



PLACER COUNTY

Landscape Design Guidelines

Placer County Planning Services Division

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PLACER COUNTY LANDSCAPE DESIGN GUIDELINES

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1. Introduction

The overall purpose of the Placer County Landscape Design Guidelines (Guidelines) is to provide County staff, prospective developers and stakeholders with a basic framework for designing landscaped areas within unincorporated Placer County and to ensure continuity, consistency and design excellence. Also, this document will assist the Planning Services Division with their review of submitted plans for landscape improvements by providing consistent and specific design criteria which will help determine if a proposal is acceptable.

The focus of the Guidelines is the streetscape and parking lots, since this is most prevalent in the public's eye. The term 'streetscape' as utilized throughout these Landscape Design Guidelines typically refers to exterior *public* spaces located *between* street curbs and building facades and is the collective image and character of a variety of elements that make up the street or public environment.

The streetscape is composed of the street, the sidewalks, lighting, trees, public art, and street furniture such as benches, trash containers and planters. In addition to streetscape improvements, these Guidelines also address parking lot shading, site landscaping, irrigation including water efficient landscape requirements, planting standards, and maintenance requirements.

The Guidelines are intended to ensure that public places are attractive, function efficiently, and provide an inviting and comfortable pedestrian environment. The streetscape helps to create a unified image and defined visual structure for an area. The design of the streetscape should provide an attractive foreground for a property and a setting for activity by creating an environment that is visually rich and satisfying and that complements the property or development.

Goals

Landscape Design Guidelines will be utilized during the County's design review process to accomplish these primary goals:

- Maintain the community's quality of life for residents;
- Maintain property values;
- Protect and improve our environment; and,
- Preserve the County's natural beauty and visual character.

Objectives

The following objectives expand on the above goals:

- Provide general and specific guidelines for landscape plan design and installation throughout the county;
- Enhance the beauty, livability and prosperity of the community;
- Encourage high quality development and screen undesirable views;
- Preserve existing natural habitat, rock outcroppings and mature trees;
- Ensure the highest level of resource conservation including water conservation and ground water recharge;
- Retain flexibility and encourage creativity through appropriate design including low-impact development features; and,
- Ensure that the review process is fair and consistent both in policy and implementation to allow all who are involved to benefit from the process.



Figure 1.1: Proper landscaping can enhance the visual character of a project.

Implementation

It is not the intent of the Guidelines to administer strict standards. Placer County is diverse and flexibility is required. For example, site furnishings selected for a commercial plaza may not be appropriate for use on a predominantly residential street. Likewise, a planting plan in western Placer County is not appropriate for the Sierras. The desire to maintain the distinctive identities of Placer County's diverse neighborhoods and geography, coupled with the specific design requirements for an individual site will require variations on common landscape objectives.

It should be noted that it is virtually impossible to address all of the elements and site-specific conditions pertaining to the streetscape environment. The Guidelines provide a design framework that the County will use to evaluate proposed developments.

The criteria and graphics contained in this document address landscape and irrigation design criteria, maintenance standards, streetscape design criteria and recommended plant materials in a rather broad nature. This allows for design flexibility and does not “lock” the County or applicant into “only one way of doing something.”

In many instances, design items may be reviewed on a case-by-case basis because the issue of streetscape design is not a simple one. There is always a unique situation that is present with a design and the streetscape criteria found in this document are flexible enough to accommodate creative design solutions.

Requested deviations on proposed standard landscape components may be permissible with proper County review and approval.

The Guidelines are to be administered by the Design/Site Review Committee. Decisions of the Design/Site Review Committee may be appealed as provide by Section 17.60.110 of the Zoning Ordinance.

COMPLIANCE

Within these Guidelines, three terms are used in reference to the anticipated compliance. These terms are intended to have the following meaning with respect to compliance:

- **Consider/Encourage** – design criteria that should be thought about during the design process.
- **Should** – required unless there are sufficient reasons, based on the overall design concept that the criteria should not be imposed.
- **Must or Shall** – mandatory except under extraordinary conditions particular to a given project or site.



Figure 1.2: Commercial and other projects benefit from a well-designed landscape.

A. Streetscape Components

While the "Introduction" provides an overview of the components of the streetscape, the following list provides additional specificity. It should be noted that these Guidelines do not address objects mounted to building facades such as signs, canopies, awnings, railings, and other architectural features.

1. Hardscape /Paving
 - Sidewalks
 - Curbs
 - Accessible Sidewalk Ramps
 - Traffic Calming Measures (roundabouts, etc.)
 - Crosswalks
 - Fencing
2. Plantings
 - Street Trees
 - Residential Street Canopy Trees
 - Other Supplemental Plantings
 - Container Plantings
3. Furnishings
 - Benches
 - Litter and Ash Receptacles
 - Movable Tables and Chairs
 - Bollards
 - Bicycle Racks
 - Bus Shelters
 - Utility Covers/Screening
 - Planters
 - Lighting

B. Applicability

The Guidelines are intended to apply to all Commercial and Industrial Districts and residential multi-family and new residential single family developments that require discretionary approval by the County.



Figure 1.3: An attractive streetscape provides a neighborhood amenity.



Figure 1.4: High-quality landscaping enhances commercial centers.

2. General Landscape Design Standards and Guidelines for Sites

A. General Provisions

1. Landscaped areas shall be maximized and distributed throughout the site and except for vine pockets, shall not have a dimension of less than 5 feet clear in width. Existing healthy trees should be preserved wherever possible.
2. Certain landscape installations must comply with the County’s Water Efficient Landscape requirements. See Section 15 to determine applicability.
3. Plantings should be balanced to achieve an attractive initial appearance while considering the mature size of plants. Overplanting that requires later plant removal is not desired. By alternating tree types, a sense of enclosure can be achieved while slower growing trees are established.
4. Proposed new trees should be compatible with an established design program or with the neighborhood pattern/Specific Plan, if applicable.
5. Streetscape elements such as lights, trash cans, benches, tables, bicycle racks, landscaping (with the exception of groundcover), irrigation, etc. shall not be located within the public right-of-way unless it is approved by Placer County or the State of California, as applicable.
6. In cases where existing protected trees are allowed to be removed for new development, substantial additional trees, other landscaping, and/or additional mitigation measures shall be

required beyond the measures established in these Guidelines. (See Placer County Tree Preservation Ordinance).

7. To increase visual interest, and to prevent mass destruction by disease, the following requirements are for tree species at any one site:

**Table 2-1
Required Tree Variety**

Number of New Trees at Site	Maximum % of any One Species at Site
10 to 19	50
20 to 39	33
40 to 59	25
60 or more	15

8. As a general guideline, the following setbacks for trees should be applied when placing trees adjacent to roadways, walls, fences, ditches, swales, drainage facilities and walks:
 - Large Deciduous Trees: 6 feet minimum, however, 8 feet is preferred for the setback from edge of pavements, back of curbs and edges of sidewalks.
 - Small Deciduous/Ornamental Trees: 4- foot minimum, however, 6 feet is preferred for the setback from edge of pavements, back of curbs and edges of sidewalks.
 - For plantings around buildings, the setbacks above may be decreased by t2 feet.
9. Landscape and utility plans should be coordinated to avoid potential conflicts.

10. Tree canopies should not conflict with the safe movement of pedestrians and vehicles. When locating deciduous trees, their canopies should be maintained to ensure a minimum of 8 feet of clearance on the pedestrian side (higher along equestrian trails) and a minimum of 15 feet on the vehicular side. Because small deciduous trees and ornamental canopies often cannot meet these criteria, their use and placement must be carefully considered (See Figure 11.1).
11. Regardless of location near an intersection or elsewhere, placement of all proposed streetscape components must meet the requirements set forth within the County’s ordinances, the California Code of Regulations: Title 24, and the Americans with Disabilities Act (ADA).
12. Vegetative ground cover that will absorb rainwater and reduce runoff should be used. Gravel, colored rock, and similar materials should only be used in small defined areas such as swales, drainage basins, around the base of signs, or small borders. All irrigated non-turf areas should include a minimum 4-inch layer of wood chip or bark mulch to retain water, inhibit weed growth, and moderate soil temperature. Nonporous material shall not be placed under the mulch.
13. Landscaping should cover a minimum of fifteen percent of the site (more is encouraged for commercial, office, and industrial park projects that are visible to the public).

14. Landscaping should include a diversity of plants, shrubs, and trees to add visual interest rather than just one or two species of each. The plant palette should emphasize massing and form rather than individual or small groupings of shrubs and trees. No areas are to be left in bare soil conditions. No areas are to be left as only or mostly rock or mulch.
15. Plants should be grouped according to their water needs (hydrozones) and irrigated separately from other groupings with dissimilar water needs.
16. Landscaping along all of the borders of the property is required, unless special circumstances demonstrate that it would not be necessary to do so.
17. Plants selected for sloped areas are to be water conserving plants suitable for erosion control. Varied species and irregular plant spacing should achieve a natural appearance on disturbed or graded slopes. Ground cover other than turf shall be used on all slopes exceeding 10 percent.
18. The exact number, size, and location of plant material shown on approved plans shall be planted on the site. It is the responsibility of the applicant to ensure that the landscaping is installed per the Design Review plans approved by the County. On-site changes must be approved by the County.
19. A 4-foot clear space shall be maintained around the circumference of fire hydrants and utility boxes except as otherwise required or approved.
18. Visual clearance/sight distance triangle.
 - At the intersection of roadways or vehicular access points, no plant material with a mature height of greater than 3 feet from pavement surface shall be planted within sight triangle measuring 44 feet along the edge of pavement, measured from the point of intersecting edge of pavement, except where engineering standards indicate otherwise.
 - Fences shall not exceed 36 inches in height and shall be of an open design.
 - Deciduous trees (and properly trimmed conifers) may be permitted to encroach into the sight visibility triangle provided that the lowest branch of any such tree shall be at least 8 feet vertical clearance from grade.

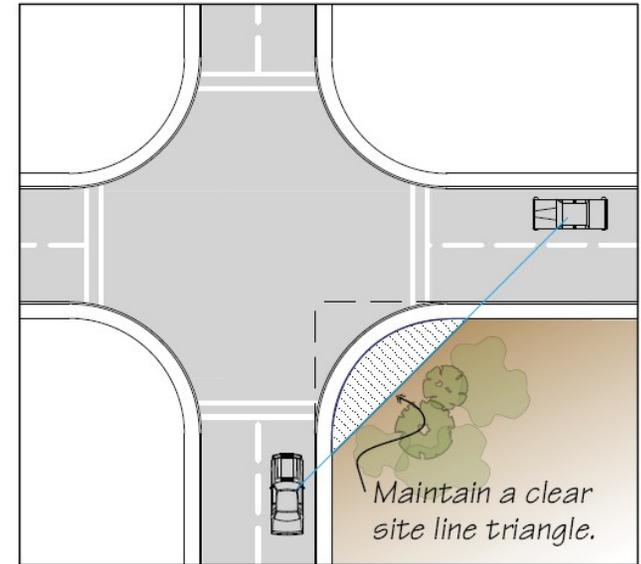


Figure 2.1: Site visibility triangle.



Figure 2.2: Landscaping along curbs and sidewalks in industrial park.



Figure 2.3: Plan adequate room so trees may grow to their mature form without excessive pruning.

Site Planning and Design

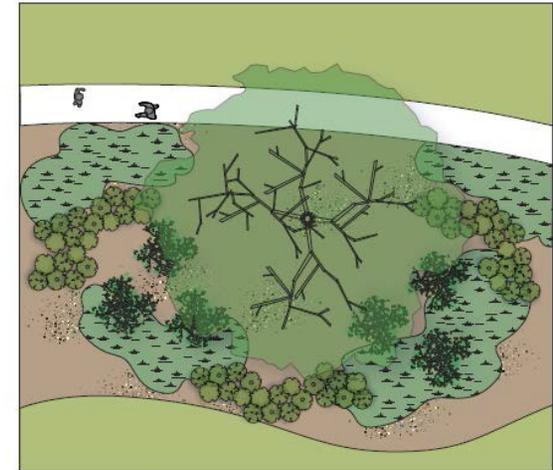
Space devoted to landscaping should be thoughtfully planned from project inception, not space left over after the building and parking have been sited.

1. Tree and shrub planting should be grouped together to create strong accent points within the site plan unless circumstances dictate otherwise.
2. Layered landscaping and a mix of deciduous and evergreen trees should be incorporated in the landscape design. Plant palettes should emphasize massing and form rather than individual or small groupings of shrubs and trees (see Figures 2.5 and 2.6). Landscaping design should consider maintenance needs and maintenance personnel access, particularly in areas near roadways.
3. Ornamental trees that normally grow from 12- to 25-feet tall at maturity shall

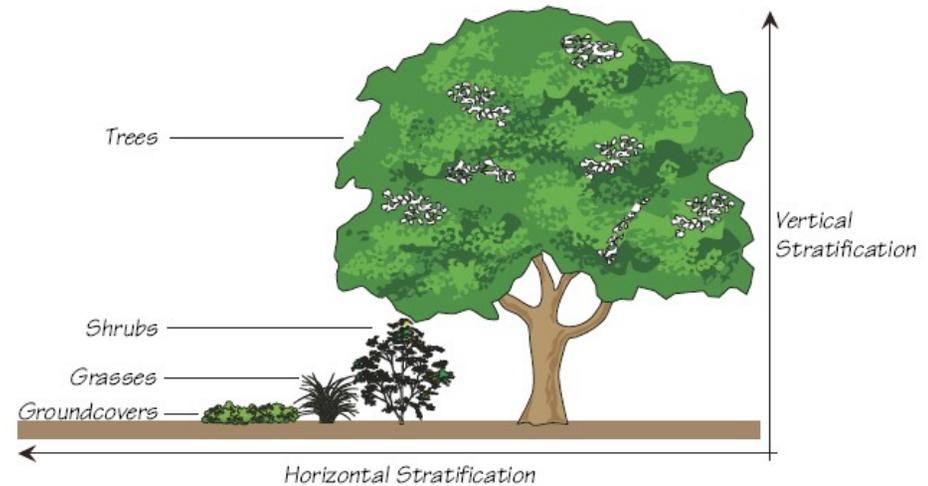
be liberally planted for accents and visual emphasis.

4. Tree placement should provide maximum shading of streets, sidewalks, parking areas, and outdoor public spaces without overhanging adjacent pedestrian and driving areas or adjacent properties.
5. Energy conservation within structures shall be addressed by recognizing the sun exposure on the site and providing appropriate tree species that minimize solar heat gain during the summer months and maximize it during the winter (deciduous trees on the southern exposure, coniferous and broadleaf evergreen trees along the eastern and western exposures, and evergreens along the northern exposure.)
6. Tree and shrub species should be selected with root growth habits that will not cause damage to sidewalks, sound walls, neighboring properties, or overhead and underground utilities. Species with invasive roots should be sited away from hardscape areas.
7. Commercial and Industrial projects located next to residential areas and/or residentially-

zoned areas are encouraged to incorporate appropriately-sized transitional landscaping and solid walls along the property lines so as to provide an effective visual buffer between the different land uses.



Figures 2.4 and 2.5: Plant layering



8. Natural appearing berms or mounds should be incorporated into relatively flat areas to create visual interest, where appropriate.
9. Landscape elements should complement architectural design elements. Unarticulated horizontal and vertical walls and fences should consider using various landscape treatments such as trellises, vines and/or espaliers to visually break-up the large surfaces (see Figure 2.3).
10. Special landscape treatments, such as intensifying the size of trees, accent trees, decorative structures, water features, accent lighting and special paving, should be provided at all primary commercial project entries and should highlight key features such as entry monument signs and other hardscape features.
11. Landscaping should be emphasized to designate the primary entry into commercial and industrial buildings.
12. Annual flower beds should be used to provide an attractive accent element at project and building entries, monument signs, and other focal points.
13. The uses of potted plants and hanging flower baskets are encouraged, but should not impede pedestrian traffic.
14. Consider the placement of trees/shrubs in relation to freestanding and building signs should be designed to not visually obscure the signs when the trees/shrubs reach maturity.
15. Commercial developments larger than three (3) acres in size or with multiple buildings should consider incorporating hardscape element(s) which creates a focus for the development and creates an attractive, usable, people friendly, public open space. Appropriate hardscape elements include plaza areas, patios, courtyards, atriums and outdoor gathering and eating areas. Interesting design features should be incorporated such as fountains, public art or historical references.
16. Tree selection and siting should be designed to avoid future conflict with storefront and/or commercial sign visibility.



Figure 2.6: Annual flower beds provide accent elements at project entries.

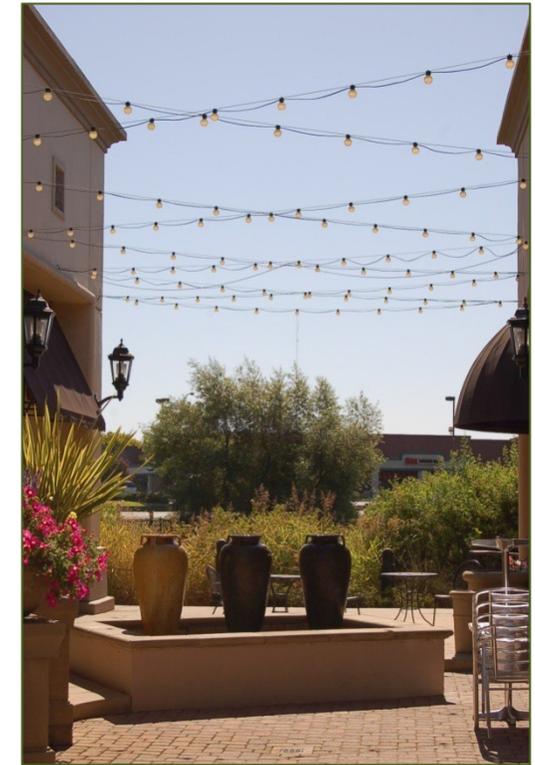


Figure 2.7: Plazas, water features and seating areas are recommended for larger commercial projects.

C. Planting Size

1. Unless unusual circumstances exist, all street trees shall be a minimum of 24 inch box size. Minimum size: 14- to 16-foot minimum height at time of planting.
2. Ornamental trees are most effective with a dark background provided by architecture or evergreen trees. Multiple- or single-stem, small-scale trees may be used in small-scale pedestrian locations where space is limited and an intimate feeling is appropriate. Minimum planting size should be a 15-gallon container approximately 10- to 12-foot minimum height at time of planting.
3. Minimum planting size of evergreen trees should be a 15-gallon container, approximately 8 to 10 feet in height, at the time of planting. Evergreen trees shall be used at strategic locations and shall be designed into group plantings to enhance interest, to screen objectionable views, to enhance privacy, to serve as a backdrop for ornamental trees, and to block winds.
4. In certain prominent public gathering areas, trees of 24-inch box size or larger may be required to create a strong design element.
5. Deciduous shrubs shall be used to create seasonal color interest. Due to their informal appearance, they shall not be used in high profile areas where a manicured formal image is desired. Shrubs shall be spaced close enough together to ensure an attractive and mature planting effect. Minimum shrub planting size is 5 gallons and the preferred planting size is 3 to 4 feet in height.

6. Evergreen shrubs shall be used where a low level screen or hedge is desired; they may also be used as effective ground covers on slopes. Screen hedges shall offer frequent visual breaks for accent planting. Minimum planting size is 18- to 24-inch spread.



Figure 2:8: Water features should be incorporated into the design of larger projects.



Figure 2.9: Landscape plantings should appear 'full' even at planting.

3. General Landscape Design Standards for Parking Lots

1. Landscape shall permit adequate sight distance for motorists and pedestrians entering and exiting a site and shall not interfere with circulation patterns. Vehicular line of site shall be maintained in all areas throughout a parking lot.
2. Landscaping shall be within parking areas to minimize the expansive appearance of parking lots. This landscaping should include fast growing, deciduous trees without messy fruit in the parking lot interior to provide summer shade.
3. Landscape planting areas shall be provided an average of every ten parking stalls within a surface parking lot to provide visual relief. Landscape planting areas which are used for separation between banks of parking stalls shall be a minimum of 5 feet in width measured inside of curbs. An 8-foot wide planter area is more ideal to ensure the long-term survival of the tree.
4. Reinforced cement concrete curbing shall be used at the edges of all planters and paving surfaces adjacent to auto circulation or parking areas unless otherwise designed to promote runoff infiltration into parking lot planters as a Low Impact Design measure.
5. To protect landscape areas and to reduce soil compaction, planting islands abutting parking spaces shall provide a minimum 6 inch wide stepping strip (see Figure 3.1)
6. Parking areas should be screened entirely or partially from public view through the use of berming/mounding,

landscaping materials, and/or low screen walls.

7. The planting of trees in landscape islands that extend the full length of parking spaces is preferred over trees in smaller planting areas between spaces.
8. Refer to the Zoning Ordinance (17.54.070) for minimum parking lot standards.



Figure 3.1: Landscape island stepping strip.

This....



Not This....



Figures 3.2 and 3.3: Parking lot island landscaping.

Parking Lot Shading Provisions – The intent of the shading provisions is to reduce urban heat islands by substantially increasing the shaded areas within parking lots. Cooler parking lot temperatures reduce ozone concentrations by lowering hydrocarbon emissions.

- Parking lot shading provisions apply to all parking and circulation areas with the exception of areas devoted to truck maneuvering, truck loading areas in front of overhead doors, and vehicle display, sales, and storage.
- Trees shall be planted and maintained throughout the parking lot to ensure that, within fifteen (15) years after establishment of the parking facility, at least fifty (50) percent of the parking area is shaded, as measured at 15-year maturity.
- Shading shall be calculated by using the expected diameter of the tree crown at fifteen years. Where tree shade overlaps, the shade area shall not be double counted (see Figure 3.4). The coverage area may be reduced for landscaping located under power lines and other obstructions that restrict and/or prohibit tree placement.

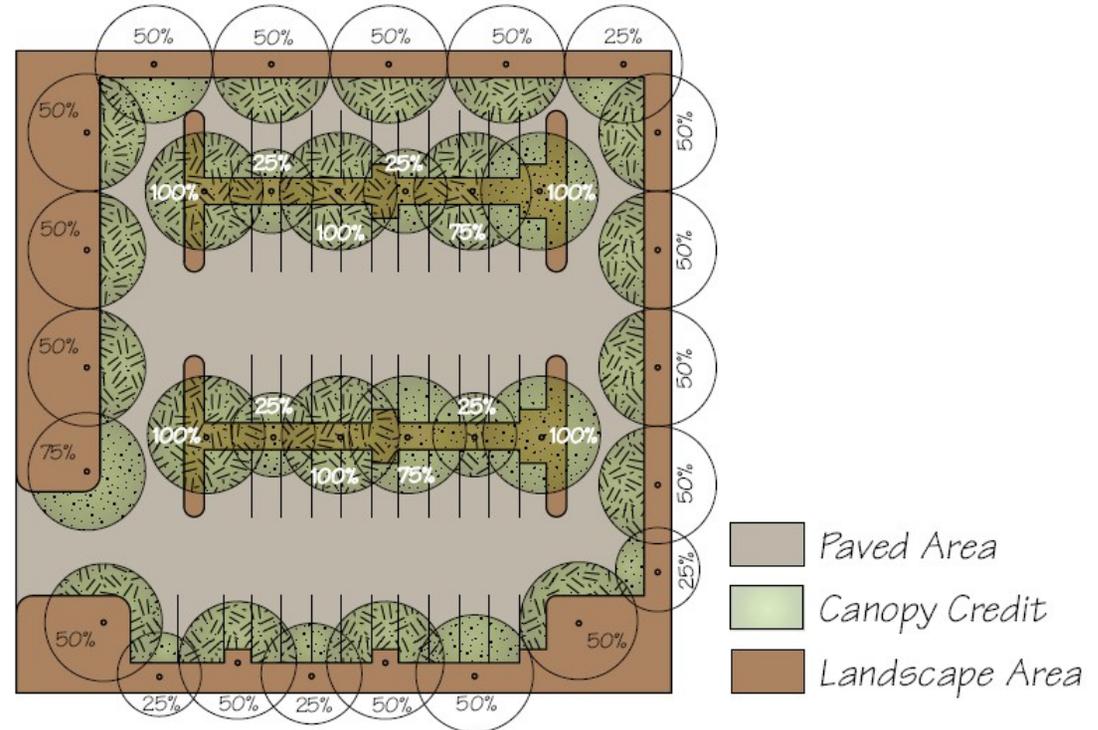


Figure 3.4: Parking lot shading calculations.

Parking Lot Sidewalks – Pedestrian access from the street, separated from drive aisles, to the front entrance of larger commercial buildings shall be provided where appropriate. Sidewalks in parking lots should have a minimum of 5 feet of net landscaping on at least one side of the walkway or alternate from one side to the other to provide a comfortable walking environment, including shade for pedestrians. Stamped and/or colored concrete or other decorative accent is encouraged for crosswalks within the parking lot.

Walkways should be provided along paths of likely travel through landscape areas to protect plantings from foot traffic.

Pedestrian circulation walks shall be designed to provide access to the disabled in compliance with the California Code of Regulations: Title 24, American's with Disabilities Act (ADA), and other relevant standards.

Drive-Thru Lanes – Drive-thru lanes that are adjacent to the street shall be screened through the use of low screen walls, berming or mounding, and/or landscaping.

Pickup windows oriented toward the street shall be de-emphasized through screening and/or architectural treatment.



Figure 3.6: Internal pedestrian circulation is necessary in larger commercial developments.



Figure 3.7: Drive-thru lanes should be screened by a combination of walls and landscaping.

4. Bioretention/Storm Water Management

It is imperative to consider how a new development will impact that which already exists in the area and to assess the opportunities where Low Impact Development (LID) can be implemented feasibly. Low Impact Development is a sustainable practice that benefits water supply and contributes to water quality protection.

Sustainability means meeting the needs and aspirations of the current generation, without compromising the ability to meet the needs of future generations. It means thinking differently and making innovative, efficient decisions about lifestyle and community design.

Sustainable design enhances the natural environment and reduces the impact of the built environment. There are a number of benefits associated with building sustainably, including healthier living environments, reduced costs of heating and cooling, reduced greenhouse gas emissions, local employment opportunities and safe, livable communities.

Unlike traditional storm water management which collects and conveys storm water runoff through storm drains, pipes and other conveyances to a nearby creek or river, LID takes a different approach by using site design and storm water management to recreate the site's natural water balance.

The County has adopted the West Placer Storm Water Quality Design Manual and has prepared a Low Impact Development Guidebook for projects in the eastern county.

Projects must comply with these storm water quality design standards that include a total site design approach using existing natural site features to provide small-scale storm water controls that mimic or recreate the natural water balance for a site.

The goal of LID is to mimic a site's predevelopment hydrology by using design techniques that infiltrate, filter, store, evaporate, and detain runoff close to the source of rainfall. Developers and others are urged to incorporate LID features into their projects.

Bioretention is a water quality and water quantity control best management practice that utilizes biological, chemical and physical properties of plants, microbes and soils to remove or significantly reduce pollutants from storm water runoff.

Catching, slowing and retaining water will promote infiltration and removal of pollutants and minimize stormwater runoff using:

- Infiltration basins, trenches, buffer strips, drainfields or drywells
- Bioretention systems
- Vegetated swales

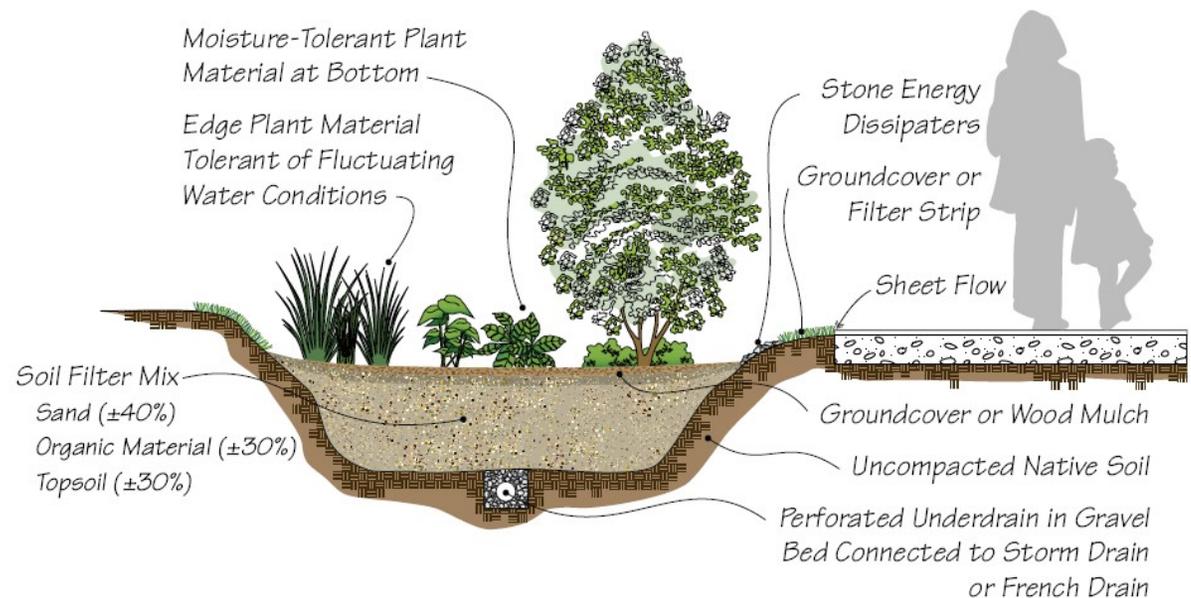


Figure 4.1: Typical bioswale cross-section.

Other storm water management BMPs include planter boxes and roof gardens. Specific considerations for such landscape-based BMPs include, at a minimum:

- BMP should be designed and implemented to reduce the discharge of storm water pollutants to the maximum extent possible.
- Impervious hardscape should be kept to a minimum in order to decrease storm water runoff and allow infiltration.
- Where possible, choose native vegetation and soils for storm water management BMPs. Use a variety of trees, shrubs and herbaceous plant materials. Native grass meadows are especially effective at controlling and treating storm water over a large area.
- Choose moisture-tolerant plants for the bottom of a bioretention swale or basin. Choose plants that can tolerate both fluctuating water conditions and drought conditions for the side edges.
- Standing water in a bioretention swale or basin must have the ability to drain within 72 hours. This may require periodic removal of built up sedimentation. All BMP treatment options require periodic maintenance.
- Well-established plants are most effective at treating storm water.

Opportunities

- Bioswales with curb cuts or rural in lieu of urban road cross sections
- Rainbarrels (essentially cost effective cisterns)
- Turfstone and/or asphalt driveways with permeable pavement strips
- Directing roof leaders to discharge water to rear lots and side yards - also known as 'Third pipe system'
- Bioretention or raingardens in lieu of parking islands
- White roofing systems
- Use of green or living roofs where feasible
- Interlocking permeable pavers or permeable pavement in effective areas such as parking spaces and pedestrian crossing areas



Figure 4.3: Bioretention in a parking lot.



Figure 4.2: Storm water management in a residential neighborhood.

5. Streetscapes

Traffic Safety

- Setbacks for trees places along collector/arterial roadways shall be considered separately by the Department of Public Works to evaluate traffic safety.
- Plants shall preserve sight distance at site entries and exits and internal circulation routes. Plant materials shall be selected that maintain the sight visibility triangle (see Figure 2.1).
- Landscaping shall not obstruct building or parking lot light fixtures, address signs, street signs, building entries, and windows.
- Landscaped planter strips should be provided between sidewalks and roadways to provide a buffer between pedestrians and vehicles.

Sidewalk/Roadway Planter Strips

- The public right-of-way, sidewalks, and on-site pedestrian walkways should be lined with a landscape/planter strip that is at least 5 feet wide, where possible. A mix of trees, shrubs, and groundcover other than turf should occur in this area (see Figure 5.1). Shade trees are encouraged along sidewalks to minimize the impacts of sun on pedestrians and to help cool the streetscape.
- Low lying shrubs along sidewalks and pedestrian walkways should generally be less than 3 feet tall. Trees should be pruned so that at least 8 feet of clearance is provided between the bottom of the sidewalk and the lowest branches of the tree.

- Pedestrian walkways should be designed with a solid paving material, such as concrete, brick, or unit pavers.

Residential Street Canopy Trees

- Street trees shall be provided on the edges of all property lines that are adjacent to roadways.
- Residential street canopy trees shall be installed for all development. The street tree list in Part XIII recommends tree species and new trees shall be planted consistent with the street tree standards and guidelines herein.
- The spacing of street trees should be approximately 20 to 30 feet apart depending on tree species. Deviations from this spacing pattern should only occur when necessary to accommodate driveway entrances.
- Any existing “street tree” which constitutes a specimen or mature tree within the regulation of the Placer County Tree Preservation Ordinance may be substituted for a required street tree.
- All new street trees shall be a minimum of 24 inch box size.
- Street tree placement shall include consideration for vehicle line of sight, entrance and exit curb cuts, street light and traffic control devices, and other site specific conditions as part of design review process.
- Trees should preferably be located between a sidewalk and the curb, within a landscaped planter strip. If placement of street trees will interfere with utility lines, trees may be planted within the front setback adjacent to the sidewalk. Where street trees already exist (for example, infill lots in an existing neighborhood) any gaps shall be filled.



Figure 5.1: Planting strips should entail a variety of non-turf plant species.

Median Plantings

- Median islands shall be planted in continuous rows of dominant street tree species.
- In median islands less than 6 feet but greater than 3 feet wide, one type of groundcover should be used along with shrubs. Trees should not be planted.
- In median islands 6 feet wide or larger, a row planting of shrubs should be located in the center of the median with a band of groundcover on each side of the shrub, and trees shall be columnar in form.
- Medians less than 3 feet in width shall be finished with County-approved decorative hardscape instead of landscaping.
- Shrub plantings shall be limited to three species types per median. Contiguous single species masses and double rows of shrubs are permissible.
- Earth mounds should be kept to a minimum. Shrubs and earth mounds shall not exceed 4 feet in height in center medians.
- Xeriscape design in medians is mandatory. Lawn is not permitted in medians as a bedding material.



Figure 5.2: Median incorporating trees and shrubs.



Figure 5.3: Drought-tolerant median landscaping along E. Roseville Parkway in Granite Bay.

6. Neighborhood Entries

Entry Features

- Neighborhood entrances are “gateways” into a neighborhood and should be designed to create a distinct identity and a visually open feeling.
 - Entryways should include vertical elements utilizing a combination of plant materials and hardscapes, such as monuments, architectural treatments, walls, fencing, pilasters, signage, and special paving.
 - Entryway features shall not exceed 7 feet in height. Decorative elements such as pilasters, caps, finials, columns or posts may be constructed up to 8 feet in height on each side of a neighborhood entry feature if integrated into the fence/gate design. Said decorative elements shall not have any horizontal dimension greater than 24 inches and caps shall not have any horizontal dimensions greater than 30 inches.
 - The maximum length of a neighborhood entryway feature shall not exceed 50 feet on each side of the entrance roadway. Any structure or feature extending beyond this length shall be considered a fence or wall and shall meet fence or wall height requirements.
- The height of vehicle entry gates to residential development shall be a maximum 6 feet except that decorative elements on gates such as scrolls, finials, and similar features may extend up to 1 foot above the maximum fence height.
 - **Entryways shall provide an opportunity to distinguish individual neighborhoods using thematic names, materials, colors and signage. Understated entry features are desirable. These entry statements should match on each side of the street entering the neighborhood and should also reflect the surrounding landform.**
 - Entry treatments may also occur at major intersection points of community arterials or collector streets in the more urban areas of Placer County. These community entries are internalized to the site to create arrival points, visual identity, or “gateways” to the community. They may be used to announce the site and/or establish direction to neighborhoods. The objective of these quadrant landscape areas is to create a landscape and hardscape theme at these intersections.

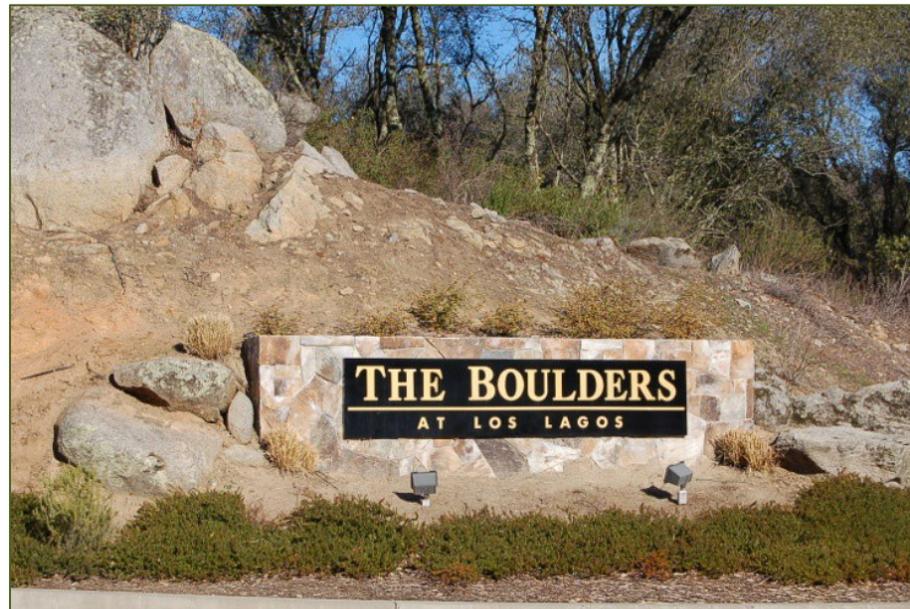


Figure 6.1: Appropriate neighborhood entryway design.

Entryway Design Standards

- Structural entrance features must satisfy zoning ordinance setback requirements and DPW sight-distance standards. Landscaping should be consistent with the ultimate configuration of the intersection and should include low-lying shrubs and groundcover to maintain adequate site distance.
- Monument signs require a substantial base with stone, brick, or other compatible material to help give the sign a sense of being permanent, “anchored,” and durable. Signs on single posts, pillars, or poles are not acceptable.
- The use of indigenous natural material is encouraged.
- Existing natural vegetation and wooded areas should be incorporated into entrance design.
- Non-native and “formal” type landscape design and vegetation are discouraged in rural areas. Annuals beds at the entrance may be appropriate in more urban settings however.
- Lighting of entrances should be restricted to the parameters set forth under the rural lighting standards.
- If the subdivision intersections are illuminated, additional entrance lighting is not necessary and is discouraged.
- Entrance feature lighting should be restricted to identification purposes with only directed and shielded lighting on the identifying portion of the entrance feature. Where signs and monuments are to be uplit, lighting equipment shall be approved by the County.
- Lawn only permitted as allowed in the Water Efficient Landscape Ordinance.
- Entryway feature walls, signage, and landscaping must comply with the required sight lines at corners for vehicles and pedestrians as set forth in the Landscape Design Guidelines.
- The number, height and size of signs and logos are subject to the Placer County Sign Ordinance and applicable Community Plan standards. Sign elements on pilasters or walls shall use mounting hardware securely embedded into the surface onto which it is affixed. Mounted individual letters are not permitted.

7. Fencing and Screening Design

Fencing and walls may be used for sound attenuation, to maintain privacy in residential subdivisions, and to screen views of the following:

- Parking lots (except along street frontages)
- Trash disposal areas
- Service and loading/unloading areas
- Ground equipment
- Fencing and walls are not allowed within the County right-of-way

Design Standards

1. All new sound walls, masonry walls, retaining walls or fences 50 feet in length or longer, and 4 feet in height or taller, shall be designed to minimize visual monotony through changes in plane, height, material or material texture or significant landscape massing. Appropriate methods of articulations include a combination of regularly spaced columns, a defined base and cap, providing more than one color or material, and/or altering the height of the wall. Pop-outs or recessed areas that provide expanded planting areas should be installed at a minimum of every 200 feet of walled area to 'break-up' the wall massing.
2. The materials selected for fences and walls should be compatible with the architecture of associated buildings. The following types of fences are encouraged:
 - Decorative wrought iron fences

- Solid walls made of cast concrete, natural stone or stone veneer, brick and/or textured concrete block.
- A combination of solid wall with decorative wrought iron
- All fencing should be wildlife friendly. Wrought iron fences shall not have 'spiked' tops.

3. Walls constructed of plain concrete (CMU) block, single scored block, timbers, railroad ties or sheet pilings are not acceptable.
4. Brick and natural stone shall not be painted.
5. Fences and walls should be between four and 6 feet in height except where restricted by the Zoning Ordinance. Terracing with retaining walls, berming, or mounding should be used to address grade changes and to create the appearance of walls no taller than 6 feet. Vine plantings are required on all retaining walls higher than 24" utilized along a public right-of-way.(see Figure 7.3).



Figures 7.1 to 7.3: Properly landscaped and designed walls.

6. Fencing should be designed as an integrated part of the site where possible, rather than as a separate fence, i.e. planter wall, continuation of architectural wall, etc. Chain link fencing is not permitted.
7. Masonry sound walls should step down around corners, transitioning into yards.
8. Tops of all walls and fencing should be level wherever feasible.
9. Walls and fences are required to be constructed of high-quality and durable materials with an approved sealant to minimize water staining and graffiti.
10. Walls that are visible from a public right-of-way shall have an attractive cap and face and frequent columns.
11. Walls are encouraged to have stone veneer, or stone and tile insets, or other decorative design features.
12. Low landscaping, such as vines and shrubs, shall be planted between walls/fences and public streets to soften their appearance and to deter graffiti. The landscaping should be placed close to the wall/fence so that individuals are not able to hide between the wall/fence and the landscaping.
13. Publicly-visible walls utilizing concrete masonry blocks (CMU) are required to be landscaped with wall-covering vines to ensure screening of the wall within three years of installation.
14. When a fence parallels a walkway, a 36-inch minimum planting strip shall be

provided between the sidewalk and fence.

15. Wall openings for pedestrian or bicycle access shall be provided where appropriate.



Figure 7.4: Not appropriate.



Figures 7.5 and 7.6: Walls with stone or textured surfaces and layered landscaping.

16. Commercial and industrial projects located next to residential areas and/or residentially zoned areas, are required to incorporate appropriately-sized, dense landscaping and/or a solid wall along the property line so as to provide an effective buffer between the different land uses.
17. Retaining walls shall not end abruptly but blend naturally with the adjacent topography, using grading methods, rock outcrops, and vegetation.

Good Neighbor Fences

1. The “Good Neighbor” fence is located along the yard perimeter of the residences and is a shared fence between neighbors. It should be of high quality wood construction and of a character that is compatible with the architectural style of the homes. It typically does not incorporate decorative top rails. It is intended to provide privacy and security between residential units.

Standard Wood Fences

1. Standard wood fences have a consistent architectural design appearance on each side and incorporate decorative top rails. This fence type is typically located adjacent to parks and paseos or on lots which back or side to a residential street where a masonry wall is not required.

2. Guidelines for standard wood fences:

- Minimum height of solid wood fence along all residential streets within neighborhoods is 6 feet.
- Fence sections may be 8 to 10' in length supported by 4-by-4 posts.
- Are to be of redwood construction and painted or stained in an earth tone color.

Open Fencing

1. All open fencing should be wrought iron or medium gauge decorative tubular steel painted black or other dark color. White, or any other similar light color, is not permitted on open fencing.
2. All wrought iron or tubular steel fences should be designed to result in a smooth line following a slope, to the extent feasible.



Figure 7.7: Properly designed fence.

Trash and Utility Enclosures

1. Trash enclosures, including the gate(s), shall be constructed of sturdy, durable, opaque materials (with trash receptacles screened from view) which are designed to be compatible with the project architecture.
2. Whenever feasible, areas for collecting and loading recyclable materials shall be adjacent to the solid waste collection areas.
3. Electrical transformers and similar utility structures shall be undergrounded or placed at the rear of the site. If undergrounding is infeasible due to preexisting site conditions such as a high water table, the facility shall be enclosed within the building or adequately screened from the view of any public right-of-way.

Not This....



Figure 7.8: Utility structures should be screened and landscaped.

4. When publicly visible, exterior trash and storage areas, service yards, loading docks and ramps, electric and gas meters, fire sprinkler valves, irrigation backflow prevention devices, etc., shall be screened from view utilizing landscaping and/or architectural elements that are consistent with the project design.

Screening materials shall be substantial and durable, and the screening shall be well-designed. Evergreen plantings should primarily be used in order to provide an effective year-round screen. Screening will preferably use solid materials, such as berming or enclosures rather than reliance solely on plant materials.

A minimum 3-foot landscape buffer should be provided on all non-accessible sides of trash enclosures.

Not This....



Figure 7.9: Landscape buffers should be provided on three sides of trash enclosures.

This....



Figure 7.11: Properly screened trash enclosure.

8. Tree Preservation

Important existing features and conditions on a site should be preserved because they:

- Facilitate compatibility or fit between old and new elements in the landscape - this creates a sense of visual integrity or wholeness throughout the community
- Provides mature/established settings for new, planned development

Tree Ordinance

In 1991 the Placer County Board of Supervisors adopted the Tree Preservation Ordinance (Chapter 12, Article 12.16 Placer County Code). The ordinance applies to all native, landmark trees, riparian zone trees in designated Tree Preservation Zones and to all projects where discretionary permit approvals are required by the County. Protected trees include all oaks and native trees greater than 6 inches in circumference or larger (measured 4.5 feet above ground) and trees of any species with a landmark tree designation. See the Tree Preservation Ordinance and Oak Woodland Mitigation Guidelines for additional information and requirements.

This Landscape Design Guideline document is not intended to duplicate or replace adopted ordinances and policies. Rather, it is designed to complement these planning tools by offering a comprehensive set of potential management and implementation strategies.



Figures 8.1 and 8.2: Existing trees incorporated into subdivision design.

Views and Vistas

Views and vistas are important elements of Placer County and should be preserved. They form a critical part of the visual journey through the community. 'Views' are generally panoramic in nature while 'vistas' usually refers to a strong individual feature often framed by its surroundings.

Views and vistas can be achieved through the strategic alignment of rights-of-ways, the layout of pedestrian circulation and open space systems, and the siting of major features, public uses, structures and landscape form.

Site plans should create views and view corridors to open space areas and their components.

These features may include:

- Native trees and woodlands;
- Views of hillsides and distant mountains;
- Natural features such as outcroppings, wetlands, ponds, creeks and streams;
- Built structures such as significant architecture; and,
- Important views and vistas.

Guidelines for Protecting Existing Trees

New development should also preserve as much native vegetation on a parcel as possible. Great care must be exercised when work is conducted upon or around trees to be preserved. Preventing disturbance within a tree's Critical Root Zone (CRZ) is not difficult or expensive. The Critical Root Zone is the area around a tree in which the roots necessary for the tree's survival are located. It includes large woody roots that transport nutrients and support the tree as well as the smaller roots of varying sizes that absorb nutrients. Taking preventative measures during the planning and design process will help to limit damage to trees.

The size of the CRZ can vary widely depending on the type of tree and site conditions, but it almost always larger than the dripline (the outer perimeter of the leafy canopy).

To approximate the CRZ, the diameter of the tree 4 ½ feet from the ground is measured. This is the Diameter at Breast Height, or DBH. For every inch of DBH, allow 1 ½ feet of radius for the CRZ. For example, a tree with a 10-inch DBH would have a Critical Root Zone of 15 feet.

When possible, incorporate design features that limit disturbance to the CRZ such as retaining walls, post and pier foundations and suspended decks. If hardscape must go over a portion of the CRZ, use permeable materials such as gravel, pavers or flagstone, or an elevated boardwalk to limit compaction and allow air and water circulation.



Figure 8.3: Significant trees and vistas should be preserved.

Protection During Construction

Construction activities can cause serious damage and even death to trees if proper protection measures are not used. Heavy equipment can compact soils as deep as 2 feet below the surface of the soil. Compacted soils do not have adequate space for air or water.

Injuries to trees are not always obvious, and the decline of the tree may not be evident for months or years after the construction activities are complete. When such conditions do become evident, it is often too late to correct the damage, and tree loss or tree hazards may result.

After construction begins, many protective practices can protect trees from construction damage such as:

- Not stockpiling soil, construction debris, or materials within the CRZ, even temporarily;
- Making sure changes in site grading do not result in concentrating water flows into the CRZ or depriving trees of a source of surface water to which they have adapted;
- Not altering the terrain or composition of the natural soil in the CRZ. This includes cutting, filling, or compaction. Such activities can sever roots, suffocate roots, expose roots to drying air, deplete topsoil, and create excessive pooling or runoff; and,
- Avoiding trenching through the CRZ and using tunneling instead.



Figures 8.4 and 8.5: Protective Fencing is required to prevent CRZ disturbance.

Installation of Protective Fencing and Signage

The area under the CRZ of all existing oaks and other protected trees, etc., which are to be saved shall be fenced prior to construction. Grading operations are restricted under such trees to prevent soil compaction and to reduce root damage (see Placer County Tree Preservation Ordinance).

- a. Type of Fencing. Six-foot high plastic mesh fence shall be installed at the edge of the Critical Root Zone, or at a minimum, the outermost edge of the drip line of each protected tree or group of protected trees.
- b. Fence Installation. The fences shall be installed with fence posts not more than 10 feet apart, and prior to the commencement of any clearing, grubbing, grading, trenching, excavation, or any construction activities. Fencing shall be inspected by the Planning Services Division prior to construction activities beginning on-site.
- c. No grade changes are permitted that will lower or raise the ground on all sides of the tree.
- d. Signs must be installed on the fence around each individual protected tree. See the Tree Preservation Ordinance for sign language and other requirements.

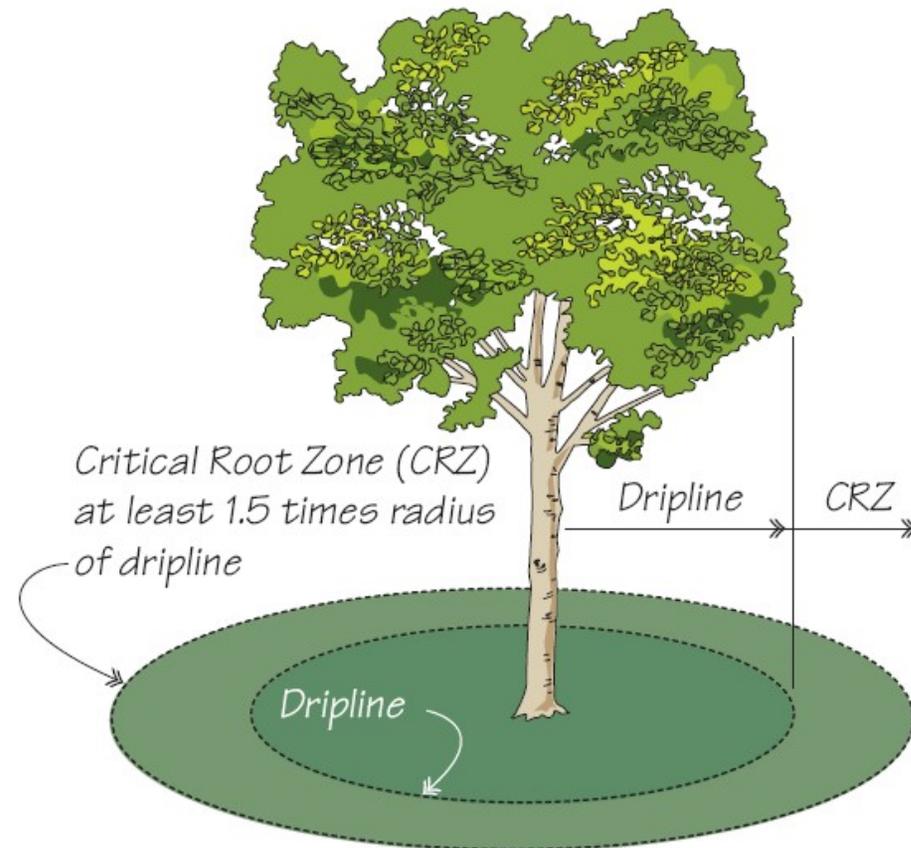


Figure 8.6: How to determine the size of the Critical Root Zone.

On-Site Oak Tree Protection and Preservation

1. The following guidelines have been prepared to provide specific guidance for projects which must preserve existing oak trees within or adjacent to the site. These guidelines may be supplemented with additional requirements through the Design Review approval process. Raising the grade around the tree trunks should be avoided. This causes rotting of the trunk, and serious damage/death to the tree. Cuts are not allowed within the CRZ of a protected tree.
2. Finished grades should slope away from the trunks to avoid water concentrated at their bases.
3. Planting live material or placement of pervious pavement such as pavers or cobbles under native oak trees is generally discouraged, and it will not be permitted within 6 feet of the trunk of a native oak tree with a diameter at breast height (DBH) of 18 inches or less, or within 10 feet of the trunk of a native oak tree with a DBH of more than 18 inches.
4. All drip irrigation systems must be installed on grade. Trenching for irrigation pipe is not permitted. Only low-flow drip irrigation systems shall be used for establishing drought-tolerant plants within the critical root zone of a protected oak tree. No irrigation is allowed within 10 feet of the trunk. Irrigation shall be gradually reduced and discontinued after a two to five year period, depending on plant species and establishment.



Figure 8.7: Maintenance of protective fencing is necessary throughout the construction phase.



Figure 8.8: Oak tree with 'clear' dripline.

9. Planting Practices

All plants should be nursery grown in accordance with the highest standards of horticultural practices and conform to the American Standard for Nursery Stock as published by the American Association of Nurserymen. Plants shall be free of disease and shall have healthy, well-developed root systems.

- All landscape materials shall be installed to current industry standards. Plant selection should consider site geology and soil conditions. Soil should be amended as necessary to ensure establishment.
- Non-thorn bearing vegetation should be utilized.
- When constructing new landscape planting areas on surfaces which were previously covered by pavement or structures, all existing asphalt, base rock or other deleterious material shall be removed to the depth of the native soil and clean soil shall be used to backfill the planting area.
- Amend the soil with compost in the planting areas as needed. Compost fosters a diverse, fertile, and disease suppressive soil. It can improve structure, aeration and water holding capacity, and offset degradation due to typical construction activities.
- Any invasive plant species in or near the installation area should be removed and properly disposed of to preclude future spread of the species.

1. The planting pit shall be three to four times the size of the container width.
2. Newly planted trees shall be mulched over the root system with 4 to 6 inches of organic mulch. Do not use redwood or cedar mulch. Wood chip mulch shall be clean wood chips free of soil or man-made debris shredded into coarse pieces ranging in size from 1 inch to 3 inches.



Figures 9.1 and 9.2: Proper tree staking is essential.



3. Nursery stakes shall be removed at time of planting and tree stakes should be installed in accordance with #3.
4. Trees should be properly staked as shown in Figure 9.3. Stakes shall be non-treated wood and appropriately sized. Trees should be staked as appropriate for the topographic and wind conditions to ensure vertical form as roots take hold and develop.
5. Plants should be thoroughly watered immediately after planting.
6. Prevent longer term sedimentation of streams, stormwater drains and/or air pollution with dust and particulate matter. All disturbed ground should be stabilized against soil erosion and sedimentation before, during and after landscaping installation. Stabilizing products, such as organic mats, netting and hydroseed should be used as appropriate on slopes.
7. Planter areas that have been previously compacted shall be excavated to a minimum depth of 3 feet (if trees are proposed) and 18 inches (if shrubs are proposed). Excavated areas shall be backfilled with 2/3 native soil and 1/3 planting mix.

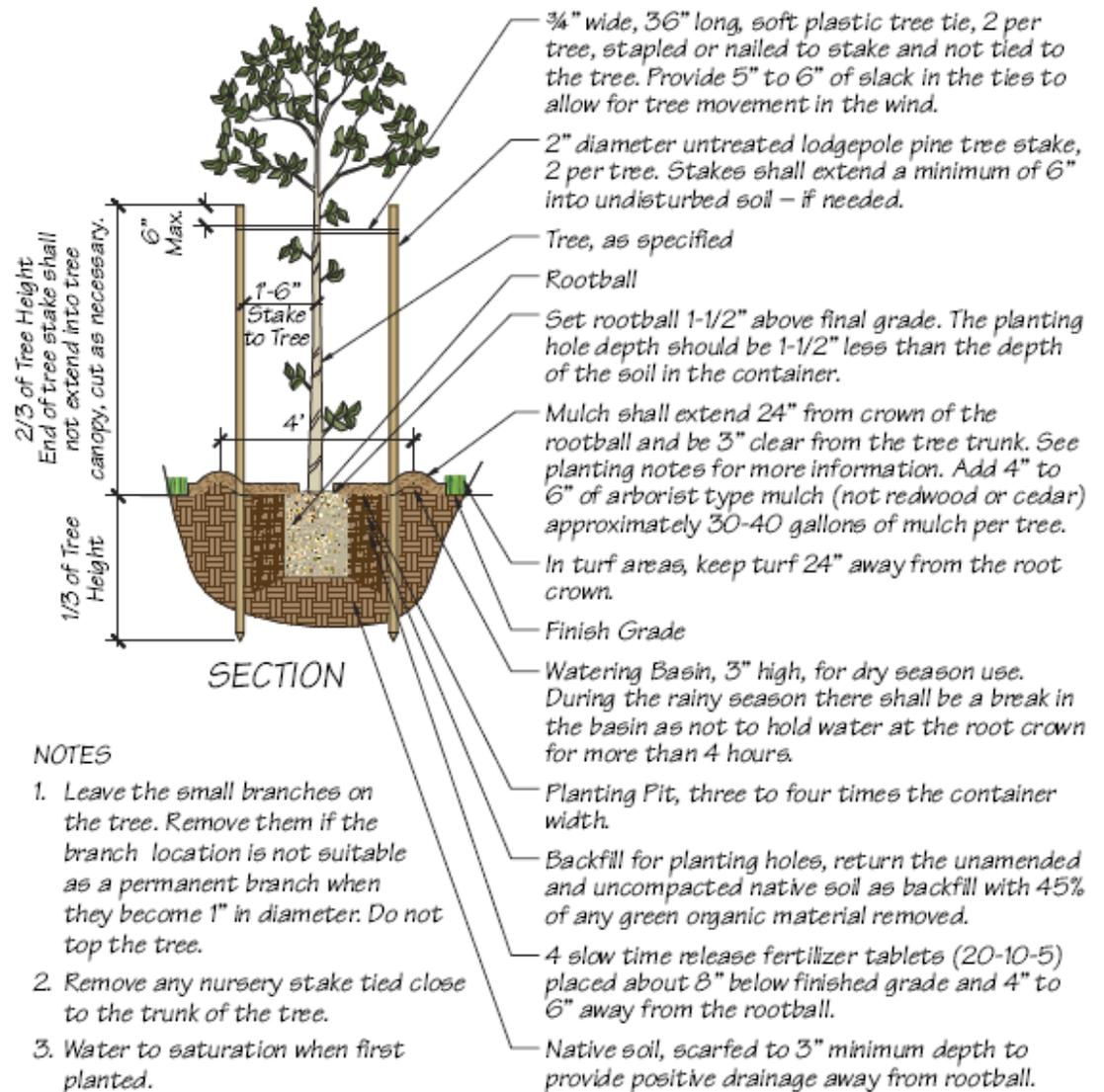


Figure 9.3: Tree planting standard.

10. Irrigation Standards

Placer County encourages all landscaping projects, large and small, to be designed with water efficiency in mind. Certain projects must comply with the County's Water Efficient Landscape requirements. See Section 15 to determine if the project must comply with these requirements. Use of native vegetation is encouraged to reduce landscaping water consumption for landscaping. Irrigation must be sufficient and reliable to ensure successful plant establishment within the first three to five years following installation. Even for plants with low water demands, regular irrigation is necessary after installation as the roots become established.

Principles of xeriscape shall be utilized in the design of the irrigation system. Different plants have different water requirements. The irrigation system should be designed to deliver appropriate amounts of water to each hydrozone. Dividing the landscape into low, medium and high water use zones prevents over-watering. Use of recycled water is also encouraged for larger installations where feasible and available.

Some design considerations will include: shrub and perennial beds are to be zoned separately from turf areas; sloped areas to have separate zoning for heads at the higher elevations from those at the lower elevation and areas with different exposures are to be zoned separately.

Drip emitters, soakers and bubblers are recommended for trees and shrubs. Drip and bubbler irrigation technologies apply

water accurately to the plant root zones at the rate that it can infiltrate. Drip is often more appropriate than overhead in areas that are narrow, odd shaped, densely planted, or in parking lots and medians.

Lawn area should be minimized. Lawns are useful for recreation or places where families and employees can relax. However, turf requires frequent watering to stay green during our long dry season.

Water-wise landscaping is more than just controlling irrigation and planting xeriscapes. Water-wise landscaping also means increasing the water holding capacity of the soil, fostering healthier plants that thrive with less water, and planning for the use of alternatives to potable water such as graywater and recycled or captured stormwater.

The amount of irrigation water required for a healthy landscape varies significantly with soil quality. Compost can increase permeability and water-holding capacity, thereby reducing the need for irrigation.

1. Native planting or compatible species of drought-tolerant plants should be used as much as possible to reduce water consumption.
2. Landscape plans should be prepared by a licensed landscape architect and shall be prepared in accordance with the Water Efficient Landscape requirements.
3. Water-intensive landscaping, such as turf grass, should be concentrated in areas of high visibility and use. The

combined square footage of turf grass and decorative water (e.g. fountains, ponds, etc.) shall be minimized to reduce water use and evapotranspiration.

4. Annuals, ground covers and perennials shall be used where appropriate such as within tree pits and in shrub beds.
5. Limited irrigated landscape area will be allowed under existing oak trees or other highly protected species which would be adversely affected.
6. When required, a plan for an automatic irrigation system and certification (preferably by a Landscape Architect) that the plan is in compliance with the Water Efficient Landscape requirements shall be provided as part of a complete project application submittal to insure that all plants receive adequate water for healthy growth.
7. Severe climate conditions require careful design and selection of vegetation. Adaptable plants that have proven hardy are recommended wherever possible. Xeriscape methods are advisable, such as grouping plants with similar water demands together and watering higher demand plants on a different sprinkler schedule while drought-tolerant plants may be watered by rain or bubbler irrigation.

Standards

All proposed irrigation systems that are placed within the Placer County rights-of-way shall have a manual gate valve installed within the right-of-way that controls the entire irrigation system. Irrigation controllers and backflow preventers shall be installed in a relatively non-visible area while also allowing for maintenance access.

Landscape plantings are also encouraged to help screen views of these items when possible. Irrigation moisture sensors are also recommended in landscape areas adjacent to roadways. Sensors tend to decrease the overall demand for water and eliminate excessive amounts of water on roadway surfaces.

When irrigated turf is proposed immediately adjacent to a roadway, it is preferred that 'pop-up' style irrigation heads be placed immediately along the back of the curb/road section. 'Rotor' type irrigation heads, if used, should be placed a minimum of 8 feet from the edge of the curb road section. The intent is to eliminate or minimize irrigation water from entering pedestrian/vehicular travel lanes and storm water collection systems. These conflicts may also be further minimized through the use of low trajectory spray heads and drip emitter systems.

Specific considerations for irrigation include the following:

1. Irrigation design shall be done by a certified irrigation designer or landscape architect.
2. Irrigation systems shall be installed and maintained so that heads do not spray onto any streets in such a way that they spray passing motorists or pedestrians. Heads should be adjusted so that they do not overspray sidewalks.
3. All Landscape Plan submittals shall be accompanied with a Schematic Irrigation Plan that outlines:
 - The proposed lap/backflow preventer and irrigation controller location;
 - The location of the manual gate valve that will control the entire irrigation system. Such valves should be situated as close as possible to the point of connection of the water supply to minimize water loss in case of an emergency or routine repair;
 - The anticipated type of irrigation proposed for each area (turf, shrub beds, etc.);
 - The recommended setback distance of all proposed irrigation heads from back or curb or edge of pavement;
 - All proposed sleeve locations; and,
 - Location of protected trees.
4. The irrigation system must be designed to provide full coverage and match precipitation rates.
5. Check valves-in-head are to be used for all areas adjacent to walkways and at the bottom of berms, mounds, and pond areas.
6. Include rain shut-off valves so that there is no irrigation during rain events.

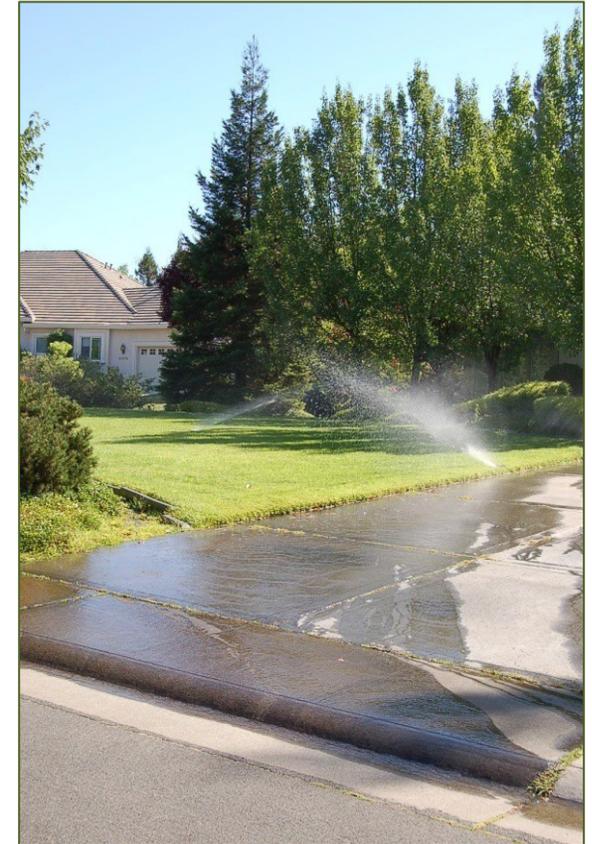


Figure 10.1: Irrigation overspray is a significant source of water waste.

11. Landscape Maintenance Standards

The landscape elements of the project shall be maintained to represent the original integrity of the design and installation over time. The establishment and return on investment from trees are not realized at the time the tree is planted. The trees must grow for many years and support a foliar canopy typical of the species in order to provide benefits. The public perception of a well-maintained landscape is promoted by practices which benefit the health of the landscape materials and achieve a neat, well-cared for appearance.

All required landscaping improvements shall be maintained to professional maintenance industry standards. Plants should be inspected regularly and frequently for visible problems that may be associated with pests, disease, under-watering and over-watering. Individual owners or a homeowner's association shall be responsible for executing a landscape maintenance program for landscape areas within their development and the public right-of-way. Property owners shall be responsible for private maintenance of any landscaping within the public right-of-way through an encroachment permit issued by the Department of Public Works. Establishment of a County Service Area (CSA), or other mechanism, may be required to ensure long-term maintenance.

The scope of a long-term maintenance program should include the initial installation from planting, pruning, staking, mulching, trunk flare clearance, irrigating;

short-term maintenance including any planned tree removal (thinning); future maintenance including stake removal, pruning, pest and disease control, mulching and soil protection, and tree protection and replacement. All tree pruning shall be completed to specifications written in compliance with ANSI A-300 Tree Maintenance Standards.

All landscaping shown on plans approved by the County shall be continually maintained in a healthy and weed-free condition. Dead plant material should be replaced with previously approved plantings at a comparable size.

Any changes to the approved landscape plan shall be approved by the County.

Due to severe climate conditions in Placer County, consideration of long-term maintenance is an important element of the initial design of any landscape. Plant materials should be chosen which grow well in the climate the project is located in and the given soil conditions without requiring excessive irrigation.

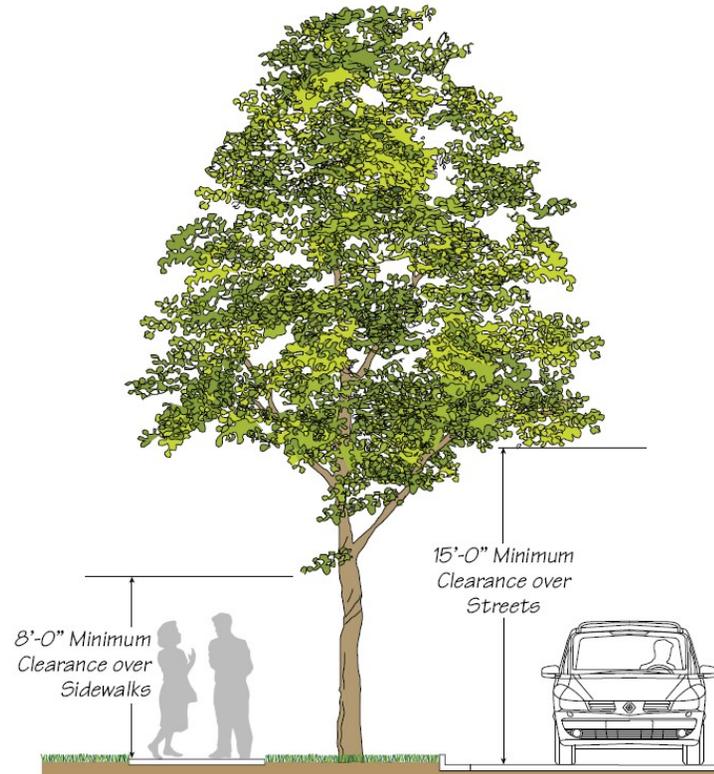


Figure 11.1: Trees shall be pruned to provide clearance over sidewalks and streets.

The maintenance program shall include the following and be coordinated with the maintenance of common areas:

- Prune trees and shrubs as necessary to maintain an attractive shape; remove dead branches and provide clearance for vehicles and pedestrians. Trees shall be maintained in such a manner so as not to endanger, interfere, or otherwise conflict with requirements of safe public use of an area.
- Every owner of any tree or shrub overhanging any street or public right-of-way within the County shall prune the branches of the tree so that such branches shall not interfere with the safe use of the street or sidewalk or obstruct the view of any street intersection. Hanging limb and branch height shall be maintained 15 feet above streets and 8 feet above sidewalks (higher if along equestrian paths).
- Plant materials that have died or are in a visible state of decline shall be replaced to meet the requirements of the original landscape plan.
- Amend with compost, mulch, water and weed plant beds regularly. Mulch conserves water, enhances the growth of plants and the appearance of the landscape.
- Apply insecticides and fungicides as necessary to maintain plant vigor and appearance.
- Lawns shall be watered, mowed, and maintained in a dense, weed-free condition. Turf shall be edged adjacent to paved surfaces.
- Maintenance and replacement of landscape materials and irrigation systems shall be the responsibility of the property owner or homeowner's association, including the maintenance of any trees planted in the public right-of-way.
- Inspect new plantings on a regular basis and remove dead, broken and diseased branches.
- Remove sprout growth from stems and root collars early in growing season.
- Re-mulch trees on an annual basis to maintain a 4 to 6 inch deep mulch cover.
- Maintain tree rings in turf zones as weed free.
- Insect and disease levels shall be monitored and control measures implemented when necessary following Integrated Pest Management (IPM) practices.
- Where trunks are wrapped, remove tree wrap the next spring season after planting.
- Tree stakes should be removed when trees become established.
- Where appropriate, trees should be pruned and limbed as needed for wildfire defensible space.
- Areas within the right-of-way (i.e. between the sidewalk and the curb) are to be planted and maintained by the property owner, unless otherwise noted.
- Property owners may be required to sign a maintenance agreement with the County, typically for five years, for newly-installed landscapes that provides for standard maintenance practices.



Figure 11.2: Properly maintained landscaping adds to the character of a property.

12. Defensible Space

The potential for fire in Placer County can be great, and landscaping plays a critical role. The vegetation surrounding a building or structure is fuel for a fire. Even the building or structure itself is considered fuel. Research and experience have shown that fuel reduction around a building or structure increases the probability of it surviving a wildfire. Good defensible space allows firefighters to protect and save buildings or structures safely without facing unacceptable risk to their lives. Fuel reduction through vegetation management is the key to creating good defensible space.

Understanding the topography, fuel, and local weather are critical to designing and maintaining a landscape that reduces the potential for loss to fire. Plant selection is also very important to reducing the fuel load and avoiding fire ladders. Some species – “pyrophites” – ignite readily and burn intensely. Dense vegetation can be a fire hazard because the competition for limited waters, nutrients and space results in a large amount of dry “twiggy” material.

For sites adjacent to fire-sensitive open space or wildland, create a Fire Mitigation Plan that identifies adjacent fire-sensitive lands, open space, or developments, exposure to prevailing winds during the dry season, steep slopes, and vegetation type. Establish a “defensible zone” immediately surrounding structures with one or more strategies for firescaping, or fire-resistant landscaping, such as:

- Emphasize plants with low fuel volume and/or high moisture content in planting plans;
- Avoid plants with high oil content or that tend to accumulate excessive dead wood or debris;
- Assure that trees are well spaced and pruned to 8 to 10 feet above the ground, and that dense shrub plantings are separate from trees to minimize fuel ladders;
- Assure that trees and tall shrubs are planted where limbs and branches will not reach the building or grow under overhangs as they mature;
- Avoid fine shredded bark mulch;
- Face and construct decks out of fire-resistant materials.

The California Department of Forestry and Fire Protection (CDF), Nevada-Yuba-Placer Unit, has created fuel reduction standards for new developments. The requirements are to be implemented to reduce the fire hazards and increase the potential of success of fire suppression activities during initial attack response. Fuel reduction activities that remove or dispose of vegetation are required to comply with all federal, state or county environmental protection laws and obtain permits when necessary.

A modified shaded fuel break is defined as a defensible location to be used by fire suppression resources to suppress oncoming wildfires. Any fuel break by itself will not stop a wildfire. It is a location

where the fuel has been modified to increase the probability of success for fire suppression activities.

Refer to the CDF guidelines to ensure compliance with Defensible Space requirements.



Figure 12.1: Defensible space guidelines

13. Western Placer County Suggested Residential Street Canopy Street Trees

The following trees are appropriate for street trees within residential subdivisions in Western Placer County. Other street tree options may be considered provided that the tree type has a low or moderate Water Use Classification of Landscape Species (WUCOLS) rating, has a moderate to fast growth rate, an adequate canopy shape, the tree is not prone to dropping a significant amount of fruit or nuts (or other messy items), and the tree does not feature an invasive root system.

Low Water Use Trees

- Cork Oak
- Celtis Occidentalis Hackberry
- Deodar Cedar
- Chinese Pistache
- Sweet Bay
- Western Redbud

Medium Water Use Trees

- Red Sunset Maple
- Scarlet/Red Oak
- Pin Oak
- Tulip Tree
- Raywood Ash
- Columbia London Plane
- Saw Leaf Zelkova
- Chanticleer Flowering Plum

Note: Some arterials, in Granite Bay and North Auburn for instance, have designated “theme” trees in Design Guideline or Community Plan documents.



Figures 13.1 and 13.2: Street trees in a front setback area (top) and within a planting strip (below).

14. UNDESIRABLE PLANTS

The following undesirable plants shall not be used within Placer county landscape and streetscape designs.

**Table 14-1
Undesirable Plants**

Name (common and scientific)	Reason
American Sweet Gum <i>Liquidambar styraciflua</i>	Frequent surface roots. Round fruit/seed pods are a trip hazard.
Arundo, giant reed <i>Arundo donax</i>	Invasive plant
Big Leaf Maple <i>Acer macrophyllum</i>	High water use
Bloodgood London Plane Tree <i>Plantanus x acerfolia "Bloodgood"</i>	Usually infested with powdery mildew. These are generally OK for open park type areas however.
Blue Gum Eucalyptus <i>Eucalyptus globules</i>	Invasive plant. Round fruit causes a trip hazard.
Brooms: Scotch broom, Striated broom, French broom, Bridal Veil broom, Spanish Broom <i>Cystisus scoparuis, Cystisus striatus, Genista monspessulana, Retama monosperma, Spartium junceum</i>	Invasive plants
California Sycamore <i>Platanus racemosa</i>	Messy
China-Berry/Texas Umbrella Tree <i>Melia Azedarach</i>	Invasive seeds
Chinese Hackberry <i>Celtis sinensis</i>	Prone to scale and aphids
Chinese Tallow tree <i>Sapium sebiferum</i>	Invasive plant
Cottonwood family <i>Populus species</i>	All species and cultivars have too many problems
Empress/Princess tree Paulownia tomentosa	Very fast growing
European White Birch <i>Betula Pendula</i>	Very susceptible to the Bronze Birch Borer
Giant Sequoia /Coast Redwood <i>Sequoia Sempervirens/Sequoiadendron giganteum</i>	Short life span in the lower valley area High watering requirements
Ginkgo (Maidenhair Tree) - Females <i>Ginkgo biloba</i>	Females have stinky fruit. Male Ginkgo trees are permissible.

Glossy Privet <i>Ligustrum lucidum</i>	Very seed invasive
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Name (common and scientific)	Reason
Grey/Foothill Pine <i>Pinus sabiniana</i>	Dangerous, particularly if growing with a lean. Too many problems.
Honey Locust <i>Gleditsia triacanthos</i>	Problems with midge
Jacquemontii Birch <i>Betula jacquemontii</i>	High water use
Leyland Cypress <i>Cupressocyparis Lelandii</i>	Grows fast, dies soon from coryneum canker
Locust family <i>Robinia</i> species	Tends to split, sucker, mistletoe & surface roots
Mexican Feather Grass <i>Nassella tenuissima</i>	Invasive seeds
Mimosa /Silk Tree <i>Albizia julibrissin</i>	Invasive plant
Modesto Ash <i>Fraxinus velutina</i> “Modesto”	Too many problems
Monterey Pine <i>Pinus Radiata</i>	Too many problems. Short life.
Mulberry <i>Morus</i> species (usually alba)	Surface root problems
Pampas Grass Unnamed cultivars of <i>Cortaderia Jubata</i> and <i>Selloana</i>	Invasive plants
Periwinkle <i>Vinca major</i>	Invasive plant
Russian Olive <i>Elaeagnus Angustifolia</i>	Invasive plant
Saltcedar <i>Tamarix ramosissima</i>	Invasive plant
Scarlet Wisteria Tree/Rattlebox <i>Sesbania Punicea</i>	Invasive plant
Silver Maple	Brittle, shallow roots, mistletoe. Maybe OK in large

<i>Acer saccharinum</i>	open space areas with lots of natural water.
Tree of Heaven <i>Ailanthus altissima</i>	Invasive, stinky male
Willow family <i>Salix</i> species	Breaks easily, surface roots, messy cotton

15. WATER EFFICIENT LANDSCAPING REQUIREMENTS

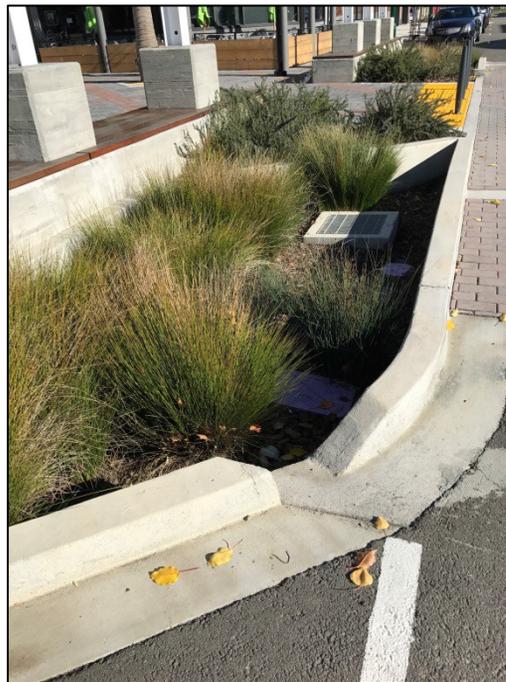
In 2006, the State of California adopted the Water Conservation in Landscaping Act, Government Code Sections 65591 et. seq. The Act required the Department of Water Resources to update a previously adopted model water efficient landscape ordinance that provides for greater efforts at water conservation and more efficient use of water in landscaping. The model ordinance included provisions for:

1. Water conservation by the appropriate use and groupings of plants that are well adapted to particular sites and local conditions;
2. A landscape water budget that establishes the maximum amount of water to be applied through the irrigation system;
3. Automatic irrigation systems and irrigation schedules based on climatic conditions, terrains and soil types and other environmental conditions;
4. On-site soil assessment and soil management plans that include grading and drainage to promote healthy plant growth and prevent excessive erosion and runoff; and,
5. Promoting the use of recycled water for landscaping when it is available and the use is consistent with State law.

These Water Efficient Landscaping Requirements adopt regulations for the unincorporated areas of the County that are consistent with the findings and declarations the State Legislature made when adopting the new Water Conservation in Landscaping

Act and is as effective as the State's updated model water efficient landscape ordinance. The requirements will:

1. Promote the values and benefits of landscapes while recognizing the need to utilize water and other resources as efficiently as possible;
2. Establish a structure for planning, designing, installing, maintaining and managing water efficient landscapes in



Figures 15.1 and 15.2: Water Efficient Landscape in Alameda retail project (above) and at new residence in West Placer (right).

new construction;

3. Increase water use efficiency by establishing and monitoring water budgets, promoting installation and maintenance of efficient irrigation systems and encouraging use of plants that use water efficiently based on climate, soil type and site features; and,
4. Reduce water waste that occurs from irrigation runoff and overspray.

Relationship to Other Documents

Consistency with specific plans and other design guidelines. Landscape and irrigation plans shall be designed consistent with the Placer County Landscape Design Guidelines and any adopted specific plans or other planning area design guidelines, if applicable. Where any inconsistencies arise between the Water Efficient Landscape Requirements and other adopted policy documents, the more restrictive requirement shall govern.



A. Applicability

1. The Water Efficient Landscaping Requirements outlined here apply to all of the following landscape projects:
 - a. New landscapes in single-family residential, multi-family residential, commercial, industrial, and public agency projects with an aggregate landscape area equal to or greater than 500 square feet requiring a permit, plan check, or design review.
 - b. Rehabilitated landscapes exceeding 2,500 square feet requiring a permit, plan check, or design review.
 - c. Existing landscapes limited to Sections F and L.
 - d. Cemeteries. Recognizing the special landscape management needs of cemeteries, new and rehabilitated cemeteries are limited to Sections B.2.b, E and F; and existing cemeteries are limited to Sections F and L.
 - e. Conservation landscapes, stormwater facilities that encourage on-site retention and infiltration of stormwater, are exempt from the Water Efficient Landscaping Requirements.
 - f. Homeowners Associations and Common Interest Developments. The architectural guidelines (i.e., CC&Rs) of a common interest development, which may include apartment projects, condominiums, planned developments, cooperatives, or single-family subdivisions governed by a homeowners association shall not prohibit or include conditions that have the effect of prohibiting the use of low-water use plants as a group. Further,

said guidelines shall not prohibit the removal of turf, nor restrict or prohibit the reduction of turf in lieu of more water efficient alternatives.

- g. The Water Efficient Landscaping Requirements do 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.
 - (4) Existing plant collections, as part of botanical gardens and arboretums open to the public.
- h. For projects using treated or untreated graywater or rainwater captured on site, any lot or parcel within the project that has less than 5,000 square feet of landscape and meets the lot or parcel's landscape water requirement (Estimated Total Water Use) entirely with treated or untreated groundwater or through stored rainwater captured on site is subject only to the Prescriptive Compliance Measures (WELO Forms, Part C).
- i. Any project requiring a permit, plan check, or design review with an aggregate landscape area of 5,000 square feet or less shall be required to comply only with Prescriptive Compliance approach.

B. Submittal Requirements

1. Prescriptive Compliance Package:

- a. Submit a Project Information Sheet which includes the following elements (see Part A of WELO Forms):
 - (1) Date;
 - (2) Project applicant;
 - (3) Project address and parcel number;
 - (4) Total landscape area (square feet), including a breakdown of turf and plant material;
 - (5) Project type (e.g., new, rehabilitated, public, private, cemetery, homeowner-installed);
 - (6) 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;
 - (7) Contact information for the project applicant and property owner; and,
 - (8) Applicant signature and date with statement, "I agree to comply with the requirements of the prescriptive compliance option to the Water Efficient Landscaping Regulations of the Placer County Landscape Design Guidelines".
- b. Incorporate compost at a rate of at least four cubic yards per 1,000 square feet to a depth of 6 inches into landscape area (unless contraindicated by a soil test).
- c. Plant material shall comply with all of the following:
 - (1) For residential areas, install climate adapted plants that require occasional, little or no summer water (average WUCOLS plant factor 0.3) for 75 percent of the

- plant area excluding edibles and areas using recycled water; For non-residential areas, install climate adapted plants that require occasional, little or no summer water (average WUCOLS plant factor 0.3) for 100 percent of the plant area excluding edibles and areas using recycled water; and,
- (2) A minimum 3-inch (3") layer of mulch shall be applied on all exposed soil surfaces of planting areas except in turf areas, creeping or rooting groundcovers, or direct seeding applications where mulch is contraindicated.
- b. Turf shall comply with all of the following:
- (1) Turf shall not exceed 25 percent of the landscape area in residential areas, and there shall be no turf in non-residential areas;
 - (2) Turf shall not be planted on areas sloped greater than 25% (a slope of 1 foot vertical elevation change for every 4 feet of horizontal length); and,
 - (3) Turf is prohibited in parkways less than 10 feet wide, unless the parkway is adjacent to a parking strip and used to enter and exit vehicles. Any turf in parkways must be irrigated by subsurface irrigation or by other technology that creates no overspray or runoff.
- c. Irrigation systems shall comply with the following:
- (1) Automatic irrigation controllers are required and must use evapotranspiration or soil moisture sensor data;
 - (2) Irrigation controllers shall be of a type which does not lose programming data in the event the primary power source is interrupted;
 - (3) Pressure regulators shall be installed on the irrigation system to ensure the dynamic pressure of the system is within the manufacturers' recommended pressure range;
 - (4) Manual shut-off valves (such as a gate valve, ball valve, or butterfly valve) shall be installed as close as possible to the point of connection of the water supply; and,
 - (5) All irrigation emission devices must meet the requirements set in the ANSI standard, ASABE/ICC 802-2014, "Landscape Irrigation Sprinkler and Emitter Standard." All sprinkler heads installed in the landscape must document a distribution uniformity low quarter of 0.65 or higher using the protocol defined in ASABE/ICC 802-2014.
- d. At the time of final inspection, the permit applicant must provide the owner of the property with a certificate of completion, certificate of installation, irrigation schedule and a schedule of landscape and irrigation maintenance.
1. Full Documentation Landscape Package Submittal Required. When applicable, and prior to issuance of a permit, as part of plan check, or design review, the project applicant shall submit a landscape package to the County for review and approval. The

landscape package shall contain the information required by Section 2 and shall be incorporated into the improvement plan and/or landscape plan set in a form determined acceptable to the Community Development Resource Agency Director.



Figure 15.3: Water Efficient Landscape installed at new residence in West Placer.

2. Elements of the Full Documentation Landscape Package. The landscape package shall include the following elements:
 - a. **Project Information Sheet** (WELO Forms, Part A)
 - b. **Water Efficient Landscape Worksheet** (WELO Forms, Part B). For the calculation of the maximum applied water allowance and estimated total water use, a project applicant shall use the ETo values found in the California Model Water Efficient Landscape Ordinance Reference Table for the project location.

- i. Water budget calculations shall adhere to the following requirements:
- (1) The plant factor used shall be obtained from the most recent Water Use Classification of Landscape Species (WUCOLS) publication or from horticultural researches with academic institutions or professional associations as approved by the California Department of Water Resources. The plant factors ranges shall be calculated as follows:
 - (a) 0 to 0.3 for low water use plants
 - (b) 0.4 to 0.6 for moderate water use plants
 - (c) 0.7 to 1.0 for high water use plants
 - (2) All water features shall be included in the high water use hydrozone.
 - (3) Temporarily irrigated areas shall be designed as low water use hydrozones.
 - (4) Special landscape areas shall be clearly identified and their water use calculated using the Water Efficient Landscape Worksheet (WELo Forms, Part B).
 - (5) Water use for new and existing (non-rehabilitated) special landscape areas shall be calculated with an ETAF not to exceed 1.0.
- c. **Soil Management Report.** In order to reduce runoff and encourage healthy plant growth, a soil management report shall be completed by the project applicant or designee as follows:
- i. Submit soil sample(s) to a laboratory for analysis and recommendations.
 - (1) Soil sampling shall be conducted in accordance with laboratory protocol, including protocols regarding adequate sampling depth for the intended plans.
 - (2) The soil analysis shall include:
 - (a) Soil texture
 - (b) Infiltrate rate determined by laboratory test or soil texture infiltration rate table
 - (c) pH
 - (d) Total soluble salts
 - (e) Sodium
 - (f) Percent organic matter
 - (g) Recommendations for appropriate amendment
 - ii. 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 submitted to the County as part of the Landscape Documentation Package; or,
 - (2) If significant mass grading is planned, the soil analysis report shall be submitted to the County as part of the Certificate of Completion.
 - iii. 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.
 - iv. Any soil management or amendment recommendations shall be including with the design plans for County review.
 - v. Upon completion of construction and prior to issuance of an occupancy permit, the project applicant or designee shall submit documentation verifying implementation of the soil analysis report recommendations within the landscaped area to the County with the Certificate of Completion.
- d. **Landscape Design Plan.** 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 must comply with the Landscape Design Guidelines. Where applicable, landscape plans, including plant selection, shall be designed consistent with the applicable specific plan or community plan planning area design guidelines. At a minimum, landscape design plans to be submitted as part of the Landscape Documentation Package shall address the following:
- i. The landscape design plan, at a minimum, shall:
 - (1) Delineate property lines, utilities and utility easements, streets, driveways, walkways, and other paved areas or hardscapes (pervious or impervious);

- (2) Identify buildings and structures including pad elevation(s) if applicable;
- (3) Identify natural features to remain, including rock outcroppings, existing oak and ornamental trees, shrubs, etc.;
- (4) Identify recreational or other special landscape areas, as defined in Section Two;
- (5) Delineate and label each hydrozone by number, letter, or other method 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;
- (6) Identify recreational areas;
- (7) Identify areas permanently and solely dedicated to edible plants;
- (8) Identify areas irrigated with recycled water;
- (9) Identify type of mulch and application depth;
- (10) Identify soil amendments, type, and quantity;
- (11) Identify type and surface area of water features;
- (12) Identify location, installation details, and 24-hour retention or infiltration capacity of any applicable stormwater best management practices that encourage on-site retention and infiltration of stormwater. Project applicants shall

refer to the County or regional Water Quality Control Board for information on any applicable stormwater technical requirements. Stormwater best management practices are encouraged in the landscape design plan and examples are provided in Section I;

- (13) Identify any applicable rain harvesting or catchment as discussed in Section I and their 24-hour retention or infiltration capacity;
- (14) Identify any applicable graywater discharge piping, system components and area(s) of distribution;
- (15) The landscape plan shall 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,
- (16) 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 Title16 of the California Code of Regulations, and Section 6721 of the Food and Agriculture Code).

ii. Plant Materials.

- (1) 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. Methods to achieve water efficiency shall include one or more of the following:

- (a) Protection and preservation of native species and natural vegetation;
 - (b) Selection of water-conserving plant, tree and turf species, especially local native plants;
 - (c) Selection of plants based on local climate suitability, disease and pest resistance;
 - (d) Selection of trees based on the Landscape Design Guidelines tree shading requirements, and size at maturity as appropriate for the planting area; and,
 - (e) Selection of plants from community plan, area plan, Landscape Design Guidelines, or local landscape program plant lists.
 - (f) Selection of plants from local fuel modification plan guidelines.
- (2) Each hydrozone shall have plant materials with similar water use, with the exception of hydrozones with plants of mixed water use, as specified in Subsection B.2.e.i(4). Hydrozones shall be designated as low, moderate, high water or mixed water use and shall be labeled by number, letter, or other method. Areas irrigated with recycled water should be clearly delineated.

- (3) Plants shall be selected and planted appropriately based upon their adaptability to the climatic, geologic, and topographical conditions of the project site. Methods to achieve water efficiency shall include one or more of the following:
- Use the Sunset Western Climate Zone System which takes into account temperature, humidity, elevation, terrain, latitude, and varying degrees of continental and marine influence on local climate;
 - Recognize the horticultural attributes of plants (i.e., mature plant size, invasive surface roots) to minimize damage to property or infrastructure [e.g., buildings, sidewalks, power lines]; allow for adequate soil volume for healthy root growth; and,
 - 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 percent where the toe of the slope is adjacent to an impermeable hardscape and where 25 percent means 1 foot of vertical elevation change for every 4 feet of horizontal length (rise divided by run x 100 = slope percent).
- (5) High water use plants, characterized by a plant factor of

0.7 to 1.0, are prohibited in street medians.

- 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. Refer to local fire safe guidelines.
 - The use of invasive and/or noxious plant species, such as those listed by the California Invasive Plant Council and the Landscape Design Guidelines, shall not be used.
 - The architectural guidelines or covenants, conditions and restricts (CC&Rs) of a common interest development, which include apartment projects, condominiums, and planned developments, shall not prohibit or include conditions that have the effect of prohibiting the use of low-water use plants as a group.
- iii. Water Features
- Recirculating water systems shall be used for water features.
 - Where available, recycled water shall be used as a source for decorative water features.
 - 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.



Figure 15.4: LID feature along parking lot.

iv. Soil Preparation, Mulch and Amendments

- Prior to the planting of any materials, compacted soils shall be transformed to a friable condition. On engineered slopes, only amended planting holes need meet this requirement.
- Soil amendments shall be incorporated according to recommendations of the soil report and what is appropriate for the plants selected (see Section B.2.c).
- For landscape installations, compost at a rate of a minimum of four cubic yards per 1,000 square feet of permeable area shall be

incorporated to a depth of 6 inches into the soil. Soils with greater than 6 percent organic matter in the top 6 inches of soil are exempt from adding compost and tilling.

- (4) A minimum 3-inch (3") layer of mulch shall be applied on all exposed soil surfaces of planting areas except in turf areas, creeping or rooting groundcovers, or direct seeding applications where mulch is contraindicated. To provide habitat for beneficial insects and other wildlife, up to 5 percent of the landscape area may be left without mulch. Designated insect habitat must be included in the landscape design plan as such.
- (5) Stabilizing mulching products shall be used on slopes that meet current engineering standards.
- (6) The mulching portion of the seed/mulch slurry in hydro-seeded applications shall meet the mulching requirement.
- (7) Organic mulch materials made from recycled or post-consumer shall take precedence over inorganic materials or virgin forest products unless the recycled post-consumer organic products are not locally available. Organic mulches are not required where prohibited by fire safe guidelines.

e. Irrigation Design Plan. This section applies to landscaped areas requiring permanent irrigation, not areas that require temporary irrigation solely for the plant establishment period. For the efficient use of

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

i. System Requirements

- (1) Landscape water meters, defined as either a dedicated water service meter or private sub-meter, shall be installed for all non-residential irrigated landscapes of 1,000 sq. ft. but not more than 5,000 sq.ft. (the level at which Water Code 535 applies) and residential irrigated landscapes of 5,000 sq. ft. or greater. A landscape water meter may be either:
 - (a) A customer service meter dedicated to landscape use provided by the local water purveyor; or
 - (b) A privately owned meter or sub-meter.
- (2) Automatic irrigation controllers utilizing either evapotranspiration or soil moisture sensor data utilizing non-volatile memory shall be required for irrigation scheduling in all irrigation systems.
- (3) If the water pressure is below or exceeds the recommended pressure of the specified irrigation devices, the installation of a pressure regulating device is

required to ensure that the dynamic pressure at each emission device is within the manufacturer's recommended pressure range for optimal performance.

- (a) 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.
 - (b) 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.
- (4) 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.
 - (5) 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.
- (6) 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.
- (7) Flow sensors that detect high flow conditions created by system damage or malfunction are required for all on non-residential landscapes and residential landscapes of 5,000 sq. ft. or larger.
- (8) Master shut-off valves are required on all projects except landscapes that make use of technologies that allow for the individual control of sprinklers that are individually pressurized in a system equipped with low pressure shut down features.
- (9) 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.
- (10) Relevant information from the soil management plan, such as soil type and infiltration rate, shall be utilized when designing irrigation systems.
- (11) The design of the irrigation system shall conform to the hydrozones of the landscape design plan.
- (12) The irrigation system must be designed and installed to meet, at a minimum, the irrigation efficiency criteria as described in Section B.2.b regarding the Maximum Applied Water Allowance.
- (13) All irrigation emission devices must meet the requirements set in the American National Standards Institute (ANSI) standard, American Society of Agricultural and Biological Engineers'/International Code Council's (ASABE/ICC) 802-2014 "Landscape Irrigation Sprinkler and Emitter Standard, All sprinkler heads installed in the landscape must document a distribution uniformity low quarter of 0.65 or higher using the protocol defined in ASABE/ICC 802-2014.
- (14) It is highly recommended that the project applicant inquire with the local water purveyor about peak water operating demands (on the water supply system) or water restrictions that may impact the effectiveness of the irrigation system.
- (15) In mulched planting areas, the use of low volume irrigation is required to maximize water infiltration into the root zone.
- (16) Sprinkler heads and other emission devices shall have matched precipitation rates, unless otherwise directed by the manufacturer's recommendations.
- (17) Head to head coverage is recommended. However, sprinkler spacing shall be designed to achieve the highest possible distribution uniformity using the manufacturer's recommendations.
- (18) Swing joints or other riser-protection components are required on all risers subject to damage that are adjacent to hardscapes or in high traffic areas of turf grass.
- (19) Check valves or anti-drain valves are required for all irrigation systems on all sprinkler heads where low point drainage could occur.
- (20) Areas less than 10 feet in width in any direction shall be irrigated with subsurface irrigation or other means that produces no runoff or overspray.
- (21) 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 in Section B.2.e.i(9). Prevention of overspray and runoff must be confirmed during the irrigation audit.
- (22) Slopes greater than 25 percent shall not be irrigated with an irrigation system with an application rate exceeding 0.75 inches per hour. This restriction may be modified if the landscape designer specifies an alternative design or technology, as part of the Landscape Documentation Package, and clearly demonstrates no runoff or erosion will occur. Prevention of runoff and erosion must be confirmed during the irrigation audit.
- ii. 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 to facilitate the appropriate irrigation of trees. The mature size and extent of the root zone shall be considered when designing irrigation for the tree.
 - (4) Individual hydrozones that mix plants of moderate and low water use, or moderate and high water use, may be allowed if:
 - (a) Plant factor calculation is based on the proportions of the respective plant water uses and their plant factor; or
 - (b) 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 WELO Forms, Part B). This table can also assist with the irrigation audit and programming the controller.
- iii. 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 H;
 - (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.)

- f. **Grading Design Plan.** 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.
- i. The project applicant shall submit a landscape grading plan that indicates finished configurations and elevations of the landscape area including:
- (1) Height of graded slopes;
 - (2) Drainage patterns;
 - (3) Pad elevations;
 - (4) Finish grade; and,
 - (5) Stormwater retention improvements, if applicable.
- ii. To prevent excessive erosion and runoff, it is highly recommended that project applicants:
- (1) Grade so that all irrigation and normal rainfall remains within property lines and does not drain on to non-permeable hardscapes;
 - (2) Avoid disruption of natural drainage patterns and undisturbed soil; and
 - (3) Avoid soil compaction in landscape areas.

- iii. 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.

C. Approval Required

Upon approval of the Landscape Package by the County, and provided all other applicable County requirements are met, the project applicant shall:

1. Receive from the County a permit or approval and record the date of the permit or approval in the Certificate of Completion; and,
2. Submit a copy of the approved landscape package along with the record drawings, and any other information to the property owner or designee.
 - a. **Certificate of Completion.** The Certificate of Completion (see WELO Forms, Section G for a sample certificate) shall include the following six (6) elements:
 - i. Project information sheet that contains:
 - (1) Date;
 - (2) Project name;
 - (3) Project applicant name, telephone, and mailing address;
 - (4) Project address and location; and,
 - (5) Property owner name, telephone, and mailing address;
 - ii. 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.

- (1) Where there have been significant changes made in the field during construction, these “as-built” or record drawings shall be included with the certification.
- (2) A diagram of the irrigation plan showing hydrozones shall be kept with the irrigation controller for subsequent management purposes.
- iii. Irrigation scheduling parameters used to set the controller (see Section D);
- iv. Landscape and irrigation maintenance schedule (see Section E);
- v. Irrigation audit report (see Section F); and
- vi. Soil analysis report, if not submitted with the Landscape Documentation Package, and documentation verifying implementation of soil report recommendations (see Section B.2.c).

The project applicant shall:

- i. Submit the signed Certificate of Completion to the County review;
- ii. Ensure that copies of the approved Certificate of Completion are submitted to the local water purveyor and property owner or his or her designee.

The County shall:

- i. Receive the signed Certificate of Completion from the project applicant;

- ii. Approve or deny the Certificate of Completion. If the Certificate of Completion is denied, the County shall provide information to the project applicant regarding reapplication, appeal, or other assistance.

D. 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:

1. Irrigation scheduling shall be regulated by automatic irrigation controllers.
2. Overhead irrigation shall be scheduled between 9:00 p.m. and 9:00 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, 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



Figure 15.5: Water Efficient Landscape installed at new residence in West Placer.

- (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.

E. Landscape and Irrigation Maintenance Schedule

1. Landscapes shall be maintained to ensure water use efficiency. A regular maintenance schedule shall be submitted with the Certificate of Completion.
2. A regular maintenance schedule shall include, but not be limited to, routine inspection; auditing, adjustment and repair of the irrigation system and its components; aerating and dethatching turf areas; topdressing with compost; replenishing mulch; fertilizing; pruning; weeding in all landscape areas, and removing and obstructions to emission devices. Operation of the irrigation system outside the normal watering window is allowed for auditing and system maintenance.
3. Repair of all irrigation equipment shall be done with the originally installed components or their equivalents or with components with greater efficiency.
4. A project applicant is encouraged to implement established landscape industry sustainable Best Practices for all landscape maintenance activities.

F. Irrigation Audit, Irrigation Survey, and Irrigation Water Use Analysis

1. All landscape irrigation audits shall be conducted by a third-party certified landscape irrigation auditor. Landscape audits shall not be

conducted by the person who designed the landscape or installed the landscape.

2. In large projects or projects with multiple landscape installations (i.e. production home developments) an auditing rate of 1 in 7 lots or approximately 15 percent will satisfy this requirement.

3. For new construction and rehabilitated landscape projects as described in Section A:

- a. The project applicant shall submit an irrigation audit report with the Certificate of Completion to the County and water 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, including configuring irrigation controllers with application rate, soil types, plant factors, slope, exposure and any other factors necessary for accurate programming;
- b. The County shall implement 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.

G. Irrigation Efficiency. For the purpose of determining Estimated Total Water Use, average irrigation efficiency is assumed to be 0.75 for overhead spray devices and 0.81 for drip system devices.

H. Recycled Water and Graywater Systems

1. The installation of recycled systems shall allow for the current and future use of recycled water.

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

3. Landscapes using recycled water are considered Special Landscape Areas. The ET Adjustment Factor for new and existing (non-rehabilitated) Special Landscape Areas shall not exceed 1.0.

4. Graywater systems promote the efficient use of water and are encouraged to assist in on-site landscape irrigation. All graywater systems shall conform to the California Plumbing Code (Title 24, Part 5, Chapter 16) and any applicable local ordinance standards. Refer to Section A for the applicability of this ordinance to landscapes with areas 5,000 square feet or less with the Estimated Total Water Use met entirely by graywater.

I. Stormwater Management and Rainwater Retention

1. 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 rainwater retention and infiltration are encouraged.

2. Project applicants shall refer to the local agency or Regional Water Quality Control Board for information on any applicable stormwater technical requirements.

3. All planted landscape areas are required to have friable soil to maximize water retention and infiltration. Refer to Section B.2.d.iv(1).



Figure 15.6: Water Efficient Landscape signage at model home complex.

4. It is strongly recommended that landscape areas be designed for capture and infiltration capacity that is sufficient to prevent runoff from impervious surfaces (i.e. roof and paved areas) from either: the 1 inch, 24-hour rain event or (2) the 85th percentile, 24-hour rain event, and/or additional capacity as required by any applicable local, regional, state or federal regulation.

5. It is recommended that storm water projects incorporate any of the following elements to improve on-site storm water and dry weather runoff capture and use:

- a. Grade impervious surfaces, such as driveways, during construction to drain to vegetated areas.

- b. Minimize the area of impervious surfaces such as paved areas, roof and concrete driveways.
- c. Incorporate pervious or porous surfaces (e.g., gravel, permeable pavers or blocks, pervious or porous concrete) that minimize runoff.
- d. Direct runoff from paved surfaces and roof areas into planting beds or landscaped areas to maximize site water capture and reuse.
- e. Incorporate rain gardens, cisterns, and other rain harvesting or catchment systems.
- f. Incorporate infiltration beds, swales, basins and drywells to capture storm water and dry weather runoff and increase percolation into the soil.
- g. Consider constructed wetlands and ponds that retain water, equalize excess flow, and filter pollutants.

J. Education/Model Home Signage

1. 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 Placer County.
2. The County or water supplier/purveyor shall provide information to owners of permitted renovations and new single-family residential homes regarding the design, installation, management, and maintenance of water efficient landscapes based on a water budget.
3. Model Homes. All model homes shall be landscaped and use signs and written information to demonstrate the principles of

water efficient landscapes described in these Landscape Design Guidelines.

- a. 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. Signage shall include information about the site water use as designed per the local ordinance; specify who designed and installed the water efficient landscape; and demonstrate low water use approaches to landscaping such as using native plants, graywater systems, and rainwater catchment systems.
- b. Information shall be provided about designing, installing, managing, and maintaining water efficient landscapes.

K. Irrigation Audit, Irrigation Survey, and Irrigation Water Use Analysis

1. This section shall apply to all existing landscapes that were installed before December 1, 2015 and are over one acre in size.
 - a. For all landscapes in Section K.1 that have a water meter, the County 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: $MAWA = (0.8)(ET_o)(LA)(0.62)$.
 - b. For all landscapes in Section K.1 that do not have a meter, local water agencies

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.

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

L. Water Waste Prevention

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 shall be minimized. 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.

M. Effective Precipitation

1. An applicant may use Effective Precipitation (25 percent of annual precipitation) in tracking water use utilizing the following equation to calculate Maximum Applied Water Allowance:

$MAWA = (ET_o - Eppt)(0.62)[(0.55 \times LA) + (0.45 \times SLA)]$ for residential areas.

$MAWA = (ET_o - Eppt)(0.62)[(0.45 \times LA) + (0.55 \times SLA)]$ for non-residential areas.

N. Water Agency Participation

By mutual agreement, the County may designate a water agency or water purveyor to implement some or all of the Water Efficient Landscape requirements such as outreach and education measures.

SECTION TWO - DEFINITIONS

The terms used in these guidelines have the meaning set forth below:

“Applied Water” means the portion of water supplied by the irrigation system to the landscape.

“Automatic Irrigation Controller” means a timing device used to remotely control valves that operate an irrigation system. Automatic irrigation controllers are able to self-adjust and schedule irrigation events using either evapotranspiration (weather-based) or soil moisture data.

“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.

“Certificate of Completion” means the document required under Section C.2.a.

“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.

“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.

“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.



Figure 15.7: Water Efficient Landscape installed at new residence in West Placer.

“Common Interest Developments” means community apartment projects, condominium projects, planned developments, and stock cooperatives per Civil Code Section 1351.

“Compost” means the safe and stable product of controlled biologic decomposition of organic materials that is beneficial to plant growth.

“Conversion Factor (0.62)” means the number that converts acre-inches per acre per year to gallons per square foot per year.

“Distribution Uniformity” means the measure of the uniformity of irrigation water over a defined area.

“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.

“Ecological Restoration Project” means a project where the site is intentionally altered to establish a defined, indigenous, historic ecosystem.

“Effective Precipitation” or **“Usable Rainfall” (Eppt)** means the portion of total precipitation which becomes available for plant growth.

“Emitter” means a drip irrigation emission device that delivers water slowly from the system to the soil.

“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.

“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. Native habitat mitigation areas and trees may need three to five years for establishment.

“Estimated Total Water Use” (ETWU) means the total water used for the landscape as described in Section B.2.b.

“ET Adjustment Factor” (ETAF) means a factor of 0.55 for residential areas and 0.45 for non-residential areas, 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. The ETAF for a new and existing (non-rehabilitated) Special Landscape Areas shall not exceed 1.0. The ETAF for existing non-rehabilitated landscapes is 0.8.

“Evapotranspiration Rate” means the quantity of water evaporated from adjacent soil and other surfaces and transpired by plants during a specified time.

“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.

“Flow Sensor” means an inline device installed at the supply point of the irrigation system that produces a repeatable signal proportional to flow rate. Flow sensors must be connected to an automatic irrigation controller, or flow monitor capable of receiving flow signals and operating master valves. This combination flow sensor/controller may also function as a landscape water meter or submeter.

“Friable” means a soil condition that is easily crumbled or loosely compacted down to a minimum depth per planting material requirements, whereby the root structure of newly planted material will be allowed to spread unimpeded.

“Fuel Modification Plan Guideline” means guidelines from a local fire authority to assist residents and businesses that are developing

land or building structures in a fire hazard severity zone.

“Graywater” means untreated wastewater that has not been contaminated by any toilet discharge, has not been affected by infectious, contaminated, or unhealthy bodily wastes, and does not present a threat from contamination by unhealthful processing, manufacturing, or operating wastes. “Graywater” includes, but is not limited to, wastewater from bathtubs, showers, bathroom washbasins, clothes washing machines, and laundry tubs, but does not include wastewater from kitchen sinks or dishwashers. Health and Safety Code Section 17922.12.

“Hardscapes” means any durable material (pervious and non-pervious).

“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.

“Hydrozone” means a portion of the landscaped area having plants with similar water needs and rooting depth. A hydrozone may be irrigated or non-irrigated.

“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).

“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. Lists

of invasive plants are maintained at the California Invasive Plant Inventory and USDA invasive and noxious weeds database.

“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. The audit must be conducted in a manner consistent with the Irrigation Association’s Landscape Irrigation Auditor Certification program or other U.S. Environmental Protection Agency “Watersense” labeled auditing program.

“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 irrigation efficiencies for purposes of this ordinance are 0.75 for overhead spray devices and 0.81 for drip systems.

“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.

“Irrigation Water Use Analysis” means a review of water use data based on meter readings and billing data.

“Landscape Architect” means a person who holds a license to practice landscape

architecture in the state of California Business and Professions Code, Section 5615.

“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).

“Landscape Contractor” means a person licensed by the state of California to construct, maintain, repair, install, or subcontract the development of landscape systems.

“Landscape Documentation Package” means the documents required under Section B.2.

“Landscape Project” means total area of landscape in a project as defined in “landscape area” meeting requirements under Section A.1.

“Landscape Water Meter” means an inline device installed at the irrigation supply point that measures the flow of water into the irrigation system and is connected to a totalizer to record water use.

“Lateral Line” means the water delivery pipeline that supplies water to the emitters or sprinklers from the valve.

“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.

“Local Water Purveyor” means any entity, including a public agency, city, county, or private water company that provides retail water service.

“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.

“Main Line” means the pressurized pipeline that delivers water from the water source to the valve or outlet.

“Master Shut-off Valve” is an automatic valve installed at the irrigation supply point which controls water flow into the irrigation system. When this valve is closed water will not be supplied to the irrigation system. A master valve will greatly reduce any water loss due to a leaky station valve.

“Maximum Applied Water Allowance” (MAWA) means the upper limit of annual applied water for the established landscaped area as specified in Section B.2.b. 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. $MAWA = (ET_o) (0.62) [(ETAF \times LA) + ((1-ETAF) \times SLA)]$,

“Median” is an area between opposing lanes of traffic that may be unplanted or planted with trees, shrubs, perennials, and ornamental grasses.

“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.

“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.

“Mulch” means any organic material such as leaves, bark, straw, compost, or inorganic mineral materials such as rocks, gravel, or 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.

“New Construction” means, for the purposes of these guidelines, a new building with a landscape or other new landscape, such as a park, playground, or greenbelt without an associated building.

“Non-residential Landscape” means landscapes in commercial, institutional, industrial and public settings that may have areas designated for recreation or public assembly. It also includes portions of common areas of common interest developments with designated recreational areas.

“Operating Pressure” means the pressure at which the parts of an irrigation system are designed by the manufacturer to operate.

“Overhead Sprinkler Irrigation Systems” means systems that deliver water through the air (e.g., spray heads and rotors).

“Overspray” means the irrigation water which is delivered beyond the target area.

“Permit” means an authorizing document issued by local agencies for new construction or rehabilitated landscapes.

“Pervious” means any surface or material that allows the passage of water through the material and into the underlying soil.

“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 very low water use plants is 0 to 0.1, the plant factor range for low water use plants is 0.1 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 2000 publication “Water Use Classification of Landscape Species”. Plant factors may also be obtained from horticultural researchers from academic institutions or professional associations as approved by the California Department of Water Resources (DWR).

“Project Applicant” means the individual or entity submitting a Landscape Documentation Package required under Section A.1.b 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.

“Rain Sensor” or “rain sensing shutoff device” means a component which automatically suspends an irrigation event when it rains.

“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.

“Recreational Area” means areas, excluding private single family residential areas, designated to for active play, recreation or public assembly in parks, sports fields, picnic grounds, amphitheaters or golf course tees, fairways, roughs, surrounds and greens.

“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.

“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 Three and is an estimate of the evapotranspiration of a large field of 4- to 7-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.

“Regional Water Efficient Landscape Ordinance” means a local Ordinance adopted by two or more local agencies, water suppliers and other stakeholders for implementing a consistent set of landscape provisions throughout a geographical region. Regional ordinances are strongly encouraged to provide a consistent framework for the landscape industry and applicants to adhere to.

“Rehabilitated Landscape” means any re-landscaping project that requires a permit, plan check, or design review, meets the requirements of Section A, and the modified landscape area is equal to or greater than 2,500 square feet.

“Residential Landscape” means landscapes surrounding single or multifamily homes.



Figure 15.8: Right-of-way landscaping.

“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.

“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.

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

“Special Landscape Area” (SLA) means an area of the landscape dedicated solely to edible

plants, recreational areas, areas irrigated with recycled water, water features using recycled water, or Low Impact Development areas.

“Sprinkler Head” means a device which delivers water through a nozzle.

“Static Water Pressure” means the pipeline or municipal water supply pressure when water is not flowing.

“Station” means an area served by one valve or by a set of valves that operate simultaneously.

“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.

“Submeter” means a metering device to measure water applied to the landscape that is installed after the primary utility water meter.

“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.

“Valve” means a device used to control the flow of water in the irrigation system.

“Water Conserving Plant Species” means a plant species identified as having a very low or low plant factor.

“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.

“Watering Window” means the time of day irrigation is allowed.

“WUCOLS” means the Water Use Classification of Landscape Species published by the University of California Cooperative Extension and the Department of Water Resources, 2014.

SECTION THREE

Reference Evapotranspiration (ET_o) Table

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual ET _o
Auburn	1.2	1.7	2.8	4.4	6.1	7.4	8.3	7.3	5.34	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	0.9	36.2

Before the Board of Supervisors County of Placer, State of California

In the matter of: Adoption of updates to the Placer County Design Guidelines Resolution No.: 2017-183

The following Resolution was duly passed by the Board of Supervisors of the County of Placer at a regular meeting held October 3, 2017, by the following vote on roll call:

Ayes: DURAN, WEYGANDT, HOLMES, UHLER, MONTGOMERY

Noes: NONE

Absent: NONE

Signed and approved by me after its passage.


 Chair, Board of Supervisors
THE FOREGOING INSTRUMENT IS A CORRECT COPY OF THE ORIGINAL ON FILE IN THIS OFFICE ATTEST
 MEGAN WOOD
 Clerk of the Board of Supervisors, County of Placer, State of California

 Deputy Clerk

Attest:


 Clerk of said Board

WHEREAS, Placer County's General Plan sets forth goals for preserving and improving the County's natural and built environment, protecting the health of its residents and visitors, and fostering its economy; and,

WHEREAS, Placer County's General Plan includes policies to ensure that new development incorporates landscaping design to maintain the character and visual quality of the surrounding area, to create, when necessary, a visual transition area between different land uses and to protect the scenic and natural resources of this County; and

WHEREAS, the Landscape Design Guidelines are an implementation tool used by staff in the review of land development applications and are intended to establish consistent and specific design expectations for residential, commercial and industrial projects in unincorporated Placer County; and,

WHEREAS, the Landscape Design Guidelines have been updated to incorporate the applicable portions of the Water Efficient Landscape code (Chapter 15, Article 15.75) and will apply to all new developments and site alterations to existing developments that require discretionary County approvals within the unincorporated boundaries of the County except for that land included in the boundaries of the Placer County Tahoe Basin Area Plan; and

WHEREAS, upon the effective date these updated Landscape Design Guidelines replace the Landscape Design Guidelines previously adopted by the Board of Supervisors on May 7, 2013 (Resolution No. 2013-84).

BE IT RESOLVED BY the Board of Supervisors, County of Placer, State of California, to adopt the Placer County Landscape Guidelines dated October 3, 2017 as set forth in Exhibit A and incorporated herein by reference.

BE IT FURTHER RESOLVED BY the Board of Supervisors, County of Placer, State of California, this resolution shall become effective upon the effective date of the Ordinance adopting Chapter 15, Article 15.75 into the County Code (Water Efficient Landscape) and at such time the Placer County Landscape Guidelines dated October 3, 2017 shall supersede and replace the 2013 version.

Exhibit A - Placer County Landscape Guidelines dated October 3, 2017