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Landscape Design Guidelines and Plan Submittal Requirements

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Article 8 of the *Site Development Ordinance* contains guidelines and regulations used to evaluate landscape plans and includes the Town's Water Efficient Landscape Ordinance (WELO). The purpose of WELO regulations is to promote the conservation and efficient use of water and to prevent waste by limiting the amount of water used to the amount reasonably required to maintain landscaping that is beneficial to the Town and its residents. All new development requiring a Site Development Permit through the Planning Department shall comply with WELO including all landscape screening projects.

Landscaping shall be planted so that structures are unobtrusive from off-site views, in conformance with the Site Development Ordinance. Landscape plans are usually required for major additions and new residences, and may be required for minor projects. The Town requires only the amount of landscaping needed to satisfy the requirements of Article 8 of the Site Development Ordinance and the Town's landscape policies. The size of the structure, the types of materials and the proposed colors determine the amount of required landscaping.

Landscape Design Applications related to the screening of new structures or additions are accepted for processing after the building is framed. Please schedule a pre-application meeting with the project planner to review the required application materials, processing fees, and obtain an application checklist.

It is important that a project representative attend all public hearings related to landscape screening (Site Development Committee or Planning Commission) to answer questions and to hear comments. Hearings are typically continued when a project representative is not present.

Parcel Water Budget (PWB)

The Parcel Water Budget (PWB) is the upper limit of annual applied water purchased from the local water purveyor for the parcel. All properties shall calculate a Parcel Water Budget (PWB) upon submittal of a Site Development Permit using the following equation:

$$PWB = [(1.0\text{-slope}) (0.8) (43.0) (0.62) [0.55 \times (An\text{-}MDA) + (0.45 \times SLA)] / 748] + 120$$

Where:

PWB = Parcel water budget (units per year)
Slope = Average slope of the parcel or lot as a percentage of 1.0 to the nearest hundredth
0.8 = Water conservation factor
43.0 = Reference evapotranspiration (ETo) in Los Altos Hills, in inches/year
0.62 = Conversion factor (to gallons)
0.55 = ET adjustment factor (ETAF)
An = Net lot area (square feet)
MDA = The maximum development area (in square feet) allowed for the property.
0.45 = Additional water allowance for SLA
SLA = Special landscape area (square feet)
748 = Number of gallons in a unit (100 cubic feet) of water
120 = Number of units for indoor water use per property per year, or as may be modified by the Planning Director upon a demonstration of difficulty or unnecessary hardship.
Note: Not applicable if a landscape/outdoor use meter is installed.

Water Efficient Landscape Worksheet

A project applicant shall complete a Water Efficient Landscape Worksheet (attached) for all new landscape areas of 500 square feet or greater or for rehabilitated landscape projects that are 2,500 square feet or larger. The worksheet shall contain information on the plant factor, irrigation method, irrigation efficiency, and area associated with each hydrozone. Calculations are then made to show that the evapotranspiration adjustment factor (ETAF) for the landscape project does not exceed a factor of 0.55 for residential areas and 0.45 for non-residential areas, exclusive of Special Landscape Areas. The ETAF for a landscape project is based on the plant factors and irrigation methods selected. The Estimated Total Water Use (ETWU) is calculated based on the plants used and irrigation method selected for the landscape design. ETWU must be below the PWB minus the 120 units for indoor water use.

In calculating the PWB and ETWU, a project applicant shall use the ETo value for the local area from the Reference Evapotranspiration Table.

Water budget calculations shall adhere to the following requirements:

a) The plant factor used shall be from WUCOLS or from horticultural researchers with academic institutions or professional associations as approved by the California Department of Water Resources (DWR). The plant factor ranges from 0 to 0.1 for very low water using plants, 0.1 to 0.3 for low water use plants, from 0.4 to 0.6 for moderate water use plants, and from 0.7 to 1.0 for high water use plants (including turf).
b) All water features shall be included in the high water use hydrozone and temporarily irrigated areas shall be included in the low water use hydrozone.
c) All Special Landscape Areas shall be identified and their water use included in the water budget calculations.
d) ETAF for new and existing (non-rehabilitated) Special Landscape Areas shall not exceed 1.0.

Landscape Design, Soil Preparation and Mulching Criteria

For the efficient use of water, the proposed landscaping shall be carefully designed and planned for the intended function of the project. The following criteria shall be used in the design of all landscape areas:

Plants

Plants shall be selected where the Estimated Total Water Use (ETWU) in the landscape area does not exceed the site's Parcel Water Budget (PWB). Landscaping that utilizes native, local, drought tolerant species and preserves existing low water use vegetation is highly recommended. Plant selection criteria is as follows:

a) Proposed plantings shall incorporate one or more of the following:
    1) Protection and preservation of native species and natural vegetation;
    2) Selection of water-conserving plant, tree and turf species, especially local native plants;
    3) Selection of plants based on local climate suitability, disease and pest resistance;
    4) Selection of trees based on applicable local tree ordinances or tree shading guidelines, and size at maturity as appropriate for the planting area;
    5) Selection of plants from local and regional landscape program plant lists; and
    6) Selection of plants from local Fuel Modification Plan Guidelines;
b) Each hydrozone shall have plant materials with similar water use, with the exception of hydrozones with plants of mixed water use;
c) 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 this shall include one or more of the following:
    1) Use the Sunset Western Climate Zone System which takes into account temperature, humidity, elevation, terrain, latitude, and varying degrees of continental and marine influence on local climate;
    2) Recognize the horticultural attributes of plants (i.e., mature plant size, invasive surface roots) to minimize damage to property or infrastructure [e.g., buildings, sidewalks, power lines]; allow for adequate soil volume for healthy root growth and
    3) Consider the solar orientation for plant placement to maximize summer shade and winter solar gain.
d) Turf shall not exceed 25% of the total landscape area in residential areas (in nonresidential areas turf is prohibited) and is not allowed on slopes greater than 25%, where the toe of the slope is adjacent to an impermeable hardscape.
e) High water use plants, characterized by a plant factor of 0.7 to 1.0, shall not exceed 5,000 square feet of the total planted area and are prohibited in street medians.
f) 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 the local Fuel Modification Plan guidelines.
g) The use of invasive plant species, such as those listed by the California Invasive Plant Council, is not permitted.

Water Features

The following criteria shall be used when evaluating water features in a design plan:

a) Recirculating water systems shall be required;
b) Where available, recycled water shall be used as a source for decorative water features;
c) The surface area of a water feature shall be included in the high water use hydrozone area of the water budget calculation;
d) Pool and spa covers are highly recommended.

Soil Preparation, Mulch and Amendments

The following criteria shall be used in the preparation of on-site soils and for mulching procedures:

a) 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;
b) Soil amendments shall be incorporated according to recommendations of the soil report and what is appropriate for the plants selected;
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 six inches into the soil. Soils with greater than 6% organic matter in the top 6 inches of soil are exempt from adding compost and tilling;
d) A minimum three 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 % of the landscape area may be left without mulch. Designated insect habitat must be included in the landscape design plan as such;
e) Stabilizing mulching products shall be used on slopes that meet current engineering standards;
f) The mulching portion of the seed/mulch slurry in hydro-seeded applications shall meet the mulching requirement;
g) 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 local Fuel Modification Plan Guidelines or other applicable local ordinances.

Other Landscape Design Criteria

Applicants shall also consider the following additional criteria when preparing their landscape plan:

a) No structures (including gateposts, columns, pillars and monument style mailboxes) are allowed in road rights-of-way or pathways. The fencing requirements in the Zoning Ordinance (Section 10-1.504) are also applied to gateposts, columns and pillars. Zoning permits are required for any proposed fences or monuments.
b) Driveway columns or pillars may not exceed six feet in height (7’with lights). Only two lights may be placed within setbacks.

c) Landscaping and sprinklers are not permitted in dedicated pathway easements, or within five feet of pathways.
d) Placement of plants must be sufficiently distant form roads and pathways so as to not cause future obstructions. Road rights-of-way generally extend beyond the paved surface of the roadway.
e) Structures along Interstate 280 will require additional levels of landscape mitigation.
f) Outdoor lighting shall be placed so as to be unobtrusive to neighboring properties. Lighting shall be down shielded and low wattage (the light source may not be visible from off-site). Floods and uplights are discouraged. Other than two driveway lights, lighting may not be located within setbacks.

Irrigation Design Criteria

Landscaped areas requiring permanent irrigation (not areas that require temporary irrigation solely for the plant establishment period) are required to have an irrigation system that meets 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 Design Plan. The design criteria for the irrigation plans shall be as follows:

System

a) Landscape water meters, defined as either a dedicated water service meter or private submeter, shall be installed for all non-residential irrigated landscapes from 1,000 sq.ft. to 5,000 sq.ft.(the level at which Water Code 535 applies), and for residential irrigated landscapes of 5,000 sq. ft. or greater. A landscape water meter may be either a customer service meter dedicated to landscape use provided by the local water purveyor or a privately owned meter or submeter.
b) 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.
c) 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.
    1) If the static pressure is above or below the required dynamic pressure of the irrigation system, pressure-regulating devices such as inline pressure regulators, booster pumps, or other devices shall be installed to meet the required dynamic pressure of the irrigation system.
    2) Static water pressure, dynamic or operating pressure and flow reading of the water supply shall be measured at the point of connection. These pressure and flow measurements shall be conducted at the design stage. If the measurements are not available at the design stage, the measurements shall be conducted at installation.

d) Sensors (rain, freeze, wind, etc.), either integral or auxiliary, that suspend or alter irrigation operation during unfavorable weather conditions shall be required on all irrigation systems, as appropriate for local climatic conditions. Irrigation should be avoided during windy or freezing weather or during rain.
e) Manual shut-off valves (such as a gate valve, ball valve, or butterfly valve) shall be required, as close as possible to the point of connection of the water supply, to minimize water loss in case of an emergency (such as a main line break) or routine repair.
f) Backflow prevention devices shall be required to protect the water supply from contamination by the irrigation system. A project applicant shall refer to the applicable local agency code (i.e., public health) for additional backflow prevention requirements.
g) Flow sensors that detect high flow conditions created by system damage or malfunction are required for all non-residential landscapes and residential landscapes of 5000 sq. ft. or larger.
h) 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.
i) 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.
j) Relevant information from the soil management plan, such as soil type and infiltration rate, shall be utilized when designing irrigation systems.
k) The design of the irrigation system shall conform to the hydrozones of the landscape design plan.
l) The irrigation system must be designed and installed to meet, at a minimum, the irrigation efficiency criteria as described in Section 492.4 regarding the Maximum Applied Water Allowance.
m) 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.
n) It is highly recommended that the project applicant or local agency inquire with the local water purveyor about peak water operating demands (on the water supply system) or water restrictions that may impact the effectiveness of the irrigation system.
o) In mulched planting areas, the use of low volume irrigation is required to maximize water infiltration into the root zone.
p) Sprinkler heads and other emission devices shall have matched precipitation rates, unless otherwise directed by the manufacturer's recommendations.
q) Head to head coverage is recommended. However, sprinkler spacing shall be designed to achieve the highest possible distribution uniformity using the manufacturer's recommendations.
r) 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 turfgrass.
s) Check valves or anti-drain valves are required on all sprinkler heads where low point drainage could occur.

t) Areas less than ten (10) feet in width in any direction shall be irrigated with subsurface irrigation or other means that produces no runoff or overspray.
u) Overhead irrigation shall not be permitted within 24 inches of any non-permeable surface. Allowable irrigation within the setback from non-permeable surfaces may include drip, drip line, or other low flow non-spray technology. The setback area may be planted or unplanted. The surfacing of the setback may be mulch, gravel, or other porous material. These restrictions may be modified if:
    1) the landscape area is adjacent to permeable surfacing and no runoff occurs; or
    2) the adjacent non-permeable surfaces are designed and constructed to drain entirely to landscaping; or
    3) the irrigation designer specifies an alternative design or technology, as part of the Landscape Documentation Package and clearly demonstrates strict adherence to irrigation system design criteria in Section 492.7 (a)(1)(IH). Prevention of overspray and runoff must be confirmed during the irrigation audit.
v) Slopes greater than 25% shall not be irrigated with an irrigation system with a precipitation 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.
w) No irrigation may be placed within rights-of-way.

<u>Hydrozone</u>

x) Each valve shall irrigate a hydrozone with similar site, slope, sun exposure, soil conditions, and plant materials with similar water use.
y) Sprinkler heads and other emission devices shall be selected based on what is appropriate for the plant type within that hydrozone.
z) 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.
aa) Individual hydrozones that mix plants of moderate and low water use, or moderate and high water use, may be allowed if:
    1) plant factor calculation is based on the proportions of the respective plant water uses and their plant factor; or
    2) the plant factor of the higher water using plant is used for calculations.
bb) Individual hydrozones that mix high and low water use plants shall not be permitted.
cc) 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. This table can also assist with the irrigation audit and programming the controller.

Soil Management Report

A soil management report shall be completed by the project applicant, or his/her designee, as follows:

a) Submit soil samples to a laboratory for analysis and recommendations.
   The soil analysis shall include:
   - soil texture;
   - infiltration rate determined by laboratory test or soil texture infiltration rate table;
   - pH;
   - total soluble salts;
   - sodium;
   - percent organic matter; and
   - recommendations

   In projects with multiple landscape installations (i.e. production home developments) a soil sampling rate of 1 in 7 lots or approximately 15% will satisfy this requirement. Large landscape projects shall sample at a rate equivalent to 1 in 7 lots.
b) The project applicant, or his/her designee, shall submit the report to the Planning and Building Department as part of the Landscape Plan Submittal Package.
c) The soil analysis report shall be made available, in a timely manner, to the professionals preparing the landscape design plans and irrigation design plans to make any necessary adjustments to the design plans.
d) The project applicant, or his/her designee, shall submit documentation verifying implementation of soil analysis report recommendations to the local agency with Certificate of Completion.

Landscape and Irrigation Plan Requirements

The landscape and irrigation plans shall be prepared by, and bear the signature of, a licensed landscape architect, licensed landscape contractor, or any other person authorized by the State of California to design a landscape and irrigation plan. Native species and natural vegetation shall be preserved where feasible and native, water conserving species are recommended.

The plans shall include the following information:

a) Provide basic project information including the date, north arrow, scale (1"=20'), applicant name, site address, total landscape area and turf area (square feet), water supply and purveyor, project contacts and applicant's signature and date with the statement, "I have complied with the criteria of the Water Efficiency Landscape Ordinance and applied them for the efficient use of water in the landscape design plan.";
b) Provide a Water Efficient Landscape Worksheet with the Parcel Water Budget (PWB) and the Estimated Total Water Use (ETWU);
c) Soil management report;
d) Grading plan - a modified copy of the grading and drainage plan (from your site development permit application) may be used. Final grades in two (2) foot maximum contours is required;
e) The entire site shall be shown, including all property lines, improvements, road rights-of-way, pathways and easements;

f) Relation of roadway (pavement) to property lines and rights-of-way (label all streets adjacent to the property);
g) Building footprint for residence and all other structures, decks, driveways and other hardscape such as walkways, patios, pools and decking, and tennis courts (existing and proposed development area) and all new and existing outdoor lighting;
h) Identify, in tabular form, all plants to be installed as part of the project. The table shall include the following:
    1) Symbol (representing the plant on the plan);
    2) Common name and botanical name;
    3) Container size;
    4) Quantity;
    5) Type (e.g., grass, succulent, vine, shrub, tree);
    6) Size at maturity.

    The plant list shall exclude plant types that increase wildfire susceptibility. In areas designated wildland urban interface, the plan shall demonstrate that plants have been selected from local Fuel Modification Plan Guidelines and arranged to provide defensible space for wildfire protection, in conformance with Public Resources Code Section 4291;
i) Label and identify each hydrozone as low water, moderate water, high water, or mixed (low/moderate) water use, as defined by WUCOLS and place plants with similar water use within the same hydrozone;
j) Identify recreation areas and Special Landscape Areas;
k) Identify all landscaping required for screening and erosion control pursuant to Section 10-2.802;
l) Identify areas irrigated with recycled water;
m) Identify the type of mulch, application depth, and soil amendments
n) Identify all water features (and surface area), hardscape, and stormwater infiltration and detention facilities;
o) Identify all applicable rainwater harvesting or catchment facilities;
p) Identify all applicable graywater discharge piping, system components and area(s) of distribution;
q) Location and size of separate water meters for landscaping;
r) 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;
s) Static water pressure at the point of connection to the public water supply;
t) Flow rate (gallons per minute), application rate (inches per hour), and design operating pressure (pressure per square inch) for each station;
u) Recycled water irrigation systems;
v) The following statement on the irrigation plan sheets: “I have complied with the criteria of the Water Efficient Landscaping Ordinance and applied them accordingly for the efficient use of water in the irrigation design plan.”

Irrigation Scheduling

All irrigation schedules shall be developed, managed, and evaluated to utilize the minimum amount of water required to maintain plant health. Irrigation schedules shall meet the following criteria:

a) Irrigation scheduling shall be regulated by automatic irrigation controllers;
b) 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;
c) For implementation of the irrigation schedule, particular attention must be paid to irrigation run times, emission device, flow rate, and current reference evapotranspiration, so that applied water meets the Estimated Total Water Use. Total annual applied water shall be less than or equal to the Parcel Water Budget (PWB). Actual irrigation schedules shall be regulated by automatic irrigation controllers using current reference evapotranspiration data (e.g., CIMIS) or soil moisture sensor data;
d) Parameters used to set the automatic controller shall be developed and submitted for each of the following:
    1) the plant establishment period;
    2) the established landscape; and
    3) temporarily irrigated areas.
e) Each irrigation schedule shall consider for each station all of the following that apply:
    1) irrigation interval (days between irrigation);
    2) irrigation run times (hours or minutes per irrigation event to avoid runoff);
    3) number of cycle starts required for each irrigation event to avoid runoff;
    4) amount of applied water scheduled to be applied on a monthly basis;
    5) application rate setting;
    6) root depth setting;
    7) plant type setting;
    8) soil type;
    9) slope factor setting;
    10) shade factor setting; and
    11) irrigation uniformity or efficiency setting.

Landscape and Irrigation Maintenance Schedule

A regular maintenance schedule shall be submitted with the Certificate of Completion and shall include, but not be limited to:

a) 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;
b) Repair of all irrigation equipment shall be done with the originally installed components or their equivalents or with components with greater efficiency;

c) A project applicant is encouraged to implement established landscape industry sustainable Best Practices for all landscape maintenance activities.

Definitions

The following definitions are established and apply to landscape projects within the Town.

Applied water means the 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.
Certified professional means a certified irrigation designer, certified landscape irrigation auditor, licensed landscape architect, licensed landscape contractor, licensed professional engineer, or any other person authorized by the state to design a landscape, an irrigation system, or authorized to complete a water budget.
Compost means the safe and stable product of controlled biological decomposition of organic materials that is beneficial to plant growth.
Distribution uniformity means the measure of the uniformity of irrigation water over a defined area.
Ecological restoration project means a project where the site is intentionally altered to establish a defined, indigenous, historic ecosystem.
Established landscape means the point at which plants in the landscape area have developed significant root growth into the soil. Typically, most plants are established after one or two years of growth.
Estimated Total Water Use (ETWU) means the total water used for the landscape as calculated in the Water Efficient Landscape Worksheet."
Evapotranspiration (ET) rate means the quantity of water evaporated from adjacent soil and other surfaces and transpired by plants during a specified time.
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. The ETAF for new and existing (non-rehabilitated) Special Landscape Areas shall not exceed 1.0. The ETAF for existing non-rehabilitated landscapes is 0.8.
Flow sensor means an inline device installed at the supply point of the irrigation system that produces a repeatable signal proportional to the rate at which water flows through the pipes. Flow sensors must be connected to an automatic irrigation controller, or flow monitor capable of receiving flow signals and operating master valves. The flow sensor 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 residences 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.

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.

Invasive plant species means species of plants not historically found in California that spread outside cultivated areas and can damage environmental or economic resources. 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 professional. 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 efficiency 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 and includes, but is not limited to: inspection, system test, and written recommendations to improve performance of the irrigation system.

Landscape area (LA) means all the irrigated planting areas, turf areas and water features in a landscape design plan subject to the Maximum Applied Water Allowance calculation.

Landscape project means the total area comprising the proposed irrigated landscape area, as defined in this article.

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

Local water purveyor means any entity, including a public agency, city, county, district or private water company that provides retail water service.

Master shut-off valve is an automatic valve installed at the irrigation supply point which controls water flow into the irrigation system.

New construction means the construction of a new building or structure containing a landscape or other new land improvement, such as a park, playground, or greenbelt without an associated building.

Non-residential landscape means landscapes in commercial, institutional, and public settings that may have areas designated for recreation or public assembly.

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

Parcel water budget (PWB) means the upper limit of annual applied water purchased from the local water purveyor for the parcel as specified in subsection (c) "Parcel Water Budget" of LAHMC Section 10-2.809.

Permit means an authorizing document issued by local agencies for the installation of new 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. 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.
Project applicant means the individual or entity requesting a permit or plan check from the Town. A project applicant may be the property owner or designee.
Rain sensor or rain sensing shutoff valve means a component which automatically suspends an irrigation event when it rains.
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 and is an estimate of the evapotranspiration of a large field of four to seven inch tall, cool season grass that is well watered. The ETo for Los Altos Hills, based on the state's reference evapotranspiration table, is 43.0.
Rehabilitated landscape means any re-landscaping project that requires a building or site development permit.
Runoff means water which is not absorbed by the soil or landscape to which it is applied and flows from the irrigated landscape area.
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.
Special landscape area (SLA) means an area of the landscape dedicated solely to edible plants, recreation areas, areas irrigated with recycled water, or water features using recycled water.
Submeter means a metering device to measure water applied to the landscape area that is installed after the primary utility 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. Bermuda grass, Kikuyu grass, Seashore Paspalum, St. Augustine grass, Zoysia grass, and Buffalo grass are warm-season grasses.
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 are included in the high water use hydrozone of the landscape area. Constructed wetlands that are not irrigated and stormwater retention basins are not water features.
WUCOLS means the Water Use Classification of Landscape Species published by the University of California Cooperative Extension and the Department of Water Resources, 2014.

APPENDIX A

Landscape Recommendations Guide Prepared by the Environmental Design & Protection Committee

INTRODUCTION: LANDSCAPING GOAL

There are many factors that go into designing a landscape for a residence in a community like ours. The Town of Los Altos Hills remains one of the open country areas left in the congested, expanding cities of the Bay Area. A great number of our homes border on the natural, undeveloped areas which provide a visual backdrop for much of the San Francisco Peninsula. Our goal in landscaping is to minimize the visual impact of the housing structures with plantings which blend with the natural beauty of our native surroundings.

DESIGN CONSIDERATIONS

At the time of new construction, owners are required to present a plan for managing erosion on slopes and for mitigating the impact or view of new structures from off-site. The purpose is to keep the Town looking less urban, to preserve the soil and to retain the original contours as much as possible. Future plantings and changes should continue with the same goals. The General Plan calls for landscaping to create maximum compatibility of development with the natural environment. As a general guideline, the Town recommends informal plantings. To achieve this, plant in random or staggered groups of a variety of species rather than formal rows of hedges. This method will avoid future difficulties in replacement if and when plants are killed by gophers or other problems. Frequently plantings are used to conceal the view of a structure, provide privacy, manage erosion or mitigate wind or noise. Trees are often the first thought but remember trees grow tall and wide. The bottom branches die out and what was meant to be hidden will become visible again. Additionally, our tree may now block your neighbor's view or sunlight or interfere with utility lines, while it no longer serves your original purpose. Shrubs may be a better answer. Most evergreen (non-deciduous) shrubs will top out below 20 feet and continue for years to give privacy clear to the soil level.

Other design considerations are the water needs of the plants you select. Grouping plants according to their water needs will improve their success. Water saving will be a big item of consideration as the State's population increases in the future. Water supplies are finite and we will all be required to minimize our use of landscape water in the near future. Lawns are the biggest user of water, so try to have only the amount of lawn you really need for your family use and use drought tolerant plants elsewhere. Some of the easiest drought tolerant plants are the ones that evolved here naturally. These are our own native plants. (See Table 1: Native Plants)

Also, when designing you landscape, consider the site. Is it an exposed hill or a shady valley? Use plants which are adapted to these conditions.

In Los Altos Hills, the best time to plant is in the fall at the time the rains are beginning. The soil is still warm, thereby allowing the roots to establish. The air is cooler so there won't be much top

growth and the rains will do most of the watering for you. However, if the rains are inconsistent, supplemental water will be needed. Fall planting will give your plants a head start on early spring growth. If you miss the fall planting season, winter are spring are second best and summer least favorable. The Sunset Western Garden Book is a good source of information for appropriate plantings for our climate. According to Sunset, our zone is 16. All plantings should be chosen for their adaptability to this zone.

LIVING WITH CALIFORNIA OAKS

In Los Altos Hills, we are fortunate to have many native oaks. Oaks give us shade and shelter, increase our property values, create carefree beautiful landscapes and provide food for native wildlife. Oaks are very low water and low maintenance trees. Unfortunately, inappropriate landscaping, such as lawns or high water plantings, and construction practices can seriously damage these trees. Often the damage is not evident till years later. As homeowners among these beautiful trees we are in the best position to protect and enhance our native oak resources. Careful planning and design can provide benefits for both people and oaks.

OAK ROOTS

The roots of mature oaks grow predominately within the upper 3 feet of soil. Most of the roots responsible for uptake of water and minerals are concentrated within 18 inches of the surface. Although the roots typically radiate well beyond the periphery of foliage (drip line), much of the active root system is within the drip line. Roots are sensitive to environmental change such as compacting, paving, grading and increased moisture. In summer, oaks are dormant and do not need water. During the warmer days of summer, water actually promotes the growth of soil fungi which will kill the tree very slowly (over 5 or more years). Also, the tree needs oxygen in the soil and too much water will displace the soil's oxygen.

ACTIVITIES WHICH CAN DAMAGE TREE ROOTS

SOIL COMPACTING-Frequent traffic (human, livestock, driving or parking of vehicles) within the drip line squeezes soil particles together, eliminating natural air space thereby reducing infiltration and storage of water and air.

PAVEMENT-Impermeable soil coverings restrict the amount of air, water and minerals available to the roots thus impairing root growth and function.

GRADE CHANGES-This involves either the addition of removal of soil within the drip line. Excavation (cut) can sever and expose roots. Addition (fill) can suffocate them.

TRENCHING-Trenches that cut across the drip line cut essential roots. This impairs the tree's ability to obtain water and essential elements which may cause death, die-back or gradual decline.

DRAINAGE CHANGES-Any change that causes water to collect around a tree, especially the trunk, is harmful. Likewise, a grade change that diverts a source of water that the tree depends on may cause drought stress.

SOIL CONTAMINATION-Avoid storing and discarding harmful chemicals or materials such as; herbicides, petroleum products, building materials or waste water near oaks.

LANDSCAPING-There are just a few California native plants that can be used in landscaping oak gardens. See table 1: Native Plants *''d items. It is best to keep the area within the drip line relatively open. Use plants as accents rather than ground covers. Select plants that tolerate drought and plant no closer that 10 feet to the trunk. Avoid all planting under declining oaks.

OVER FEEDING-As a general rule, native oaks should not be irrigated. Frequent irrigation displaces much of the oxygen in the soil. This can lead to reduced growth and vitality and increased susceptibility to insects and diseases. One exception, however, is during drought years. If the winter is unusually dry, supplemental deep watering in the spring or summer can compliment natural rainfall. Water the soil from halfway between the trunk and the drip line to 10-15 feet beyond. Allow the water to penetrate 18-24 inches. This may take 4-6 hours and should only be done one time per month.

MULCHING AND FERTILIZING-Keep soil surface mulched with 2-4 inches of natural leaf litter, wood chips or gravel. Do not place directly against trunk. Under such conditions, healthy oaks do no need added fertilizer. However, if leaf litter is regularly removed, you may need to fertilize. The ideal time is in the spring. Broadcast over the tree's room zone, lightly water into the soil, avoiding the area within 10 feet of the trunk. Use fertilizers high in Nitrogen (N) such as calcium nitrate, ammonia sulfate, ammonia nitrate or urea. Complete fertilizers with nitrogen, phosphorous and potassium are more expensive and generally unwarranted.

PRUNING-Large old oaks are likely to need thinning and cabling. Avoid excessive pruning, removing no more than 10-20% of the foliage in any one year. WARNING! Incorrect pruning can lead to serious problems. Consult a professional arborist certified by the Western Chapter of the International Society of Arboriculture.

DETECTING HEALTH PROBLEMS: SIGNS OF ADVANCED DECLINE OR DECAY

Thin, sparse foliage
Poor growth
Yellow, undersized leaves
Dead branches and limbs in upper canopy
Wilted, brown leaves during spring and summer
Many short shoots growing on trunk and branches
Mushrooms at tree base or on the roots in fall or early winter
Conks – shell-like mushrooms on trunk
Cavities in trunk
White, fan-shaped mats of fungus under the bark at soil line
Soft, punchy wood
Wet, oozing areas on the bark

If any of these problems occur, residents should contact a certified arborist.

RIPARIAN HABITAT

The stream corridor, including the vegetation along the bank, is known as riparian habitat. This high moisture environment supports a great diversity of plants and wildlife. The corridor is an invaluable natural resource that serves as a conduit for floodwater, replenishes surface and ground water and contributes a host of aesthetic and recreational benefits. By protecting and preserving this delicate area you can prevent or minimize erosion, preserve water quality, contribute to the survival of fish and wildlife and help avoid flood damage. Your primary goals along stream areas are to minimize erosion or contamination from adjacent properties and preserve the natural state of the area by restoring any damaged areas with native plants. The following guidelines will help protect and enhance your living stream.

Always use native plants (No invasive or non-native plants). (See Table1: Native Plants) and (Table 2: Invasive plants).

Keep pets and livestock away from the riparian area.

Never use fertilizers or pesticides near the riparian zone.

Protect existing vegetation and natural grades during construction.

Control erosion by protecting areas where flowing water meets bare soil. This may be accomplished by reducing the speed or redirecting the water to vegetated areas or by replanting with native ground cover.

Do not rake up leaf litter or prune native plants.

Do not dump yard wastes into stream area.

PROBLEMS IN THE HILLS

Our community because of its setting on the edge of natural areas has some special challenges. Fire protection, erosion and flood control can be aided by the use of appropriate plantings. Our abundant wildlife must be protected from poisonous plants and chemicals, but must also be considered in plant selections that attract rodents, deer or raccoons.

EROSION AND FLOOR CONTROL

Soil stability can be promoted by avoiding and controlling water runoff. Limit the amount of hardscape (asphalt, concrete and other impermeable pavement) to avoid rapid run-off of large amounts of water. Landscape irrigation of a slope is equivalent to 25-60 inches of rainfall per year. Over-watering, the cause of many slope failures, can equal 100 inches of rainfall per year when the winter rains are added. Use of drip or no irrigation would be recommended on any slope.

When planting, avoid cutting into the bottom of the slope because what is above will likely be washed down. Disturb the soil as little as possible and use appropriate drought resistant plants with deep roots. Some native plants which will help are dwarf coyote bush, baccharis pilularis, some of the Ceanothus types, native bunch grasses, native roses and toyon. Natural and constructed water courses such as creeks and drainage ditches must be kept free of debris. Any areas of land that are disturbed during construction should be quickly re-vegetated; preferably with native plants with deep roots.

FIRE PROTECTION

To prevent the likelihood or severity of wildfires, create a 30 foot fuel break area around your home using vegetation that has low flammability and is low growing. Remove dead plants and clean out dead material from your living plants in such a way so that it does not accelerate erosion and flood potential. Trees should be kept a distance from any structure at least as wide as the mature crown. Additionally large shrubbery under trees can created a fire ladder allowing the flames to ignite the tree foliage. Pines, junipers, cypress and eucalyptus trees burn especially fast and should not be planted near the house.

WATER CONSERVATION

Our climate is considered a Mediterranean climate with cool, wet winters and a long dry period from May to October. Supplemental watering should begin when the rains cease (this varies from February to June but averages about May 1).

The plants that are the best adapted to do well on your sited are the ones that are native to the area closest to you. They are drought tolerant and they provide much needed wildlife value for our birds, butterflies and other creatures. (See Table 1: Native plant list).

Minimize lawn area. Grass not only demands frequent watering but is easily destroyed by tunneling animals such as gophers and moles. Instead consider drought tolerant ground covers such as various species of ceanothus, a rock garden or a meadow of wildflowers. If lawn is functionally required, use a drought tolerant species. The optimum landscape design for water conservation would include no more that 1/3 high water use plantings, 1/3 moderate and 1/3 low water use plantings.

INVASIVE PLANTS

Certain plants will invade into the surrounding countryside. Some invasive plants have gotten loose into roadsides and native habitats. These plants which have been introduced into California from other parts of the world have no natural enemies and spread rampantly into our open space. There they crowd out native plants and become a monoculture. This has a serious impact on our wildlife which depends on the natural variety for food and shelter. (See Table 2: Invasive plants).

POISONOUS PLANTS

Some plants are poisonous to people and livestock. No plant which is poisonous should be allowed in any enclosure for an animal. Some of our common garden plants are poisonous if eaten by children. Most notable is Oleander which is widely planted as a drought tolerant ornamental shrub. Others include the Rhododendron family. (See Table 3: Poisonous plants).

COPING WITH WILDLIFE

We live in an urban/rural interface and as much as our plantings might attract the birds and butterflies, they also attract rodents, deer and raccoons. To protect against gophers, place a 1 inch or less wire mesh basket in the planting hole. It is almost impossible to protect lawns against moles and gophers, so take this into consideration in your overall landscape plan. Dense ground covers such as ivy, vinca and the thickets of blackberries can harbor rats. Deer protection is difficult. Much of what the deer will eat is variable and depends upon his degree of hunger. There are some plants that deer consistently do not eat. These are mostly the spiny ones and those with strong odors or fragrance but they adore plants in the rose family which includes many stone fruits. If you need to protect specific plantings, i.e. vegetable gardens, the best protection is fencing. Fences to keep deer away need to be 6 feet high or more. A double row of fences of 4 feet high and 4 feet apart will also do the trick. However, then you have a weed problem in the inter-space. At Hidden Villa, a sheep-run between the fences keeps the weeds down. Fences require a building permit. Remember, however, that wildlife needs to migrate for food and water so please leave open corridors through your property.

LANDSCAPE MAINTENANCE

New Plantings

Watering may be needed for at least the first two summers or until the plants can make it on their own. Water only sparingly after that, remembering about the growth of soil fungi during the summer.

PRUNING AND TRIMMING

It is important to keep large trees correctly pruned to allow for safety and balance and prevent storm damage. Consult a certified arborist. Maintain our shrubbery along pathways, roadways and driveway intersections to allow proper visibility and accessibility. Also, remember your and your neighbors scenic views can disappear when trees and shrubs are not kept properly trimmed.

IRRIGATION

When using automatic or manual irrigation do not over-water creating run-off or flooding to adjacent properties. Use drip system irrigation or a soaker hose whenever possible to avoid erosion and conserve our valuable water resources. Also, remember to change automatic timers as seasonal weather changes.. because of fluctuating high water pressure in some areas, a pressure regulator valve should be installed on your landscape watering system to prevent ruptured pipes.

WEED CONTROL

The fire district will ask you to control weed growth. Here are some recommendations to handle this often overwhelming problem. The following list is in order of preference and environmental sensitivity.

1. Mowing, string or blade trimming and grazing
2. Layers of chip mulch
3. Glyphosate sprays such as "Roundup" in open areas or "Rodeo" near water courses. Read the label carefully first and follow directions explicitly.
4. Plowing and discing will cause soil erosion from wind and water. It has also been responsible for fires (from sparks off engine or hitting rocks). Timing of turning the soil is important. If seed has already formed and dropped, rototilling will only replant seed for next year's weeds.

COMPOSTING

Composting your yard waste at home can produce valuable nutrients for your garden while decreasing the impact on landfills. Classes are available monthly in Los Altos for Los Altos Hills residents

HERITAGE TREES

Los Altos Hills has a Heritage Tree Program, and the so designated coastal live oak at Town Hall is a fine example of such a tree. We are looking for other outstanding California Native trees that could be honored in our town. Property owners with such a tree are encouraged to contact the Town Hall office and let us now. The Environmental Design and Protection Committee with the help of an arborist will examine and consult on the tree. If there tree is suitable and healthy, an award will be given and the tree will be identified as a Heritage Tree of Los Altos Hills.

GARDENS DISPLAYING DROUGHT TOLERANT AND NATIVE PLANTINGS

Sunset Magazine Gardens in Menlo Park
Yerba Buena Nursery – Demonstration Garden
Woodside Library
Guadalupe Gardens in San Jose
Alameda County Water District
University of California at Berkeley Botanic Garden
Tilden Botanic Garden in Berkeley
U.C. Santa Cruz Arboretum
DeAnza College Environmental Studies Area
San Mateo Garden Center
Gamble Gardens in Palo Alto

HELPFUL REFERENCE BOOKS

California Native Trees & Shrubs for Garden & Environmental Use in Southern California and Adjacent Areas-Lee W. Lenz & John Dourley, Rancho Santa Ana Botanic Garden, Claremont, CA, 1981.

Growing California Native Plants, Marjorie G. Schmidt, 1980.

Hillsborough Water Use Classification of Landscape Species, Version 1, January 1993. On file in Los Altos Hills Town Hall.

Homeowner's Guide to Fire and Watershed Management at the Chaparral/Urban Interface, Klaus W.H. Radtke, National Foundation for Environmental Safety, Inc., 2210 Wilshire Blvd., Suite #184, Santa Monica, CA, 90403, 1982.

Landscape Plants for Western Regions, Bob Perry, Land Design Publishing, Claremont, CA 91711, 1996.

Living Among the Oaks, A Management Guide for Landowners, University of California Cooperative Extension Natural Resources Program, Berkeley, CA, (415 642-2360).

Living More Safely in the Chaparral/Urban Interface, Klaus W.H. Radtke, U.S.D.A. General Technical Report PSW-67, 1983.

Selected California Native Plants in Color, Saratoga Horticulture Foundation, Barrie D. Coate, Editor, 1980.

Streamside Planting Guide for San Mateo and Santa Clara County Streams, Coyote Creek Riparian Station, P.O. Box 1027, Alviso, CA 95002, (408 262-9204).

Sunset Western Garden Book, Lane Publishing Company (many additions available).

Success List of Water Conserving Plants, Saratoga Hotline Foundation, 1983.

Successful Perennials for the Peninsula, A Selection by Member of Western Horticulture Society, 1989.

Water-Conserving Plants and Landscapes for the Bay Area, East Bay Municipal Utility District, 1990.

APPENDIX B

TABLE 1:
NATIVE PLANTS

These native plants grow wild in or near Los Altos Hills and will grow easily in your garden.

TREES

Botanical Name	Common Name	Foliage
Acer macrophyllum	Big-leaf Maple	deciduous
Aesculus calironica	California Buckeye	early deciduous
Arbutus menziesii	Madrone	evergreen
Lithocarpus desiflora	Tanbark Oak	evergreen
Plantanus racemosa	Western Sycamore	deciduous
Populus fremontii	Fremont Cottonwood	deciduous
Pseudotsuga menziesii	Douglas Fir	evergreen
Quercus agrifolia	Coast Live Oak	evergreen
Quercus chrysolepis	Canyon Oak	evergreen
Quercus douglassi	Blue Oak	deciduous
Quercus kelloggii	California Black Oak	deciduous
Quercus lobata	Valley Oak	deciduous
Sambucus caerulea	Mexican Elderberry	deciduous
Sequoia sempervirens	Coast Redwood	evergreen
Torreya californica	California Nutmeg	evergreen
Umbellularia californica	California Bay	evergreen

SHRUBS

Botanical Name	Common Name	Foliage
Amelanchier pallida	Serviceberry	deciduous
Arctostaphylos andersonii*	Heart-leaved Manzanita	evergreen
Arctostaphylos glauca*	Big-berried Manzanita	evergreen
Arcrtostaphylos Manzanita	Dr. Hurd	evergreen
Baccharis pilularis*	Dwarf Coyote Bush	evergreen
Ceanothus cuneatus*	Common Buck Brush	evergreen
Ceanothus thyrsiflours*	Blue Brush	evergreen
Ceanothus (many species)		
Cercis occidentalis	Western Redbud	deciduous
Cercocarpus betuloides*	Mountain Mahogany	evergreen
Cornus californica	Creek Dogwood	deciduous
Cornus grabata	Brown Dogwood	deciduous
Corylus cornuta californica	California Hazelnut	deciduous
Dendromecon rigida*	Bush Poppy	evergreen
Diplacus aurantiacus Mimulus*	Sticky Monkey Flower	shrubby perennial
Fremontodendron*	Flannel Bush	evergreen
Garrya elliptica	Coast Silktassel	evergreen

Heteromeles arbutifolia	Toyon	evergreen
Holodiscus discolor	Cream Bush	deciduous
Lepechinia calycina	Pitcher Sage	evergreen aromatic
Lonicera involucrate	Hairy Honeysuckle	evergreen
Mahonia pinnatta*	Shinyleaf Barberry	evergreen
Malacothamnus arcuatus	Northern malacothamnus	evergreen
Myrica californica	Wax Myrtle	evergreen
Oemlaria cerasiformis	Oso Berry	deciduous
Physocarpus capitus	Pacific Ninebark	deciduous
Prunus ilicifolia*	Hollyleaf Cherry	evergreen
Rhamnus californica*	Coffeeberry	evergreen
Ribes aureum*	Golden Currant	deciduous
Ribes sanguieum	Red Flowering Currant	deciduous
Ribes Speciosum	Fuchia Flowering Gooseberry	deciduous
Rosa californica*	California Rose	deciduous
Salvia leucophylla	Purple Sage	deer proof
Salvia sonomensis*	Sage	perennial
Symphoricarpos albus	Common Snowberry	deciduous
Symphoricarpos mollis	Creeping Snowberry	deciduous
Trichostemma lanatum	Wooly Blue Curls	evergreen

LOW GROWING SHRUBS/GROUNDCOVER

Botanical Name	**Common Name**	**Foliage**
America maritima	Sea Pink	evergreen
Clarkia ameona (Godetia)	Farwell-to-Spring	annual
Eriogonum fasciculatum*	California Buckwheat	evergreen
Eriogonum grande*	Red Buckwheat	evergreen
Eschscholzia calironica	California Poppy	annual
Heuchera sanguinea	Coral Bells	evergreen
I. douglasiana, innominata	Pacific Coast Iris	evergreen
Zauchneria	California Fuchsia	deciduous
(epilobium canum)		

NATIVE GRASSES

Botanical Name	**Common Name**	**Foliage**
Elymus glaucus	Blue lyme grass	perennial/sun
Festuca californica	California Fescue	grasses/shade
Melica torreyana		grasses/shade
Nessella cernua	nodding needle grass	bunching/sun
Nessella pulchra	purple needle grass	bunching/sun

* Native plants for under oak trees

TABLE #2:
INVASIVE PLANTS

These are plants which seed themselves into wild areas and which will eventually crowd out native plants and reduce natural foods for our birds, insects and other animals. Please avoid planting these and try to remove existing plants where possible.

Botanical Name	Common Name
Ailanthus	Tree of Heaven
Arundo donax	Giant Reed
Cortaderia jubata	Pampus Grass
Cotoneaster spp.	Cotoneaster
Cytisus	French, Scotch or Spanish Broom
Eucalyptus globulus	Blue Gum Eucalyptus
Hedera canariensis	Algerian Ivy
Pennisetum	Fountain Grass
Pyracantha spp.	Pyracantha
Rubus procerus	Himalayan Blackberry
Tamarix	Tamarisk
Vinca major	Periwinkle

*Also included are any non-native plants which have berries or which spread by rhizomes.

It is especially important to keep the above plants from entering waterways.

TABLE #3:
POISONOUS PLANTS

These must be kept out of animal enclosures along pathways.

Arrowgrass	Cockleburr*	Grimsel	Lantana*
Black Henbane	Coffeebean*	Ground Ivy*	Larkspur*
Black Locust	Corn Cockle	Groundsel	Laurel*
Bladder Pod	Cotalaris*	Horse Nettle	Laurel Cherry
Bluebonnet*	Coyote Tobacco*	Horsetail*	Lily of the Valley*
Blue-green Algae	Creeping Ivy*	Indian Hemp	Locoweed
Boxwood	Curly Dock*	Ivy Bush*	Mallow*
Bracken Fern	Death Cammas	Jasmine*	Milkweed
Broomcorn	Desert Tobacco	Jeruselum Cherry*	Nightshade*
Burr Clover*	Ergot	Jimson Weed	Oaks*
Buckeye*	Fanwood	Johnson Grass*	Oleanders*
Castor Bean*	Fiddleneck	Johnswort	Old Man in Spring
Cheeseweed	Fitweed	Klamanth Weed	Pennygrass
Cherry Laurel*	Flax*	Knapweed	Pigweed*
Choke Cherry*	Goatweed	Knotweed	Plum Tree*
Climbing Bittersweet	Golden Corydalis*	Lambkill	Poison Hemlock*

Privet Hedge*	Rough Pea	Sour Dock*	Tree Tabacco*
Purple Sesband	Russian Knapweed	Staggergrass	Vetch
Rabbit Bush or Brush	St. Johnswort*	Star of Bethlehem*	Water Hemlock*
Ragweed*	Seasbane	Star Thistle	Wold Cherries
Rattlebox	Senecio	Stink Grass	Yew*
Rayless Goldenrod*	Sneezeweed	Tansy	
Raywort*	Sorghum	Teaweed	

(* Plants used for landscaping around homes along driveways and fence lines)

Published by Spur Magazine, June 1990.

APPENDIX C: Water Efficient Landscape Worksheet

This worksheet shall be completed by a Certified WELO Professional and is a required element of the Landscape Documentation Package.

Reference Evapotranspiration (ETo) for Los Altos Hills = 43.0 Maximum Lawn Area Allowed = 5,000 sq.ft.

Hydrozone # Planting Description[1]	Plant Factor (PF)	Irrigation Method [2]	Irrigation Efficiency (IE)[3]	ETAF (PF/IE)	Landscape Area (sq,ft)	ETAF x Area	Estimated Total Water Use (ETWU)[4]
Regular Landscape Areas							
				Totals	(A)	(B)	
Special Landscape Areas							
				Totals	(C)	(D)	
						ETWU Total	
						Parcel Water Budget (PWB)[5]	

Average ETAF for Regular Landscape Areas must be 0.55 or below for residential areas, 0.45 or below for non-residential.

ETAF Calculations

Regular Landscape Areas		
Total ETAF x Area	**(B)**	
Total Area	**(A)**	
Average ETAF	**B ÷ A**	

All Landscape Areas		
Total ETAF x Area	**(B+D)**	
Total Area	**(A+C)**	
Sitewide ETAF	**(B+D) ÷ (A+C)**	

1) Hydrozone #/Planting Description
e.g. #1 Low water use
#2 Medium water use
#3 High water use
#4 Lawn

2) Irrigation Method
Overhead spray or drip

3) Irrigation Efficiency
0.75 for spray head
0.81 for drip

4) ETWU (Annual Gallons Required) =
43 x 0.62 x ETAF x Area
where 0.62 is a conversion factor that converts acre-inches per acre per year to gallons per square foot per year.

5) PWB (Annual Gallons Allowed) =
[(1.0-slope) (0.8) (43.0) (0.62) [0.55 x (An-MDA) + (0.45 x SLA)]
PWB= Parcel water budget (units per year)
Slope = Average slope of the parcel or lot as a percentage of 1.0 to the nearest hundredth
0.8 = Water conservation factor
43.0 = Reference evapotranspiration (ETo) in Los Altos Hills, in inches/year
0.62 = Conversion factor (to gallons)
0.55 = ET adjustment factor (ETAF)
An = Net lot area (square feet)
MDA = The maximum development area (in square feet) allowed for the property.
0.45 = Additional water allowance for SLA
SLA = Special landscape area (square feet)
748 = Number of gallons in a unit (100 cubic feet) of water

APPENDIX D

CERTIFICATE OF COMPLETION

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

PART 1. PROJECT INFORMATION SHEET

Project Address _____

Project File # _____ **Date** _____

Name of Applicant		
Applicant Address		
City	State	Zip Code
E-mail	Phone	
Name of Property Owner		
Owner Address		
City	State	Zip Code
E-mail	Phone	

"I/we certify that I/we have received copies of all the documents within the Landscape Documentation Package and the Certificate of Completion and that it is our responsibility to see that the project is maintained in accordance with the Landscape and Irrigation Maintenance Schedule."

_____

Property Owner Signature **Date**

Please answer the questions below:

1. Date the Landscape Documentation Package was submitted to the local agency:

   _____

2. Date the Landscape Documentation Package was approved by the local agency:

   _____

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

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

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

Signature*_____ Date _____

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

Name (print)			
Title	License or Certification No.		
Company			
Street Address			
City		State	Zip Code
E-mail		Phone	

PART 3. IRRIGATION SCHEDULING

Attach parameters for setting the irrigation schedule on controller per ordinance Section 10-2.809(l)

PART 4. SCHEDULE OF LANDSCAPE AND IRRIGATION MAINTENANCE

Attach schedule of Landscape and Irrigation Maintenance per ordinance Section 10-2.809(m)

PART 5. LANDSCAPE IRRIGATION AUDIT REPORT

Attach Landscape Irrigation Audit Report per ordinance Section 10-2.809(n)

PART 6. SOIL MANAGEMENT REPORT

Attach soil analysis report, if not previously submitted with the Landscape Documentation Package per ordinance Section 10-2.809(e)

Attach documentation verifying implementation of recommendations from soils analysis report per ordinance Section 10-2.809(k)

APPENDIX E

Prescriptive Compliance Option

a. This appendix contains prescriptive requirements which may be used as a compliance option to the Town's Water Efficient Landscape Ordinance.

b. Compliance with the following items is mandatory and must be documented on a landscape plan in order to use the prescriptive compliance option:

1. Submit a Landscape Documentation Package which includes the following elements:
    a. Date
    b. Project applicant
    c. Project address (if available, parcel and/or lot number(s)
    d. Total landscape area (in square feet), including a breakdown of turf and plant material
    e. Project type (e.g., new, rehabilitated, public, private, cemetery, homeowner-installed)
    f. Water supply (e.g., potable, recycled, well) and identify the local retail water purveyor if the applicant is not served by a private well
    g. Contact information for the project applicant and property owner
    h. Applicant signature and date with statement, "I agree to comply with the requirements of the prescriptive compliance option to the WELO".
2. Incorporate compost at a rate of at least four cubic yards per 1,000 square feet to a depth of six inches into the landscape area (unless contra-indicated by a soil test);
3. Plant materials shall comply with all of the following;
    a. For residential areas, install climate adapted plants that require occasional, little or no summer water (average WUCOLS plant factor of 0.3) for 75% 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 of 0.3) for 100% of the plant area excluding edibles and areas using recycled water;
    b. A minimum three 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 contra-indicated.
4. Turf shall comply with all of the following:
    a. Turf shall not exceed 25% of the landscape area or 5,000 square feet in residential areas, and there shall be no turf in non-residential areas;
    b. Turf shall not be planted on sloped areas which exceed a slope of one (1) foot vertical elevation change for every four (4) feet of horizontal length;
    c. Turf is prohibited in parkways less than ten (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.

5. Irrigation systems shall comply with the following:
    a. Automatic irrigation controllers are required and must use evapotranspiration or soil moisture sensor data and utilize a rain sensor.
    b. Irrigation controllers shall be of a type which does not lose the programming date in the event the primary power source is interrupted.
    c. Pressure regulators shall be installed on the irrigation system to ensure the dynamic pressure of the system is within the manufacturers recommended pressure range.
    d. 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.
    e. 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 area must document a distribution uniformity low quarter of 0.65 or higher using the protocol defined in ASABE/ICC 802-2014.
    f. Areas less than ten (10) feet in width in any direction shall be irrigated with subsurface irrigation or other means that produces no runoff or overspray.
6. For non-residential projects with landscape areas of 1,000 sq. ft. or more, a private submeter(s) to measure landscape water shall be used.

c. 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.