permanently and solely dedicated to edible plants, and area irrigated with recycled water) in this example.

Hydrozone	Plant Water Use Type(s)	Plant Factor (PF)*	Hydrozone Area (HA) (square feet)	PF x HA (square feet)
1	High	0.8	7,000	5,600
2	High	0.7	10,000	7,000
3	Medium	0.5	16,000	8,000
4	Low	0.3	7,000	2,100
5	Low	0.2	10,000	2,000
			Sum	24,700

*Plant

Factor from WUCOLS

$$ETWU = (51.1)(0.62) \left(\frac{24,700}{0.71} + 0 \right)$$

$$= 1,102,116 \text{ gallons per year}$$

Compare ETWU with MAWA: For this example MAWA = (51.1) (0.62) [(0.7 x 50,000) + (0.3 x 0)] = 1,108,870 gallons per year. The ETWU (1,102,116 gallons per year) is less than MAWA (1,108,870 gallons per year). In this example, the water budget complies with the MAWA.

(2) Example ETWU calculation: total landscape area is 50,000 square feet, 2,000 square feet of which is planted with edible plants. The edible plant area is considered a Special Landscape Area (SLA). The reference evapotranspiration value is 51.1 inches per year. The plant type, plant factor, and hydrozone area are shown in the table below.

Hydrozone	Plant Water Use Type(s)	Plant Factor (PF)*	Hydrozone Area (HA) (square feet)	PF x HA (square feet)
1	High	0.8	7,000	5,600
2	High	0.7	9,000	6,300
3	Medium	0.5	15,000	7,500
4	Low	0.3	7,000	2,100
5	Low	0.2	10,000	2,000
			Sum	23,500
6	SLA	1.0	2,000	2,000

*Plant Factor

from WUCOLS

$$ETWU = (51.1)(0.62) \left(\frac{23,500}{0.71} + 2,000 \right)$$

$$= (31.68) (33,099 + 2,000)$$

$$= 1,111,936 \text{ gallons per year}$$

Compare ETWU with MAWA. For this example:

$$MAWA = (51.1) (0.62) [(0.7 \times 50,000) + (0.3 \times 2,000)]$$

$$= 31.68 \times [35,000 + 600]$$

$$= 31.68 \times 35,600$$

$$= 1,127,808 \text{ gallons per year}$$

The ETWU (1,111,936 gallons per year) is less than MAWA (1,127,808 gallons per year). For this example, the water budget complies with the MAWA.

Note: Authority Cited: Section 65595, Government Code. Reference: Section 65596, Government Code.

§ 492.5 Soil Management Report.

(a) In order to reduce runoff and encourage healthy plant growth, a soil management report shall be completed by the project applicant, or his/her designee, as follows:

(1) Submit soil samples to a laboratory for analysis and recommendations.

(A) Soil sampling shall be conducted in accordance with laboratory protocol, including protocols regarding adequate sampling depth for the intended plants.

(B) The soil analysis may 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 project applicant, or his/her designee, shall comply with one of the following:

(A) If significant mass grading is not planned, the soil analysis report shall be submitted to the local agency as part of the Landscape Documentation Package; or

(B) If significant mass grading is planned, the soil analysis report shall be submitted to the local agency as part of the Certificate of Completion.

(3) The soil analysis report shall be made available, in a timely manner, to the professionals preparing the landscape design plans and irrigation design plans to make any necessary adjustments to the design plans.

(4) The project applicant, or his/her designee, shall submit documentation verifying implementation of soil analysis report recommendations to the local agency with Certificate of Completion.

Note: Authority Cited: Section 65595, Government Code. Reference: Section 65596, Government Code.

§ 492.6 Landscape Design Plan.

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

(1) Plant Material

(A) 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. To encourage the efficient use of water, the following is highly recommended:

1. protection and preservation of native species and natural vegetation;
2. selection of water-conserving plant and turf species;
3. selection of plants based on disease and pest resistance;
4. selection of trees based on applicable local tree ordinances or tree shading guidelines; and
5. selection of plants from local and regional landscape program plant lists.

(B) Each hydrozone shall have plant materials with similar water use, with the exception of hydrozones with plants of mixed water use, as specified in Section 492.7(a)(2)(D).

(C) Plants shall 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:

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, power lines]; and
3. consider the solar orientation for plant placement to maximize summer shade and winter solar gain.

(D) Turf is not allowed 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 shall address fire safety and prevention. A defensible space or zone around a building or structure is required per Public Resources Code Section 4291(a) and (b). Avoid fire-prone plant materials and highly flammable mulches.

(F) The use of invasive and/or noxious plant species is strongly discouraged.

(G) The architectural guidelines of a common interest development, which include community apartment projects, condominiums, planned developments, and stock cooperatives, shall not prohibit or include conditions that have the effect of prohibiting the use of low-water use plants as a group.

(2) Water Features

(A) Recirculating water systems shall be used for water features.

(B) Where available, recycled water shall be used as a source for decorative water features.

(C) Surface area of a water feature shall be included in the high water use hydrozone area of the water budget calculation.

(D) Pool and spa covers are highly recommended.

(3) Mulch and Amendments

(A) A minimum two inch (2") 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.

(B) Stabilizing mulching products shall be used on slopes.

(C) The mulching portion of the seed/mulch slurry in hydro-seeded applications shall meet the mulching requirement.

(D) Soil amendments shall be incorporated according to recommendations of the soil report and what is appropriate for the plants selected (see Section 492.5).

(b) The landscape design plan, at a minimum, shall:

(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 landscape shall 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 stormwater best management practices that encourage on-site retention and infiltration of stormwater. Stormwater 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 ordinance and applied them for the efficient use of water in the landscape design plan"; and

(13) bear the signature of a licensed landscape architect, licensed landscape contractor, or any other person authorized to design a landscape. (See Sections 5500.1, 5615, 5641, 5641.1, 5641.2, 5641.3, 5641.4, 5641.5, 5641.6, 6701, 7027.5 of the Business and Professions Code, Section 832.27 of Title 16 of the California Code of Regulations, and Section 6721 of the Food and Agriculture Code.)

Note: Authority Cited: Section 65595, Government Code. Reference: Section 65596, Government Code and Section 1351, Civil Code.

§ 492.7 Irrigation Design Plan.

(a) 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.

(1) System

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

- (B) Automatic irrigation controllers utilizing either evapotranspiration or soil moisture sensor data shall be required for irrigation scheduling in all irrigation systems.
- (C) The irrigation system shall 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 shall 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 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.
- (D) 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.
- (E) 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 main line break) or routine repair.
- (F) Backflow prevention devices shall be required to protect the water supply from contamination by the irrigation system. A project applicant shall refer to the applicable local agency code (i.e., public health) for additional backflow prevention requirements.
- (G) High flow sensors that detect and report high flow conditions created by system damage or malfunction are recommended.
- (H) The irrigation system shall 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.
- (I) Relevant information from the soil management plan, such as soil type and infiltration rate, shall be utilized when designing irrigation systems.
- (J) The design of the irrigation system shall conform to the hydrozones of the landscape design plan.
- (K) The irrigation system must be designed and installed to meet, at a minimum, the irrigation efficiency criteria as described in Section 492.4 regarding the Maximum Applied Water Allowance.
- (L) 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.
- (M) In mulched planting areas, the use of low volume irrigation is required to maximize water infiltration into the root zone.
- (N) Sprinkler heads and other emission devices shall have matched precipitation rates, unless otherwise directed by the manufacturer's recommendations.
- (O) Head to head coverage is recommended. However, sprinkler spacing shall be designed to achieve the highest possible distribution uniformity using the manufacturer's recommendations.
- (P) Swing joints or other riser-protection components are required on all risers subject to damage that are adjacent to high traffic areas.
- (Q) Check valves or anti-drain valves are required for all irrigation systems.
- (R) Narrow or irregularly shaped areas, including turf, less than eight (8) feet in width in any direction shall be irrigated with subsurface irrigation or low volume irrigation system.
- (S) Overhead irrigation shall not be 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 landscape 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 specifies an alternative design or technology, as part of the Landscape Documentation Package and clearly demonstrates strict adherence to irrigation system design criteria

in Section 492.7 (a)(1)(H). Prevention of overspray and runoff must be confirmed during the irrigation audit.

(T) Slopes greater than 25% shall 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 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 shall 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 shall be selected based on what is appropriate for the plant type within that hydrozone.

(C) Where feasible, trees shall 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. plant factor calculation is based on the proportions of the respective plant water uses and their plant factor; or

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

(E) Individual hydrozones that mix high and low water use plants shall not be permitted.

(F) On the landscape design plan and irrigation design plan, hydrozone areas shall 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. Use this valve number in the Hydrozone Information Table (see Appendix B Section A). This table can also assist with the irrigation audit and programming the controller.

(b) The irrigation design plan, at a minimum, shall contain:

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

(2) 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;

(3) static water pressure at the point of connection to the public water supply;

(4) flow rate (gallons per minute), application rate (inches per hour), and design operating pressure (pressure per square inch) for each station;

(5) recycled water irrigation systems as specified in Section 492.14;

(6) the following statement: "I have complied with the criteria of the ordinance and applied them accordingly for the efficient use of water in the irrigation design plan"; and

(7) the signature of a licensed landscape architect, certified irrigation designer, licensed landscape contractor, or any other person authorized to design an irrigation system. (See Sections 5500.1, 5615, 5641, 5641.1, 5641.2, 5641.3, 5641.4, 5641.5, 5641.6, 6701, 7027.5 of the Business and Professions Code, Section 832.27 of Title 16 of the California Code of Regulations, and Section 6721 of the Food and Agricultural Code.)

Note: Authority Cited: Section 65595, Government Code. Reference: Section 65596, Government Code.

§ 492.8 Grading Design Plan.

(a) For the efficient use of water, grading of a project site shall be designed to minimize soil erosion, runoff, and water waste. A grading plan shall be submitted as part of the Landscape Documentation Package. A comprehensive grading plan prepared by a civil engineer for other local agency permits satisfies this requirement.

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

(A) height of graded slopes;

(B) drainage patterns;

(C) pad elevations;

- (D) finish grade; and
- (E) stormwater retention improvements, if applicable.
- (2) To prevent excessive erosion and runoff, it is highly recommended that project applicants:
 - (A) grade so that all irrigation and normal rainfall remains within property lines and does not drain on to non-permeable hardscapes;
 - (B) avoid disruption of natural drainage patterns and undisturbed soil; and
 - (C) avoid soil compaction in landscape areas.
- (3) 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.

Note: Authority Cited: Section 65595, Government Code. Reference: Section 65596, Government Code.

§ 492.9 Certificate of Completion.

(a) The Certificate of Completion (see Appendix C for a sample certificate) shall include the following six (6) elements:

- (1) project information sheet that contains:
 - (A) date;
 - (B) project name;
 - (C) project applicant name, telephone, and mailing address;
 - (D) project address and location; and
 - (E) property owner name, telephone, and mailing address;
- (2) certification by either the signer of the landscape design plan, the signer of the irrigation design plan, or the licensed landscape contractor that the landscape project has been installed per the approved Landscape Documentation Package;
 - (A) where there have been significant changes made in the field during construction, these "as-built" or record drawings shall be included with the certification;
- (3) irrigation scheduling parameters used to set the controller (see Section 492.10);
- (4) landscape and irrigation maintenance schedule (see Section 492.11);
- (5) irrigation audit report (see Section 492.12); and
- (6) soil analysis report, if not submitted with Landscape Documentation Package, and documentation verifying implementation of soil report recommendations (see Section 492.5).

(b) The project applicant shall:

- (1) submit the signed Certificate of Completion to the local agency for review;
- (2) ensure that copies of the approved Certificate of Completion are submitted to the local water purveyor and property owner or his or her designee.

(c) The local agency shall:

- (1) receive the signed Certificate of Completion from the project applicant;
- (2) approve or deny the Certificate of Completion. If the Certificate of Completion is denied, the local agency shall provide information to the project applicant regarding reapplication, appeal, or other assistance.

Note: Authority Cited: Section 65595, Government Code. Reference: Section 65596, Government Code.

§ 492.10 Irrigation Scheduling.

(a) For the efficient use of water, all irrigation schedules shall be developed, managed, and evaluated to utilize the minimum amount of water required to maintain plant health. Irrigation schedules shall meet the following criteria:

- (1) Irrigation scheduling shall be regulated by automatic irrigation controllers.
- (2) Overhead irrigation shall be scheduled between 8:00 p.m. and 10:00 a.m. unless weather conditions prevent it. If allowable hours of irrigation differ from the local water purveyor, the stricter of

the two shall apply. Operation of the irrigation system outside the normal watering window is allowed for auditing and system maintenance.

(3) For implementation of the irrigation schedule, particular attention must be paid to irrigation run times, emission device, flow rate, and current reference evapotranspiration, so that applied water meets the Estimated Total Water Use. 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.

(4) Parameters used to set the automatic controller shall be developed and submitted for each of the following:

- (A) the plant establishment period;
- (B) the established landscape; and
- (C) temporarily irrigated areas.

(5) Each irrigation schedule shall consider for each station all of the following that apply:

- (A) irrigation interval (days between irrigation);
- (B) irrigation run times (hours or minutes per irrigation event to avoid runoff);
- (C) number of cycle starts required for each irrigation event to avoid runoff;
- (D) amount of applied water scheduled to be applied on a monthly basis;
- (E) application rate setting;
- (F) root depth setting;
- (G) plant type setting;
- (H) soil type;
- (I) slope factor setting;
- (J) shade factor setting; and
- (K) irrigation uniformity or efficiency setting.

Note: Authority Cited: Section 65595, Government Code. Reference: Section 65596, Government Code.

§ 492.11 Landscape and Irrigation Maintenance Schedule.

(a) Landscapes shall be maintained to ensure water use efficiency. A regular maintenance schedule shall be submitted with the Certificate of Completion.

(b) A regular maintenance schedule shall include, but not be limited to, routine inspection; adjustment and repair of the irrigation system and its components; aerating and dethatching turf areas; replenishing mulch; fertilizing; pruning; weeding in all landscape areas, and removing and obstruction to emission devices. Operation of the irrigation system outside the normal watering window is allowed for auditing and system maintenance.

(c) Repair of all irrigation equipment shall be done with the originally installed components or their equivalents.

(d) A project applicant is encouraged to implement sustainable or environmentally-friendly practices for overall landscape maintenance.

Note: Authority Cited: Section 65595, Government Code. Reference: Section 65596, Government Code.

§ 492.12 Irrigation Audit, Irrigation Survey, and Irrigation Water Use Analysis.

(a) All landscape irrigation audits shall be conducted by a certified landscape irrigation auditor.

(b) For new construction and rehabilitated landscape projects installed after January 1, 2010, as described in Section 490.1:

(1) the project applicant shall submit an irrigation audit report with the Certificate of Completion to the local agency that may include, but is not limited to: inspection, system tune-up, system test with distribution uniformity, reporting overspray or run off that causes overland flow, and preparation of an irrigation schedule;

(2) the local agency shall administer programs that may include, but not be limited to, irrigation water use analysis, irrigation audits, and irrigation surveys for compliance with the Maximum Applied Water Allowance.

Note: Authority Cited: Section 65595, Government Code. Reference: Section 65596, Government Code.

§ 492.13 Irrigation Efficiency.

(a) For the purpose of determining Maximum Applied Water Allowance, average irrigation efficiency is assumed to be 0.71. Irrigation systems shall be designed, maintained, and managed to meet or exceed an average landscape irrigation efficiency of 0.71.

Note: Authority Cited: Section 65595, Government Code. Reference: Section 65596, Government Code.

§ 492.14 Recycled Water.

(a) The installation of recycled water irrigation systems shall allow for the current and future use of recycled water, unless a written exemption has been granted as described in Section 492.14(b).

(b) Irrigation systems and decorative water features shall use recycled water unless a written exemption has been granted by the local water purveyor stating that recycled water meeting all public health codes and standards is not available and will not be available for the foreseeable future.

(c) All recycled water irrigation systems shall be designed and operated in accordance with all applicable local and State laws.

(d) Landscapes using recycled water are considered Special Landscape Areas. The ET Adjustment Factor for Special Landscape Areas shall not exceed 1.0.

Note: Authority Cited: Section 65595, Government Code. Reference: Section 65596, Government Code.

§ 492.15 Stormwater Management.

(a) Stormwater management practices minimize runoff and increase infiltration which recharges groundwater and improves water quality. Implementing stormwater best management practices into the landscape and grading design plans to minimize runoff and to increase on-site retention and infiltration are encouraged.

(b) Project applicants shall refer to the local agency or Regional Water Quality Control Board for information on any applicable stormwater ordinances and stormwater management plans.

(c) Rain gardens, cisterns, and other landscapes features and practices that increase rainwater capture and create opportunities for infiltration and/or onsite storage are recommended.

Note: Authority Cited: Section 65595, Government Code. Reference: Section 65596, Government Code.

§ 492.16 Public Education.

(a) Publications. Education is a critical component to promote the efficient use of water in landscapes. The use of appropriate principles of design, installation, management and maintenance that save water is encouraged in the community.

(1) A local agency shall provide information to owners of new, single-family residential homes regarding the design, installation, management, and maintenance of water efficient landscapes.

(b) Model Homes. All model homes that are landscaped shall use signs and written information to demonstrate the principles of water efficient landscapes described in this ordinance.

(1) Signs shall be used to identify the model as an example of a water efficient landscape featuring elements such as hydrozones, irrigation equipment, and others that contribute to the overall water efficient theme.

(2) Information shall be provided about designing, installing, managing, and maintaining water efficient landscapes.

Note: Authority Cited: Section 65595, Government Code. Reference: Section 65596, Government Code.

§ 492.17 Environmental Review.

(a) The local agency must comply with the California Environmental Quality Act (CEQA), as appropriate.

Note: Authority cited: Section 21082, Public Resources Code. Reference: Sections 21080, 21082, Public Resources Code.

§ 493. Provisions for Existing Landscapes.

(a) A local agency may designate another agency, such as a water purveyor, to implement some or all of the requirements contained in this ordinance. Local agencies may collaborate with water purveyors to define each entity's specific responsibilities relating to this ordinance.

Note: Authority Cited: Section 65595, Government Code. Reference: Section 65596, Government Code.

§ 493.1 Irrigation Audit, Irrigation Survey, and Irrigation Water Use Analysis.

(a) This section, 493.1, shall apply to all existing landscapes that were installed before January 1, 2010 and are over one acre in size.

(1) For all landscapes in 493.1(a) that have a water meter, the local agency shall administer programs that may include, but not be limited to, irrigation water use analyses, irrigation surveys, and irrigation audits to evaluate water use and provide recommendations as necessary to reduce landscape water use to a level that does not exceed the Maximum Applied Water Allowance for existing landscapes. The Maximum Applied Water Allowance for existing landscapes shall be calculated as: $MAWA = (0.8)(ET_o)(LA)(0.62)$.

(2) For all landscapes in 493.1(a), that do not have a meter, the local agency shall administer programs that may include, but not be limited to, irrigation surveys and irrigation audits to evaluate water use and provide recommendations as necessary in order to prevent water waste.

(b) All landscape irrigation audits shall be conducted by a certified landscape irrigation auditor.

Note: Authority Cited: Section 65595, Government Code. Reference: Section 65596, Government Code.

§ 493.2 Water Waste Prevention.

(a) Local agencies shall prevent water waste resulting from inefficient landscape irrigation by prohibiting runoff from leaving the target landscape due to low head drainage, overspray, or other similar conditions where water flows onto adjacent property, non-irrigated areas, walks, roadways, parking lots, or structures. Penalties for violation of these prohibitions shall be established locally.

(b) Restrictions regarding overspray and runoff may be modified if:

(1) the landscape 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.

Note: Authority cited: Section 65594, Government Code. Reference: Section 65596, Government Code.

§ 494. Effective Precipitation.

(a) A local agency may consider Effective Precipitation (25% of annual precipitation) in tracking water use and may use the following equation to calculate Maximum Applied Water Allowance:

$$\text{MAWA} = (\text{ETo} - \text{Eppt}) (0.62) [(0.7 \times \text{LA}) + (0.3 \times \text{SLA})].$$

Note: Authority Cited: Section 65595, Government Code. Reference: Section 65596, Government Code.

Appendices.

Appendix A. Reference Evapotranspiration (ETo) Table.

**Appendix A - Reference Evapotranspiration (ETo)
Table***

County and City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual ETo
ALAMEDA													
Fremont	1.5	1.9	3.4	4.7	5.4	6.3	6.7	6.0	4.5	3.4	1.8	1.5	47.0
Livermore	1.2	1.5	2.9	4.4	5.9	6.6	7.4	6.4	5.3	3.2	1.5	0.9	47.2
Oakland	1.5	1.5	2.8	3.9	5.1	5.3	6.0	5.5	4.8	3.1	1.4	0.9	41.8
Oakland Foothills	1.1	1.4	2.7	3.7	5.1	6.4	5.8	4.9	3.6	2.6	1.4	1.0	39.6
Pleasanton	0.8	1.5	2.9	4.4	5.6	6.7	7.4	6.4	4.7	3.3	1.5	1.0	46.2
Union City	1.4	1.8	3.1	4.2	5.4	5.9	6.4	5.7	4.4	3.1	1.5	1.2	44.2
ALPINE													
Markleeville	0.7	0.9	2.0	3.5	5.0	6.1	7.3	6.4	4.4	2.6	1.2	0.5	40.6
AMADOR													
Jackson	1.2	1.5	2.8	4.4	6.0	7.2	7.9	7.2	5.3	3.2	1.4	0.9	48.9
Shanandoah Valley	1.0	1.7	2.9	4.4	5.6	6.8	7.9	7.1	5.2	3.6	1.7	1.0	48.8
BUTTE													
Chico	1.2	1.8	2.9	4.7	6.1	7.4	8.5	7.3	5.4	3.7	1.7	1.0	51.7
Durham	1.1	1.8	3.2	5.0	6.5	7.4	7.8	6.9	5.3	3.6	1.7	1.0	51.1
Gridley	1.2	1.8	3.0	4.7	6.1	7.7	8.5	7.1	5.4	3.7	1.7	1.0	51.9
Oroville	1.2	1.7	2.8	4.7	6.1	7.6	8.5	7.3	5.3	3.7	1.7	1.0	51.5
CALAVERAS													
San Andreas	1.2	1.5	2.8	4.4	6.0	7.3	7.9	7.0	5.3	3.2	1.4	0.7	48.8
COLUSA													
Colusa	1.0	1.7	3.4	5.0	6.4	7.6	8.3	7.2	5.4	3.8	1.8	1.1	52.8
Williams	1.2	1.7	2.9	4.5	6.1	7.2	8.5	7.3	5.3	3.4	1.6	1.0	50.8
CONTRA COSTA													
Benicia	1.3	1.4	2.7	3.8	4.9	5.0	6.4	5.5	4.4	2.9	1.2	0.7	40.3
Brentwood	1.0	1.5	2.9	4.5	6.1	7.1	7.9	6.7	5.2	3.2	1.4	0.7	48.3
Concord	1.1	1.4	2.4	4.0	5.5	5.9	7.0	6.0	4.8	3.2	1.3	0.7	43.4
Courtland	0.9	1.5	2.9	4.4	6.1	6.9	7.9	6.7	5.3	3.2	1.4	0.7	48.0
Martinez	1.2	1.4	2.4	3.9	5.3	5.6	6.7	5.6	4.7	3.1	1.2	0.7	41.8
Moraga	1.2	1.5	3.4	4.2	5.5	6.1	6.7	5.9	4.6	3.2	1.6	1.0	44.9
Pittsburg	1.0	1.5	2.8	4.1	5.6	6.4	7.4	6.4	5.0	3.2	1.3	0.7	45.4
Walnut Creek	0.8	1.5	2.9	4.4	5.6	6.7	7.4	6.4	4.7	3.3	1.5	1.0	46.2
DEL NORTE													
Crescent City	0.5	0.9	2.0	3.0	3.7	3.5	4.3	3.7	3.0	2.0	0.9	0.5	27.7
EL DORADO													
Camino	0.9	1.7	2.5	3.9	5.9	7.2	7.8	6.8	5.1	3.1	1.5	0.9	47.3
FRESNO													
Clovis	1.0	1.5	3.2	4.8	6.4	7.7	8.5	7.3	5.3	3.4	1.4	0.7	51.4
Coalinga	1.2	1.7	3.1	4.6	6.2	7.2	8.5	7.3	5.3	3.4	1.6	0.7	50.9
Firebaugh	1.0	1.8	3.7	5.7	7.3	8.1	8.2	7.2	5.5	3.9	2.0	1.1	55.4
FivePoints	1.3	2.0	4.0	6.1	7.7	8.5	8.7	8.0	6.2	4.5	2.4	1.2	60.4
Fresno	0.9	1.7	3.3	4.8	6.7	7.8	8.4	7.1	5.2	3.2	1.4	0.6	51.1
Fresno State	0.9	1.6	3.2	5.2	7.0	8.0	8.7	7.6	5.4	3.6	1.7	0.9	53.7
Friant	1.2	1.5	3.1	4.7	6.4	7.7	8.5	7.3	5.3	3.4	1.4	0.7	51.3

Kerman	0.9	1.5	3.2	4.8	6.6	7.7	8.4	7.2	5.3	3.4	1.4	0.7	51.2
Kingsburg	1.0	1.5	3.4	4.8	6.6	7.7	8.4	7.2	5.3	3.4	1.4	0.7	51.6
Mendota	1.5	2.5	4.6	6.2	7.9	8.6	8.8	7.5	5.9	4.5	2.4	1.5	61.7
Orange Cove	1.2	1.9	3.5	4.7	7.4	8.5	8.9	7.9	5.9	3.7	1.8	1.2	56.7
Panoche	1.1	2.0	4.0	5.6	7.8	8.5	8.3	7.3	5.6	3.9	1.8	1.2	57.2
Parlier	1.0	1.9	3.6	5.2	6.8	7.6	8.1	7.0	5.1	3.4	1.7	0.9	52.0
Reedley	1.1	1.5	3.2	4.7	6.4	7.7	8.5	7.3	5.3	3.4	1.4	0.7	51.3
Westlands	0.9	1.7	3.8	6.3	8.0	8.6	8.6	7.8	5.9	4.3	2.1	1.1	58.8

Appendix A - Reference Evapotranspiration (ET_o) Table*

County and City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual ET _o
GLENN													
Orland	1.1	1.8	3.4	5.0	6.4	7.5	7.9	6.7	5.3	3.9	1.8	1.4	52.1
Willows	1.2	1.7	2.9	4.7	6.1	7.2	8.5	7.3	5.3	3.6	1.7	1.0	51.3
HUMBOLDT													
Eureka	0.5	1.1	2.0	3.0	3.7	3.7	3.7	3.7	3.0	2.0	0.9	0.5	27.5
Ferndale	0.5	1.1	2.0	3.0	3.7	3.7	3.7	3.7	3.0	2.0	0.9	0.5	27.5
Garberville	0.6	1.2	2.2	3.1	4.5	5.0	5.5	4.9	3.8	2.4	1.0	0.7	34.9
Hoopla	0.5	1.1	2.1	3.0	4.4	5.4	6.1	5.1	3.8	2.4	0.9	0.7	35.6
IMPERIAL													
Brawley	2.8	3.8	5.9	8.0	10.4	11.5	11.7	10.0	8.4	6.2	3.5	2.1	84.2
Calipatria/Mulberry	2.4	3.2	5.1	6.8	8.6	9.2	9.2	8.6	7.0	5.2	3.1	2.3	70.7
El Centro	2.7	3.5	5.6	7.9	10.1	11.1	11.6	9.5	8.3	6.1	3.3	2.0	81.7
Holtville	2.8	3.8	5.9	7.9	10.4	11.6	12.0	10.0	8.6	6.2	3.5	2.1	84.7
Meloland	2.5	3.2	5.5	7.5	8.9	9.2	9.0	8.5	6.8	5.3	3.1	2.2	71.6
Palo Verde II	2.5	3.3	5.7	6.9	8.5	8.9	8.6	7.9	6.2	4.5	2.9	2.3	68.2
Seeley	2.7	3.5	5.9	7.7	9.7	10.1	9.3	8.3	6.9	5.5	3.4	2.2	75.4
Westmoreland	2.4	3.3	5.3	6.9	8.7	9.6	9.6	8.7	6.9	5.0	3.0	2.2	71.4
Yuma	2.5	3.4	5.3	6.9	8.7	9.6	9.6	8.7	6.9	5.0	3.0	2.2	71.6
INYO													
Bishop	1.7	2.7	4.8	6.7	8.2	10.9	7.4	9.6	7.4	4.8	2.5	1.6	68.3
Death Valley Jct	2.2	3.3	5.4	7.7	9.8	11.1	11.4	10.1	8.3	5.4	2.9	1.7	79.1
Independence	1.7	2.7	3.4	6.6	8.5	9.5	9.8	8.5	7.1	3.9	2.0	1.5	65.2
Lower Haiwee Res.	1.8	2.7	4.4	7.1	8.5	9.5	9.8	8.5	7.1	4.2	2.6	1.5	67.6
Oasis	2.7	2.8	5.9	8.0	10.4	11.7	11.6	10.0	8.4	6.2	3.4	2.1	83.1
KERN													
Arvin	1.2	1.8	3.5	4.7	6.6	7.4	8.1	7.3	5.3	3.4	1.7	1.0	51.9
Bakersfield	1.0	1.8	3.5	4.7	6.6	7.7	8.5	7.3	5.3	3.5	1.6	0.9	52.4
Bakersfield/Bonanza	1.2	2.2	3.7	5.7	7.4	8.2	8.7	7.8	5.7	4.0	2.1	1.2	57.9
Bakersfield/Greenlee	1.2	2.2	3.7	5.7	7.4	8.2	8.7	7.8	5.7	4.0	2.1	1.2	57.9
Belridge	1.4	2.2	4.1	5.5	7.7	8.5	8.6	7.8	6.0	3.8	2.0	1.5	59.2
Blackwells Corner	1.4	2.1	3.8	5.4	7.0	7.8	8.5	7.7	5.8	3.9	1.9	1.2	56.6
Buttonwillow	1.0	1.8	3.2	4.7	6.6	7.7	8.5	7.3	5.4	3.4	1.5	0.9	52.0
China Lake	2.1	3.2	5.3	7.7	9.2	10.0	11.0	9.8	7.3	4.9	2.7	1.7	74.8
Delano	0.9	1.8	3.4	4.7	6.6	7.7	8.5	7.3	5.4	3.4	1.4	0.7	52.0
Famoso	1.3	1.9	3.5	4.8	6.7	7.6	8.0	7.3	5.5	3.5	1.7	1.3	53.1
Grapevine	1.3	1.8	3.1	4.4	5.6	6.8	7.6	6.8	5.9	3.4	1.9	1.0	49.5
Inyokern	2.0	3.1	4.9	7.3	8.5	9.7	11.0	9.4	7.1	5.1	2.6	1.7	72.4
Isabella Dam	1.2	1.4	2.8	4.4	5.8	7.3	7.9	7.0	5.0	3.2	1.7	0.9	48.4
Lamont	1.3	2.4	4.4	4.6	6.5	7.0	8.8	7.6	5.7	3.7	1.6	0.8	54.4
Lost Hills	1.6	2.2	3.7	5.1	6.8	7.8	8.7	7.8	5.7	4.0	2.1	1.6	57.1
McFarland/Kern	1.2	2.1	3.7	5.6	7.3	8.0	8.3	7.4	5.6	4.1	2.0	1.2	56.5
Shafter	1.0	1.7	3.4	5.0	6.6	7.7	8.3	7.3	5.4	3.4	1.5	0.9	52.1

Taft	1.3	1.8	3.1	4.3	6.2	7.3	8.5	7.3	5.4	3.4	1.7	1.0	51.2
Tehachapi	1.4	1.8	3.2	5.0	6.1	7.7	7.9	7.3	5.9	3.4	2.1	1.2	52.9
KINGS													
Caruthers	1.6	2.5	4.0	5.7	7.8	8.7	9.3	8.4	6.3	4.4	2.4	1.6	62.7
Corcoran	1.6	2.2	3.7	5.1	6.8	7.8	8.7	7.8	5.7	4.0	2.1	1.6	57.1
Hanford	0.9	1.5	3.4	5.0	6.6	7.7	8.3	7.2	5.4	3.4	1.4	0.7	51.5
Kettleman	1.1	2.0	4.0	6.0	7.5	8.5	9.1	8.2	6.1	4.5	2.2	1.1	60.2
Lemoore	0.9	1.5	3.4	5.0	6.6	7.7	8.3	7.3	5.4	3.4	1.4	0.7	51.7
Stratford	0.9	1.9	3.9	6.1	7.8	8.6	8.8	7.7	5.9	4.1	2.1	1.0	58.7

Appendix A - Reference Evapotranspiration (ETo) Table*

County and City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual ETo
LAKE													
Lakeport	1.1	1.3	2.6	3.5	5.1	6.0	7.3	6.1	4.7	2.9	1.2	0.9	42.8
Lower Lake	1.2	1.4	2.7	4.5	5.3	6.3	7.4	6.4	5.0	3.1	1.3	0.9	45.4
LASSEN													
Buntingville	1.0	1.7	3.5	4.9	6.2	7.3	8.4	7.5	5.4	3.4	1.5	0.9	51.8
Ravendale	0.6	1.1	2.3	4.1	5.6	6.7	7.9	7.3	4.7	2.8	1.2	0.5	44.9
Susanville	0.7	1.0	2.2	4.1	5.6	6.5	7.8	7.0	4.6	2.8	1.2	0.5	44.0
LOS ANGELES													
Burbank	2.1	2.8	3.7	4.7	5.1	6.0	6.6	6.7	5.4	4.0	2.6	2.0	51.7
Claremont	2.0	2.3	3.4	4.6	5.0	6.0	7.0	7.0	5.3	4.0	2.7	2.1	51.3
El Dorado	1.7	2.2	3.6	4.8	5.1	5.7	5.9	5.9	4.4	3.2	2.2	1.7	46.3
Glendale	2.0	2.2	3.3	3.8	4.7	4.8	5.7	5.6	4.3	3.3	2.2	1.8	43.7
Glendora	2.0	2.5	3.6	4.9	5.4	6.1	7.3	6.8	5.7	4.2	2.6	2.0	53.1
Gorman	1.6	2.2	3.4	4.6	5.5	7.4	7.7	7.1	5.9	3.6	2.4	1.1	52.4
Hollywood Hills	2.1	2.2	3.8	5.4	6.0	6.5	6.7	6.4	5.2	3.7	2.8	2.1	52.8
Lancaster	2.1	3.0	4.6	5.9	8.5	9.7	11.0	9.8	7.3	4.6	2.8	1.7	71.1
Long Beach	1.8	2.1	3.3	3.9	4.5	4.3	5.3	4.7	3.7	2.8	1.8	1.5	39.7
Los Angeles	2.2	2.7	3.7	4.7	5.5	5.8	6.2	5.9	5.0	3.9	2.6	1.9	50.1
Monrovia	2.2	2.3	3.8	4.3	5.5	5.9	6.9	6.4	5.1	3.2	2.5	2.0	50.2
Palmdale	2.0	2.6	4.6	6.2	7.3	8.9	9.8	9.0	6.5	4.7	2.7	2.1	66.2
Pasadena	2.1	2.7	3.7	4.7	5.1	6.0	7.1	6.7	5.6	4.2	2.6	2.0	52.3
Pearblossom	1.7	2.4	3.7	4.7	7.3	7.7	9.9	7.9	6.4	4.0	2.6	1.6	59.9
Pomona	1.7	2.0	3.4	4.5	5.0	5.8	6.5	6.4	4.7	3.5	2.3	1.7	47.5
Redondo Beach	2.2	2.4	3.3	3.8	4.5	4.7	5.4	4.8	4.4	2.8	2.4	2.0	42.6
San Fernando	2.0	2.7	3.5	4.6	5.5	5.9	7.3	6.7	5.3	3.9	2.6	2.0	52.0
Santa Clarita	2.8	2.8	4.1	5.6	6.0	6.8	7.6	7.8	5.8	5.2	3.7	3.2	61.5
Santa Monica	1.8	2.1	3.3	4.5	4.7	5.0	5.4	5.4	3.9	3.4	2.4	2.2	44.2
MADERA													
Chowchilla	1.0	1.4	3.2	4.7	6.6	7.8	8.5	7.3	5.3	3.4	1.4	0.7	51.4
Madera	0.9	1.4	3.2	4.8	6.6	7.8	8.5	7.3	5.3	3.4	1.4	0.7	51.5
Raymond	1.2	1.5	3.0	4.6	6.1	7.6	8.4	7.3	5.2	3.4	1.4	0.7	50.5
MARIN													
Black Point	1.1	1.7	3.0	4.2	5.2	6.2	6.6	5.8	4.3	2.8	1.3	0.9	43.0
Novato	1.3	1.5	2.4	3.5	4.4	6.0	5.9	5.4	4.4	2.8	1.4	0.7	39.8
Point San Pedro	1.1	1.7	3.0	4.2	5.2	6.2	6.6	5.8	4.3	2.8	1.3	0.9	43.0
San Rafael	1.2	1.3	2.4	3.3	4.0	4.8	4.8	4.9	4.3	2.7	1.3	0.7	35.8
MARIPOSA													
Coulterville	1.1	1.5	2.8	4.4	5.9	7.3	8.1	7.0	5.3	3.4	1.4	0.7	48.8
Mariposa	1.1	1.5	2.8	4.4	5.9	7.4	8.2	7.1	5.0	3.4	1.4	0.7	49.0
Yosemite Village	0.7	1.0	2.3	3.7	5.1	6.5	7.1	6.1	4.4	2.9	1.1	0.6	41.4
MENDOCINO													

Fort Bragg	0.9	1.3	2.2	3.0	3.7	3.5	3.7	3.7	3.0	2.3	1.2	0.7	29.0
Hopland	1.1	1.3	2.6	3.4	5.0	5.9	6.5	5.7	4.5	2.8	1.3	0.7	40.9
Point Arena	1.0	1.3	2.3	3.0	3.7	3.9	3.7	3.7	3.0	2.3	1.2	0.7	29.6
Sanel Valley	1.0	1.6	3.0	4.6	6.0	7.0	8.0	7.0	5.2	3.4	1.4	0.9	49.1
Ukiah	1.0	1.3	2.6	3.3	5.0	5.8	6.7	5.9	4.5	2.8	1.3	0.7	40.9
MERCED													
Kesterson	0.9	1.7	3.4	5.5	7.3	8.2	8.6	7.4	5.5	3.8	1.8	0.9	55.1
Los Banos	1.0	1.5	3.2	4.7	6.1	7.4	8.2	7.0	5.3	3.4	1.4	0.7	50.0
Merced	1.0	1.5	3.2	4.7	6.6	7.9	8.5	7.2	5.3	3.4	1.4	0.7	51.5

Appendix A - Reference Evapotranspiration (ET_o) Table*

County and City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual ET _o
MODOC													
Modoc/Alturas	0.9	1.4	2.8	3.7	5.1	6.2	7.5	6.6	4.6	2.8	1.2	0.7	43.2
MONO													
Bridgeport	0.7	0.9	2.2	3.8	5.5	6.6	7.4	6.7	4.7	2.7	1.2	0.5	43.0
MONTEREY													
Arroyo Seco	1.5	2.0	3.7	5.4	6.3	7.3	7.2	6.7	5.0	3.9	2.0	1.6	52.6
Castroville	1.4	1.7	3.0	4.2	4.6	4.8	4.0	3.8	3.0	2.6	1.6	1.4	36.2
Gonzales	1.3	1.7	3.4	4.7	5.4	6.3	6.3	5.9	4.4	3.4	1.9	1.3	45.7
Greenfield	1.8	2.2	3.4	4.8	5.6	6.3	6.5	6.2	4.8	3.7	2.4	1.8	49.5
King City	1.7	2.0	3.4	4.4	4.4	5.6	6.1	6.7	6.5	5.2	2.2	1.3	49.6
King City-Oasis Rd.	1.4	1.9	3.6	5.3	6.5	7.3	7.4	6.8	5.1	4.0	2.0	1.5	52.7
Long Valley	1.5	1.9	3.2	4.1	5.8	6.5	7.3	6.7	5.3	3.6	2.0	1.2	49.1
Monterey	1.7	1.8	2.7	3.5	4.0	4.1	4.3	4.2	3.5	2.8	1.9	1.5	36.0
Pajaro	1.8	2.2	3.7	4.8	5.3	5.7	5.6	5.3	4.3	3.4	2.4	1.8	46.1
Salinas	1.6	1.9	2.7	3.8	4.8	4.7	5.0	4.5	4.0	2.9	1.9	1.3	39.1
Salinas North	1.2	1.5	2.9	4.1	4.6	5.2	4.5	4.3	3.2	2.8	1.5	1.2	36.9
San Ardo	1.0	1.7	3.1	4.5	5.9	7.2	8.1	7.1	5.1	3.1	1.5	1.0	49.0
San Juan	1.8	2.1	3.4	4.6	5.3	5.7	5.5	4.9	3.8	3.2	2.2	1.9	44.2
Soledad	1.7	2.0	3.4	4.4	5.5	5.4	6.5	6.2	5.2	3.7	2.2	1.5	47.7
NAPA													
Angwin	1.8	1.9	3.2	4.7	5.8	7.3	8.1	7.1	5.5	4.5	2.9	2.1	54.9
Carneros	0.8	1.5	3.1	4.6	5.5	6.6	6.9	6.2	4.7	3.5	1.4	1.0	45.8
Oakville	1.0	1.5	2.9	4.7	5.8	6.9	7.2	6.4	4.9	3.5	1.6	1.2	47.7
St Helena	1.2	1.5	2.8	3.9	5.1	6.1	7.0	6.2	4.8	3.1	1.4	0.9	44.1
Yountville	1.3	1.7	2.8	3.9	5.1	6.0	7.1	6.1	4.8	3.1	1.5	0.9	44.3
NEVADA													
Grass Valley	1.1	1.5	2.6	4.0	5.7	7.1	7.9	7.1	5.3	3.2	1.5	0.9	48.0
Nevada City	1.1	1.5	2.6	3.9	5.8	6.9	7.9	7.0	5.3	3.2	1.4	0.9	47.4
ORANGE													
Irvine	2.2	2.5	3.7	4.7	5.2	5.9	6.3	6.2	4.6	3.7	2.6	2.3	49.6
Laguna Beach	2.2	2.7	3.4	3.8	4.6	4.6	4.9	4.9	4.4	3.4	2.4	2.0	43.2
Santa Ana	2.2	2.7	3.7	4.5	4.6	5.4	6.2	6.1	4.7	3.7	2.5	2.0	48.2
PLACER													
Auburn	1.2	1.7	2.8	4.4	6.1	7.4	8.3	7.3	5.4	3.4	1.6	1.0	50.6
Blue Canyon	0.7	1.1	2.1	3.4	4.8	6.0	7.2	6.1	4.6	2.9	0.9	0.6	40.5
Colfax	1.1	1.5	2.6	4.0	5.8	7.1	7.9	7.0	5.3	3.2	1.4	0.9	47.9
Roseville	1.1	1.7	3.1	4.7	6.2	7.7	8.5	7.3	5.6	3.7	1.7	1.0	52.2
Soda Springs	0.7	0.7	1.8	3.0	4.3	5.3	6.2	5.5	4.1	2.5	0.7	0.7	35.4
Tahoe City	0.7	0.7	1.7	3.0	4.3	5.4	6.1	5.6	4.1	2.4	0.8	0.6	35.5
Truckee	0.7	0.7	1.7	3.2	4.4	5.4	6.4	5.7	4.1	2.4	0.8	0.6	36.2

PLUMAS

Portola	0.7	0.9	1.9	3.5	4.9	5.9	7.3	5.9	4.3	2.7	0.9	0.5	39.4
Quincy	0.7	0.9	2.2	3.5	4.9	5.9	7.3	5.9	4.4	2.8	1.2	0.5	40.2

RIVERSIDE

Beaumont	2.0	2.3	3.4	4.4	6.1	7.1	7.6	7.9	6.0	3.9	2.6	1.7	55.0
Blythe	2.4	3.3	5.3	6.9	8.7	9.6	9.6	8.7	6.9	5.0	3.0	2.2	71.4
Cathedral City	1.6	2.2	3.7	5.1	6.8	7.8	8.7	7.8	5.7	4.0	2.1	1.6	57.1
Coachella	2.9	4.4	6.2	8.4	10.5	11.9	12.3	10.1	8.9	6.2	3.8	2.4	88.1
Desert Center	2.9	4.1	6.4	8.5	11.0	12.1	12.2	11.1	9.0	6.4	3.9	2.6	90.0
Elsinore	2.1	2.8	3.9	4.4	5.9	7.1	7.6	7.0	5.8	3.9	2.6	1.9	55.0
Indio	3.1	3.6	6.5	8.3	10.5	11.0	10.8	9.7	8.3	5.9	3.7	2.7	83.9

Appendix A - Reference Evapotranspiration (ET_o) Table*

County and City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual ET _o
RIVERSIDE													
La Quinta	2.4	2.8	5.2	6.5	8.3	8.7	8.5	7.9	6.5	4.5	2.7	2.2	66.2
Mecca	2.6	3.3	5.7	7.2	8.6	9.0	8.8	8.2	6.8	5.0	3.2	2.4	70.8
Oasis	2.9	3.3	5.3	6.1	8.5	8.9	8.7	7.9	6.9	4.8	2.9	2.3	68.4
Palm Deser	2.5	3.4	5.3	6.9	8.7	9.6	9.6	8.7	6.9	5.0	3.0	2.2	71.6
Palm Springs	2.0	2.9	4.9	7.2	8.3	8.5	11.6	8.3	7.2	5.9	2.7	1.7	71.1
Rancho California	1.8	2.2	3.4	4.8	5.6	6.3	6.5	6.2	4.8	3.7	2.4	1.8	49.5
Rancho Mirage	2.4	3.3	5.3	6.9	8.7	9.6	9.6	8.7	6.9	5.0	3.0	2.2	71.4
Ripley	2.7	3.3	5.6	7.2	8.7	8.7	8.4	7.6	6.2	4.6	2.8	2.2	67.8
Salton Sea North	2.5	3.3	5.5	7.2	8.8	9.3	9.2	8.5	6.8	5.2	3.1	2.3	71.7
Temecula East II	2.3	2.4	4.1	4.9	6.4	7.0	7.8	7.4	5.7	4.1	2.6	2.2	56.7
Thermal	2.4	3.3	5.5	7.6	9.1	9.6	9.3	8.6	7.1	5.2	3.1	2.1	72.8
Riverside UC	2.5	2.9	4.2	5.3	5.9	6.6	7.2	6.9	5.4	4.1	2.9	2.6	56.4
Winchester	2.3	2.4	4.1	4.9	6.4	6.9	7.7	7.5	6.0	3.9	2.6	2.1	56.8
SACRAMENTO													
Fair Oaks	1.0	1.6	3.4	4.1	6.5	7.5	8.1	7.1	5.2	3.4	1.5	1.0	50.5
Sacramento	1.0	1.8	3.2	4.7	6.4	7.7	8.4	7.2	5.4	3.7	1.7	0.9	51.9
Twitchell Island	1.2	1.8	3.9	5.3	7.4	8.8	9.1	7.8	5.9	3.8	1.7	1.2	57.9
SAN BENITO													
Hollister	1.5	1.8	3.1	4.3	5.5	5.7	6.4	5.9	5.0	3.5	1.7	1.1	45.1
San Benito	1.2	1.6	3.1	4.6	5.6	6.4	6.9	6.5	4.8	3.7	1.7	1.2	47.2
San Juan Valley	1.4	1.8	3.4	4.5	6.0	6.7	7.1	6.4	5.0	3.5	1.8	1.4	49.1
SAN BERNARDINO													
Baker	2.7	3.9	6.1	8.3	10.4	11.8	12.2	11.0	8.9	6.1	3.3	2.1	86.6
Barstow NE	2.2	2.9	5.3	6.9	9.0	10.1	9.9	8.9	6.8	4.8	2.7	2.1	71.7
Big Bear Lake	1.8	2.6	4.6	6.0	7.0	7.6	8.1	7.4	5.4	4.1	2.4	1.8	58.6
Chino	2.1	2.9	3.9	4.5	5.7	6.5	7.3	7.1	5.9	4.2	2.6	2.0	54.6
Crestline	1.5	1.9	3.3	4.4	5.5	6.6	7.8	7.1	5.4	3.5	2.2	1.6	50.8
Lake Arrowhead	1.8	2.6	4.6	6.0	7.0	7.6	8.1	7.4	5.4	4.1	2.4	1.8	58.6
Lucerne Valley	2.2	2.9	5.1	6.5	9.1	11.0	11.4	9.9	7.4	5.0	3.0	1.8	75.3
Needles	3.2	4.2	6.6	8.9	11.0	12.4	12.8	11.0	8.9	6.6	4.0	2.7	92.1
Newberry Springs	2.1	2.9	5.3	8.4	9.8	10.9	11.1	9.9	7.6	5.2	3.1	2.0	78.2
San Bernardino	2.0	2.7	3.8	4.6	5.7	6.9	7.9	7.4	5.9	4.2	2.6	2.0	55.6
Twentynine Palms	2.6	3.6	5.9	7.9	10.1	11.2	11.2	10.3	8.6	5.9	3.4	2.2	82.9
Victorville	2.0	2.6	4.6	6.2	7.3	8.9	9.8	9.0	6.5	4.7	2.7	2.1	66.2
SAN DIEGO													
Chula Vista	2.2	2.7	3.4	3.8	4.9	4.7	5.5	4.9	4.5	3.4	2.4	2.0	44.2
Escondido SPV	2.4	2.6	3.9	4.7	5.9	6.5	7.1	6.7	5.3	3.9	2.8	2.3	54.2
Miramar	2.3	2.5	3.7	4.1	5.1	5.4	6.1	5.8	4.5	3.3	2.4	2.1	47.1

Oceanside	2.2	2.7	3.4	3.7	4.9	4.6	4.6	5.1	4.1	3.3	2.4	2.0	42.9
Otay Lake	2.3	2.7	3.9	4.6	5.6	5.9	6.2	6.1	4.8	3.7	2.6	2.2	50.4
Pine Valley	1.5	2.4	3.8	5.1	6.0	7.0	7.8	7.3	6.0	4.0	2.2	1.7	54.8
Ramona	2.1	2.1	3.4	4.6	5.2	6.3	6.7	6.8	5.3	4.1	2.8	2.1	51.6
San Diego	2.1	2.4	3.4	4.6	5.1	5.3	5.7	5.6	4.3	3.6	2.4	2.0	46.5
Santee	2.1	2.7	3.7	4.5	5.5	6.1	6.6	6.2	5.4	3.8	2.6	2.0	51.1
Torrey Pines	2.2	2.3	3.4	3.9	4.0	4.1	4.6	4.7	3.8	2.8	2.0	2.0	39.8
Warner Springs	1.6	2.7	3.7	4.7	5.7	7.6	8.3	7.7	6.3	4.0	2.5	1.3	56.0
SAN FRANCISCO													
San Francisco	1.5	1.3	2.4	3.0	3.7	4.6	4.9	4.8	4.1	2.8	1.3	0.7	35.1
SAN JOAQUIN													
Farmington	1.5	1.5	2.9	4.7	6.2	7.6	8.1	6.8	5.3	3.3	1.4	0.7	50.0

Appendix A - Reference Evapotranspiration (ET_o) Table*

County and City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual ET _o
SAN JOAQUIN													
Lodi West	1.0	1.6	3.3	4.3	6.3	6.9	7.3	6.4	4.5	3.0	1.4	0.8	46.7
Manteca	0.9	1.7	3.4	5.0	6.5	7.5	8.0	7.1	5.2	3.3	1.6	0.9	51.2
Stockton	0.8	1.5	2.9	4.7	6.2	7.4	8.1	6.8	5.3	3.2	1.4	0.6	49.1
Tracy	1.0	1.5	2.9	4.5	6.1	7.3	7.9	6.7	5.3	3.2	1.3	0.7	48.5
SAN LUIS OBISPO													
Arroyo Grande	2.0	2.2	3.2	3.8	4.3	4.7	4.3	4.6	3.8	3.2	2.4	1.7	40.0
Atascadero	1.2	1.5	2.8	3.9	4.5	6.0	6.7	6.2	5.0	3.2	1.7	1.0	43.7
Morro Bay	2.0	2.2	3.1	3.5	4.3	4.5	4.6	4.6	3.8	3.5	2.1	1.7	39.9
Nipomo	2.2	2.5	3.8	5.1	5.7	6.2	6.4	6.1	4.9	4.1	2.9	2.3	52.1
Paso Robles	1.6	2.0	3.2	4.3	5.5	6.3	7.3	6.7	5.1	3.7	2.1	1.4	49.0
San Luis Obispo	2.0	2.2	3.2	4.1	4.9	5.3	4.6	5.5	4.4	3.5	2.4	1.7	43.8
San Miguel	1.6	2.0	3.2	4.3	5.0	6.4	7.4	6.8	5.1	3.7	2.1	1.4	49.0
San Simeon	2.0	2.0	2.9	3.5	4.2	4.4	4.6	4.3	3.5	3.1	2.0	1.7	38.1
SAN MATEO													
Hal Moon Bay	1.5	1.7	2.4	3.0	3.9	4.3	4.3	4.2	3.5	2.8	1.3	1.0	33.7
Redwood City	1.5	1.8	2.9	3.8	5.2	5.3	6.2	5.6	4.8	3.1	1.7	1.0	42.8
Woodside	1.8	2.2	3.4	4.8	5.6	6.3	6.5	6.2	4.8	3.7	2.4	1.8	49.5
SANTA BARBARA													
Betteravia	2.1	2.6	4.0	5.2	6.0	5.9	5.8	5.4	4.1	3.3	2.7	2.1	49.1
Carpenteria	2.0	2.4	3.2	3.9	4.8	5.2	5.5	5.7	4.5	3.4	2.4	2.0	44.9
Cuyama	2.1	2.4	3.8	5.4	6.9	7.9	8.5	7.7	5.9	4.5	2.6	2.0	59.7
Goleta	2.1	2.5	3.9	5.1	5.7	5.7	5.4	5.4	4.2	3.2	2.8	2.2	48.1
Goleta Foothills	2.3	2.6	3.7	5.4	5.3	5.6	5.5	5.7	4.5	3.9	2.8	2.3	49.6
Guadalupe	2.0	2.2	3.2	3.7	4.9	4.6	4.5	4.6	4.1	3.3	2.4	1.7	41.1
Lompoc	2.0	2.2	3.2	3.7	4.8	4.6	4.9	4.8	3.9	3.2	2.4	1.7	41.1
Los Alamos	1.8	2.0	3.2	4.1	4.9	5.3	5.7	5.5	4.4	3.7	2.4	1.6	44.6
Santa Barbara	2.0	2.5	3.2	3.8	4.6	5.1	5.5	4.5	3.4	2.4	1.8	1.8	40.6
Santa Maria	1.8	2.3	3.7	5.1	5.7	5.8	5.6	5.3	4.2	3.5	2.4	1.9	47.4
Santa Ynez	1.7	2.2	3.5	5.0	5.8	6.2	6.4	6.0	4.5	3.6	2.2	1.7	48.7
Sisquoc	2.1	2.5	3.8	4.1	6.1	6.3	6.4	5.8	4.7	3.4	2.3	1.8	49.2
Solvang	2.0	2.0	3.3	4.3	5.0	5.6	6.1	5.6	4.4	3.7	2.2	1.6	45.6
SANTA CLARA													
Gilroy	1.3	1.8	3.1	4.1	5.3	5.6	6.1	5.5	4.7	3.4	1.7	1.1	43.6
Los Gatos	1.5	1.8	2.8	3.9	5.0	5.6	6.2	5.5	4.7	3.2	1.7	1.1	42.9
Morgan Hill	1.5	1.8	3.4	4.2	6.3	7.0	7.1	6.0	5.1	3.7	1.9	1.4	49.5
Palo Alto	1.5	1.8	2.8	3.8	5.2	5.3	6.2	5.6	5.0	3.2	1.7	1.0	43.0
San Jose	1.5	1.8	3.1	4.1	5.5	5.8	6.5	5.9	5.2	3.3	1.8	1.0	45.3

SANTA CRUZ

De Laveaga	1.4	1.9	3.3	4.7	4.9	5.3	5.0	4.8	3.6	3.0	1.6	1.3	40.8
Green Valley Rd	1.2	1.8	3.2	4.5	4.6	5.4	5.2	5.0	3.7	3.1	1.6	1.3	40.6
Santa Cruz	1.5	1.8	2.6	3.5	4.3	4.4	4.8	4.4	3.8	2.8	1.7	1.2	36.6
Watsonville	1.5	1.8	2.7	3.7	4.6	4.5	4.9	4.2	4.0	2.9	1.8	1.2	37.7
Webb	1.8	2.2	3.7	4.8	5.3	5.7	5.6	5.3	4.3	3.4	2.4	1.8	46.2

SHASTA

Burney	0.7	1.0	2.1	3.5	4.9	5.9	7.4	6.4	4.4	2.9	0.9	0.6	40.9
Fall River Mills	0.6	1.0	2.1	3.7	5.0	6.1	7.8	6.7	4.6	2.8	0.9	0.5	41.8
Glenburn	0.6	1.0	2.1	3.7	5.0	6.3	7.8	6.7	4.7	2.8	0.9	0.6	42.1
McArthur	0.7	1.4	2.9	4.2	5.6	6.9	8.2	7.2	5.0	3.0	1.1	0.6	46.8
Redding	1.2	1.4	2.6	4.1	5.6	7.1	8.5	7.3	5.3	3.2	1.4	0.9	48.8

Appendix A - Reference Evapotranspiration (ETo) Table*

County and City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual ETo
SIERRA													
Downieville	0.7	1.0	2.3	3.5	5.0	6.0	7.4	6.2	4.7	2.8	0.9	0.6	41.3
Sierraville	0.7	1.1	2.2	3.2	4.5	5.9	7.3	6.4	4.3	2.6	0.9	0.5	39.6
SISKIYOU													
Happy Camp	0.5	0.9	2.0	3.0	4.3	5.2	6.1	5.3	4.1	2.4	0.9	0.5	35.1
MacDoel	1.0	1.7	3.1	4.5	5.9	7.2	8.1	7.1	5.1	3.1	1.5	1.0	49.0
Mt Shasta	0.5	0.9	2.0	3.0	4.5	5.3	6.7	5.7	4.0	2.2	0.7	0.5	36.0
Tule lake FS	0.7	1.3	2.7	4.0	5.4	6.3	7.1	6.4	4.7	2.8	1.0	0.6	42.9
Weed	0.5	0.9	2.0	2.5	4.5	5.3	6.7	5.5	3.7	2.0	0.9	0.5	34.9
Yreka	0.6	0.9	2.1	3.0	4.9	5.8	7.3	6.5	4.3	2.5	0.9	0.5	39.2
SOLANO													
Dixon	0.7	1.4	3.2	5.2	6.3	7.6	8.2	7.2	5.5	4.3	1.6	1.1	52.1
Fairfield	1.1	1.7	2.8	4.0	5.5	6.1	7.8	6.0	4.8	3.1	1.4	0.9	45.2
Hastings Tract	1.6	2.2	3.7	5.1	6.8	7.8	8.7	7.8	5.7	4.0	2.1	1.6	57.1
Putah Creek	1.0	1.6	3.2	4.9	6.1	7.3	7.9	7.0	5.3	3.8	1.8	1.2	51.0
Rio Vista	0.9	1.7	2.8	4.4	5.9	6.7	7.9	6.5	5.1	3.2	1.3	0.7	47.0
Suisun Valley	0.6	1.3	3.0	4.7	5.8	7.0	7.7	6.8	5.3	3.8	1.4	0.9	48.3
Winters	0.9	1.7	3.3	5.0	6.4	7.5	7.9	7.0	5.2	3.5	1.6	1.0	51.0
SONOMA													
Bennett Valley	1.1	1.7	3.2	4.1	5.5	6.5	6.6	5.7	4.5	3.1	1.5	0.9	44.4
Cloverdale	1.1	1.4	2.6	3.4	5.0	5.9	6.2	5.6	4.5	2.8	1.4	0.7	40.7
Fort Ross	1.2	1.4	2.2	3.0	3.7	4.5	4.2	4.3	3.4	2.4	1.2	0.5	31.9
Healdsburg	1.2	1.5	2.4	3.5	5.0	5.9	6.1	5.6	4.5	2.8	1.4	0.7	40.8
Lincoln	1.2	1.7	2.8	4.7	6.1	7.4	8.4	7.3	5.4	3.7	1.9	1.2	51.9
Petaluma	1.2	1.5	2.8	3.7	4.6	5.6	4.6	5.7	4.5	2.9	1.4	0.9	39.6
Santa Rosa	1.2	1.7	2.8	3.7	5.0	6.0	6.1	5.9	4.5	2.9	1.5	0.7	42.0
Valley of the Moon	1.0	1.6	3.0	4.5	5.6	6.6	7.1	6.3	4.7	3.3	1.5	1.0	46.1
Windsor	0.9	1.6	3.0	4.5	5.5	6.5	6.5	5.9	4.4	3.2	1.4	1.0	44.2
STANISLAUS													
Denair	1.0	1.9	3.6	4.7	7.0	7.9	8.0	6.1	5.3	3.4	1.5	1.0	51.4
La Grange	1.2	1.5	3.1	4.7	6.2	7.7	8.5	7.3	5.3	3.4	1.4	0.7	51.2
Modesto	0.9	1.4	3.2	4.7	6.4	7.7	8.1	6.8	5.0	3.4	1.4	0.7	49.7
Newman	1.0	1.5	3.2	4.6	6.2	7.4	8.1	6.7	5.0	3.4	1.4	0.7	49.3
Oakdale	1.2	1.5	3.2	4.7	6.2	7.7	8.1	7.1	5.1	3.4	1.4	0.7	50.3
Patterson	1.3	2.1	4.2	5.4	7.9	8.6	8.2	6.6	5.8	4.0	1.9	1.3	57.3
Turlock	0.9	1.5	3.2	4.7	6.5	7.7	8.2	7.0	5.1	3.4	1.4	0.7	50.2
SUTTER													

Nicolaus	0.9	1.6	3.2	4.9	6.3	7.5	8.0	6.9	5.2	3.4	1.5	0.9	50.2
Yuba City	1.3	2.1	2.8	4.4	5.7	7.2	7.1	6.1	4.7	3.2	1.2	0.9	46.7
TEHAMA													
Corning	1.2	1.8	2.9	4.5	6.1	7.3	8.1	7.2	5.3	3.7	1.7	1.1	50.7
Gerber	1.0	1.8	3.5	5.0	6.6	7.9	8.7	7.4	5.8	4.1	1.8	1.1	54.7
Gerber Dryland	0.9	1.6	3.2	4.7	6.7	8.4	9.0	7.9	6.0	4.2	2.0	1.0	55.5
Red Bluff	1.2	1.8	2.9	4.4	5.9	7.4	8.5	7.3	5.4	3.5	1.7	1.0	51.1
TRINITY													
Hay Fork	0.5	1.1	2.3	3.5	4.9	5.9	7.0	6.0	4.5	2.8	0.9	0.7	40.1
Weaverville	0.6	1.1	2.2	3.3	4.9	5.9	7.3	6.0	4.4	2.7	0.9	0.7	40.0
TULARE													
Alpaugh	0.9	1.7	3.4	4.8	6.6	7.7	8.2	7.3	5.4	3.4	1.4	0.7	51.6
Badger	1.0	1.3	2.7	4.1	6.0	7.3	7.7	7.0	4.8	3.3	1.4	0.7	47.3
Delano	1.1	1.9	4.0	4.9	7.2	7.9	8.1	7.3	5.4	3.2	1.5	1.2	53.6

Appendix A - Reference Evapotranspiration (ET_o) Table*

County and City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual ET _o
TULARE													
Dinuba	1.1	1.5	3.2	4.7	6.2	7.7	8.5	7.3	5.3	3.4	1.4	0.7	51.2
Lindcove	0.9	1.6	3.0	4.8	6.5	7.6	8.1	7.2	5.2	3.4	1.6	0.9	50.6
Porterville	1.2	1.8	3.4	4.7	6.6	7.7	8.5	7.3	5.3	3.4	1.4	0.7	52.1
Visalia	0.9	1.7	3.3	5.1	6.8	7.7	7.9	6.9	4.9	3.2	1.5	0.8	50.7
TUOLUMNE													
Groveland	1.1	1.5	2.8	4.1	5.7	7.2	7.9	6.6	5.1	3.3	1.4	0.7	47.5
Sonora	1.1	1.5	2.8	4.1	5.8	7.2	7.9	6.7	5.1	3.2	1.4	0.7	47.6
VENTURA													
Camarillo	2.2	2.5	3.7	4.3	5.0	5.2	5.9	5.4	4.2	3.0	2.5	2.1	46.1
Oxnard	2.2	2.5	3.2	3.7	4.4	4.6	5.4	4.8	4.0	3.3	2.4	2.0	42.3
Piru	2.8	2.8	4.1	5.6	6.0	6.8	7.6	7.8	5.8	5.2	3.7	3.2	61.5
Port Hueneme	2.0	2.3	3.3	4.6	4.9	4.9	4.9	5.0	3.7	3.2	2.5	2.2	43.5
Thousand Oaks	2.2	2.6	3.4	4.5	5.4	5.9	6.7	6.4	5.4	3.9	2.6	2.0	51.0
Ventura	2.2	2.6	3.2	3.8	4.6	4.7	5.5	4.9	4.1	3.4	2.5	2.0	43.5
YOLO													
Bryte	0.9	1.7	3.3	5.0	6.4	7.5	7.9	7.0	5.2	3.5	1.6	1.0	51.0
Davis	1.0	1.9	3.3	5.0	6.4	7.6	8.2	7.1	5.4	4.0	1.8	1.0	52.5
Esparto	1.0	1.7	3.4	5.5	6.9	8.1	8.5	7.5	5.8	4.2	2.0	1.2	55.8
Winters	1.7	1.7	2.9	4.4	5.8	7.1	7.9	6.7	5.3	3.3	1.6	1.0	49.4
Woodland	1.0	1.8	3.2	4.7	6.1	7.7	8.2	7.2	5.4	3.7	1.7	1.0	51.6
Zamora	1.1	1.9	3.5	5.2	6.4	7.4	7.8	7.0	5.5	4.0	1.9	1.2	52.8
YUBA													
Browns Valley	1.0	1.7	3.1	4.7	6.1	7.5	8.5	7.6	5.7	4.1	2.0	1.1	52.9
Brownsville	1.1	1.4	2.6	4.0	5.7	6.8	7.9	6.8	5.3	3.4	1.5	0.9	47.4

* The values in this table were derived from:

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

Section B1. Maximum Applied Water Allowance (MAWA)

The project's Maximum Applied Water Allowance shall be calculated using this equation:

$$\text{MAWA} = (\text{ETo}) (0.62) [(0.7 \times \text{LA}) + (0.3 \times \text{SLA})]$$

where:

- MAWA = Maximum Applied Water Allowance (gallons per year)
- ETo = Reference Evapotranspiration from Appendix A (inches per year)
- 0.7 = ET Adjustment Factor (ETAF)
- LA = Landscaped Area includes Special Landscape Area (square feet)
- 0.62 = Conversion factor (to gallons per square foot)
- SLA = Portion of the landscape area identified as Special Landscape Area (square feet)
- 0.3 = the additional ET Adjustment Factor for Special Landscape Area (1.0 - 0.7 = 0.3)

Maximum Applied Water Allowance = _____gallons per year

Show calculations.

Effective Precipitation (Eppt)

If considering Effective Precipitation, use 25% of annual precipitation. Use the following equation to calculate Maximum Applied Water Allowance:

$$\text{MAWA} = (\text{ETo} - \text{Eppt}) (0.62) [(0.7 \times \text{LA}) + (0.3 \times \text{SLA})]$$

Maximum Applied Water Allowance = _____gallons per year

Show calculations.

Section B2. Estimated Total Water Use (ETWU)

The project's Estimated Total Water Use is calculated using the following formula:

$$ETWU = (ETo)(0.62) \left(\frac{PF \times HA}{IE} + SLA \right)$$

where:

- ETWU = Estimated total water use per year (gallons per year)
- ETo = Reference Evapotranspiration (inches per year)
- PF = Plant Factor from WUCOLS (see Definitions)
- HA = Hydrozone Area [high, medium, and low water use areas] (square feet)
- SLA = Special Landscape Area (square feet)
- 0.62 = Conversion Factor (to gallons per square foot)
- IE = Irrigation Efficiency (minimum 0.71)

Hydrozone Table for Calculating ETWU

Please complete the hydrozone table(s). Use as many tables as necessary.

Hydrozone	Plant Water Use Type(s)	Plant Factor (PF)	Area (HA) (square feet)	PF x HA (square feet)
			Sum	
	SLA			

Estimated Total Water Use = _____ gallons

Show calculations.

Appendix C – Sample Certificate of Completion.

CERTIFICATE OF COMPLETION

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

PART 1. PROJECT INFORMATION SHEET

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

Project Address and Location:

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

Property Owner 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

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_____
3. Date that a copy of the Water Efficient Landscape Worksheet (including the Water Budget Calculation) was submitted to the local water purveyor_____

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

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

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

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

PART 3. IRRIGATION SCHEDULING

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

PART 4. SCHEDULE OF LANDSCAPE AND IRRIGATION MAINTENANCE

Attach schedule of Landscape and Irrigation Maintenance per ordinance Section 492.11.

PART 5. LANDSCAPE IRRIGATION AUDIT REPORT

Attach Landscape Irrigation Audit Report per ordinance Section 492.12.

PART 6. SOIL MANAGEMENT REPORT

Attach soil analysis report, if not previously submitted with the Landscape Documentation Package per ordinance Section 492.5.

Attach documentation verifying implementation of recommendations from soil analysis report per ordinance Section 492.5.