

Article 19 Landscape Requirements

Sections:

4-1900	Specific Purpose
4-1902	General Requirements
4-1904	Landscaping Plans Required
4-1906	Existing Trees on Development Sites
4-1908	Design Standards
4-1910	Acceptable Materials and Performance Standards
4-1912	Completion, Maintenance and Subsequent Changes
<u>4-1914</u>	<u>Existing Landscapes</u>
<u>4-1916</u>	<u>Penalties</u>

4-1900 Specific Purpose

In recognition of the importance landscaping has in improving the quality of San Leandro's environment, and that landscape design, installation, maintenance and management must be water efficient and sustainable, this Article establishes procedures to insure that landscaping is installed and maintained in accordance with the requirements of this Code. This article is intended to implement the new landscape design requirements of the Water Conservation in Landscaping Act of 2006 (AB 1881) and to establish standards for sustainable landscape practices in accord with the current version of the StopWaste.Org Bay Friendly Landscape protocols.

4-1902 General Requirement

Required site landscaping areas shall be installed and permanently maintained in accord with the standards and requirements of this Article. This Article shall apply to applicable large landscape projects and projects for which "Site Plan Approval" pursuant to Article 25 are required. Applicable large landscape projects include new or rehabilitated commercial, industrial and developer-installed residential landscapes over twenty-five hundred (2,500) square feet and all new or rehabilitated residential landscapes over five thousand (5,000) square feet. For projects subject to Site Plan Review, landscape plans are subject to the review and approval process provided in Article 25, and additional planting requirement and/or exceptions to requirements for minimum landscape yards may be made by the Site Plan Review decision-maker.

4-1904 Landscaping Plans Required

A. Requirements for Applications subject to "Site Plan Approval."-Shall Include Conceptual Landscape Plans.

Development applications for "Site Plan Approval" that include new or rehabilitated commercial, industrial or developer-installed residential landscapes that do not exceed two thousand five hundred (2,500) square feet and residential

landscapes that do not exceed five thousand (5,000) square feet shall comply with the following requirements:

1. Development applications for “Site Plan Approval” shall include a conceptual landscape plan that generally identifies a plant palette and lists the quantity, size, species, and locations of proposed plantings. The Zoning Enforcement Official may waive the requirement for a conceptual landscape plan and a final landscape plan when little or no change to existing landscaping is proposed or for a project where the amount of new or renovated landscaping is small in relation to existing landscaping.

~~1.—~~

~~2. B. Ability to Supplement Plan Submittal Requirements. Applicants shall submit additional landscape plan information if requested by the Zoning Enforcement Official and/or decision-making body.~~ Either the Zoning Enforcement Official and/or decision-making body may request additional landscape plan information, if needed to address a site-specific area of concern, as part of its review of the application. Such areas of concern may include, but are not limited to, information regarding existing trees on the site, as outlined in accordance with Section 5-1906: Existing Trees on Development Sites.

~~2.—~~

~~3.—~~

~~3. C. Final Landscape Plans Required.~~ Final landscape plans, identifying the species, sizes, and quantities of the specific plant materials to be used, shall be submitted concurrently with all applicable structural plans that are required for building permit review. The Zoning Enforcement Official shall review such final landscape plans. No building permit shall be issued, unless and until it has been determined that the submitted final landscape plan is consistent with the requirements of this Article.

~~4.—~~

~~5.—~~

~~6.4. D. Preparation of Plans. Conceptual and final landscape plans shall be prepared by A a~~ licensed landscape architect, architect, landscape designer, or other qualified person. ~~shall prepare conceptual and final landscape plans~~ Conceptual and final landscape plans shall be drawn “to scale” and have base information that is consistent with the architectural and civil site plans.

B. Requirements for Large Landscape Projects

Development applications that include new or rehabilitated commercial, industrial or developer-installed residential landscapes that exceed two thousand five hundred (2,500) square feet or residential landscapes that

exceed five thousand (5,000) square feet shall submit a “Landscape Documentation Package” that shall include (1) project information, (2) landscape design plan, (3) irrigation design plan, (4) water management plan, (5) soil management report, and (6) grading design plan. This requirement shall not apply to historic landscapes.

1. Project information submitted in an applicant’s Landscape Documentation Package shall include:
 - a. Name of applicant;
 - b. Street address of site or Assessor’s Parcel Number;
 - c. Total area to be landscaped (square feet);
 - d. Project type (e.g. new, rehabilitated, public, private, home-owner installed);
 - e. Water supply type (e.g. potable, recycled, non-potable) and name of water provider;
 - f. Checklist of all documents in the Landscape Documentation Package;
 - g. Contact information for the project applicant and property owner;
 - h. Applicant signature and date.

2. Landscape Design Plan submitted in an applicant’s Landscape Documentation Package shall:
 - a. Identify a plant pallet and list quantity, size and locations of proposed plantings;
 - b. Delineate and label each hydrozone and identify each hydrozone as low, moderate, high water, or mixed water use. Temporarily irrigated areas of the landscape shall be included in the low water use hydrozone for the water budget calculation;
 - c. Identify recreational areas;
 - d. Identify areas permanently and solely dedicated to edible plants;
 - e. Identify areas irrigated with recycled water;
 - f. Identify type of mulch and application depth (application depth must comply with design standards in this article);
 - g. Identify soil amendments, type, and quantity;
 - h. Identify type and surface area of water features;
 - i. Identify storm water retention and infiltration areas;
 - j. Identify hardscapes (pervious and non-pervious);
 - k. Identify any applicable rain harvesting or catchment technologies (e.g., rain gardens, cisterns, etc.);
 - l. Demonstrate compliance with all design standards specified in

this article;

- m. Contain the following statement: “I have complied with the criteria of Article 19 of the Zoning Code, including all design standards of Section 4-1908, and applied them for the efficient use of water in the landscape design plan”; and
- n. Bear the signature of a licensed landscape architect, licensed landscape contractor, or any other person authorized to design a landscape.

3. Irrigation Design Plan submitted in an applicant’s Landscape Documentation Package shall include:

- a. Location and size of separate water meters for landscape;
- b. 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;
- c. Static water pressure at the point of connection to the public water supply;
- d. Flow rate (gallons per minute), application rate (inches per hour), and design operating pressure (pressure per square inch) for each station;
- e. Recycled water irrigation systems (if applicable);
- f. Demonstration of compliance with all design standards specified in the article;
- g. The following statement: “I have complied with the criteria of Article 19 of the Zoning Code, including all design standards and applied them accordingly for the efficient use of water in the irrigation design plan”; and
- h. The signature of a licensed landscape architect, certified irrigation designer, licensed landscape contractor, or any other person authorized to design an irrigation system.

4. Water Management Plan submitted in an applicant’s Landscape Documentation Package shall include:

- a. An introduction and statement of existing site conditions, including annual precipitation rates;
- b. The anticipated water requirements in inches per year for each hydrozone;
- c. Seasonal irrigation water schedules or procedures for programming proposed controllers; and
- d. A maintenance plan for the ongoing operation and maintenance of the irrigation system.

e. The Water Efficient Landscape Worksheet which contains two sections:

- i. A hydrozone information table for the landscape project
- ii. A water budget calculation for the landscape project. For the calculation of the Maximum Applied Water Allowance and Estimated Total Water Use, a project applicant shall use the reference evapotranspiration (ET_o) value 41.8.

5. A Soil Management Report that addresses the soil attributes of the project site and shall include Identification of areas of quality topsoil to be protected during construction and/or critical soil limitations (such as compaction; water logged soils or wetlands; thin, eroded or erosion prone soils) and a laboratory soil analysis of the soil(s) into which plantings are to be made. Soil sampling shall be conducted in accordance with laboratory protocol, including protocols regarding adequate sampling depth for the intended plants. The soil analysis shall include:

- a. analysis of soil texture;
- b. analysis of infiltration rate determined by laboratory test or soil texture infiltration rate table;
- c. pH;
- d. total soluble salts;
- e. sodium;
- f. essential nutrients;
- g. percent organic matter; and
- h. recommendations for soil amendments or nutrient applications to ameliorate the soil limitations identified by the analysis and the amount of compost required to bring the soil organic matter content to a minimum of three and one half percent (3.5%) by dry weight or a minimum application of at least one (1) inch . The required practice of adding compost is waived if the plant palette primarily includes California native species that are adapted to soils with little or no organic matter as documented by a published plant reference.

It is highly recommended that:

- i. the lab report recommendations be based on an ‘organic’ approach to soil and landscape management that specifies natural and non-synthetic fertilizers to rectify any soil deficiencies;
- j. if the soils are to be irrigated with recycled water the lab report recommendations be tailored to recycled water;
- k. the types of plantings intended such as turf, perennial bed, annual bed, swale etc be provided to the soil laboratory; and

1. management actions be identified to remediate limiting soil characteristics such as ripping the soil to alleviate soil compaction.

6. Grading Design Plan submitted in an applicant's Landscape Documentation Package shall include:

- a. Height of graded slopes;
- b. Drainage patterns;
- c. Pad elevations;
- d. Finish grade;
- e. Stormwater retention improvements, if applicable;

This requirement may be fulfilled by providing the aforementioned information on the Landscape Design Plan.

C.E. Irrigation is Required. ~~Excepting single-family development, a~~ permanent and automatic irrigation system that complies with all design standards specified in this article shall be provided for all new and renovated landscaped areas exceeding five hundred (500) square feet except residential landscapes that are less than five thousand (5,000) square feet. The Zoning Enforcement Official may waive this requirement due to significant physical constraints. A statement regarding the provision of an irrigation system shall be made on the final landscape plans.

An Irrigation Design Plan shall be submitted as part of the Landscape Documentation Package (when required) or when ~~For large non-residential projects or when~~ made a condition of approval, the or required by the Zoning Enforcement Official. ~~may require that applicants provide construction details for an automatic system at time of building permit application.~~ When required, the ~~irrigation plan~~ Irrigation Design Plan shall include the following information:

- 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 (if applicable);
- 6. Demonstration of compliance with all design standards specified in the article;
- 7. The following statement: "I have complied with the criteria of Article 19

of the Zoning Code, including all design standards and applied them accordingly for the efficient use of water in the irrigation design plan”; and
8. The signature of a licensed landscape architect, certified irrigation designer, licensed landscape contractor, or any other person authorized to design an irrigation system.

- ~~1. Location, type, and size of lines;~~
- ~~2. Location, type, and gallon output of heads;~~
- ~~3. Location and sizes of valves;~~
- ~~4. Location and type of controller;~~
- ~~5. Installation details;~~
- ~~6. Location and type of backflow prevention device (as per Health Code);~~
- ~~7. Available water pressure and water meter outlet size; and~~
- ~~8. Irrigation application schedule and flow rates.~~

~~F.~~

C
and

D. Certificate of Completion. Upon approval of the Landscape Documentation Package, the applicant shall receive a Certificate of Completion, which shall include the following:

1. Project Information Sheet.
2. Certification that project has been installed in conformance with the approved Landscape Documentation Plan.
3. Irrigation scheduling parameters used to set the controller(s).
4. An audit report (if required).
5. Landscape and irrigation maintenance schedule.

E. Changes to Approved Plans. No significant or substantive changes to approved landscaping or irrigation plans or any plans In the Landscape Documentation Package shall be made without prior written approval by the Zoning Enforcement Official. The Zoning Enforcement Official may refer substantial changes to the Site Development Sub-Commission and may require the approval of the project’s decision-making body, such as Board of Zoning Adjustment or Planning Commission, if the requested changes would have a major effect on the character of the project, would effect a landscape requirement that was discussed in the public hearing, or were part of a condition of approval.

F. Irrigation Audits. The City of San Leandro shall administer programs that may

include, but are not be limited to, irrigation water use analysis, irrigation audits, and irrigation surveys for compliance with the Maximum Applied Water Allowance. All landscape irrigation audits shall be conducted by a certified landscape irrigation auditor. For new construction and rehabilitated landscape projects installed after January 1, 2010 the project applicant shall submit an irrigation audit report with the Certificate of Completion to the City of San Leandro 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.

4-1906 Existing Trees on Development Sites

A. Identification of Trees on Development Applications.

1. Plans submitted for “Site Plan Approval” shall identify all existing trees with a trunk diameter equal or greater than six (6) inches in diameter as measured four and one-half (4½) feet above existing grade. The plans shall indicate the trees’ species and drip-lines. The plan(s) shall indicate which trees are proposed for removal, and a “limit of grading” line, where applicable.
2. To supplement the above requirements, an applicant may be required to provide a tree report, to be prepared by a certified arborist, that provides additional information to aid the decision-maker(s) in the evaluation of the site plan. The report should indicate such information as the tree’s health, appearance, suitability for preservation, and/or potential for failure.

B. Preservation or Replacement of Trees.

1. Ability to Require Preservation or Replacement. The “Site Plan Approval” decision-maker may require that significant trees be preserved, and/or that replacement trees be provided within the final landscape plan for the project. A tree may be found to be significant due to its size, age, prominence in the neighborhood’s landscape, and/or habitat value.
2. Applicant Must Identify Protection Measures. Final grading and landscape plans for the project (as submitted at the building/grading permit stage) shall specify tree protection measures for those trees that were either identified on the applicant’s plan to be preserved, or were required to be preserved as a condition of Site Plan, Use Permit or Planned Development approval. In addition, the Zoning Enforcement Official or project decision-makers may require the applicant to provide additional security, such as a bond or certificate of deposit, to cover possible replacement if the subject tree(s) are damaged or destroyed.

3. Grading Prohibited Within Drip-lines. No grading shall occur within the drip-line of a tree required designated to be preserved unless approval of such grading was given at the time the project was approved or unless the Zoning Enforcement Official has subsequently reviewed and approved plans for such additional grading.
4. Preserved and Replacement Trees to Be Permanently Maintained. Trees designated and/or required for preservation or required as replacement trees shall be permanently maintained as required by Section 4-1912.C.

4-1908 Design Standards

A. General Design Standards.

All landscapes shall adhere to the following design standards:

1. Landscape materials shall demonstrate a recognizable pattern or theme for the overall development by choice and location of materials and shall be located such that at maturity:
 - a. They do not interfere with site distance standards for vehicular, bicycle, or pedestrian traffic, as determined by the City Engineer;
 - b. They do not conflict with overhead utility lines, overhead lights, or walkway lights; and
 - c. They do not block pedestrian or bicycle ways or emergency access or exits.
2. Plant selection and irrigation design shall incorporate appropriate water conservation measures, as required by applicable State or local regulations and adhere to the most recent version of the “Bay Friendly Landscape Guidelines” developed by StopWaste.Org for use in the professional design, construction and maintenance of landscapes. City staff shall maintain the most recent version of the “Bay-Friendly Landscape Guidelines” at all times. ~~In general, water use shall be reduced to the degree possible by:~~
 - ~~a. Using drought tolerant turf grass and avoiding turf on slopes exceeding twenty five percent (25%).~~
 - ~~b. Using drought tolerant trees, shrubs, and ground covers that are suitable for the climate and soil conditions in San Leandro, and grouping together plants with similar water needs.~~

- ~~c. Using automatic controllers that can seasonally adjust watering schedules and allow for multiple start times.~~
- ~~d. Specifying sprinkler heads and spacing to achieve a uniform precipitation rate with minimum over-spray onto adjacent pavement.~~
- ~~e. Avoiding the placement of lawn sprinkler heads and shrub/ground cover sprinkler heads on the same irrigation valve.~~
- ~~f. Use of recycled water, as applicable, if provided by EBMUD.~~

3. The minimum portion of a site that is to be a landscaped area shall be as prescribed under the applicable R, C (includes P, PHD, NA, DA and SA Districts) or I Zoning District's requirements for "Minimum Required Landscaped Yards" and "Minimum Site landscaping."

B. Street Trees.

1. Street Trees Required. Street trees with spacing not to exceed thirty (30) feet and of minimum fifteen (15) gallon size shall be provided along any public street frontage. Such trees shall be a deciduous species that will provide canopy shade cover at maturity or alternate species type as approved with the conceptual or final landscape plan. Credit may be given for existing city street trees, where applicable. New trees may be placed in the City right-of-way in conjunction with new sidewalk improvements and subject to the approval of the Zoning Enforcement Official and City Engineer.

C. Design Standards for Parking Lots.

1. Requirements for Perimeter Planting.
 - a. Perimeter Landscaping Required for All Parking Lots. In addition to the requirements for minimum landscaped front and corner side yards prescribed for in the applicable R, C, and I Zoning Districts, and notwithstanding the zero (0) foot setback requirement for side or rear yards in the C and I Districts, a landscaped area of not less than five (5) feet wide, measured from inside of curb, shall be provided adjacent to any interior property line.
 - b. Required Screening of Parking Lot from Street. Along street frontages, screening to a height of thirty (30) inches shall be provided by use of continuous shrub plantings, berms, and/or architectural walls.

2. Requirements for Interior Landscaped Areas.

- a. Minimum Width of Interior Landscaped Areas. Interior landscaped areas, or tree wells, shall be a minimum of four (4) feet in width, measured from inside of curb to inside of curb, or as required by Subsection C.4, below.
- b. Separation of Parking Rows from Driveways. The end of each row of parking stalls shall be separated from driveways by a landscaped area, sidewalk, or other means approved by the Zoning Enforcement Official.

3. Requirements for Parking Lot Trees.

- a. Minimum Number of Trees. A minimum of one (1) tree for every six (6) parking spaces shall be distributed throughout the parking lot.
- b. Trees to Provide Shade at Maturity. Trees with a canopy or spreading branch structure shall be specified, and trees shall generally have consistent spacing to substantially shade the parking area at maturity.

4. Increased Landscaped Area In-lieu of Wheel Stops. Where parking stalls face into landscaped areas, the depth of the parking stall shall be decreased by two (2) feet, and the landscaped area shall be increased two (2) feet, making- with wheel stops or with the curb functioning as the wheel stop and allowing autos to overhang the increased landscaped area. Where autos will overhang into opposite sides of a landscaped area, such landscaped areas shall have a minimum width of six (6) feet, as measured from the inside of curb to inside of curb.

5. Required Landscaped Areas for Parking Structure. A parking structure in a C, P, or I Zoning District having at-grade parking adjoining a street shall have a ten (10) foot landscaped area adjoining the street property line. Planter boxes shall be provided on the upper levels of parking structures where these structures are visible from public streets, pedestrian pathways, or adjacent buildings.

- D. Design Standards for Projects Requiring a Landscape Documentation Package and/or Irrigation Design Plan. All new or rehabilitated commercial, industrial or developer-installed residential landscapes that exceed two thousand five hundred (2,500) square feet or residential landscapes that exceed five thousand (5,000) square feet shall adhere to the following design standards. These standards shall not apply to city-recognized historic landscapes.

1. Plants shall be selected and planted appropriately based upon their adaptability to the climatic, geologic, and topographical conditions of the project site.
2. Plants shall be grouped in hydrozones according to water need.
3. At least seventy-five percent (75%) of the total number of plants in non-turf areas shall require occasional, little or no summer water. All species should be adapted to the climate in which they will be planted, as documented by a published plant reference. If plants are given a range of water needs from “occasional to moderate” for example, the landscape designer must determine if the plant will require either occasional or moderate watering based on site, soil, and climate conditions and categorize the plant appropriately. Sources used to determine climate adaptation and watering requirements may include:
 - a. Bornstein, Carol, David Fross and Bart O’Brien, California Native Plants for the Garden.
Qualifying irrigation designation: “occasional”, “infrequent”, or “drought tolerant”
 - b. East Bay Municipal Utility District’s publication Plants and Landscapes for Summer Dry Climates.
Qualifying irrigation designation: “occasional”, “infrequent” or “no summer water”
 - c. Sunset Publishing Corporation Sunset Western Garden Book.
Qualifying irrigation designation: “little or no water”
 - d. University of California Cooperative Extension’s Guide to Estimating Irrigation Water Needs of Landscape Plantings in CA.
Qualifying irrigation designation: “Low” or “Very Low”
4. Total irrigated areas specified as turf shall be limited to a maximum of 25%; sports or multiple uses fields or recreational areas exempted. Turf is not allowed on slopes greater than twenty-five (25) percent where the toe of the slope is adjacent to an impermeable hardscape and where twenty-five (25) percent means one (1) foot of vertical elevation change for every four (4) feet of horizontal length.
5. Those species identified by CAL-IPC as invasive in the San Francisco Bay Area shall not be specified.
6. The architectural guidelines of a common interest development, which include community apartment projects, condominiums, planned developments, and stock cooperatives, shall not prohibit or include conditions that have the effect of prohibiting the use of low-water use plants as a group.
7. Recirculating water shall be used for water features and, where available, recycled water shall be used as a source for decorative water features.
8. Recycled water shall be used for all irrigation (if available).

9. The irrigation system shall be designed to ensure that the dynamic pressure at each emission device is within the manufacturer's recommended pressure range for optimal performance.
10. 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.
11. 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.
12. Backflow prevention devices shall be required to protect the water supply from contamination by the irrigation system.
13. 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.
14. In mulched planting areas, the use of low volume irrigation is required to maximize water infiltration into the root zone.
15. Sprinkler spacing shall be designed to achieve a uniform precipitation rate with no overspray onto hardscapes.
16. Swing joints or other riser-protection components are required on all risers subject to damage that are adjacent to high traffic areas.
17. Check valves or anti-drain valves are required for all irrigation systems.
18. Narrow or irregularly shaped areas, including turf, less than eight (8) feet in width in any direction shall be irrigated with subsurface irrigation or low volume irrigation system. Overhead irrigation shall not be permitted within twenty-four (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.
19. 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 scheduling shall be regulated by automatic irrigation controllers. Overhead irrigation shall be scheduled between 8:00 p.m. and 10:00 a.m. unless weather conditions prevent it. If allowable hours of irrigation differ from the local water purveyor, the stricter of the two shall apply. Operation of the irrigation system outside the normal watering window is allowed for auditing and system maintenance.

20. Stabilizing mulching products shall be used on slopes. It is highly recommended that bio based products are used and petroleum based products are avoided.

E. Recommended Design Standards.

It is recommended that all landscape projects:

1. Protect and preserve existing native vegetation and use local natural plant communities as models;
2. Avoid non-native species and those species identified by CAL-IPC as invasive in the San Francisco Bay Area;
3. Select water-conserving plant and turf species that are suitable for the climate and soil conditions in San Leandro;
4. Select plants based on disease and pest resistance;
5. Use the Sunset Western Climate Zone System to select plants, which takes into account temperature, humidity, elevation, terrain, latitude, and varying degrees of continental and marine influence on local climate;
6. Recognize the horticultural attributes of plants (i.e., mature plant size, invasive surface roots) to minimize damage to property or infrastructure (e.g., buildings, sidewalks, power lines) and to allow them to grow to their mature size within the space allotted them to avoid shearing and topping and consider the solar orientation for plant placement to maximize summer shade and winter solar gain;
7. Avoid turf on slopes greater than ten (10) percent where the toe of the slope is adjacent to an impermeable hardscape and avoid turf in street medians, traffic islands or bulbouts of any size unless irrigated with subsurface or low volume irrigation;
8. Grade so that all irrigation and normal rainfall remains within property lines and does not drain on to non-permeable hardscapes;
9. Avoid disruption of natural drainage patterns and undisturbed soil;
10. Avoid soil compaction in landscape areas;
11. Avoid overhead irrigation within twenty-four (24) inches of any non-permeable surface.
12. Group plants in hydrozones according to water need and place trees on separate valves from shrubs, groundcovers, and turf;
13. Use automatic irrigation controllers that can seasonally adjust water schedules and allow for multiple start times;
14. Set irrigation controls to water before 10am or after 8pm;
15. Space sprinkler heads to achieve a uniform precipitation rate with no overspray onto hardscapes;
16. Use dedicated landscape water meters on landscape areas smaller

- than 5,000 square feet to facilitate water management;
17. Install high-flow sensors (flow meters) that detect and report high flow conditions created by system damage or malfunction;
18. Install manual shut-off valves (such as a gate valve, ball valve, or butterfly valve) 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;
19. Use low volume irrigation to maximize water infiltration into the root zone in mulched planting areas;
20. Use subsurface irrigation in narrow or irregularly shaped areas, including turf, less than eight (8) feet in width in any direction;
21. Incorporate rain harvesting or catchment technologies such as cisterns for storage and use of rainwater to satisfy a percentage of the landscape irrigation requirements; and
22. Incorporate stormwater best management practices to minimize runoff and to increase on-site retention and infiltration are encouraged. Examples include:
- a. Rain gardens, infiltration beds, swales and basins that allow water to collect and soak into the ground
 - b. Constructed wetlands and retention ponds that retain water, handle excess flow and filter pollutants; and
 - c. Pervious or porous surfaces (e.g., permeable pavers or blocks, pervious or porous concrete, etc.) that minimize runoff.

F. Exceptions to Design Standards.

As part of the “Site Plan Approval” pursuant to Article 25, exceptions to the requirements of this Section may be permitted if such requirements are found not to be practical due to pre-existing site constraints.

4-1910 Acceptable Materials and Performance Standards

- A. Minimum Required Landscape Areas Shall be Planted. The sole use of crushed rock or gravel for large landscaped areas is prohibited (except for walks and drainage swales).
- B. Minimum Plant Sizes. Plant materials shall be sized and spaced to achieve immediate effect and shall not be normally less than a fifteen (15) gallon container for trees, five (5) gallon container for shrubs, and a one (1) gallon container for accent plantings. The Zoning Enforcement Official may approve smaller or require larger initial planting size to achieve specific effects.

- C. Mulching is Required. Non-turf areas, such as shrub beds, shall be top dressed with medium decorative bark chip mulch to a depth of ~~two~~ three ~~2(3)~~ inches, or an approved alternative. Ongoing maintenance includes regular reapplication of mulch to a minimum of three (3) inches. It is highly recommended that compost and mulch is recycled from local organic materials such as plant or wood waste and compost is purchased from processors who participate in the US Composting Council's Standard Testing Assurance Program.
- D. Performance Standards for Plant Material:
1. Ground cover plantings shall substantially fill the intended landscape area within two (2) years of planting.
 2. Shrub plantings, where used to screen parking lots, shall reach a minimum height of thirty (30) inches within two (2) years of planting.
- E. Staking Requirements. All trees shall be double staked.
- F. Hydro-seeding. Plans indicating location and type of hydro-seeding shall be submitted with the final landscape plan when such planting is to be utilized for permanent landscape treatment or for natural area restoration. Hydro-seeding plans shall contain installation specifications including, but not limited to:
1. Seed mix and application rate. A native seed mix containing a minimum of ten percent (10%) shrub and perennial seeds shall be utilized in areas where permanent landscape restoration is required. Species selected shall include plant materials native to the area.
 2. Fertilizer, mulch materials, soil preparation, and watering specifications.

4-1912 Completion, Maintenance and Subsequent Changes

- A. Completion of Landscape Installation. Prior to the issuance of either a Certificate of Occupancy or Approval of the Final Inspection, all required landscaping and irrigation shall be installed per the approved plans, with respect to size, number, and species of plants, and provision of adequate irrigation coverage. In cases of substantial documented hardship and subject to the approval of the Zoning Enforcement Official, a Certificate of Occupancy may be issued prior to the complete installation of the landscaping subject to the applicant/owner's posting of a certificate of deposit, performance bond, or other acceptable security.

B. Ability to Assure Establishment of Landscaping. For projects with significant new landscaping, or where the installation of such landscaping was a project specific condition intended to mitigate a project's impact, the Zoning Enforcement Official may require either or both of the following to assure plant establishment:

1. Posting of a performance bond or certificate of deposit, to cover a two (2) year period. Such bonds shall typically cover the cost of replacing all applicable plant material, but may exclude material and labor costs relating to irrigation; or
2. Providing evidence of a minimum two (2) year maintenance contract with a licensed landscape contractor.

C. 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 8:00 p.m. and 10:00 a.m. unless weather conditions prevent it. If allowable hours of irrigation differ from the local water purveyor, the stricter of the two shall apply. Operation of the irrigation system outside the normal watering window is allowed for auditing and system maintenance.
3. For implementation of the irrigation schedule, particular attention must be paid to irrigation run times, emission device, flow rate, and current reference evapotranspiration, so that applied water meets the Estimated Total Water Use. Total annual applied water shall be less than or equal to Maximum Applied Water Allowance (MAWA). Actual irrigation schedules shall be regulated by automatic irrigation controllers using current reference evapotranspiration data (e.g., CIMIS) or soil moisture sensor data.
4. Parameters used to set the automatic controller shall be developed and submitted for each of the following:
 - a. The plant establishment period;
 - b. The established landscape; and
 - c. Temporarily irrigated areas.
5. Each irrigation schedule shall consider for each station all of the following that apply:
 - a. irrigation interval (days between irrigation);
 - b. irrigation run times (hours or minutes per irrigation event to avoid runoff);
 - c. number of cycle starts required for each irrigation event to avoid runoff;

- d. amount of applied water scheduled to be applied on a monthly basis;
- e. application rate setting;
- f. root depth setting;
- g. plant type setting;
- h. soil type *and mulch depth*;
- i. slope factor setting;
- j. shade factor setting; and
- k. irrigation uniformity or efficiency setting.

D. Landscaping Shall be Permanently Maintained. Required landscaped areas shall be permanently maintained to preserve plant health, water use efficiency and consistency with the design at time of completion and City's final inspection. As used in this Section, "maintained" includes: watering, weeding, pruning, insect and disease control, and replacement of plant materials and irrigation equipment as needed to preserve the health and appearance of plant materials.

1. ~~4~~ Landscape and Irrigation Maintenance Schedule. Landscapes shall be maintained to ensure water use efficiency. A regular maintenance schedule shall be submitted with the Certificate of Completion.

- a. A regular maintenance schedule shall include, but not be limited to, routine inspection; adjustment and repair of the irrigation system and its components; aerating and dethatching turf areas; replenishing mulch; fertilizing; pruning; weeding in all landscape areas, and removing and obstruction to emission devices. Operation of the irrigation system outside the normal watering window is allowed for auditing and system maintenance.
- b. Repair of all irrigation equipment shall be done with the originally installed components or their equivalents.
- c. Use of the "Bay-Friendly Landscape Model Maintenance Specifications" and the "Bay-Friendly Landscape Guidelines" as an official reference documents in the landscape maintenance contract and/or with on-site landscape staff is highly recommended. It is highly recommended that at least one landscaping staff member or contractor to be trained in the use of IPM or is a "Bay-Friendly Qualified Landscape Professional."

2 Failure to Maintain Landscaping is a Violation of this Code. The failure to maintain a landscape installation that is governed by the Article may be cited as a violation of this Code, pursuant to Section 5-2908. Examples of failed maintenance include, but are not limited to:

- a. Allowing a significant amount of trees, shrubs, ground covers, and/or turf areas to die, or become so diseased, and/or stressed as to make the property appear unsightly.

- b. Improperly pruning trees, so that their natural form is negated. Examples include the severe topping or pollarding of trees that were planted or retained to provide a shade canopy, or “pruning up,” or excessively “thinning” trees that were required for screening.
- c. Allowing weeds to grow and infiltrate to such an extent that the intended ground cover plantings are obscured, and/or the landscaped area appears unsightly.

32. Changes to Previously Approved Plans Require City Approval. The removal and/or replacement of trees that were a part of an earlier approval by a Site Plan Review, Use Permit, and/or Planned Development may require an amendment to that earlier approval as determined by the Zoning Enforcement Official. Removal of such trees without prior City approval of an amendment is prohibited and may be subject to enforcement pursuant to Section 5-2908. Minor changes do not require approval of an amendment and are subject to the approval of the Zoning Enforcement Official.

4-1914 Existing Landscapes

A. Water Waste Prevention: To prevent water waste resulting from inefficient landscape irrigation, applied water shall not leave the target landscape (runoff) due to overspray, or any other similar conditions that causes water flows onto adjacent property, non-irrigated areas, walks, roadways, parking lots, or structures.

B. Irrigation Audit Required for Existing Landscapes that Exceed One Acre. All existing landscapes that were installed before January 1, 2010 and are over one acre in size shall conduct irrigation water use analyses, irrigation surveys, or irrigation audits to evaluate water use. All landscape irrigation audits shall be conducted by a certified landscape irrigation auditor.

4-1916 Penalties

Water waste resulting from inefficient landscape irrigation is prohibited. Water waste resulting from runoff leaving new or existing landscapes 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 subject to penalties as established in the City of San Leandro Municipal Code. Overspray and runoff may be allowed 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.