

CITY OF GLENDALE

LANDSCAPE GUIDELINES

FOR

HILLSIDE DEVELOPMENT

1993



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A RESOLUTION OF THE CITY COUNCIL OF THE
CITY OF GLENDALE, CALIFORNIA, ADOPTING LANDSCAPE
GUIDELINES FOR HILLSIDE DEVELOPMENT IN CONJUNCTION
WITH AMENDMENTS TO CHAPTERS 23, 28, AND 30 OF
THE GLENDALE MUNICIPAL CODE.

WHEREAS, the Council has conducted noticed public hearings pursuant to the provisions of Sections 3-107 of the Glendale Municipal Code and Chapter 3, Title 7 of the Government Code of the State of California; and

WHEREAS, the Council has ordered the study of its policies and standards for development of the hillsides of Glendale; and

WHEREAS, the Council has amended its land use, open space, and conservation elements of its general plan, providing new policies for the development of the hillsides of Glendale; and

WHEREAS, the Council has amended Chapters 23, 28, and 30 of the Glendale Municipal Code in order to implement the General Plan and maintain consistency of the Glendale Municipal Code with the policies of the General Plan; and

WHEREAS, the Council has found that mandatory regulation of all possible landscaping criteria would prevent flexibility and creativity in landscape design, thereby providing inconsistency with the general plan policies; and

WHEREAS, the Council has found that the Landscape Guidelines for Hillside Development complement the intent and purpose of mandatory development regulations found in the Glendale Municipal Code, provide direction for landscaping to achieve consistency with the policies of the general plan, and provide flexibility and creativity for landscaping within hillside development; and

WHEREAS, the Council has found that the Landscape Guidelines for Hillside Development promote the public health, safety, comfort, convenience, and general welfare of the citizens of Glendale; and

WHEREAS, the Planning Commission of the City of Glendale held noticed public hearings on the Landscape Guidelines for Hillside Development on January 26, 1993, February 2, 1993, February 16, 1993, and February 23, 1993 and has recommended the adoption thereof to the City Council;

NOW, THEREFORE, BE IT RESOLVED BY THE COUNCIL OF THE CITY OF GLENDALE, that the Landscape Guidelines for Hillside Development, presented by the Planning Division to City Council, are hereby adopted as the document referenced in the Glendale Municipal Code, to be used by staff, boards, commissions, and Council in the assessment of landscape plans, landscape installation and landscape maintenance as directed by the Glendale Municipal Code.

Adopted this 16th day of March, 1993.


Mayor

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A. Introduction

The City of Glendale has developed a hillside landscape strategy for engineered slopes and natural slopes that have undergone vegetation modification that combines the goals of the city and those of residents into landscape design guidelines. Many of these divergent goals can be met by the proper utilization of appropriate plant material, irrigation techniques, and maintenance guidelines. These landscape guidelines provide a framework for successful design and management of engineered slopes.

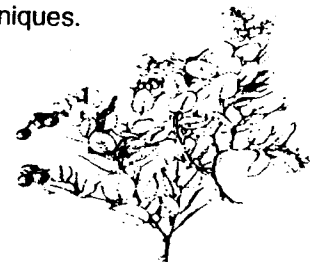
Located adjacent to a diverse, colorful, and rugged chaparral hillside environment, Glendale is an urban center with a rich history. The city has developed a progressive urban architectural style, and the hillside residential areas reflect this style as well.

Glendale's hillside developments are visible from the Ventura (134), Glendale (2), Foothill (210), and Golden State (5) freeways. These views instill visitors and residents with a sense of the character of Glendale. The striking urban skyline and dramatic backdrop of the Verdugo and San Rafael Mountains give the city its identity within the region. Some of the undeveloped hillside areas are being considered for residential development. However, hillsides are environmentally sensitive, highly visible, and developments within them are potentially controversial. Individual home-owners, homeowner associations, the Glendale Fire Division and other city departments have

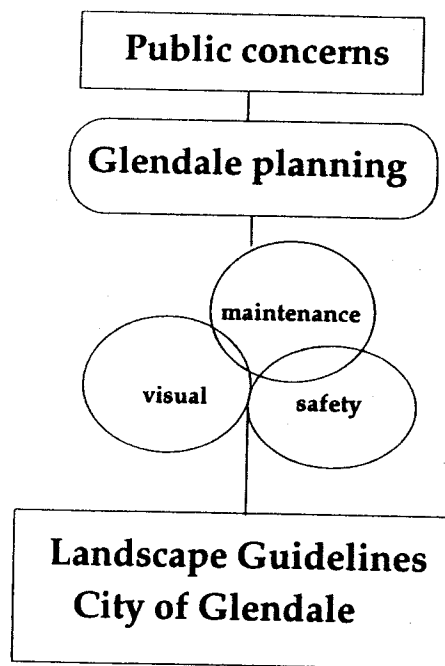
particular concerns about hillside development. One of the most important issues for the City is the development of plant palettes (lists) that merge the natural environment with developed areas. In this way, a suburban hillside development will be visually unobtrusive and preserve the natural quality of the hillside areas.

The Fire Division and the Parks, Recreation and Community Services Division are particularly concerned about fire safety and maintenance in the hillsides where chaparral is the predominant plant community. Revegetation of burned or modified slopes with selected native and non-native plants can address these concerns while ensuring the aesthetic quality of the hillsides.

These landscape guidelines recommend the use of drought tolerant plants, preservation of large specimen trees, and vegetation that is easily maintained. These guidelines are structured to protect the visual quality of the hillsides and promote fire safety and appropriate maintenance techniques.



B. Background



1. Guideline Development Process

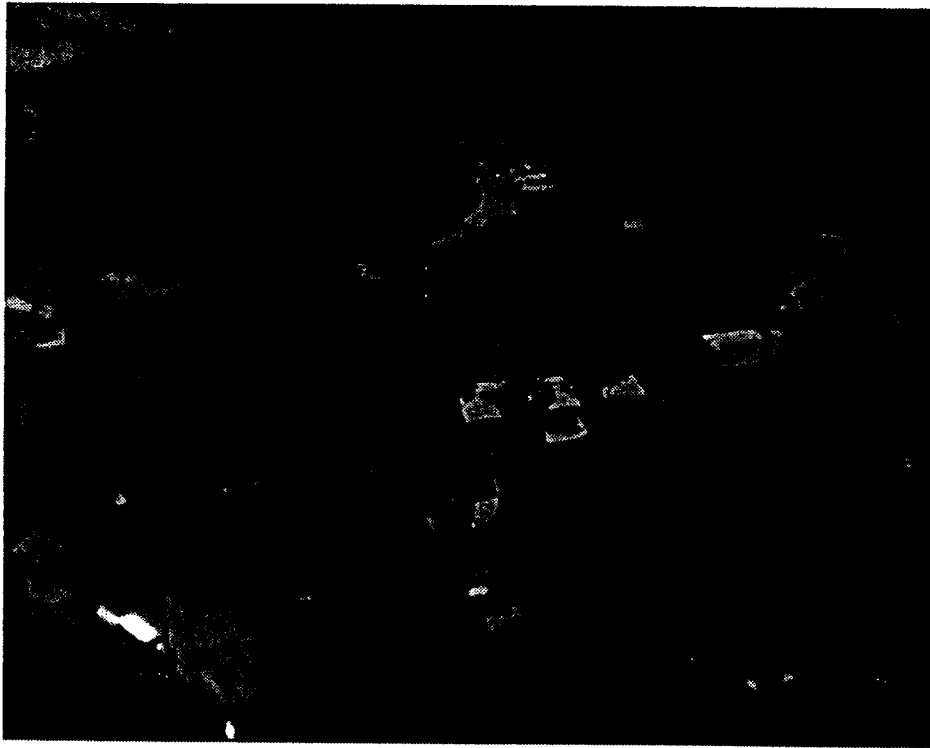
The visual impact of hillside development led the city to undertake intensive studies of future development areas, and complete an analysis of the issues, and a study of other cities' hillside design guidelines. Intense competition for remaining open space creates the need for the protection of natural resources. This must be balanced with the need to provide housing and recreation areas in Glendale. City officials must reconcile these concerns and provide a comprehensive landscape program within these sensitive areas.

2. Glendale Hillside Environment

While a landscape is usually visualized as a composition of shrubs, trees, and flowers, plants are only one element in a complex interrelationship with other components such as climate, soil, topography, insects, wildlife, and hydrology. A stable relationship is developed in the landscape, through specific patterns, behavior, and dependencies of one specie upon the other. Over generations, an interwoven network or 'community' emerges. This vegetation community is dependent upon other members for its health and to ensure a continuation of its genetic material.

Examples of this relationship include shrubs and trees that provide cover and food for any number of animals, while the intertwining root system controls soil and erosion. A specific character, diversity, and stability emerges. This vegetation community represents the structure and visual quality that these landscape guidelines seek to emulate.

The Glendale hillsides support several native vegetation communities that are predominantly chaparral. Chaparral is a dense scrub community. The name is from the Basque word for scrub oak *Chabarro*. Chaparral communities have become resilient to harsh drought conditions, occasional flooding, fire, and frost. These plant communities are unique to Mediterranean climates, such as those occurring in Italy, Greece, and Chile.



HISTORIC HILLSIDE DEVELOPMENT

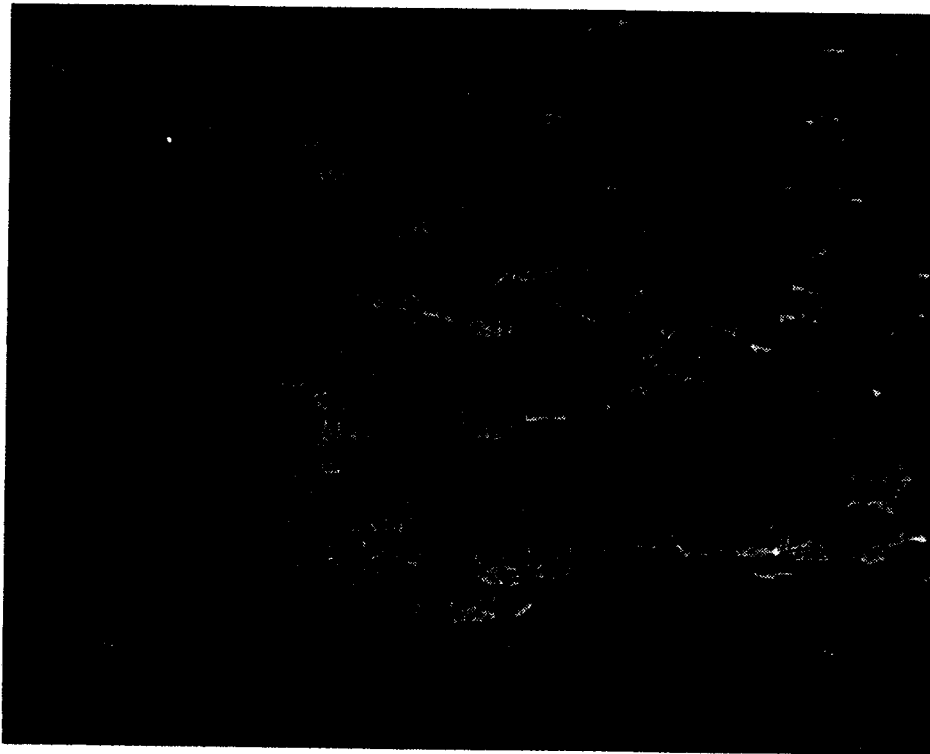
In the 19th and early 20th centuries, the population of southern California increased dramatically as thousands of new residents arrived from mid-west and eastern states. These individuals imported plant material that displaced the native grasslands and chaparral. Many of these non-native plants do not have the same environmental adaptations as the native plant communities. They require imported fertilizer, insecticides, and supplemental water for survival. Furthermore, the use of these non-native plants in the hillside environment tends to visually magnify the edge between the natural and built environment.

In an ecological association, the removal or addition of one element affects the balance and stability of those around it. The implications of disturbing this environment must be understood so that any changes made will protect and strengthen the hillside landscape.

Hillside grading removes more than just the plant community that has developed over generations. It also produces the potential for erosion, removes habitat, reduces pollution controls, and changes the hillside character. Replacement of the removed plant community with a single plant type, or only a hydroseed mixture, will not provide the stable and rich diversity of the historic/native plant community. These guidelines call for the use and/or preservation of existing plant material. This approach uses planting relationships that will eventually form the ecological structure of the engineered slopes and allow for stability to evolve as engineered slopes naturalize.



C. HILLSIDE LANDSCAPE GUIDELINES



TODAY'S HILLSIDE DEVELOPMENT

1. Purpose and Intent

Although many factors contribute to successful hillside developments, appropriate plant material will contribute to the fulfillment of the City's goals for hillside areas. These goals include the preservation of natural resources, protection of public health and safety, and minimization of environmental impacts on hillside developments.

2. Organization of the Guidelines

Hillside development within a chaparral plant community must address the following issues:

Plant Material

Plant Selection

Visual Impact

Fire Zone Management

Erosion Control

Irrigation

Maintenance

The City has also adopted design criteria for other critical components of hillside development including grading, site location, density, and architectural design. The landscape guidelines have been developed with these criteria in mind.

3. The Plant Palettes

The following is a general listing of fire resistant, erosion controlling, plant material. It is not the goal of these guidelines to design each slope. The plant palettes are to be used for plant selection to create engineered slopes which meet the stated goals of the landscape guidelines.

The plant palettes are short. This is intentional because the palettes contain only drought tolerant, erosion controlling plants. A licensed landscape architect shall provide final planting and irrigation plans with specifications for each site condition.

The general listing of plants is presented as two plant palettes (See Figure 2 Naturalizing Plant Palette and Figure 3 Ornamental Plant Palette). These palettes have been designed to minimize the visual contrast between engineered slopes and the natural hillsides.

Naturalizing Palette. Glendale hillsides contain vegetative communities dominated by chaparral. The goal of the naturalizing plant palette is to create a slope in which the ecological elements of a native hillside are realized. It is to be used on engineered slopes adjacent to native vegetation.

Ornamental Palette. This plant palette can be used where the engineered slope is adjacent to existing ornamental vegetation. If the area is large enough, the naturalizing plant palette can be blended into the ornamental palette by means of a 150 foot interface as described in these guidelines, and as illustrated in Figure 1.

Both of these plant palettes use drought tolerant, low maintenance plants. There are some plants, in the Naturalizing Palette that contain oils which make them more prone to fire. These plants have been included in this palette with a cautionary note to use them infrequently and in areas away from structures. An example of

such shrubs are the salvias. In pure stands these plants can create a highly flammable situation. However, when used infrequently on a slope, they can serve to create a naturalized appearance.

Plant material from the plant palettes will help reduce erosion and fire hazard and enhance the visual quality of engineered slopes to more closely resemble natural conditions.

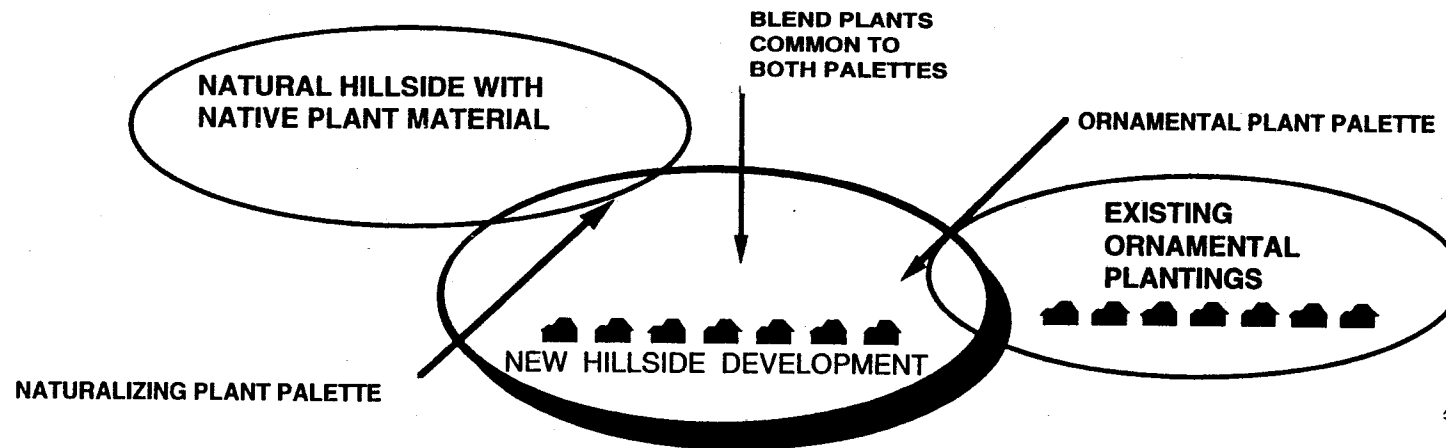


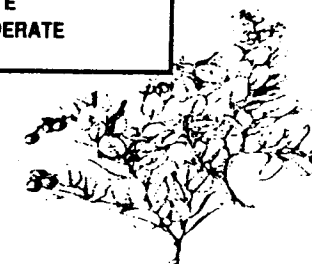
FIGURE 1 APPLICATION OF THE PLANT PAlettes

| SCIENTIFIC NAME | COMMON NAME | ASPECT | SPACING | FREQUENCY | MOISTURE RATE |
|---|---------------------|--------|---------|-----------|---------------|
| TREES | | | | | |
| <i>Alnus rhombifolia</i> | White Alder | NE | 15-25 | 2 | LOW-MODERATE |
| <i>Arbutus unedo</i> | Strawberry Tree | NESW | 15-20 | 3 | HIGH |
| <i>Cercis occidentalis</i> | Western Redbud | NES | 10-15 | 2 | MODERATE |
| <i>Rhamnus californica</i> | Western Scrub Holly | NES | 15-20 | 2 | MODERATE |
| <i>Quercus agrifolia</i> | California Oak | NESW | 25-30 | 1 | LOW-MODERATE |
| <i>Quercus laevis</i> | Live Oak | NESW | 25-30 | 2 | LOW-MODERATE |
| SHRUBS | | | | | |
| <i>Arbutus unedo</i> | Strawberry Tree | NESW | 10-15 | 1 | LOW-MODERATE |
| <i>Artemisia tridentata</i> | Sagebrush | SW | 5-10 | 2 | LOW-MODERATE |
| <i>Chamaecrista fasciculata</i> | Chamaecrista | SW | 5-10 | 2 | LOW |
| <i>Chrysothamnus viscidiflorus</i> | Golden Cholla | SW | 5-10 | 2 | LOW |
| <i>Eriogonum fasciculatum</i> | Cholla | SW | 5-10 | 2 | LOW |
| <i>Graydonia californica</i> | Graydonia | NESW | 10-15 | 2 | LOW-MODERATE |
| <i>Rhamnus californica</i> | Western Scrub Holly | NES | 10-15 | 2 | LOW-MODERATE |
| <i>Rhamnus alaternus</i> | Alatern Holly | SW | 5-10 | 2 | LOW |
| <i>Quercus agrifolia</i> | California Oak | NESW | 10-15 | 2 | LOW-MODERATE |
| <i>Quercus laevis</i> | Live Oak | NESW | 10-15 | 2 | LOW-MODERATE |
| <i>Rhamnus californica</i> | Western Scrub Holly | NES | 10-15 | 2 | LOW-MODERATE |
| <i>Rhamnus alaternus</i> | Alatern Holly | SW | 10-15 | 2 | LOW-MODERATE |
| <i>Rhus glabra</i> | Summit Holly | NESW | 10-15 | 2 | LOW-MODERATE |
| <i>Rosa californica</i> | California Rose | SW | 10-15 | 2 | LOW-MODERATE |
| <i>Salvia leucantha</i> | White Sage | SW | 10-15 | 2 | LOW-MODERATE |
| GROUND COVERS | | | | | |
| <i>Asplenium platyneuron</i> | Rock Fern | SW | 5-10 | 2 | LOW-MODERATE |
| <i>Erigeron annuus</i> | Field Amaranth | NES | 5-10 | 2 | LOW-MODERATE |
| <i>Opuntia basilaris</i> | Cholla | NES | 5-10 | 2 | LOW-MODERATE |
| <i>Pereskia aculeata</i> | Cholla | NES | 5-10 | 2 | LOW |
| <i>Trifolium repens</i> | White Clover | SW | 5-10 | 2 | LOW-MODERATE |
| <i>Zinnia mexicana</i> | Mexican Zinnia | NESW | 5-10 | 2 | LOW-MODERATE |
| <i>Yucca elata</i> | Joshua Tree | SW | 5-10 | 2 | LOW-MODERATE |
| HERBACEOUS PERENNIAL AND ACCENT PLANTS | | | | | |
| <i>Adiantum species</i> | Adiantum | SW | 5-10 | 2 | LOW-MODERATE |
| <i>Asplenium platyneuron</i> | Rock Fern | SW | 5-10 | 2 | LOW-MODERATE |
| <i>Erigeron annuus</i> | Field Amaranth | NES | 5-10 | 2 | LOW-MODERATE |
| <i>Opuntia basilaris</i> | Cholla | NES | 5-10 | 2 | LOW-MODERATE |
| <i>Pereskia aculeata</i> | Cholla | NES | 5-10 | 2 | LOW-MODERATE |
| <i>Trifolium repens</i> | White Clover | SW | 5-10 | 2 | LOW-MODERATE |
| <i>Zinnia mexicana</i> | Mexican Zinnia | NESW | 5-10 | 2 | LOW-MODERATE |
| <i>Yucca elata</i> | Joshua Tree | SW | 5-10 | 2 | LOW-MODERATE |

FIGURE 2 NATURALIZING PLANT PALETTE

| SCIENTIFIC NAME | COMMON NAME | ASPECT | SPACING | FREQUENCY | MOISTURE RATE |
|---|-----------------------|---------|---------|-----------|---------------|
| TREES | | | | | |
| <i>Arbutus unedo</i> | Strawberry Tree | N,E,S,W | 15-20' | 1 | LOW-MODERATE |
| <i>Lagerstroemia indica</i> | Crape Myrtle | E,S,W | 15-25' | 2 | LOW-MODERATE |
| <i>Koelreuteria bipinnata</i> | Chinese Flame Tree | N,E,S,W | 25-40' | 2 | MODERATE |
| <i>Pistacia chinensis</i> | Chinese Pistache | N,E,S | 20-25' | 2 | MODERATE |
| <i>Platanus acerifolia</i> | London Plane Tree | N,E,S,W | 25-35' | 1 | MODERATE |
| <i>Platanus racemosa</i> | Western Sycamore | N,E,S | 15-20' | 2 | MODERATE |
| SHRUBS | | | | | |
| <i>Arbutus unedo</i> 'Compacta' | Dwarf Strawberry Tree | N,E,S,W | 10-15' | 1 | LOW-MODERATE |
| <i>Cotoneaster lacteus</i> | Red Clusterberry | N,E,S,W | 10-15' | 2 | LOW-MODERATE |
| <i>Jasminum mesnyi</i> | Primrose Jasmine | N,E,S,W | 10-15' | 2 | LOW-MODERATE |
| <i>Lantana camara</i> varieties | Lantana | S,W | 5-10' | 2 | LOW |
| <i>Plumbago auriculata</i> | Cape Plumbago | S,W | 10-15' | 2 | LOW-MODERATE |
| <i>Prunus ilicifolia</i> | Holly-leaved Cherry | N,E,S,W | 10-15' | 2 | LOW-MODERATE |
| <i>Rosa banksiae</i> | Lady Bank's Rose | S,W | 10-15' | 2 | LOW-MODERATE |
| <i>Tecomaria capensis</i> | Cape Honeysuckle | N,E,S,W | 10-15' | 2 | LOW-MODERATE |
| <i>Xyloma congestum</i> | Shiny Xyloma | E,S,W | 8-10' | 2 | LOW-MODERATE |
| GROUND COVERS | | | | | |
| <i>Ceanothus griseus</i> var. <i>horizontalis</i> | Carmel Creeper | N,E,S | 10-12' | 2 | LOW-MODERATE |
| <i>Delosperma alba</i> | White Iceplant | S,W | | 2 | LOW-MODERATE |
| <i>Duchesnea indica</i> | Mock Strawberry | N,E | | 2 | MODERATE |
| <i>Gazania rigens leucolaena</i> | Trailing Gazania | E,S,W | | 2 | LOW |
| <i>Lantana montevidensis</i> | Trailing Lantana | E,S,W | 4-5' | 2 | LOW-MODERATE |
| <i>Lonicera japonica</i> 'Halliana' | Half's Honeysuckle | N,E,S,W | 4-5' | 1 | LOW-MODERATE |
| <i>Vinca major</i> | Common Periwinkle | N,E | | 3 | MODERATE |
| HERBACEOUS PERENNIAL AND ACCENT PLANTS | | | | | |
| <i>Agapanthus africanus</i> | Lily of the Nile | E,S,W | | 2 | MODERATE |
| <i>Dielys vegeta</i> | Fortnight Lily | E,S,W | | 2 | LOW-MODERATE |
| <i>Hermerocallis</i> | Daylily | E,S,W | | 2 | MODERATE |
| <i>Kniphofia uvaria</i> | Red Hot Poker | E,S,W | | 2 | LOW-MODERATE |
| <i>Penstemon species</i> | Penstemon | E,S,W | | 2 | |

FIGURE 3 ORNAMENTAL PLANT PALETTE



4. Guidelines

The intent of the Landscape Design Guidelines is to preserve and enhance the visual quality of Glendale's hillsides and minimize the danger of erosion and fire. These guidelines are meant to serve as statements of concern and intent. They are not standards, except where it is technically necessary.

The guidelines are separated into the following sections:

- 1.0 INVENTORY OF EXISTING CONDITIONS
- 2.0 PLANT PALETTES
- 3.0 HYDROSEED MIX
- 4.0 PLANTING DESIGN
- 5.0 PLANT DIVERSITY
- 6.0 EROSION CONTROL AND SLOPE PREPARATION
- 7.0 PLANT STOCK AND EXISTING PLANT MATERIAL
- 8.0 FIRE ZONE MANAGEMENT
- 9.0 PLANTING TECHNIQUES
- 10.0 IRRIGATION
- 11.0 MAINTENANCE

The Landscape Design Guidelines have established the naturalization of graded hillsides as City policy. This can be achieved in varying degrees through the selection of plant material that is native to the area or is compatible with native plant material. Compatible plants may be cultivars of native plants, or they may be non-invasive species with similar planting requirements.

1.0 Inventory of Existing Conditions

In order to achieve an effective naturalizing treatment after development, an inventory of the pre-development conditions must be taken. This inventory should document the flora and fauna, aspect, soil texture, chemistry and depth, horizontal and vertical arrangement of vegetation by type, density, and massing of plants.

2.0 Plant Palettes

2.1 Naturalizing Plant Palette

On slopes adjacent to natural vegetation use this palette for all plant material (except for hydroseed mix). This palette shall be used in conjunction with the Fire Zone Management Guidelines (Sec. 9.0).

2.2 Blending Naturalizing Plant Palette with the Ornamental Plant Palette

The Ornamental Plant Palette (Sec. 2.3), can be blended into naturalized plantings when the width of the planting areas exceeds 150 feet. The entire 150 feet shall be used for the blending.

2.3 Ornamental Plant Palette

This palette can be used on graded slopes adjacent to existing ornamental slopes or homesites. This palette shall be used in conjunction with the Fire Zone Management Guidelines (Sec. 9.0).

3.0 Hydroseed Mix

Hydroseeding is used to quickly establish minimal erosion control. Groundcovers and some shrubs can be scattered about a slope to further enhance the naturalized appearance.

3.1 The seed mix for each project shall be described in the landscape plans prepared by a licensed landscape architect.

3.2 The hydroseed mix for each acre shall be comprised of:

- 1,500 to 2000 pounds of virgin wood fiber
- 300 pounds soluble fertilizer
- seed mix at 24 pounds/acre (see below)
- Water

3.3 All seed shall be delivered to the job site in sealed bags with purity, germination and pure live seed count verifications on the labels. All seed should be inspected and approved prior to adding to hydroseed slurry.

3.4 Naturalizing hydroseed plants shall include

- A cover crop of such as a Zorro fescue
- Perennial native grasses (California brome)
- Nitrogen fixers such as a native lupine
- 1-pound/acre of Escholzia californica (California Poppy)
- Other species such as:
Diplicus species (Monkey Flower)
Epilobium californicum (California Fushia)

3.5 Jute netting is required in sandy soils. No netting is required in clay or loam soils.

3.6 On cut slopes scarify the planting surface.

4.0 Planting Design

The intent of the guidelines is to maintain the essential natural hillside characteristics, such as major land forms, vegetation and wildlife communities, scenic qualities and open space.

4.1 All disturbed areas except for those containing structures and paved areas such as driveways, patios and paths, should be re-vegetated with low fuel, erosion controlling, drought tolerant vegetation. Plants with similar water usage should be grouped together.

4.2 The design objectives of landscape plans should include balance, pattern, texture, and color considerations, to achieve a blending with the native vegetation. Clustering of the planting should recognize variation in horizontal and vertical elements along the sloped areas. Ridgeline plantings silhouetted against the skyline should be considered. Non-invasive species should be used near natural areas. Planting of native species should be emphasized near natural areas and along trails.

4.3 Cluster groups of selected plants to create a natural effect. The concepts of fire prevention planting require departure from uniform spacing requirements.

4.4 Space plants so flames cannot jump between plants or from plants to structures. Space groupings so that branches do not touch other groupings when fully mature. Grouped plantings are less likely to spread fire than rows

or hedges. Create a fuel mosaic with clear space between groups. Do not group medium sized shrubs beneath trees or taller shrubs.

4.5 Plants should be of a sufficient size and spacing for rapid re-vegetation. Irrigation (Sec. 11.0) should be provided for the establishment of container plants and seed mixes. Trees and shrubs near structures should be planned to allow for solar radiation in the winter and provide shade in the summer.

4.6 Plantings should be utilized to create a sense of undulation and visual relief along the vertical planes, consistent with the characteristics of the surrounding hillsides.

4.7 Trees should be grouped within swale areas to more closely reflect natural conditions. They should not impede drainage. The swales are areas of the greatest moisture concentration, and the portion of hillsides where trees naturally group. The grouping of trees in swales and on property lines shall maintain views.

4.8 Vegetation in and around buildings should, to the greatest extent possible, have color and texture similar to that of the natural landscape.

5.0 Plant Diversity

Diversity creates stable communities which have varying root depths, different nutrient requirements, and flowering cycles. It is the intent of this section to create slopes which will perform as natural slopes perform. They will be able to withstand natural challenges to their health and existence.

5.1 Planting designs for sloped areas should incorporate a variety of plants, planted from seed and container, and be chosen for both short and long-term effects. Fast growing plants, which offer good soil coverage, are necessary in any slope project. If effective plant coverage is not achieved, surface erosion can be caused by winter rains or heavy irrigation practices. It is important to balance the plant palette to include slow growing, longer-lived plants, which will develop the landscape character in the years to come.

5.2 Use a diversity of plant species. Diversity will promote successful planting in a variety of different site conditions and provide resistance to pests and diseases. When only one or two plant types are used, they are likely to perform poorly in some areas or be eliminated if they experience disease problems.

5.3 Use both seeds and container plants. Planting for diversity includes installing slope plantings with both seed and container plant materials. Seed planting is most effective in establishing plants on difficult sites. Seedlings get their roots started in small cracks and can produce very quick growth. Most cover crops and ground cover plants are suited to seed planting techniques. For more details see the hydroseeding guidelines (Sec.3.0).

6.0 Erosion Control and Slope Preparation

The erosion control guidelines present a framework for the selection of plant material that will minimize the environmental impact of water and wind erosion.



6.1 The faces of cut and fill slopes and the project site shall be prepared and maintained to control erosion. This control will consist of effective planting and irrigation and shall be installed as soon as practical.

6.2 Select tree and shrub species which have deep rooting habits. Wide, spreading shrubs and mounding trees will eventually provide good surface coverage, stabilize lower soil levels, and be less demanding of supplemental water.

6.3 Steep slopes and crib walls require specific plantings. Walls or steep slopes facing north should use *Vinca minor* (Dwarf Periwinkle), *Ribes viburnifolia* (Evergreen currant) and *Lonicera japonica* 'Halliana' (Hall's Honeysuckle). Sunnier slopes can use *Lonicera japonica* 'Halliana' (Hall's Honeysuckle), *Salvia sonomensis* (Creeping Sage), or *Bacharis pilularis* 'Santa Ana' (Prostrate Coyote Bush)

6.4 Where necessary, permanent or temporary erosion control devices such as desilting basins, check dams, cribbing, riprap or other devices or methods shall be employed to control erosion.

6.5 Slopes must be engineered and constructed so they are fundamentally stable. Planting can provide effective surface erosion control and add aesthetic character, but it cannot be relied upon to remedy basic structural problems caused by difficult soil types, or weaknesses in subgrade materials.

6.6 Slopes should be constructed with contoured shapes and rough, irregular surfaces. The contoured face of a slope creates differences in sun exposure and influences drainage, allowing it to support different types of plant growth. This approach softens the visual impact of slopes by creating shapes that fit into the

surrounding land character. The rough and irregular surfaces will provide niches to collect soil and moisture.

6.7 When a slope is cut into bedrock and consolidated subsoils, it should consist of many small terraces to improve the conditions which support more vigorous plant growth. Fill slopes normally have a smooth finish surface and have been compacted to a uniform soil density. While fill slopes provide better conditions for planting, it is still recommended that the finish surface be rough enough to trap small amounts of water and nutrients to support plant growth.

6.8 All grading (cut or fill), including roadsides, should undergo permanent re-vegetation in a timely manner to minimize the chance of erosion and siltation.

7.0 Plant Stock and Existing Plant Material

The success of re-vegetation projects are greatly improved by the selection of appropriate plant stock.

7.1 For large projects, plant material shall be locally grown; preferably within a 100 mile radius of the site in a similar climate zone. Acquisition of this type of plant material may be achieved through contract growing or the purchase of local stock.

7.2 All plant materials shall be of the quantities, sizes and types as indicated on the project drawings, or specified therein. No substitutions shall be permitted without the written authorization of the City. At its discretion, the City may retain the services of a licensed Landscape

Architect to review and certify installation of plant materials.

7.3 Plants grown in small containers such as the "D-pots", (2 1/2" x 9" black plastic tubes), will adapt and establish themselves quickly. This is very important if only a short term irrigation system is planned.

7.4 Invasive species shall not be permitted under any conditions. Included in this list are:

| | |
|---------------------------------|-------------------|
| Acacia baileyana | Bailey Acacia |
| Acacia decurrens | |
| Acacia melanoxylon | Blackwood Acacia |
| Ailanthus altissima | Tree-of-Heaven |
| Albizia distachya | Plume Albizia |
| Atriplex semibaccata | Creeping Saltbush |
| Centranthus ruber | Red Valerian |
| Cortaderia jubata | |
| Cytisus monospeulanus | French Broom |
| Cytisus scoparius | Scotch Broom |
| Cytisus racemosus | Easter Broom |
| Lathyrus latifolius | Wild Sweet Pea |
| Pennisetum setaceum | Fountain Grass |
| Robinia pseudoacacia | Black Honeylocust |
| Schinus terebinthifolius | Brazilian Pepper |
| Spartium junceum | Spanish Broom |
| Tamarix aphylla | Athel Tree |
| Ulex europaeus | Gorse |

7.5 Plant material shall be pest-free.

7.6 Indigenous trees (oaks and sycamores) should be preserved in accordance with the City's Indigenous Tree Ordinance (Section 1, Article 13, Ordinance #4582 of the Glendale Municipality Code). Trees which cannot be preserved should be replaced with a tree or trees of an equal size and/or value, of the same species, as established by the tables published by the Council of Tree and Landscape Appraisers and the U.S. Department of Labor Consumer's Price Index.

8.0 Fire Zone Management

The intent of the Fire Zone Management Guidelines is to outline methods of using the naturalizing and ornamental plant palettes to minimize fire risk and damage to structures.

8.1 Fire Zone Management planting shall be required around all flammable structures. Where there are no structures, the Naturalizing Plant Palette guidelines shall be used. The Naturalizing Plant Palette is to be used where the slopes to be planted are adjacent to hillsides with native vegetation.

Fire-Resistant Plants - burn slowly

Fire Retardant Plants - are less likely to burn and take longer to ignite.

Low Fuel Volume Plants - have little fuel to contribute to a fire.

8.2 The fire resistance of plants depends their growth habits, on location, growing conditions and level of maintenance. Plants considered fire retardant can become a fire hazard if they have lush green top growth covering a tangle of dry branches and leaves several feet high. When these same plants are trimmed, and dry material removed (trim in spring followed by feeding and a light watering), the new top growth is again fire retardant.

8.3 A minimum buffer distance of 100 to 150 feet around structures should receive a comprehensive landscaping program. There are situations and site conditions where additional modification is necessary and each case must be evaluated individually. Under the provisions of the City's Hazardous Vegetation Ordinance (Ordinance #4935, Division III, Article 2, Volume VI of the Building and Safety Code) The mini-

mum buffer distance of 100 feet can be increased to 200 feet at the discretion of the City Fire Chief if fire hazards are present.

Fire Management Zones

Within the buffer distance, four Fire Management Zones, described below, and shown in Figure 4, can be established.

Zone 1 Selective thinning of native vegetation

Zone 2 Low Fuel Volume planting

Zone 3 Fire retardant planting

Zone 4 Ornamental planting

8.3.1 Zone 1 - Selective Thinning

Existing native vegetation on ungraded portions of the site shall be selectively removed. Foliage mass must be reduced by removing large shrubby plants and dense groupings. This will reduce the fuel volume and lower the intensity of any fire that may approach buildings. The thinning will be performed in a manner that will create a natural appearance and will not expose excess soil area.

8.3.1.a High Fire Hazard

Within Zone 1 remove all:

- **Adenostoma fasciculatum**
Chamise, Greasewood
- **Adenostoma sparsifolium**
Red Shank
- **Artemisia californica**
California Sagebrush
- **Eriogonum fasciculatum**
Common Buckwheat
- **Salvia species**
Sage Family

8.3.1 b Slope and Soil Stabilization and Habitat Value

These plants provide good slope and soil stabilization and wildlife habitats and are not as flammable as the high fire hazard species. When thinned to reduce their foliage mass, they may be retained in limited numbers to prevent high intensity fires.

Thin:

Arctostaphylos species

Ceanothus species

Comarstaphylos diversifolia

Summer Holly

Garrya species

Heteromeles arbutifolia

Toyon, Christmas Berry

Juglans species

Rhamnus species

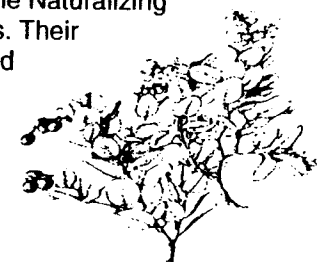
Rhus species

Quercus species

8.3.2 Zone 2 - Low, Slow Burning Plantings

Between the native landscape of Zone 1 and structures, the volume of vegetation should continue to be reduced and replaced with low growing, slow burning plant species from the Naturalizing Plant Palette.

8.3.2.a Plant low fuel volume and fire resistant plant material from the Naturalizing and Ornamental plant palettes. Their low growth patterns and limited foliage mass can diminish the intensity of fires and prevent erosion.



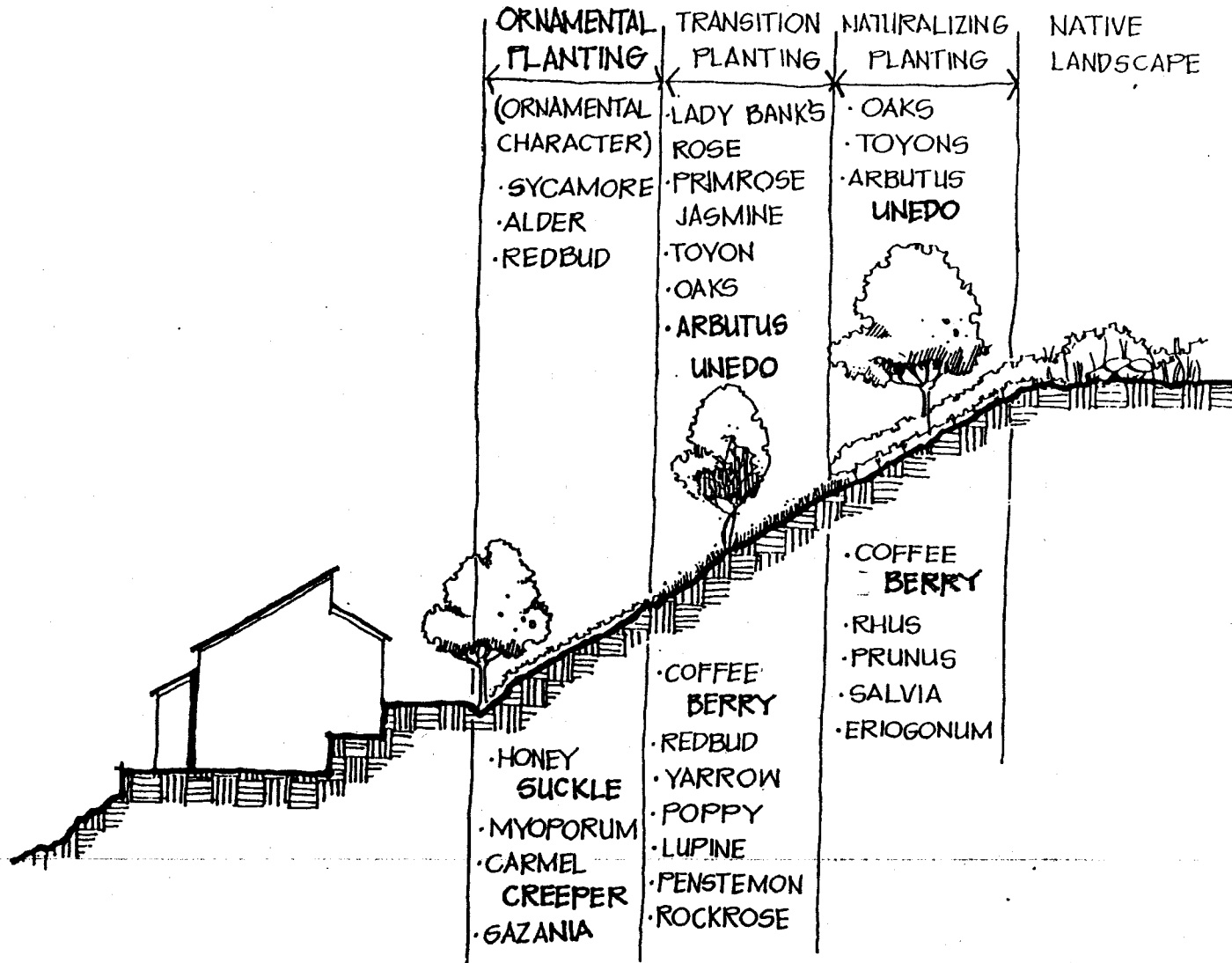


FIGURE 4 HILLSIDE PLANTING ZONES

8.3.3 Zone 3 -Fire Retardant Plantings

This zone establishes the fire buffer zone, which is the maximum fire prevention edge.

8.3.3.a Using the Ornamental and Naturalizing plant palettes, plant low fuel volume ground cover plants which need to receive regular irrigation. These are best suited to stop any ground fire that could reach this area. The low foliage level, in combination with the high moisture content, is the key to this planting.

8.3.3.b A regular program of watering and weed control is necessary. This planting is much more domesticated in appearance, and provides high soil stabilization. It shall be designed to blend with Zone 2 in a manner that follows the guidelines.

8.3.3.c Depending upon the degree of fire risk, this planting can vary from 20 to 25 feet in width in order to achieve the appropriate level of safety. While there are some drought tolerant plants which can provide good fire safety in this zone, a little more water and maintenance should be invested to achieve the maximum fire barrier.

8.3.4 Zone 4 -Ornamental Planting

This zone is the area of residential plantings immediately surrounding the structure.

8.3.4.a The planting which is located around buildings should be carefully placed and consist of fire retardant species as specified in the Ornamental and, to a limited extent, Naturalizing plant palettes.

8.3.4.b The amount of tall trees should be limited. Foliage should be thinned and dead branches removed from large plants next to buildings.

9.0 Planting Techniques

9.1 Weed Removal

9.1.1 All planting areas with established grasses and weeds shall be sprayed with a non-selective contact herbicide by an approved landscaped pest control advisor. Application of herbicides shall be done in strict accordance with manufacturers standards for application rates and safety precautions. Leave sprayed plants intact for at least fifteen days to allow

complete systemic kill. Allow more time if cold weather and rain inhibit the growing activity of the plants. After maximum kill has occurred, thoroughly scrape and clear off treated weedy vegetation and debris from planting areas. Irrigate the planting areas three to four times daily for fifteen days to germinate existing weed seeds. Discontinue irrigation a minimum of three to four days prior to applying a second herbicide application. Apply a second application of non-selective herbicide to new weed growth and leave sprayed plants intact for at least seven days before applying hydroseed material.

9.1.2 To increase native re-vegetation opportunities, top soil from the site should be stored and respread within one year. This

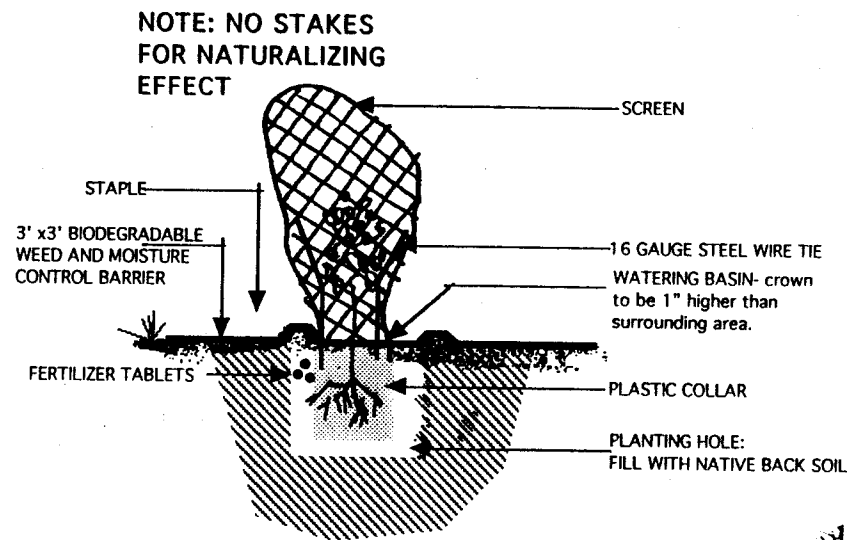
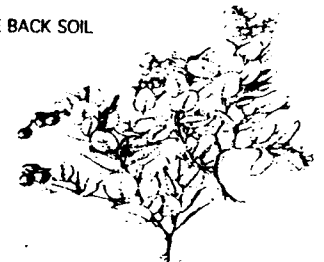


FIGURE 5. NATURALIZING PLANTING DETAIL FOR CONTAINER PLANTS AND TREES

NOT TO SCALE



topsoil will contain viable seed and rhizomes and will help to establish a substrate for quick plant establishment.

9.1.3 Hydroseeding for erosion control shall occur after the drilling of planting holes and prior to installing plant material. Hydroseeding specifications shall be approved by the city before application (Sec. 3.0).

9.2 Container Plantings

9.2.1 Auger planting holes 1 1/2 times larger than the rootball. Scarify the hole and backfill with native top soil. See Figure 4.

9.2.2 Planting holes, slightly larger than the size of the container plant's root ball, shall be dug into the augured hole.

9.2.3 Scarify the sides of the holes and backfill them with suitable soil from the site, tamp and irrigate.

9.2.4 Plants shall be at least six inches high with a well developed root system. The roots should reach the bottom of the tube at the time of planting.

9.2.5 The crown of the planted rootball should not be lower than it was in the nursery container. A crown two inches to three inches above the grade of the site is preferred. Construct a shallow water basin around each plant to direct water to the rootzone. Care should be taken to prevent water from ponding at the base of the plant. Slow release fertilizer should be added to the planting holes according to the manufacturer's directions.

9.2.6 Install moisture and weed barriers. Moisture and weed barriers will improve the

success rate if installed when plants are small. Weeding will be necessary until plants have become established.

10.0 Irrigation

To assure that drought tolerant plant materials survive long enough to become established and to support non-drought tolerant plantings, appropriate irrigation must be designed, installed and maintained. It is recognized that many landscape designs using drought tolerant plant material will not need irrigation once established.

10.1 The design of the irrigation system and the duration of use shall be determined by a qualified landscape architect.

10.2 Irrigation systems shall be installed by a licensed landscape contractor for all engineered slopes.

10.3 Water must infiltrate the soil properly. The application of irrigation water must be slow in order to avoid run-off, resulting in soil erosion and water waste. Proper infiltration requires that the top four inches of soil remain friable.

10.4 Irrigation for slope plantings should be designed to encourage deep root growth. This is best achieved through deep, infrequent watering. A regular supply of moisture, deep and infrequent, but regular in timing, will provide high levels of plant growth and quick soil coverage. Shallow and frequent watering encourages plants to become shallow rooted and more water needy. Watering should be delivered in many light applications. Application in eight to ten minute periods, at one hour intervals, will increase the percolation and

reduce runoff. The watering applications can be continued for as long as necessary to achieve the desired amount.

10.5 Irrigation systems should be designed to provide separate coverage for the top and bottom of sloped areas. More water should be applied to the upper slope location (these will dry more quickly when moisture percolates downhill). Lower slope sections can become over saturated and weakened if the concentration of water is too great.

10.6 Steep slopes and crib walls should be irrigated with spray (rotor type/ wand) heads. Drip irrigation is permitted when there isn't enough distance to allow overhead application.

10.7 The best method for achieving the appropriate balance and distribution of water is through field testing and observation. The watering time schedule shall be adjusted to the seasonal weather conditions and the needs of the plants.

11.0 Maintenance

Hillside maintenance is required for fire fighting access and to maintain the health of the hillside environment.

11.1 Any trees, shrubs, vines or ground cover plants that have died shall be immediately replaced upon discovery.

11. Access to vegetated slopes must be maintained for the purpose of, but not limited to, care or replacement of plant material, repair, replacement, and checking of irrigation devices, and to maintain fire fighting capabilities.

11.3 Periodic maintenance will be required. Maintenance will include but not be limited to, irrigating the plantings, repairing, adjusting and checking irrigation equipment and cycles, controlling weeds, and replacing dead and dying trees, shrubs, and groundcover.

11.4 All planted areas shall be kept free of debris and weeds. Weeds may be controlled and eliminated by either manual or chemical means. In no event will the project receive final approval and acceptance until it is free of all weeds and/or unspecified plant materials. This shall be done in an efficient manner, minimizing soil disturbance and damage to desired plant material.

11.5 Planting should be irrigated immediately following installation. For drought tolerant native plant material, irrigation should continue throughout the first summer and cease in the fall. California native plant material suffers from root fungus when exposed to intermittent summer watering after it has become established.

11.6 Ornamental plantings shall be watered as recommended by a landscape architect or licensed landscape contractor.

11.7 On graded slopes where naturalizing plants have been recommended, the required slope irrigation system may be modified upon approval of the City's landscape architect.

