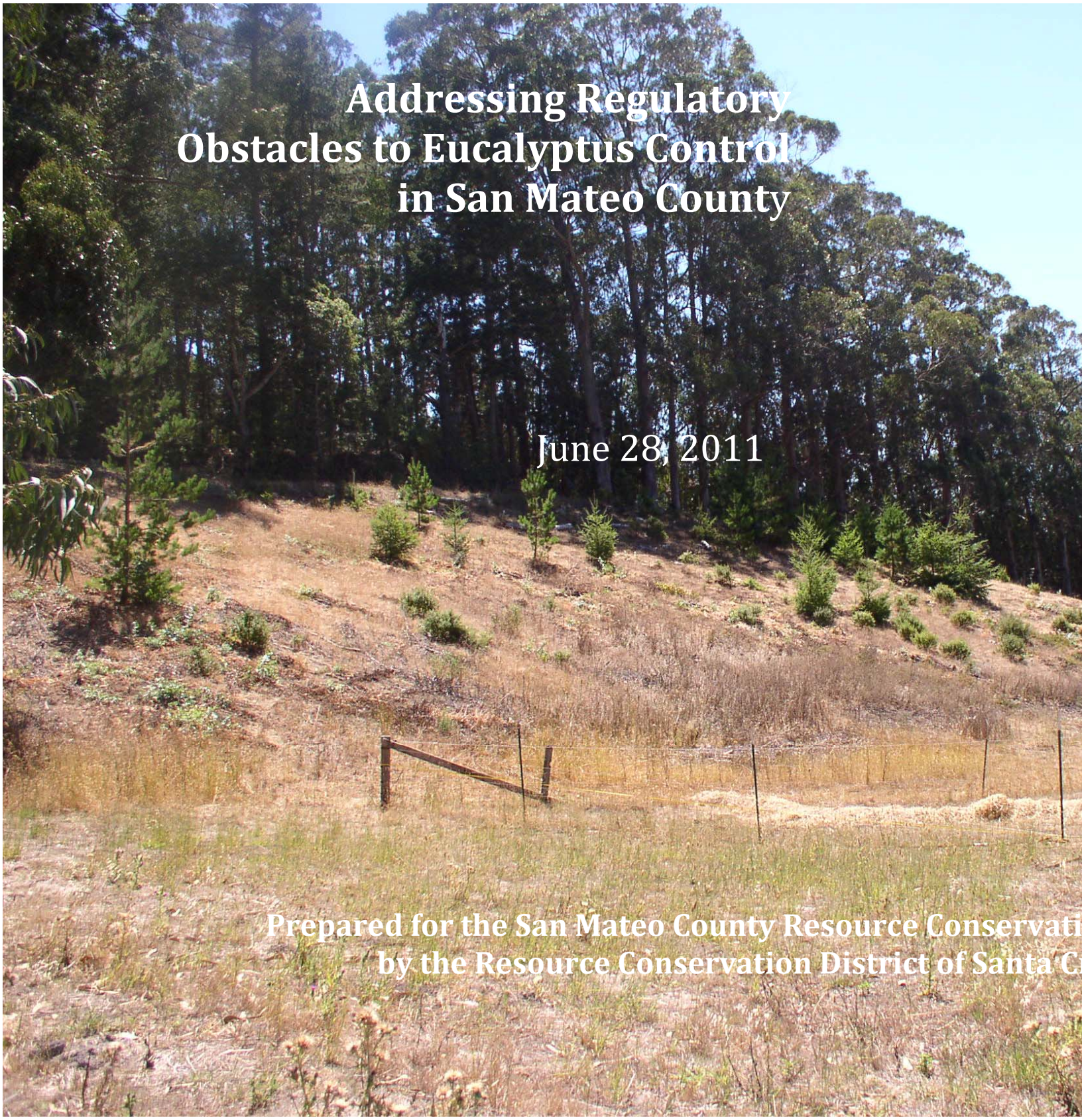

Addressing Regulatory Obstacles to Eucalyptus Control in San Mateo County

June 28, 2011

Prepared for the San Mateo County Resource Conservati
by the Resource Conservation District of Santa C

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INTRODUCTION

Project Summary

"Addressing Regulatory Obstacles to Eucalyptus Control" is a project of the San Mateo County Resource Conservation District (RCD), funded by the California Department of Food and Agriculture through the San Mateo County Weed Management Area. The goal of this project is to support landowners and land managers seeking to control eucalyptus proliferation by addressing existing regulatory constraints to eucalyptus removal in San Mateo County. Existing regulatory requirements often do not support – or may even impede- eucalyptus removal. This project works with regulating agencies to establish protocols for effective control and removal by willing landowners in San Mateo County. The project was funded as a first phase with the vision that a second phase would later be funded to develop agreements for programmatic permits for the management of eucalyptus.

Need for Project

Eucalyptus was introduced to California by Australians in the 1850's during the California Gold Rush. Learning that the huge trees grew easily in temperate climates with little regard to soil or water, they seemed the perfect crop to provide a renewable source of timber for construction, furniture making, railroad ties, and fuel in the rapidly growing state. Blue gum (*Eucalyptus globulus)*, which is native to the east coast of Tasmania, proved valuable as windbreaks for highways and farms and has become the most common large eucalyptus in California. By the early 1900s, thousands of acres of eucalyptus were planted, replacing oak woodlands and other native habitat.

The resulting non-native monoculture has raised concerns about loss of biological diversity. Eucalyptus replaces a diversity of native plant species, including forage for wildlife, is purported to cause mortality in native bird species, and may disrupt native bird migratory patterns (CAL EPPC, 2004). Eucalyptus trees shade out native understory and deposit allelopathic leaf litter that inhibits the germination of native seeds (Bossard, et al., 2000, Doerr et al., 2005). Loss of food, shelter, and nesting sites for birds, small mammals, and bee colonies has been documented (WESCO, 1993). In addition, eucalyptus forests promote fire with their prolific combustible oil, copious litter, and long shreds of hanging bark that carry flames to the crowns (Esser, et al., 1993). Stands of mature eucalyptus have also been associated with altering local hydrology. The hydrophic nature of the leaf litter has been shown to increase soil water repellency (Thompson, et al., Ferreira et al., 2000). The result is an increase in surface water runoff, higher rates of erosion and sedimentation, and a decrease in groundwater recharge. Eucalyptus trees show high rates of evapotranspiration, extracting water at great depths and under dry conditions (Bell and Williams, 1997, Pryor, 1976). Removal of eucalyptus from a riparian corridor has been shown to increase creek flows and/or maintain flows later into the summer (Thompson, 2008).

While eucalyptus appear to provide ecological niches for butterflies and raptors formerly filled by natives plant species, the loss of native plant forage for wildlife, as well as migratory disruptions may have a greater long term impact on a wider diversity of species, including invertebrates and microorganisms in soil (CALEPPC, 2004). Except for providing occasional nest sites for Great Horned Owls and Red-shouldered Hawks, non-blooming "eucs" do not provide much food or shelter for native birds or other animals and

cause areas of ecological emptiness that could otherwise by viable habitat if planted with native trees (Stallcup, 1997). Blooming "eucs" can actually harm native birds. As their physiology is not adapted to seek insects or nectar within eucalyptus blossoms, they must insert much of their heads, thus glopping up their faces and resulting in suffocation (Stallcup, 1997). During winter (October to March), many "eucs" produce abundant flowers, which in turn attract insects and inviting bird species. Without the presence of the "eucs", many of these birds would migrate, as they should, into the American tropics (Stallcup, 1997).

Given the reasons above, eucalyptus trees are being removed and native habitat restored throughout California. Control of eucalyptus is consistent with the following local plans, programs, and guidelines, among others:

- the Memorandum of Understanding establishing the San Mateo County Weed Management Area;
- the San Mateo County Watershed Protection Program (2004);
- San Mateo County Parks Department's Decision Making Guidelines for Vegetation Management (2006);
- Local Resource Concerns (2010) developed by the San Mateo County Resource Conservation District and USDA Natural Resources Conservation Service Local Work Group;
- the Pilarcitos Integrated Watershed Management Plan (2008);
- the San Gregorio Creek Watershed Management Plan (2010);
- California State Parks Department Operations Manual (as well as General Plans, Vegetation Management Plans, and Vegetation Management Statements); and
- California's Wildlife Action Plan (2007) of the California Department of Fish and Game.

Project Objectives

Identify Regulatory Agency Staff

This project identified relevant regulatory agency staff and initiated contact to facilitate collaborative dialogue. These agencies include San Mateo County, California Coastal Commission, U.S. Fish and Wildlife Service, California Department of Fish and Game, U.S. Army Corps of Engineers, San Francisco Bay Area Regional Water Quality Control Board, the City of Half Moon Bay, and the City of Pacifica.

Identify Regulatory Concerns and Strategies

The project researched and identified regulatory concerns pertaining to eucalyptus control and strategies to address those concerns that may ultimately be included in a programmatic permit for eucalyptus control. Regulatory concerns may include, for example, bird roosting, monarch butterfly habitat, erosion control during and after tree removal, and impacts of activities to protected species and habitats.

Develop Permit Applications

The project worked with individual regulatory agencies, to begin to develop permit conditions, specifications and mechanisms. This included preliminary discussions about agency concerns, priorities, and reporting requirements, discussing and clarifying proposed conservation practices, and confirming next steps for completing programmatic permit applications for removal of eucalyptus trees in San Mateo County. Depending on agency response and availability of funds, the RCD may begin to develop draft agreements and program conditions for each agency.

PROJECT FINDINGS

Regulatory Agency Staff

The potential for a streamlined eucalyptus control program (Program) was discussed with federal, State and local agency staff with potential jurisdiction over habitat modification and water quality. The removal of eucalyptus often requires the oversight of multiple regulatory agencies based on geographic location, including proximity to streams and waterbodies, inclusion in a scenic corridor, presence of wildlife species, volume of soil displaced potential for water quality impairment, etc. The agencies listed above were contacted to discuss regulations that may require permits for vegetation removal as well as their interest in and support for the Program. The following agencies did not respond to inquiries and thus their feedback is not included in the document: United States Fish and Wildlife Service, Regional Water Quality Control Board, and Army Corps of Engineers. See Appendix A for a list of agencies and staff contact information.

Regulatory Concerns and Strategies

Regulatory Concerns

In some cases, the removal of eucalyptus is a compromise between native habitat restoration and the preservation of a cultural landscape. The introduction of eucalyptus to the central coast provides historic context, scenic aesthetics, and nesting and roosting habitat for a limited number of species. However, this invasive non-native species is also associated with a loss of biological diversity, increasing fire hazards, increasing erosion rates, decreasing groundwater recharge, and reducing water available in creeks for aquatic wildlife.

All agency staff members who responded were supportive of removing eucalyptus. The California Coastal Commission, in particular, noted that removal of this non-native species is consistent with their goals and the City of Pacifica suggested a collaborative project once the Program was developed. The All agency staff expressed concern about the protecting overwintering habitat for butterflies and/or roosting and nesting habitat for bird species. In addition, there was concern that removal of this non-native species could be completed too rapidly without the establishment of other available trees for species use. It was noted that the temporary and permanent impacts of habitat restoration need to be considered in conjunction with consideration of erosion control and trucking impacts when applicable.

The following are permits/ordinances that regulate the removal of eucalyptus trees in San Mateo County. A list of these is provided below with a brief description. Additional information on regulations is included in Appendix B.

California Environmental Quality Act (CEQA)

CEQA is a statute that requires State and local agencies to identify the significant environmental impacts of their actions and to avoid or mitigate those impacts, if feasible. A public agency, such as the RCD, must comply with CEQA when it undertakes an activity defined by CEQA as a "project." The impacts of eucalyptus removal would need be evaluated by the RCD for compliance with CEQA, either on a programmatic basis or on a project by project basis. If there would be no significant adverse impact on endangered, rare or threatened species or their habitat, the action can be covered under Title 14 of the California Code of

Regulations; Article 19. The section on categorical exemptions includes a list of classes of projects which have been determined not to have a significant effect on the environment and which shall, therefore, be exempt from the provisions of CEQA and do not require the preparation of environmental documents. According to Sections 21083 and 21084 of the Public Resources Code, CEQA exemption 15333 consists of projects not to exceed five acres in size to assure the maintenance, restoration, enhancement, or protection of habitat for fish, plants, or wildlife provided that

(a) There would be no significant adverse impact on endangered, rare or threatened species or their habitat pursuant to section 15065,
(b) There are no hazardous materials at or around the project site that may be disturbed or removed, and
(c) The project will not result in impacts that are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.
(d) Examples of small restoration projects may include, but are not limited to:
(1) revegetation of disturbed areas with native plant species;
(2) wetland restoration, the primary purpose of which is to improve conditions for waterfowl or other species that rely on wetland habitat;
(3) stream or river bank revegetation, the primary purpose of which is to improve habitat for amphibians or native fish;
(4) projects to restore or enhance habitat that are carried out principally with hand labor and not mechanized equipment.
(5) stream or river bank stabilization with native vegetation or other bioengineering techniques, the primary purpose of which is to reduce or eliminate erosion and sedimentation; and
(6) culvert replacement conducted in accordance with published guidelines of the Department of Fish and Game or NOAA Fisheries, the primary purpose of which is to improve habitat or reduce sedimentation.

If there is a potential impact to special status species, their habitat, or other sensitive resources as noted above, which is likely for this project, an initial study would need to be prepared. The initial study would describe the activity (eucalyptus removal), the environmental settings for tree removal, the potential for environmental impacts and explanation to support those findings, any mitigation or avoidance measures to address identified environmental impacts, and consistency with local, State, and federal plans and policies. The initial study documents the lead agencies decision to prepare a negative declaration, and mitigated negative declaration or and environmental impact report.

California Coastal Commission (CCC)

Coastal Development Permit

The California Coastal Commission, in partnership with coastal cities and counties, plans and regulates the use of land and water in the coastal zone, to protect, conserve, restore, and enhance environmental and human-based resources of the California coast. As such, major vegetation removal in the coastal zone requires a coastal development permit (CDP). There are two options for the RCD to obtain a CDP. 1) The CDP can be issued by San Mateo County, the City of Pacifica, or the City of Half Moon Bay (within their jurisdiction) according to procedures adopted as part of the certified LCP; or 2) a special district can go straight to the California Coastal Commission. Permits issued directly from the CCC are usually property

specific, rather than programmatic, unless the activity is documented in a county or city's master plan (R. Pap, pers.comm.).

United States Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS)

Endangered Species Act (ESA)

The ESA protects endangered and threatened species and their habitats by prohibiting the "take" of listed animals and significant habitat modification or degradation. Section 7 of the ESA requires a Federal authorizing or action agency to consult with USFWS/NMFS on any actions that might affect listed species. A private citizen or State action not involving a Federal agency, which would result in an incidental taking of a listed species, must be authorized under section 10 of the ESA. If the agency or USFWS/NMFS determines an action is likely to adversely affect a species, formal consultation is required and USFWS/NMFS prepares a biological opinion (BO) that assesses whether the action is likely to jeopardize the existence of the species. An Incidental Take Statement (ITS) is attached to the BO as an appendix, and it is this statement that allows incidental take. A preliminary list of protected species and their habitats that may be impacted within the proposed Program area can be found in Appendix C.

Army Corps of Engineers (USACE)

Clean Water Act, Section 404

The USACE is responsible for any activity that may discharge dredged or fill material into waters of the United States", which includes: 1) Navigable waters of the United States; 2) Wetlands; 3) Tributaries to navigable waters of the United States, including adjacent wetlands and lakes and ponds; 4) Interstate waters and their tributaries, including adjacent wetlands; and 5) All other waters of the United States not identified above, such as isolated wetlands, intermittent streams, and other waters that are not part of a tributary system to interstate waters or to navigable waters of the United States, where the use, degradation or destruction of these waters could affect interstate or foreign commerce.

The term discharge of dredged material does not include cutting or removing vegetation above the ground (e.g., mowing, rotary cutting, and chainsawing) where the activity neither substantially disturbs the root system nor involves mechanized pushing, dragging, or other similar activities that redeposit excavated soil material. Site-specific methods to remove eucalyptus that disturb the soil may fall within USACE's jurisdiction.

California Department of Fish and Game (CDFG)

Streambed Alteration Agreement

DFG is responsible for conserving, protecting, and managing California's fish, wildlife, and native plant resources. To meet this responsibility, the Fish and Game Code (Section 1602) requires an entity to notify DFG of any proposed activity that may substantially modify a river, stream, or lake, including to 1) substantially divert or obstruct the natural flow of any river, stream or lake; 2) substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake; or 3) deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake. The notification requirement applies to any work undertaken in or near a river, stream, or lake that flows at least intermittently through a bed or channel. This includes ephemeral streams, desert washes, and watercourses with a subsurface flow. It may also apply to work undertaken within the flood plain of a body of water. The removal of eucalyptus trees within the riparian corridor and potentially within

the adjacent floodplain would fall within DFG's jurisdiction. A programmatic Memorandum or Understanding (MOU) could be requested for the Program or 1600 applications could be submitted for individual projects.

California Endangered Species Act

Sections 2081(b) and (c) of the California Endangered Species Act (CESA) allow DFG to issue an incidental take permit for a State listed threatened and endangered species only if the following criteria apply: (*Note: DFG cannot authorize take of a "fully protected species").* These criteria are as follows:

- The authorized take is incidental to an otherwise lawful activity;
- The impacts of the authorized take are minimized and fully mitigated;
- The measures required to minimize and fully mitigate the impacts of the authorized take:
  a. are roughly proportional in extent to the impact of the taking on the species,
  b. maintain the applicant's objectives to the greatest extent possible, and
  c. are capable of successful implementation;
- Adequate funding is provided to implement the required minimization and mitigation measures and to monitor compliance with and the effectiveness of the measures; and
- Issuance of the permit will not jeopardize the continued existence of a State-listed species.

An applicant who has obtained a federal incidental take statement pursuant to a federal Section 7 consultation or a federal Section 10(a) from United States Fish and Wildlife or the National Marines Fisheries Service must notify the DFG Director in writing to ensure that the federal statement/permit is consistent with CESA, prior to the issuance of a State Incidental Take permit.

Regional Water Quality Control Board (RWQCB)

Clean Water Act and Porter-Cologne Water Quality Control Act

The RWQCB regulates activities and factors that may affect the quality of the waters of the State for public uses, particularly the discharge of fill and dredged material. Any action with the potential for sediment transport into stream or other waterbodies, such as eucalyptus removal, requires consultation with the RWQCB. For those projects within the jurisdiction of the USACE, a Notice of Intent can be filed under an agreement between the USACE and the State Water Resources Control Board. For those projects not within the jurisdiction of the USACE, a Clean Water Act §401 Water Quality Certification will be submitted.

General Permit for Discharge of Stormwater

Projects that disturb one or more acres of soil are required to obtain coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity. Construction activity subject to this permit includes clearing, grading and disturbances to the ground such as stockpiling, or excavation. Eucalyptus removal on greater than 1 acre would require the development of a Storm Water Pollution Prevention Plan (SWPPP).

City of Pacifica

Preservation of Heritage trees

The City of Pacifica's ordinance regulates the removal of heritage trees, which have a trunk with a circumference of fifty inches, approximately sixteen inches in diameter, or more when measured two feet above the natural grade. The removal of eucalyptus trees is exempt from this ordinance.

Local Coastal Land Use Plan (LCP)

The LCP serves as a comprehensive, long-term land use and physical development plan for the city's coastal zone. The LCP is consistent with the 1976 Coastal Act policies and regulates land use and resource protection. According to the Municipal Code, Section 9-4.4303.3, a coastal develop permit would be required for eucalyptus tree removal as this would not fall under the city's exemption for removal of minor vegetation for maintenance purposes and because grading would exceed 50 cubic yards.

City of Half Moon Bay

Designation of Heritage Trees and Trimming and Removal of Heritage Trees

Municipal Code Chapter 12.16 establishes a process for listing trees on public and private property as heritage trees, and to establish regulations for the removal of said trees, in order to retain as many trees as possible while recognizing the interest of property owners in developing, maintaining an d enjoying their property. No heritage eucalyptus trees are currently recorded on the city's list of Heritage Trees on Private Property. No permit is required for trimming, pruning or removal of a non-heritage tree on private property.

Street Encroachment

Any work performed in the public right of way requires an encroachment permit. It is uncertain if this applies to tree removal.

Local Coastal Program Land Use Plan

The entire City of Half Moon Bay is in the coastal zone. The LCP serves as a comprehensive, long-term land use and physical development plan for the city's coastal zone. The LCP is consistent with the 1976 Coastal Act policies and regulates land use and resource protection. Section 30240 states that environmentally sensitive areas shall be protected against significant disruption of habitat values (City of Half Moon Bay, 1993). Title 18 of the city's Municipal Code states that the removal or harvesting of major vegetation for agricultural purposes is exempt. Eucalyptus removal on non-agricultural land would require a coastal development permit.

San Mateo County

The Significant Tree Ordinance of San Mateo County

The Significant Tree Ordinance was established to protect the existing and future trees and tree communities located within the County as a valuable and distinctive natural resource. Indiscriminate removal or destruction could result in the following environmental consequences (County of San Mateo Planning and Building Division, 2002):

- Modification of microclimates.
- Change or elimination of animal habitat, possibly including habitats of endangered species.
- Change in soil conditions, resulting in modified biological activity and erosion of soils.
- Creation of increased susceptibility of flood hazards.
- Increased risk of landslides.
- Increased cost of construction and maintenance of drainage system through increased flow and diversion of surface waters.
- Degradation of the human habitat.
- Loss of environmental benefits of trees in neighborhoods, such as noise reduction, oxygen replacement, carbon dioxide reduction, interception of particulates, aesthetic qualities.

- Potential for irreparable wind damage to adjacent trees.

A permit is needed to remove a "significant 'tree," defined as any live woody plant rising above the ground with a single stem or trunk of a circumference of thirty-eight inches (38") or more measured at four and one half feet (4 1/2') vertically above the ground or immediately below the lowest branch, whichever is lower, unless further defined by zoning district. In Residential Hillside/Design Review districts, a significant tree is any tree with a diameter of at least 6 inches and a circumference of at least 19 inches measured either at 4-1/2 feet above the ground or immediately below the lowest branch, whichever is lower. In Resource Management districts (RM or RM-CZ), a significant tree is any tree with a circumference of more than 55 inches measured either at 4-1/2 feet above the ground or immediately below the lowest branch, whichever is lower.

Note: the Planning Department is currently working with input from the San Mateo County RCD to exempt eucalyptus from the Significant Tree Ordinance. However, given an uncertainty of timing for completing this task, the RCD was advised to pursue this Program.

The ordinance allows for tree removal if the tree:

- is diseased;
- could adversely affect the general health and safety;
- could cause substantial damage;
- is a public nuisance;
- is in danger of falling;
- is too closely located to existing or proposed structures consistent with LCP Policy 8.9(a);
- meets standards for tree removal of Chapter 28.1 (Design Review District) of the zoning LCP Policy 8.9(a);
- substantially detracts from the value of the property;
- interferes with utility services consistent with San Mateo County Local Coastal Program (LCP) Policy 8.9(a);
- acts as a host for a plant which is parasitic to another species of tree which is in danger of LCP Policy 8.9(a);
- is a substantial fire hazard; or will be replaced by plantings approved by the Planning Director or Design Review Administrator, unless special conditions indicate otherwise.

<u>Regulations for Excavating, Grading, Filling, and Clearing on Lands in Unincorporated San Mateo County</u>
To promote the conservation of natural resources, including topography and vegetation, as well as to protect health and safety, which includes the reduction or elimination of the hazards of earth slides, mud flows, rock falls, undue settlement, erosion, siltation, and flooding, or other special conditions, a permit is needed when the extent of land clearing 1) exceeds 5,000 square feet (1,000 square feet in a scenic corridor), 2) existing slopes are greater than 20%, or 3) the land area to be cleared is in any sensitive habitat or buffer zone as identified in the County General Plan. The following activities are exempt from the county's ordinance with the approval of the RCD (County of San Mateo, 2005):

- Grading outside of natural drainage channels with the purpose of soil conservation (Section 8603.15)
- Land area to be cleared is for routine agricultural activities including but not limited to plowing, harrowing, disking, ridging, listing, leveling, and similar operations to prepare a field for a crop, or

the land area to be cleared is for resource management such as brush clearing, erosion control or other resource management programs (Section 8603.12)

- Agricultural use of land that is operated in accordance with a conservation plan approved by and implemented according to the practices of the Resource Conservation District (RCD) or when it is determined by the RCD that such use will not cause excessive erosion or sediment losses, based on applicable soil loss tolerance values (Section 86013.14)
- Agricultural water impoundments not exceeding the minimum limitations of the State Dams and Reservoir Act of 1967 (Sections 6000 et seq. of the Water Code) (Section 8603.16)

Encroachment Permit

An encroachment permit allows you to make certain uses and construct certain improvements within a public right of way or dedicated easement, both above and below ground, and would be required for tree removal within the county's right of way.

California Department of Transportation

The California Department of Transportation (Caltrans) is the State agency responsible for highway, bridge, and rail transportation planning, construction, and maintenance. Eucalyptus removal within Caltrans right of way should be consulted on an individual project basis.

Strategies to Address Regulatory Concerns

While there are a number of established mechanisms to address the potential impact of restoration activities, the first step is to evaluate the activity to determine whether any short term impact is offset by the long term beneficial gain of the project. After a determination has been made that the activity has a net environmental benefit, specific design and protection measures can be built into the project to minimize and avoid short term and long term harmful impacts. Although the following resource concerns overlap, they have been divided based on primary concern into the following categories: 1) species and sensitive habitats; 2) soils and water quality; 3) water quantity; and 4) human environment.

Species and Sensitive Habitat

The removal of invasive, exotic plants would benefit all listed species because these invasive plants can reduce the abundance and diversity of native vegetation and thereby degrade the overall quality of the habitat upon which many species depend. One approach to protect listed species is to conduct protocol level surveys, which are defined by USFWS for each species, to document that the species is absent from a project site. Qualified individuals could be hired to conduct appropriate surveys to determine that the eucalyptus trees are not providing overwintering habitat for butterflies and other species. Another mechanism, which is often more cost effective and time efficient, is to assume presence of the species if habitat is present and time project activities to avoid sensitive life stages. Prior to the onset of activities that result in the disturbance of habitat or individuals of any listed species, all project workers would be given information on the listed species in the project area, a brief overview of the species' natural history, the protection afforded the species by the Endangered Species Act, conditions of any approvals granted by the resource agencies, and the specific protective measures to be followed during implementation of the practices.

DFG staff expressed concern about the loss of tree habitat for species until native trees are established. The Program will address temporary loss of habitat associated with eucalyptus removal.

Soils and Water Quality

Change in soil conditions, resulting in modified biological activity and erosion, was noted as a concern in the County's Significant Tree Ordinance. However, literary references on eucalyptus trees consistently note a decline in biological activity associated with eucalyptus stands due to the allelopathic and hydrophobic nature of the leaf litter. The thick layer of leaf litter does provide soil protection and tree removal can result in an increase in bare soil exposed to rainfall. To address concerns of erosion and downstream sedimentation, water quality protection measures, such as seeding, silt fence, straw wattles, erosion control blankets, leaving chipped eucalyptus on-site, etc., will be built into each project design to ensure that disturbed areas are stabilized, to minimize runoff velocities, and to retain sediment on-site. Tree removal would be completed and erosion control established prior to the onset of winter rains. Areas susceptible to landslides would be evaluated by appropriate professionals during the planning phase.

Water Quantity

An additional concern was the potential for increased susceptibility of flood hazards and a potential increased cost of drainage system construction and maintenance of drainage system. Literature notes that eucalyptus trees take up a tremendous amount of groundwater through transpiration process and that their removal can result in an increase in stream flows. Downstream infrastructure and potential safety hazards will be evaluated during the next phase of this project, if funded.

Human Environment

Impacts of tree removal and offsite hauling are of concern due to potential contribution to global warming and modification of microclimates. Material will be retained onsite or nearby, when feasible, to reduce emissions and the impact of eucalyptus removal on landfills. However this will be weighed against other resource concerns, such as fire hazard. The result of tree removal on noise reduction, oxygen replacement, carbon dioxide reduction, interception of particulates, and aesthetic qualities will also be considered during the planning phase. Opportunities to repurpose the wood locally will be explored, e.g. utilizing felled trees to provide in-stream habitat when appropriate and feasible.

Permit Applications

Conservation Practices, Methods and Protocols

Conservation Practices

Across the state of California, numerous streamlined permitting programs have been developed by Resource Conservation Districts (RCDs) to facilitate the implementation of small-scale, environmentally beneficial conservation projects. The programs are managed by RCDs, utilizing a partnership with the United States Department of Agriculture's Natural Resource Conservation Service (NRCS). As a technical partner to the RCD, the NRCS's Nine Step Conservation Planning Process (Appendix C) and Field Office Technical Guide (FOTG) provide a framework for conservation planning. The FOTG contains more than 200 standardized practices to address resource concerns and outlines the specific activities that will be completed for each project from initial planning through post project implementation. The planning process and FOTG provides

regulatory agencies with a sense of confidence that the projects will be planned and implemented in a well-thought out, methodical way. For eucalyptus control, two NRCS practices are recommended for the San Mateo program, *Restoration and Management of Rare and Declining Habitats* and *Critical Area Planting* (Appendix D). The practice, *Restoration and Management of Rare and Declining Habitats,* provides guidance on eucalyptus removal and the practice, *Critical Area Planting*, provides detailed description of methods to reduce erosion and protect water quality.

Methods

A critical component to ecosystem management is the identification of the methods in the "tool box". The particular method appropriate at each site will depend on a number of factors, including fuel load hazard, steepness of slope, presence of native species, funds available, landowner values, neighbors' concerns, public access, etc. The following are some successful treatment methods for eucalyptus control and/or eradication based on conversations with local experts, including the San Mateo County Parks Department, California State Parks, Presido Trust, MidPeninsula Regional Open Space District and Peninsula Open Space Trust. The first three methods are employed after a tree is cut down to prevent resprouting. The fourth method involves treating the tree in place to both kill the tree as well as to control resprouting.

- Cut Stump
- Black Plastic
- Grind with Stump Grinder
- Kill Standing

The **cut-stump method** involves carefully applying a glyphosate-based herbicide to the stump after cutting down the tree. The herbicide must be applied around the entire circumference of the cut so it can be evenly transported to the entire cambium layer where plant growth is initiated. A dye is usually added to the herbicide, to mark stumps that have been treated. This is much cheaper than full stump removal. It is recommended the trunk be cut near ground level and that a 50-100% solution of Roundup be applied within 4 minutes of cutting. Herbicide application is subject to delays due to winds.

The **black plastic method** involves covering the tree stumps with two layers of opaque non-woven black plastic after cutting down the trees to create a physical barrier, resulting in light deprivation. The plastic is stapled to the stump and the edges are buried into the soil. The plastic must remain on the stump for a few years.

Physical destruction, by **grinding stumps** down to 2 feet below the surface, provides an alternative to chemical treatment. Stump grinding may also be used if stump size or density will inhibit native plants from getting re-established. In some cases, however, resprouting will continue to occur after grinding. This method is also somewhat labor intensive and costly (National Park Service, 2006).

Kill standing involves drilling into a eucalyptus tree with a high voltage cordless drill. Approximately 5/16"holes are drilled at a downward angle, about 3" apart in a line around the base of the tree, and each hole is quickly filled with herbicide. The herbicide prevents resprouting and eventually kills the tree. However, it may take 10 to 20 years for full tree mortality to occur.

A primary consideration for eucalyptus control is what to do with the biomass. Eucalyptus trees have large quantities of fire hazard material and disposal of material can be time consuming and costly. Branches and leaves may be chipped and spread on site and trunks either cut up and left scattered on site or hauled away.

For the Colma Creek Headwaters Restoration Project, the San Mateo County Parks and Recreation Department determined that biomass disposal at the local landfill would have been prohibitively expensive. As such, the majority of the material amassed from the removal of 50 large and 100 small eucalyptus trees was chipped and spread across the site for erosion control and weed suppression. The presence of a 4-6" layer of wood chips was completely invaluable to suppress the non-native seed bank which was extensive across the site (Cannon, 2008). In areas where no mulch spread, the sprouting of invasive weeds was extensive and without substantial maintenance efforts would have quickly out competed the newly planted natives. In addition, the presence of the mulch prolonged the period that the soils remained moist well past the end of the rainy season in May. Often it is believed that the allopathic chemicals in Eucalyptus trees would affect plant growth when used as mulch, but this was not the case. Most of the material in the mulch was stem and wood and the allopathic chemicals come primarily from the leafy material. It has been shown that most of these chemical breaks down or leach away within three months. The allelopathic chemicals in the mulch did not affect the establishment of the native plantings, but reduced non-native seed germination and seedling establishment.

Another option to address the cost to remove the biomass is to find a "market" for the material. The Midpeninsula Regional Open Space District, has been recently approached by an individual who is interested in large eucalyptus trunks for find wood work or export if the volume of materials is great enough (C. Roessler, pers. comm.).

The success of eucalyptus removal lies in follow-up monitoring and maintenance. Maintenance of the site can include:

- Conducting an on-site inspection 2-3 months post eucalyptus removal and then subsequently on an annual basis to pull off or spray stump sprouts with glyphosate.
- Hand pull, weed wrench or spot spray with glyphosate on young saplings

However, it is best to address small eucalyptus saplings before they become large groves of adult eucalyptus trees. California State Parks focuses their work to control the spread and reproduction (J. Kerbavaz, pers. comm.). Sapling removal and perimeter control does not require permits and can largely be accomplished with volunteers. In fact, the San Mateo Local Coastal Program encourages the voluntary cooperation of private landowners to remove blue gum seedlings to prevent their spread.

Protocols and Reporting

Assuming that this Program would be modeled after established local permit programs, Program protocols and reporting would be as follows. A conservation plan would be developed for each project utilizing the NRCS' 9-Step conservation planning process. The Plan would 1) outline the scope of the project, the method of removal, and plans for revegetation, including ; 1) include a map documenting the location of the trees proposed for removal, 2) photo document existing conditions; and 3) document potential resource concerns associated with the activity, including special status species, flood hazard, global warming, etc. Measures to

avoid and minimize the take of State-listed species will provided as a suite of potential protection measures. The measures for an individual project would be drawn from this suite and will vary from project to project based on site specific conditions. These measures may include but are not limited to the delineation of construction sites; take avoidance measures tailored to the affected species; workers' education programs; reporting procedures when an animal is killed, injured or trapped; and compliance inspections and reports. In addition, the plan would recommend measures to address erosion and water quality concerns, to address flood hazard and infrastructure concerns, and evaluate the climatic impact of tree removal. A summary of this plan, utilizing an approved template, could be sent to each regulatory agency prior to construction for input and approval.

If the project area exceeds 1 acre, the General Permit for Discharge of Stormwater would include a site map(s) that shows the construction site perimeter, existing and proposed buildings, lots, roadways, storm water collection and discharge points, general topography both before and after construction, and drainage patterns across the project. The SWPPP would list Best Management Practices (BMPs) to protect storm water runoff and the placement of those BMPs. Additionally, the SWPPP would contain a visual monitoring program; a chemical monitoring program for "non-visible" pollutants to be implemented if there is a failure of BMPs; and a sediment monitoring plan if the site discharges directly to a water body listed on the 303(d) list for sediment.

After construction, an annual report is sent to regulatory agency staff, noting projects that were completed under the Program and providing updates on an annual basis on the success and challenges of each site.

Timeline and Next Steps

With agency support for the Program, the next step is to meet with agency staff with overlapping ordinances or statutes to discuss specific resource concerns, ie. special status species, water quality, etc. To have a functional program in 2012, this would need to occur within the next two to three months, so that appropriate permits can be submitted in time. Appropriate permitting mechanisms and reporting requirements can be discussed at this time and then applications can begin to be drafted and submitted for approval.

CONCLUSION

While eucalyptus trees provide habitat for a limited number of species, literature, local experts, and regulatory agency staff support the removal of this non-native tree to restore native habitat to increase biological diversity and abundance. Past restoration projects in the county have documented an increase in stream flows almost immediately following eucalyptus removal (S. Herzberg, pers. comm.), as well as an increase in populations of frogs, snakes, birds, and overall diversity.

However, the current agency review processes intended to protect natural values often acts as disincentives to voluntary initiatives that would enhance habitat. A coordinated Program for eucalyptus removal will assist landowners interested in implemented small scale habitat restoration projects, but who are discouraged because of the time, cost and complexity of complying with the regulatory review process.

Consideration of eucalyptus removal utilizing a holistic, methodical approach will ensure protection of resources, while allowing the RCD to facilitate restoration by reducing the cost of permitting and planning.

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Midpeninsula Regional Open Space District. Cindy Roessler, pers. comm., 2010.

San Mateo County Parks Department. Sam Herzberg, pers. comm., 2010.

APPENDICES

Appendix A: Regulatory Agency Contact List

California Coastal Commission

Ruby Pap, District Supervisor
45 Fremont Street, Suite 2000
San Francisco, CA 94105-2219
415-904-5260

- Coastal Development Permit

County of Santa Cruz

Steve Monowitz, Acting Deputy Director of Planning
455 County Center, 2nd Floor
Redwood City, CA 94063
650-363-1855
smonowitz@co.sanmateo.ca.us

- Significant Tree Ordinance
- Coastal Development Permit
- Regulations for Excavating, Grading, Filling, and Clearing on Lands in Unincorporated San Mateo County

California Department of Fish and Game

Suzanne DeLeon, Environmental Scientist
PO Box 47
Yountville, CA 94599
831-440-9433
sdeleon@dfg.ca.gov

- Streambed Alteration Agreement
- California Endangered Species Act

US Fish and Wildlife Service

Ryan Olah
2800 Cottage Way
Sacramento, CA 95825
Ryan_Olah@fws.gov

- Endangered Species Act

San Francisco Bay Area Regional Water Quality Control Board

TBD

US Army Corps of Engineers

TBD

City of Half Moon Bay

Steve Flint, Planning Director
501 Main Street
Half Moon Bay, CA 94019
650-726-8252

stevef@hmbcity.com

City of Pacifica
Aren Clark, Arborist
155 Milagra Drive
Pacifica, CA 94044
650-438-2980

- Heritage Tree Ordinance

Appendix B: Regulations

15333. Small Habitat Restoration Projects.

Class 33 consists of projects not to exceed five acres in size to assure the maintenance, restoration, enhancement, or protection of habitat for fish, plants, or wildlife provided that:

(a) There would be no significant adverse impact on endangered, rare or threatened species or their habitat pursuant to section 15065,

(b) There are no hazardous materials at or around the project site that may be disturbed or removed, and

(c) The project will not result in impacts that are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.

(d) Examples of small restoration projects may include, but are not limited

to:

(1) revegetation of disturbed areas with native plant species;

(2) wetland restoration, the primary purpose of which is to improve conditions for waterfowl or other species that rely on wetland habitat;

(3) stream or river bank revegetation, the primary purpose of which is to improve habitat for amphibians or native fish;

(4) projects to restore or enhance habitat that are carried out principally with hand labor and not mechanized equipment.

(5) stream or river bank stabilization with native vegetation or other bioengineering techniques, the primary purpose of which is to reduce or eliminate erosion and sedimentation; and

(6) culvert replacement conducted in accordance with published guidelines of the Department of Fish and Game or NOAA Fisheries, the primary purpose of which is to improve habitat or reduce sedimentation.

Authority cited: Section 21083, Public Resources Code. Reference: Section 21084, Public Resources Code.

County of San Mateo
Planning and Building Division

THE SIGNIFICANT TREE ORDINANCE OF SAN MATEO COUNTY

(Part Three of Division VIII of the San Mateo County Ordinance Code)

CHAPTER 1. FINDINGS, INTENT AND PURPOSE

SECTION 12,000. FINDINGS. The Board of Supervisors finds and declares that the existing and future trees and tree communities located within the County of San Mateo are a valuable and distinctive natural resource. The trees and tree communities of the County augment the economic base through provision of resources for forest products, encouragement of tourism, and enhancement of the living environment. These resources are a major component of both the highly-localized and area-wide environment. The following environmental consequences are among those which could result from the indiscriminate removal or destruction of trees and tree communities in San Mateo County:

(a) Modification of microclimates.

(b) Change or elimination of animal habitat, possibly including habitats of endangered species.

(c) Change in soil conditions, resulting in modified biological activity and erosion of soils.

(d) Creation of increased susceptibility of flood hazards.

(e) Increased risk of landslides.

(f) Increased cost of construction and maintenance of drainage system through increased flow and diversion of surface waters.

(g) Degradation of the human habitat.

(h) Loss of environmental benefits of trees in neighborhoods, such as noise reduction, oxygen replacement, carbon dioxide reduction, interception of particulates, aesthetic qualities.

(i) Potential for irreparable wind damage to adjacent trees.

SECTION 12,001. INTENT. The Board of Supervisors further finds and declares that it has already passed legislation to regulate the commercial harvesting of forest products

in this County and that it does not intend by this enactment to affect those other ordinances regulating tree cutting, but that it is the intent of this Board to control and supervise in a reasonable manner the cutting of significant trees and tree communities within the unincorporated area of the County as herein described. It is further found and declared that the preservation and replacement of significant tree communities on private and public property is necessary to protect the natural beauty of the area, protect property values, and prevent undesirable changes in the environment.

SECTION 12,002. PURPOSE. The Board of Supervisors further finds and declares that it is necessary to enact this ordinance for the above reasons and to promote the public health, safety, general welfare and prosperity of the County, while respecting and recognizing individual rights to develop, maintain and enjoy private property to the fullest possible extent, consistent with the public interest, convenience and necessity.

SECTION 12,003. TITLE. This ordinance shall be known as the "Significant Tree Ordinance."

CHAPTER 2. DEFINITIONS

For the purposes of this part, the following words shall have the meaning ascribed to them in this chapter.

SECTION 12,010. "PERSON" shall mean an individual, public agency, including the County and its departments, firm, association and corporation, and their employees, agents or representatives.

SECTION 12,011. "COUNTY" shall mean the County of San Mateo acting by and through its authorized representatives.

SECTION 12,012. "SIGNIFICANT TREE" shall mean any live woody plant rising above the ground with a single stem or trunk of a circumference of thirty-eight inches (38") or more measured at four and one half feet (4 1/2') vertically above the ground or immediately below the lowest branch, whichever is lower, and having the inherent capacity of naturally producing one main axis continuing to grow more vigorously than the lateral axes.

SECTION 12,012.1. In the RH/DR Zone Districts the definition of significant tree shall include all trees in excess of nineteen inches (19") in circumference.

SECTION 12,013. "PRIVATE PROPERTY" shall mean all property not owned by the County of San Mateo or any other public agency.

SECTION 12.014. "PUBLIC PROPERTY" shall mean all property owned by the County of San Mateo, any other city, county, city and county, special district or other public agency in the unincorporated area of San Mateo County.

SECTION 12,015. "PLANNING DIRECTOR" shall mean the Planning Director of the County of San Mateo, including his authorized or appointed representatives. For the purpose of this ordinance, the Planning Director shall authorize or appoint a representative qualified in the field of forestry, ornamental horticulture, or tree ecology to provide the necessary technical assistance in the administration hereof.

SECTION 12,016. "COMMUNITY OF TREES" shall mean a group of trees of any size which are ecologically or aesthetically related to each other such that loss of several of them would cause a significant ecological, aesthetic, or environmental impact in the immediate area.

SECTION 12,017. "INDIGENOUS TREE" shall mean a tree known to be a native San Mateo County tree. The term may be narrowed in its meaning to include only those trees known to occur naturally in a certain portion of the County. In the Emerald Lake Hills Community Plan area, indigenous tree shall include the following species of trees: Salix coulteri, Salix lasiolepis, Salix lasiandra (all native willows); Acer negundo californica (box elder); Aesculus californica (buckeye); Arbutus menziesii (madrone); Quercus agrifolia (coast live oak); Quercus lobata (valley oak); Quercus douglasii (blue oak); and Umbellularia californica (California bay laurel). This list may be amended to include indigenous trees not currently known to occur naturally upon confirmation by a reputable authority on native trees of San Mateo County.

SECTION 12,018. "EXOTIC TREE" shall mean any tree known not to be a native indigenous tree, hence any tree which has been planted or has escaped from cultivation.

SECTION 12,019. "TRIM" means the cutting of or removal of any limbs or branches of trees which will not seriously impair the health of trees. For the purposes of this Part, the definition of trim shall not apply to any tree being grown as an orchard tree or other fruit or non-indigenous ornamental tree for which trimming and pruning are considered ordinary horticultural practices.

CHAPTER 3. PERMITS, CONDITIONS OF APPROVAL, POSTING, EMERGENCIES, APPEALS

SECTION 12,020. PERMIT REQUIRED. Except as provided in Section 12,020.1, below, a permit shall be required under this Part for the cutting down, removing, poisoning or otherwise killing or destroying or causing to be removed any significant tree or community of trees, whether indigenous or exotic, on any private property.

SECTION 12,020.1. EXEMPTIONS. No permits shall be required under this Part in the following circumstances:

(a) Tree cutting carried out under the provisions of Parts One (Timber Harvesting Regulations) and Two (Regulation of the Cutting of Heritage Trees) of Division VIII of the San Mateo County Ordinance Code.

(b) Tree cutting in the Resource Management (RM or RM/CZ), Timberland Production Zone (TPZ or TPZ/CZ), and Planned Agricultural (PAD) districts, except within 100 feet of any County or State scenic road or highway, as identified in the San Mateo County General Plan, provided that any tree cutting in the RM, RM/CZ or PAD districts shall be subject to Section 12,020.3.

(c) Tree cutting to remove a hazard to life and personal property as determined by the Planning Director, Director of Public Works, or Officer of the California Department of Forestry and Fire Protection.

(d) Tree cutting where there is a unique area with a tree management program.

(e) Tree cutting which has been authorized by the Planning Commission, Design Review Committee, or Planning Director as part of a permit approval process in which the provisions of this Part have been considered and applied.

SECTION 12,020.2. TRIMMING IN THE RH/DR DISTRICT. A permit shall be required in the RH/DR district for the trimming of significant indigenous trees where the cut results in the removal of a branch or cutting of the trunk which is 19 inches or greater in circumference at the point of the cut. Exempt from the provisions of this paragraph are instances where, as determined by the Planning Director, "limb break" or other natural occurrences cause the loss of the crown or limb of a tree and such loss requires additional corrective cutting. Under such circumstances, appropriate tree surgery may be required, but no permit is needed.

SECTION 12,020.3. TREE CUTTING IN THE RM, RM/CZ, AND PAD DISTRICTS.

(a) Within the Resource Management (RM or RM/CZ) district, the criteria of Sections 6324 through 6326.4 shall apply and any permit issued for such area shall constitute a Certificate of Compliance as required by Section 6461 of the San Mateo County Zoning Regulations.

(b) Within the Planned Agricultural (PAD) district, the criteria of Sections 6324 through 6326.4 shall apply, in addition to the requirements, if any, of a Coastal Development Permit.

SECTION 12,021. PERMIT APPLICATIONS. Any person desiring to cut down, remove, destroy or cause to be removed any tree regulated herein shall apply to the San Mateo County Planning Division for a Tree Cutting Permit on forms provided. Said application shall be accompanied by such drawings, written material, photographs and other information as are necessary to provide data concerning trees within the affected area, which shall include:

(a) The diameter and height of the tree.

(b) The type of trees (e.g., coniferous, evergreen hardwood and deciduous hardwood).

(c) A map or accurate sketch of location and trees proposed to be cut (show other significant trees, shrubs, buildings or proposed buildings within 25 feet of any trees proposed to be cut including any off the parcel; photographs may be used to show the area).

(d) Method for marking the tree proposed to be trimmed, cut down, removed or destroyed.

(e) Description of method to be used in removing or trimming the tree.

(f) Description of tree planting or replacement program, including detailed plans for an irrigation program, if required.

(g) Reasons for proposing removal or trimming of the tree.

(h) Street address where tree is located.

(i) General health of tree to be trimmed, cut down or removed, as documented by a licensed tree surgeon or arborist.

(j) Other pertinent information which the Planning Director may require.

SECTION 12,021.1. FEES. The application for a tree cutting permit shall be accompanied by a fee as set by resolution of the Board of Supervisors.

SECTION 12,021.2. POSTING NOTICE OF APPLICATION. The applicant shall cause a notice of application on a form provided by the San Mateo County Planning Division to be posted on each tree for which a permit is required and in at least two conspicuous locations clearly visible to the public, preferably on the roadside at eye level, on or close to the property affected indicating the date, a brief description of the application, the identification of the subject property, the address to which comments may be directed and from which further information may be obtained, and the final date for receipt of comments. The applicant shall indicate on the application his or her affidavit that this notice will be posted for at least ten (10) calendar days after the submission of the completed application.

SECTION 12,022. ACTION ON PERMIT. The Planning Director shall review the application and, if necessary, inspect the site and shall determine on the basis of the information provided, the site inspection and the criteria con tuned herein whether to grant, grant with conditions, or deny the permit. Whenever any action is taken on a permit, the Planning Director shall provide the applicant with a written statement indicating said action, and conditions imposed and the findings made in taking such action.

SECTION 12,022.1. SCENIC CORRIDORS. Any permits which involve substantial alteration of vegetation within a scenic corridor shall be acted upon by the Planning

Commission. The Planning Commission may approve, conditionally approve, or deny the permit.

SECTION 12,023. CRITERIA FOR PERMIT APPROVAL. The Planning Director or any other person or body charged with determining whether to grant, conditionally grant or deny a Tree Cutting or Trimming Permit may approve a permit only if one or more of the following findings are made:

(a) The tree: (1) is diseased; (2) could adversely affect the general health and safety; (3) could cause substantial damage; (4) is a public nuisance; (5) is in danger of falling; (6) is too closely located to existing or proposed structures consistent with LCP Policy 8.9(a); (7) meets standards for tree removal of Chapter 28.1 (Design Review District) of the San Mateo County zoning regulations; (8) substantially detracts from the value of the property; (9) interferes with utility services consistent with San Mateo County Local Coastal Program (LCP) Policy 8.9(a); (10) acts as a host for a plant which is parasitic to another species of tree which is in danger of being infested or exterminated by the parasite; (11) is a substantial fire hazard; or (12) will be replaced by plantings approved by the Planning Director or Design Review Administrator, unless special conditions indicate otherwise.

(b) The required action is necessary (1) to utilize the property in a manner which is of greater public value than any environmental degradation caused by the action; or (2) to allow reasonable economic or other enjoyment of the property. These findings cannot be made for any property in the Coastal Zone.

SECTION 12,024. CONDITIONS OF APPROVAL. In granting any permit as provided herein, the Planning Director, Planning Commission, or Board of Supervisors may attach reasonable conditions to insure compliance with the intent and purpose of this ordinance including, but not limited to:

(a) Outside of the RH/DR district, replacement of trees removed shall be with plantings of trees acceptable to the Planning Director.

(b) In the RH/DR district, replacement shall be in a manner and quantity prescribed by the Design Review Committee but shall not exceed the following specifications:

    (1) For each loss of a significant indigenous tree in the RH/DR district there shall be a replacement with three (3) or more trees, as determined by the Planning Director, of the same species using at least five (5) gallon size stock.

    (2) For each loss of a significant exotic tree in the RH/DR district there shall be a replacement with three (3) or more trees, as determined by the Planning Director, from a list maintained by the Planning Director. Substitutes for trees listed by the Planning Director may be considered but only when good reason and data are provided which show that the substitute tree can survive and flourish in the regional climatic conditions.

(3) Replacement trees for trees removed in the RH/DR district shall require a surety deposit for both performance (installation of tree, staking, and providing an irrigation system) and maintenance. Maintenance shall be required for no less than two (2) and no more than five (5) years as determined by the Planning Director.

(4) Loss of any particular replacement prior to the termination of the maintenance period shall require the landowner at his/her expense to replace the lost tree or trees. Under such circumstances, the maintenance period will be automatically extended for a period of two (2) additional years.

(5) Release of either the performance or maintenance surety shall only be allowed upon the satisfactory installation or maintenance and upon inspection by the County.

(6) Where a tree or trees have been removed on undeveloped lands in the RH/DR district and no existing water system is available on the parcel, the replacement tree or trees, if required to be installed, shall be of sufficient size that watering need not be done by automatic means. Under such circumstances, water can be imported by tank or some other suitable method which would ensure tree survival in accordance with subparagraphs (4) and (5), above.

(7) Postponing the planting of replacement trees can be done if approved by the Design Review Administrator.

(c) Use of measures to effect erosion control, soil and water retention and diversion or control of increased flow of surface waters.

(d) Use of measures to insure that the contemplated action will not have adverse environmental effects relating to shade, noise buffers, protection from wind, air pollution and historic features.

(e) Removal of posting following all tree cutting activity and inspection by the County.

SECTION 12,025. PERMIT ON SITE. The approved Tree Cutting Permit shall be posted on the site at all times during the tree cutting operation and shall be available to any person for inspection. The issued permit shall be posted in a conspicuous place at eye level at a point nearest the street.

SECTION 12,026. EXPIRATION OF PERMIT. If work authorized by an approved permit is not commenced within a period of one year from the date of approval, the permit shall be considered void.

SECTION 12,027. EMERGENCIES. In case of emergency, caused by the hazardous or dangerous condition of a tree and requiring immediate action for the safety of life or property, such necessary action may be taken to remove the tree or otherwise reduce

or eliminate the hazard without complying with the other provisions of this Part, except that the person responsible for the cutting or removal of the trees shall report such action to the Planning Director within five (5) working days thereafter, and the provisions regarding replacement trees in accordance with Section 12,024 of this Part shall be required.

SECTION 12,028. APPEALS. The applicant or any other person who is aggrieved by the issuance or non-issuance of the permit or any conditions thereof, or by any other action taken by the Planning Director as authorized by this Part, may appeal in the manner set forth below. A statement by the appellant shall be required indicating how the appellant is aggrieved or adversely affected by the decision. At the time the appeal is heard, the Planning Commission shall rule upon the appellant's standing as an aggrieved party. If the Planning Commission rules that the appellant is not aggrieved, all further proceedings shall be stayed except that the appellant may appeal the Planning Commission decision on standing to the Board of Supervisors as herein provided.

(a) Any action under this Part taken by the Planning Director may be appealed to the Planning Commission by filing a written notice of appeal with the Secretary of the Planning Commission within ten (10) days of the issuance or denial of said permit. The Planning Commission shall hear such appeal within thirty (30) days of the date of filing of the written protest. The Planning Commission shall render a decision on the appeal within fifteen (15) days of public hearing. The Planning Director shall notify the affected parties of said action as provided for in Section 12,022.

(b) Any action under this Part taken by the Planning Commission may be appealed to the Board of Supervisors by filing a written notice of appeal with the Secretary of the Planning Commission within (10) days from the decision of the Planning Commission. The Board of Supervisors shall hear such appeal within sixty (60) days and render a decision within fifteen (15) days following such hearing. The decision of the Board of Supervisors shall be final. The action taken by the Board of Supervisors shall be reported to the affected parties as provided for in Section 12,022 herein.

CHAPTER 4. INSPECTIONS, VIOLATIONS

SECTION 12,030. PERMISSION TO ENTER PROPOSED PERMIT AREA. Filing of an application for a Tree Cutting Permit shall constitute a grant of permission for County personnel concerned with administering this Part to enter the subject permit area during normal working hours from the date of application to the completion of any approved action for the purpose of inspecting said area for compliance with these rules and applicable law. Such right of entry shall be granted by the landowner through the duration of any requirements to maintain replacement trees as conditions to the permit.

SECTION 12,031. INSPECTION. The Planning Department may cause sufficient inspections to be made of the permit area to assure compliance with the provisions of

this part and the requirements of any applicable law. Upon completion of any inspection, the permittee shall be given a written notice of any violations observed at the time of inspection for correction thereof.

SECTION 12,032. VIOLATIONS: CEASE AND DESIST; REMEDIATION OF UNLAWFUL TREE CUTTING. If the Chief Building Official or Planning Director or their designated representative, or any officer of the San Mateo County Sheriff's Department, or any other peace officer finds any tree cutting activity for which a permit under this Part is required but not issued, or the posting as required in this Part has not been properly performed, or the tree cutting is not in substantial compliance with an issued permit or the plans and specifications relating thereto, or a valid tree cutting permit is not immediately present at the job site, an order to cease work may be issued. No further tree cutting may be done except upon approval of the Planning Director. Conditions may be imposed as necessary to protect the health, safety and welfare of the public, including the condition that corrective work be done within a designated time in accordance with the provisions of this Part, or as may be provided by law in Division VI (Zoning Regulations), San Mateo County Ordinance Code. In the event that the Planning Director determines that one or more significant trees have been cut without the required permit or permits, the following additional requirements shall be imposed:

(a) A stop work notice may be issued on all construction of any kind on the property to remain in effect until the remaining requirements of this section are satisfied.

(b) The owner of the affected property shall be required to obtain a permit in accordance with Chapter 3 of this Part, and shall pay all fees and satisfy all conditions in connection therewith.

(c) The stop work notice shall remain in effect, and no construction shall be allowed on the affected property, until the expiration of such period of time as may be prescribed by the Planning Director for the maintenance of the replacement trees in accordance with Section 12,024, as set forth hereinabove.

SECTION 12,032.2. VIOLATIONS: CITATION FOR INFRACTION. A citation, as described in Chapter 2.5 of Division I of the San Mateo County Ordinance Code, may also be issued. Any person to whom a citation is issued under the provisions of this Part shall be subject to a fine, as follows: Upon a first violation, by a fine not exceeding One Hundred Dollars ($100); for a second violation within a period of one (1) year, by a fine not exceeding Two Hundred Dollars ($200); and for any additional violation within a period of one (1) year, by a fine not exceeding Five Hundred Dollars ($500), in accordance with Section 25132 of the Government Code. If personal service of a citation is made on a tree cutting operator, a second citation for the same infraction may be personally served on the record owner of the property. For the purposes of this Section each single tree being cut without benefit of a permit shall constitute a separate infraction, the fine being cumulative.

SECTION 12,032.3. VIOLATIONS: CUMULATIVE REMEDIES. The remedies for violations set forth in Sections 12,032 and 12,032.2 can be enforced separately or

cumulatively. In addition to the penalties provided for in this Chapter, any violations may be addressed by civil action.

SECTION 12,032.4. VIOLATIONS: RECORDATION OF NOTICE OF VIOLATION. A notice of violation may be recorded in the office of the County Recorder for non-compliance with the provisions of this Part. The Planning Director shall notify by certified mail the owner of the affected real property and any other known party responsible for the violation of the recordation. If the property owner or other responsible party disagrees with the County's determination that the tree cutting violates this Part, proof may be submitted to the Planning Director, including documentation and professional tree surgeon or arborist reports that a tree cutting permit is not required. If the Planning Director determines that a tree cutting permit is required, the property owner and/or party responsible for the tree cutting work shall apply for the necessary tree cutting permit within a specified time period set by the Planning Director.

SECTION 12,032.5. NOTICE OF EXPUNGEMENT. A notice of expungement of the notice of violation shall be recorded with the office of the County Recorder when:

(a) The Planning Director or other appellate authority determines that a tree cutting permit is not required; or

(b) All permit conditions have been met including those conditions imposed as part of project review under any other provisions of the San Mateo County Ordinance Code for the parcel affected by the notice of violation. The meeting of any long term conditions, such as maintenance of replacement plantings is to be guaranteed by a surety deposit to run with the land and the term for which shall not be imposed as a demand for meeting these requirements for the expungement.

This Ordinance was adopted in its entirety on May 15, 1990 as Ordinance No. 3229. This action repealed and added Part Three of Division VIII, San Mateo County Ordinance Code.

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(5/8/02)

COUNTY OF SAN MATEO
ENVIRONMENTAL SERVICES AGENCY
PLANNING AND BUILDING DIVISION

REGULATIONS FOR EXCAVATING, GRADING, FILLING AND CLEARING ON LANDS IN UNINCORPORATED SAN MATEO COUNTY

[From Chapter 8, Division VII, San Mateo County Ordinance Code]

SECTION 8600. SCOPE AND PURPOSE. It is the declared intent of the County of San Mateo to promote the conservation of natural resources, including topography and vegetation, as well as to protect health and safety, which includes the reduction or elimination of the hazards of earth slides, mud flows, rock falls, undue settlement, erosion, siltation, and flooding, or other special conditions. To achieve these goals, the adverse effects of grading, cut and fill operations, land clearing, water runoff, and soil erosion must be minimized. Therefore, the following regulatory provisions of this chapter shall apply for the purpose of stringent control of all aspects of grading and clearing operations and to establish procedure for issuance, administration and enforcement of a permit.

SECTION 8600.1. APPLICATION OF CHAPTER. This chapter shall apply to all grading and excavating operations conducted in the unincorporated portions of the County, unless such operations are specifically excepted or unless a permit for such operations is required in accordance with Sections 6501 and 6502 of this ordinance code.

SECTION 8601. DEFINITIONS. For the purposes of this chapter, the following definitions shall apply.

SECTION 8601.1. ARCHITECT shall mean a professional architect registered in and by the State of California.

SECTION 8601.2. AS-GRADED is the surface conditions extant on completion of grading.

SECTION 8601.3. BEDROCK is in-place solid rock.

SECTION 8601.4. BENCH is a relatively level step excavated into earth material on which fill is to be placed, or within a cut or fill slope.

SECTION 8601.5. BEST MANAGEMENT PRACTICES HANDBOOK is a compilation of erosion and sediment control measures which is maintained by the County Planning and Building Division.

SECTION 8601.6. BLENDING is a term for the intermixing and compaction of natural site soils (such as materials from two natural soil horizons), or for the intermixing of natural site soils with imported soil or other materials.

SECTION 8601.7. BORROW is earth material acquired from on- or off-site locations for use in grading on a site.

SECTION 8601.8. BUTTRESS FILL shall mean a compacted fill placed in such a manner as to buttress and retain weak or unstable materials.

SECTION 8601.9. CERTIFICATION shall mean a written engineering or geological opinion concerning the progress and completion of the work.

SECTION 8601.10. CIVIL ENGINEER shall mean a professional engineer registered in and by the State of California to practice in the field of civil works (see Section 8606.2).

SECTION 8601.11. CIVIL ENGINEERING shall mean the application of the knowledge of the forces of nature, principles of mechanics and the properties of materials to the evaluation, design and construction of civil works.

SECTION 8601.12. CONTOUR ROUNDING is the rounding of cut and fill slopes in the horizontal and vertical planes to promote stability, to blend with existing contours or to provide horizontal variation, and to eliminate the artificial appearance of slopes.

SECTION 8601.13. COMPACTION is the densification of a fill by mechanical or other means.

SECTION 8601.14. COMPETENT MATERIAL shall mean earth material capable of withstanding the loads or forces which are to be imposed upon it without failure or detrimental settlement as certified by the appropriate geotechnical consultant.

SECTION 8601.15. COUNTY, where referring to approvals, denials or waivers, shall mean the County of San Mateo, or its designees.

SECTION 8601.16. DEPTH OF CUT OR FILL shall be the vertical distance between existing natural ground and the finish elevation at any location.

SECTION 8601.17. DRAINAGE WAY is a natural or manmade channel which collects and intermittently or continuously conveys stormwater runoff.

SECTION 8601.18. DUST CONTROL PLAN is a written procedure describing the method, equipment, and materials to be used in minimizing and controlling dust arising from the construction activities.

SECTION 8601.19. EARTH MATERIAL is any rock, or natural soil or any combination thereof.

SECTION 8601.20. ENGINEERING GEOLOGIST shall mean a professional engineering geologist certified in and by the State of California to practice in the field of engineering geology (see Section 8606.3).

SECTION 8601.21. ENGINEERING GEOLOGY shall mean the application of geologic knowledge and principles in the investigation and evaluation of naturally occurring rock and soil for use in the design of civil works.

SECTION 8601.22. EROSION is the wearing away of the ground surface as a result of the movement of wind, or water.

SECTION 8601.23. EROSION CONTROL PLAN is a written report describing the measures, materials and implementation schedule proposed for erosion control on a grading site, as per Performance Standards for Erosion and Sediment Control Plans described in the Grading Permit Performance Standards Handbook.

SECTION 8601.24. EXCAVATION is the mechanical removal of earth material.

SECTION 8601.25. FILL is a deposit of earth or waste material placed by artificial means. (Engineered fill is material placed according to the recommendations and under the observation of a geotechnical consultant.)

SECTION 8601.26. GEOTECHNICAL CONSULTANT shall mean soil engineer or engineering geologist.

SECTION 8601.27. GRADE shall mean the vertical location of the ground surface.

SECTION 8601.28. GRADE, EXISTING is the grade prior to grading.

SECTION 8601.29. GRADE, FINISH is the final grade of the site which conforms to the approved plan.

SECTION 8601.30. GRADE, ROUGH is the stage at which the grade approximately conforms to the approved plan.

SECTION 8601.31. GRADING is any excavating, filling, or placement of earth materials or combination thereof.

SECTION 8601.32. GRADING PERMIT PERFORMANCE STANDARDS is a handbook to be used by the applicant which details requirements for Erosion and Sediment Control Plans, Grading Standards, Geotechnical Report Guidelines and Dust Control Plan Guidelines.

SECTION 8601.33. HEIGHT OF CUT AND FILL SLOPES shall be the finish vertical distance from the top to toe of slope.

SECTION 8601.34. KEY is a trench (or bench) excavated in competent earth material beneath a proposed fill for placement of engineered fill.

SECTION 8601.35. LAND CLEARING is the removal of vegetation down to the duff or bare soil by any method.

SECTION 8601.36. LAND CLEARING PERMIT is a permit granted by the Planning Director or Planning Commission which authorizes the permittee to carry out land clearing.

SECTION 8601.37. LAND DISTURBANCE/LAND DISTURBING ACTIVITY is clearing, grading or other manipulation of the terrain.

SECTION 8601.38. MINIMUM STANDARDS FOR GEOTECHNICAL REPORTS is a handbook which details the information to be included in a geotechnical report.

SECTION 8601.39. NESTING is the placement of large rocks such that voids in the fill are created and that proper compaction becomes difficult or impossible.

SECTION 8601.40. REPLACEMENT is the removal and wasting of soil materials as judged unsuitable for the support of dwellings or other site improvements, and their replacement with suitable soil materials properly engineered.

SECTION 8601.41. REWORKING is the removal, or processing and subsequent mechanical densification or consolidation of existing soil material for reasons of deficiency in one or more respects.

SECTION 8601.42. SIGNIFICANT shall mean any detrimental effect on the physical or natural state which cannot be adequately mitigated and as identified by Sections 21,000 et seq. of the California Public Resources Code.

SECTION 8601.43. SITE is any lot or parcel of land or continuous combination thereof, where grading is anticipated.

SECTION 8601.44. SLOPE is an inclined ground surface the inclination of which is expressed as a ratio of horizontal distance to vertical distance.

SECTION 8601.45. SOIL is the highly weathered top layer of the earth's surface, excluding bedrock, but including any otherwise unconsolidated earth materials.

SECTION 8601.46. SOIL ENGINEER shall mean a civil engineer experienced and knowledgeable in the practice of soil engineering (see Section 8606.3).

SECTION 8601.47. SOIL ENGINEERING shall mean the application of the principles of soil mechanics in the investigation, evaluation and design of civil works involving the use of earth materials and the inspection and testing of the construction thereof.

SECTION 8601.48. STABILIZATION is a term for any procedure that will result in increased shear strength in a soil.

SECTION 8601.49. STRUCTURE shall mean something constructed or built, as a building, a wall, a bridge, a road, a dam, etc.

SECTION 8601.50. TERRACE is a relatively level step constructed in the face of a graded slope surface for drainage and maintenance purposes.

SECTION 8601.51. VARIABLE SLOPE is the variation of a cut or fill slope in the vertical plane to blend with existing contours and vertical undulation to eliminate the artificial appearance of slopes or to take advantage of inherent characteristics of the slope material.

SECTION 8601.52. WASTE MATERIAL is non-hazardous useless or discarded material.

SECTION 8601.53. WATERCOURSE is a blue line perennial or intermittent stream as shown on USGS topographic 7 1/2 minute quadrangle series maps.

SECTION 8602. PERMIT REQUIREMENTS. For the purpose of this chapter and to establish an orderly procedure for excavating, grading, filling and clearing, land disturbing activities shall be handled in two distinct phases.

SECTION 8602.1. GRADING. A grading permit shall be required for activities involving grading except as exempted in Section 8603 of this chapter.

SECTION 8602.2. CLEARING. A land clearing permit for the removal of vegetation shall be required when:

(a) The land area to be cleared is 5,000 sq. ft. or greater, within any two-year period except in County Scenic Corridors where vegetation removal is greater than 1,000 sq. ft.

(b) Existing slopes are greater than 20 percent.

(c) The land area to be cleared is in any sensitive habitat or buffer zone as identified in the County General Plan.

SECTION 8603. EXEMPTIONS. The following exemptions shall not apply to land disturbances within natural drainage channels.

No person shall do any grading or land clearing without first having obtained a permit from the County required by this chapter, except for the following:

SECTION 8603.1. An excavation below finished grade for basements and footings of a building, retaining wall, swimming pool, or other structure authorized by a valid building permit. This statement shall not exempt from permit requirement under this chapter, any fill made with the material on- or off-site from such excavation nor exempt any excavation having an unsupported height greater than 5 feet after the completion of such structure, nor when any single purpose excavation exceeds 250 cubic yards.

SECTION 8603.2. Cemetery graves.

SECTION 8603.3. Approved grading in conjunction with a timber harvest permit issued by the County of San Mateo.

SECTION 8603.4. Excavations for water wells or utilities.

SECTION 8603.5. Mining, quarrying, excavating, processing, stockpiling of rock, sand, gravel, aggregate or clay, provided a valid surface mining and reclamation permit issued by the County of San Mateo is in effect.

SECTION 8603.6. Exploratory excavations under the direction of soils engineer or engineering geologists. Such excavations are not to result in an erodible, hazardous, or unstable state. The County Geologist shall be informed of such explorations at least two (2) working days prior to commencement of work.

SECTION 8603.7. An excavation which is less than 2 feet in maximum vertical depth made on competent natural terrain with a slope flatter than five horizontal to one vertical and which creates slopes no steeper than two horizontal to one vertical and removes less than 150 cubic yards of material.

SECTION 8603.8. A fill less than 2 feet in depth, placed on natural terrain with a slope flatter than five horizontal to one vertical, not intended to support structures, and which does not exceed 150 cubic yards on any one parcel, and does not obstruct a drainage course or affect structural integrity of adjacent property.

SECTION 8603.9. Work conducted in any County street, public right-of-way or easement when the work is for a public facility, public utility or other public purposes, or is controlled by other permits.

SECTION 8603.10. Emergency work as authorized by the Planning Director necessary to protect life, limb or property; or to maintain the safety, use or stability of a public way or drainage way.

SECTION 8603.11. The land area to be cleared is for fire protection purposes as required by the San Mateo County Fire Ordinance, Chapter 15, Fire Protection Regulations.

SECTION 8603.12. The land area to be cleared is for routine agricultural activities including but not limited to plowing, harrowing, disking, ridging, listing, leveling, and similar operations to prepare a field for a crop, or the land area to be cleared is for resource management such as brush clearing, erosion control or other resource management programs carried out under the purview of the Resource Conservation District.

SECTION 8603.13. Gardening for home use.

SECTION 8603.14. Agricultural use of land that is operated in accordance with a conservation plan approved by and implemented according to the practices of the Resource Conservation District (RCD) or when it is determined by the RCD that such use will not cause excessive erosion or sediment losses, based on applicable soil loss tolerance values.

SECTION 8603.15. Grading projects for purposes of soil conservation that have been approved by the San Mateo County Resource Conservation District (RCD) when plans for such project have been filed by the RCD with the Planning Division and the Department of Public Works and with the submittal of a certificate of exemption from the Resource Conservation District.

SECTION 8603.16. Agricultural water impoundments not exceeding the minimum limitations of the State Dams and Reservoir Act of 1967 (Sections 6000 et seq. of the Water Code) when approved by the San Mateo County Resource Conservation District and with the submittal of a certificate of exemption from the RCD and provided plans are to be filed with the Planning Division and the Department of Public Works by the RCD.

SECTION 8603.17. The land area to be cleared is to be carried out under an approved Forest Improvement Program or Chaparral Management Program under the purview of the California Department of Forestry when plans for such projects have been filed with the Planning Division.

SECTION 8603.18. Repair of storm damage consisting of slide repair, debris removal and water impoundment replacement on agricultural lands carried out under the purview of the ASCS or RCD provided that such activity does not create hazards to other lands.

SECTION 8604. PROCEDURE.

SECTION 8604.1. APPLICATION REQUIREMENTS.

(a) Grading Permit Application Requirements. To obtain a grading permit, the applicant shall first file a written application with the Planning and Building Division on a form provided by the Planning Director.

The application shall be accompanied by the following material:

(1) Where applicable, a letter from the property owner authorizing the property owner's representative to sign the application.

(2) Fees as set by resolution of the Board of Supervisors.

(3) A civil engineer's estimate of the quantity of materials to be moved.

(4) A geotechnical report except when waived by the Director of Public Works. The applicant must comply with the Uniform Building Code and the County of San Mateo Minimum Standards for Geotechnical Reports.

(5) Two sets of grading plans. When the permit is to be heard by the Planning Commission, seven sets of plans are required. The plans shall be prepared and signed by a civil engineer and shall be 24" x 36" and in a form approved by the Director of Public Works. Where a geotechnical report has been required, the geotechnical consultant shall certify on the San Mateo County Geotechnical Consultant Approval Form that applicable portions of the plans have been prepared in accordance with the recommendations contained in the geotechnical report. The plan shall contain at least the following items (additional material may be required to show conformance of the proposed grading with the requirements of this division and other related ordinances).

a) A vicinity map or other means of adequately indicating the site location.

b) Boundary lines of the site.

c) If there is a proposed subdivision, each lot or parcel of land into which the site is proposed to be divided.

d) The location of any existing buildings, structures, easements, or underground utilities on the property where the work is to be performed, and the location of any buildings or structures on adjacent land within 50 feet of the proposed work.

e) Accurate contours showing the topography of the existing ground extending at least 10 feet outside all boundary lines of the project site, based on elevations taken on adjacent property or other means approved by the Director of Public Works. The contour lines shall be at intervals sufficient to show the configuration of the ground before grading relative to a bench mark established at or adjacent to the grading site.

f) All of the proposed uses for which the proposed grading is necessary.

g) Elevations, locations, extent and slope of all proposed grading shown by contours, or other acceptable means, and location of any rock disposal areas, buttress fills, subdrains, or other special features to be included in the work. Contours of the finished surface of all proposed grading shall also be included.

h) A statement of the quantities of material to be excavated and/or filled and the amount of such material to be imported to, or exported from, the site. Approved disposal sites must be used.

i) Location and nature of known or suspected soil or geologic hazard areas.

j) Approximate boundaries of any areas with a history of flooding.

k) Location, width, direction of flow and approximate location of top and toes of banks of any watercourses.

l) General location and character of vegetation covering the site and the locations of trees with a trunk diameter of 12 inches or more, measured at a point 4 1/2 feet above average ground level, within 12 feet of the area to be disturbed by the proposed grading.

m) A detailed plan for erosion and sediment control, both during construction and permanent, unless the site has no slopes greater than 2 percent or unless waived or modified by the Director of Public Works (see Erosion and Sediment Control Plan, Grading Permit Performance Standards Handbook).

n) A plan for dust control (see Dust Control Plans, Grading Permit Performance Standards).

o) Name and signature of the registered civil engineer (when required) under whose direction the grading plan is prepared.

p) Specifications, and cross-sections, profiles, elevations, dimensions and construction details based on accurate field data.

q) Construction details for roads, watercourses, culverts, bridges and drainage devices, retaining walls, gabion walls, cribbing, dams, and other improvements existing or to be constructed, together with supporting calculations and maps.

r) Such other information as the Director of Public Works or Planning Director may require.

(b) Agricultural Water Impoundments Permit Requirements. Plans and profiles not under the purview of the RCD and therefore not exempt under Section 8603.18 shall be prepared by a licensed engineer as required by the Director of Public Works and be subject to permits and approvals from the Planning Division. All construction must be in accordance with approved plans and specifications and, when required, is to be done in the presence of and certified by a licensed soils engineer or engineering geologist as appropriate.

(c) Land Clearing Permit Application Requirements. To obtain a land clearing permit, the applicant shall first file a written application with the Planning and Building Division on a form provided by the Planning Director.

The application for a land clearing permit shall be accompanied by the following materials:

(1) Where applicable, a letter from the property owner authorizing the property owner's representative to sign the application.

(2) Fees as set by resolution of the Board of Supervisors.

(3) An Erosion Control Plan (as specified in the Performance Standards Handbook).

(4) Plan for the removal of vegetation. The plan shall include at a minimum:

a) A vicinity map or other means of adequately indicating the site location.

b) Boundary lines of the site.

c) Location of area to be cleared.

d) Location of existing structures on the site.

e) A plan for disposal of the removed vegetation.

f) Purpose of removal.

SECTION 8604.2. REVIEW, REFERRAL AND REPORT.

(a) Prior to acceptance, the application shall be reviewed by the Planning Division and the Department of Public Works for compliance with Section 8604.1(a) or 8604.1(b). Additional information may subsequently be required to demonstrate compliance with this chapter.

(b) The Planning Division shall refer the application to the Department of Public Works and other interested departments and agencies for comment and recommendation.

In reviewing the application and plans and making his recommendations, the Director of Public Works shall report whether the grading as proposed complies with the standards as detailed in Section 8605 and shall recommend conditions to assure such compliance.

(c) It shall be the duty of the Planning Director to forward the application together with recommendations thereon to the appropriate body specified in Section 8604.3 for its action.

SECTION 8604.3. DECISION MAKING AUTHORITY. The following person or body shall grant the indicated permits as required by this chapter:

The Planning Commission: All grading and land clearing permits in State or County Scenic Road Corridors.

Planning Director: Land clearing permits outside State or County Scenic Road Corridors; grading permits for agricultural water impoundments which do not qualify for exemption under Section 8603.16 and which are located outside State and County Scenic Road Corridors; and grading permits involving cut or fill not to exceed 1,000 cubic bank yards.

Zoning Hearing Officer: All other grading permits.

SECTION 8604.4. PUBLIC HEARING AND COMMENT.

(a) The Zoning Hearing Officer, Planning Commission or Board of Supervisors shall hold a public hearing before taking action on any grading or land clearing permit which is before them.

(b) A public hearing on a grading or land clearing permit may be held concurrently with any other public hearing on the project held by the appropriate person or body specified in Section 8604.3.

(c) In addition to testifying at a public hearing, any person may submit written comment on an application for a grading or land clearing permit, or on a permit appeal, at any time prior to the close of the applicable public hearing. If no public hearing is required, written comments may be submitted prior to the decision date specified in any notice required by Section 8604.5. Written comments shall be submitted to the Planning Director who shall forward them to the appropriate person, commission or board.

SECTION 8604.5. NOTICE REQUIREMENTS. Where a public hearing is required, notice shall be given as required for use permits in Section 6503 of the San Mateo County Ordinance Code, Zoning Annex, if in the opinion of the Planning Director the grading activity may affect properties beyond 300 feet from the property line, additional notice may be required as deemed appropriate. In addition, ten (10) days prior to action by the Planning Director, notice of grading permits required for agricultural water impoundments shall be given in the same manner; such notice shall specify the date on which a decision will be made.

SECTION 8604.6. FINDINGS, CONDITIONS AND ACTION.

(a) The decision making authority will review the report submitted by the Planning Division regarding the permit and make the following findings in any action to approve the permit:

(1) That the granting of the permit will not have a significant adverse effect on the environment.

(2) That the project conforms to the criteria of this chapter, including the standards referenced in Section 8605.

(3) That the project is consistent with the General Plan.

(b) Approval of a permit required by this chapter shall be conditioned as necessary to ensure conformance with this chapter. For agricultural water impoundments, the permit may be conditioned as appropriate to include such requirements as having adequate evidence of water rights provided by the State Division of Water Rights in advance of construction. The approving authority may require modification and resubmittal of project plans, drawings and specifications. When modification and resubmittal of plans is required, action shall be deferred for a sufficient period of time to allow the Planning Director to prepare his recommendation on the modified project.

(c) After reviewing the evidence regarding the application for permit, the decision making authority shall either grant or deny the permit based on the conditions and findings described in Section 8604.6(a) and (b).

SECTION 8604.7. APPEALS. The action of the decision maker in authorizing or denying a permit may be appealed by the applicant, or any other person who is aggrieved by issuance of or non-issuance of the permit or any conditions thereof.

Permits considered and acted upon by the Planning Director or Zoning Hearing Officer may be appealed to the Planning Commission, by filing a written notice of appeal with the Planning Division within ten (10) calendar days from issuance or denial of said permit. The Planning Commission shall hear such appeal and render a decision following such hearing. The decision of the Planning Commission is appealable to the

Board of Supervisors in the manner described above. The decision of the Board of Supervisors shall be final. The action taken by the decision maker shall be reported to the affected parties.

SECTION 8604.8. DURATION OF PERMIT. If a substantial amount of work authorized by any permit is not commenced within eight (8) months of the date of issuance or as otherwise indicated on the face of the permit, or on the improvement agreement, or if said work is not completed within one (1) year of commencement or as otherwise indicated on the permit or the improvement agreement, the permit shall expire and become void.

SECTION 8604.9. RENEWAL. The renewal of an expired permit in accordance with subsection (a) may be administratively approved by the Planning Director providing no changes to the plans have been made. An application for such renewal must be made in writing no later than one month prior to the expiration date, in the same manner as specified for in the original application. The fees for such renewal will be one half (1/2) the original fee. Two renewals may be granted. Extensions beyond two renewals require a complete new application and must be submitted with full fees.

SECTION 8604.10. PERMIT AMENDMENT. Upon application by the permittee, the permit required by this chapter may be amended by the approving authority. Application for and action on an amendment shall be accomplished in the same manner specified by this chapter for initial approval of the permit. All sections of this chapter shall apply to the permit amendment.

SECTION 8604.11. SECURITIES. The County may require the applicant, as a condition of issuing a permit required by this chapter, to post a security in an amount as determined by the County. The security shall be of sufficient amount to ensure compliance with the conditions of the permit, this chapter, and to repair any damage that may result from the land disturbing activity. Release of the security shall occur one year after installation of the measures and be conditioned on the faithful performance of the conditions of the permit.

Securities will be released only upon satisfactory completion of the work and completion of a one-year warranty period required by the County. When landscaping or erosion control measures are required, a separate security shall be posted for a period of two-growing seasons. The security shall be based upon the cost of placement or replacement of the landscaping or the work performed, whichever is greater.

SECTION 8605. STANDARDS. The following standards delineate levels of design and control to be met during the project. Their purpose is to assure that development is accomplished so as to minimize adverse effects on the existing terrain and to minimize the potential for erosion.

SECTION 8605.1. EROSION AND SEDIMENT CONTROL. An erosion and sediment control plan and subsequent implementation shall be required except where an

environmental assessment by the County Planning Division of the site shows that such plan is not necessary. Plans shall conform to standards as detailed in the Grading Permit Performance Standards Handbook.

SECTION 8605.2. GRADING. Performance standards, as detailed in the Grading Permit Performance Standards Handbook, are to apply to all aspects of the proposed grading and are intended to be operational during all stages of development.

SECTION 8605.3. GEOTECHNICAL REPORTS. When it is determined by the Department of Public Works that conditions on the project site warrant a geotechnical report (see 8604.1(a) – Grading Permit Application Requirements), the report shall be prepared by a professional geotechnical consultant under the direction of a soils engineer and an engineering geologist in accordance with the current Minimum Standards for Geotechnical Reports and the Grading Permit Performance Standards Handbook.

SECTION 8605.4. DUST CONTROL PLANS. All projects must submit dust control plans as detailed in the Grading Permit Performance Standards Handbook.

SECTION 8605.5. FIRE SAFETY. All equipment used in grading operations shall meet spark arrester and fire fighting tool requirements as specified in the California Public Resources Code.

SECTION 8605.6. TIME RESTRICTIONS. The period from October 15 to April 15 has been determined to be the period in which heavy rainfall normally occurs in the County. During said period, no land disturbing activity shall be authorized on any single site under a permit if the Planning Director determines that such work will endanger the public health or safety or cause excessive erosion.

SECTION 8606. RESPONSIBILITIES DURING PROJECT IMPLEMENTATION.

SECTION 8606.1. RIGHT OF INSPECTION. All land disturbing activities for which a permit is required shall be subject to inspection by the County. In addition to the inspections specified in Sections 8606.2 and 8606.3, the County may make such other inspections as it deems necessary to determine that the work is being performed in compliance with the requirements of this chapter.

SECTION 8606.2. RESPONSIBILITIES OF CIVIL ENGINEER.

(a) For engineered grading, it shall be the responsibility of the civil engineer who prepares the approved grading plan to incorporate all recommendations from the geotechnical reports into the grading plan. The civil engineer shall also be responsible for the inspection and certification of the grading within the engineer's area of technical specialty. This responsibility shall include, but need not be limited to, inspection and certification as to the establishment of line, grade and drainage of the development area. The civil engineer shall act as the

coordinating agent in the event the need arises for liaison between the other professionals, the contractor and the County. The civil engineer shall also be responsible for the preparation of revised plans and the submission of as-graded grading plans (see Section 8606.6) upon completion of the work.

(b) Prior to foundation work, the permittee's engineer shall certify that the building pad elevations do not vary more than two-tenths (0.2) of a foot from the approved pad elevations.

(c) When work has been completed, the civil engineer shall certify that all grading, lot drainage and drainage facilities have been completed and the slope planting installed in conformance with the approved plans and the requirements of this chapter.

SECTION 8606.3. RESPONSIBILITIES OF THE SOILS ENGINEER AND ENGINEERING GEOLOGIST.

(a) During grading, all necessary reports, compaction data, and geotechnical recommendations shall be submitted to the permittee's civil engineer and the Department of Public Works by the soils engineer and the engineering geologist.

(b) The soils engineer's area of responsibility shall include, but need not be limited to, the professional inspection and certification concerning the preparation of ground to receive fills, testing for required compaction, stability of all finish slopes and design of buttress and replacement fills, and the design and need for subdrains and other groundwater control devices, where required, incorporating data supplied by the engineering geologist.

(c) The engineering geologist's area of responsibility shall include, but need not be limited to, professional inspection and certification of the adequacy of natural ground for receiving fills and the stability of cut slopes with respect to geological matters. Applicable findings shall be reported to the soils engineer and the civil engineer for engineering analysis.

(d) During grading, periodic density tests shall be made by the geotechnical consultant and submitted to the Department of Public Works. Dry density, moisture content, and the location, elevation and sampling date of each sample taken shall be reported, along with sufficient data to correlate with laboratory analyses submitted. In addition, the location and type of all surface and subsurface water control measures shall be submitted.

(e) Upon completion of the grading, the geotechnical consultant shall certify that the site was graded and filled with material in accordance with approved specifications and approved geotechnical recommendations. The certification should be completed on the Geotechnical Consultant Approval Form provided by the Department of Public Works.

SECTION 8606.4. CHANGE OF CONSULTANT. If the civil engineer, the geotechnical consultant or the testing agency of record is changed during the course of the work, the work shall be stopped until the replacement has agreed to accept the responsibility within the area of its technical competence for certification upon completion of the work.

SECTION 8606.5. NONCOMPLIANCE. If, in the course of fulfilling its responsibility under this chapter, the civil engineer, the geotechnical consultant or the testing agency finds that the work is not being done in conformance with this chapter, or the approved grading plans, the discrepancies shall be reported immediately in writing to the person in charge of the grading work and to the Department of Public Works and the Planning Director. Recommendations for corrective measures, if necessary, shall be submitted. Project work shall be stopped until corrective measures are approved by the County.

SECTION 8606.6. SUPPLEMENTAL REPORTS. Upon completion of the rough grading work, and at the final completion of the work, the County may require the following reports and drawings and supplements thereto:

(a) An as-graded grading plan prepared by the civil engineer including original ground surface elevations, as-graded ground surface elevations, lot drainage patterns and locations and elevations of all surface and subsurface drainage facilities, cut fill lines and all other pertinent information including, but not limited to, buttress and replacement fills, restricted from building areas, etc.

(b) An as-built grading report prepared by the geotechnical consultant including locations and elevations of field density tests, summaries of field and laboratory tests and other substantiating data and comments on any changes made during grading and their effect on the recommendations made in the soil engineering investigation report. The report shall include a final description and if necessary, a map of the geology of the site including any new information disclosed during the grading and its effect upon site grading. A certification shall be provided approving the adequacy of the site for the intended use as affected by soil and geologic factors.

SECTION 8606.7. EMERGENCY PREVENTATIVE MAINTENANCE. In any event that a condition should arise during the grading operations which may become a hazard, whether or not such condition was caused through negligence or act of God, immediate remedial action to mitigate hazard shall be taken under the direction of the civil and/or geotechnical consultant. Within three working days, a written report describing the remedial work shall be sent to the County for review.

SECTION 8607. ENFORCEMENT.

SECTION 8607.1. ENFORCEMENT BY PLANNING DIRECTOR. The Planning Director shall enforce the provisions of this chapter and the terms and conditions of any grading or land clearing permit. If the Planning Director determines that grading or clearing has been done without a required permit, or that grading or land clearing has

been done in violation of any of the terms and conditions of an issued permit, or that any person has otherwise failed to comply with the requirements of this chapter, the Planning Director shall do the following:

(a) Direct that a Stop Work Order be issued on all construction being carried out on the property affected by the violation, if one has not yet been issued under Section 8608.1.

(b) In the event that any violation presents an immediate threat to the public health or safety, require that the property owner or permit applicant, as may be appropriate, take such steps as are necessary to protect the public health or safety, in accordance with the procedure set forth in Section 8607.3.

(c) Require that the property owner or permit applicant, as appropriate, prepare and implement a grading plan which meets the requirements of this chapter and which accomplishes one of the following:

    (1) Restores the property to the condition which existed prior to the violation;

    (2) Requires such remedial work as is necessary to make the grading or land clearing work already completed conform with all requirements of this chapter;

    (3) Requires such remedial work as is necessary to mitigate impacts of the grading work so that such work conforms as nearly as possible to all requirements of this chapter. The Planning Director's determination shall be guided by the factors set forth in Section 8607.4.

A Stop Work Order issued pursuant to this section shall apply to any and all construction or other development being carried out on the property affected by a violation under this section, including, but not limited to, any residential structure to be served by an illegally graded access road or driveway. The Stop Work Order will not be lifted as to any such construction or other development until such time as the grading or land clearing violation has been corrected as provided for in this section.

SECTION 8607.2. NUISANCE. The provisions of this chapter shall not be construed to authorize any person to maintain a private or public nuisance upon their property, and compliance with the terms of this chapter shall not be a defense in any action to abate such nuisance.

SECTION 8607.3. PROCEDURE FOR EMERGENCY WORK. In the event that the Planning Director determines that grading or land clearing work has been done without a permit, or in violation of the terms or conditions of a permit, or in violation of any provision of this chapter, such that there is presented an immediate and substantial threat of physical injury or death, or irreversible environmental damage, the Planning

Director shall immediately direct that a Stop Work Order be issued, and shall give written notice to the permittee or landowner, as appropriate, stating:

(a) The nature of the violation.

(b) The facts upon which a determination has been made that the violation constitutes an immediate and substantial threat of physical injury or death, or irreversible environmental damage.

(c) The work to be completed and/or repairs to be made to correct the violation.

(d) The time within which the work is to be completed.

If after ten (10) days from the receipt of the Notice the applicant fails to respond or to meet the requirements of the Notice within the time limit set by the Planning Director, the Planning Director shall cause such work to be done and deduct the cost therefrom from any cash deposit or other security, if any has been previously posted, or otherwise direct such action as is necessary to recover the costs of such work. Any work performed under this section shall not relieve the owner or permit applicant, as appropriate, from the requirement to comply with the requirements of Section 8607.1, above. The remedy provided herein is not exclusive and shall not preclude the County from employing any other means of enforcement otherwise provided by law.

SECTION 8607.4. RESTORATION OR REMEDIAL WORK. In determining what remedial action shall be required as provided by Section 8607.1(c), the Planning Director shall consider restoration to original condition as the most appropriate remedy, conformance with all requirements of this chapter as the next most appropriate remedy, and mitigation to conform as nearly as possible to the requirements of this chapter as the least appropriate remedy. In making the necessary determination, the Planning Director shall consider:

(a) The amount of grading which has been done in violation of this chapter.

(b) The amount of grading which would be necessary to either restore the property to its original condition or to bring the grading into conformance with the requirements of this chapter.

(c) The environmental damage which would occur as a result of either restoring the property to its original condition or bringing the grading into conformance with the requirements of this chapter.

(d) The economic feasibility of either restoring the property to its original condition or bringing the grading into conformance with the requirements of this chapter.

(e) The degree of culpability of the person committing the violation.

(f) Any other factor relevant to a proper determination of the matter.

Before any work may commence, the property owner or permit applicant, as appropriate, shall provide a bond or other equivalent security, in the amount estimated for completion of the work. In the event the property owner or permit applicant fails to do the required work, the Planning Director shall direct that the proceeds of the security be used to complete the required work.

SECTION 8608. VIOLATIONS.

SECTION 8608.1. STOP WORK ORDER. If the Chief Building Official finds any grading work for which a permit is required but not issued, or the grading is in substantial noncompliance with an issued permit, or the plans and specifications relating thereto, he may order the work stopped by posting the site or by written notice and may issue an abatement order. No further grading may be done except on approval of the Planning Director. Conditions may be imposed as necessary to protect the health, safety and welfare of the public, including the condition that corrective work be done within a designated time as specified in Section 8607.1 of this chapter.

SECTION 8608.2. RECORD NOTICE OF VIOLATION. Record a Notice of Grading Violation in the Office of the County Recorder and notify the owner of the affected real property and any other known party responsible for the violation. If the property owner or other responsible party disagrees that the grading violates this chapter, proof may be submitted to the Planning Director, including documentation and engineering reports that a grading permit is not required.

If the Planning Director determines that a grading permit is required, the property owner and/or party responsible for the grading work shall apply for the necessary grading permit within a specified time period by the Planning Director. Failure to apply for the grading permit or failure to comply with all permit conditions constitutes a grading violation. The Planning Director may refer any grading violation to the County Counsel or to the District Attorney for prosecution.

SECTION 8608.3. NOTICE OF EXPUNGEMENT. A notice of expungement of the notice of violation shall be recorded with the County Recorder when:

(a) The Planning Director or other appellate authority determines that a grading permit is not required; or

(b) All work has been completed and approved by the Planning Director.

SECTION 8608.4. MISDEMEANOR. Violations of this ordinance shall be a misdemeanor and shall be punishable as provided for in Sections 1200-1203 of the San Mateo County Ordinance Code.

SECTION 8608.5. ADDITIONAL PROSECUTIONS. When applicable, violations may be prosecuted as an Unfair Business Practice under the Business and Professions Code.

SECTION 8609. SEPARABILITY. If any section, subsection, sentence, clause, or phrase of this ordinance is for any reason held to be invalid or unconstitutional by the decision of a court of competent jurisdiction, it shall not affect the remaining portions of this ordinance.

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How to Apply for an Encroachment Permit

What is the purpose of an encroachment permit?

An encroachment permit allows you to make certain uses and construct certain improvements within a public right of way or dedicated easement, both above and below ground.

Who issues encroachment permits?

The Public Works Department issues the permits.

Is a public hearing held?

No.

How do I apply for an encroachment permit?

There are two main types of encroachment projects. Their application procedures differ.

1. Construction or remodeling of a single-family home. In this instance, an encroachment permit covers your driveway, sewer laterals, and utility connections. You apply for the encroachment permit at the same time as you apply for your building permit and receive the two permits at the same time. The Building Department will route your application to Public Works. No plans are required other than your building plans.

2. Any work on a public right of way or dedicated easement that is not covered by a single-family-home building permit. Examples include gas main replacement by PG&E or repairs by the Water Department. In this instance, you submit your application and improvement plans directly to the Public Works Department.

How long will it take for my application to be approved?

Encroachment permit applications that are submitted with proper plans can be processed in 3 days, although in some cases it can take as long as 1 month.

Can I appeal if my application is denied?

You cannot appeal beyond the Public Works Department. However, the Public Works staff will discuss with you how your plans might be revised to secure approval.

What is the cost of an Encroachment Permit?

There is a single cost for the permit, however, it varies, depending upon the amount of work you are doing within the right of way.

What's the next step in this process?

Read the pamphlet General Procedures When You Apply for a Planning or Building Permit. This pamphlet describes the general procedures for applying for a permit, paying fees, calling for inspections, and other related matters. Then you should also review the following documents, which contain other information that you may need:

How to Apply for a Permit to Build a Single-Family Residence

After you have become familiar with these documents, we recommend that you prepare some very preliminary plans and bring them to the DRC counter so that we can review them. An informal meeting at this stage may save you considerable time and money later on.

If you are new to San Mateo County, you may also wish to make an appointment to meet with staff as part of the County's Early Assistance Meeting Program. Early assistance meetings are designed to acquaint owner/builders, contractors, architects, and other professionals who are new to the area or are unfamiliar with our permit system, with the different agencies involved, and the various costs and requirements. There is no charge for the meeting, which you can schedule by calling (650) 363-1825.

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San Mateo County
Planning and Building Division

How to Apply for an Encroachment Permit

Planning & Building Division

455 County Center, Second Floor

Redwood City, California 94063

(650) 363-4161

FAX (650) 363-4849

email: INTERNET:plngbldg@co.sanmateo.ca.us

web site address:
http://www.co.sanmateo.ca.us/planning

PUBLIC SERVICE EXCELLENCE

Appendix C: Special Status Species

SNAME	CNAME	FEDLIST	CALLIST
Dipodomys venustus venustus	Santa Cruz kangaroo rat	None	None
Layia carnosa	beach layia	Endangered	Endangered
Trachusa gummifera		None	None
Cicindela hirticollis gravida	sandy beach tiger beetle	None	None
Leptosiphon rosaceus	rose leptosiphon	None	None
Pinus radiata	Monterey pine	None	None
Dufourea stagei		None	None
Speyeria callippe callippe	callippe silverspot butterfly	Endangered	None
Oncorhynchus mykiss irideus	steelhead-central California coast esu	Threatened	None
Asio otus	long-eared owl	None	None
Erodium macrophyllum	round-leaved filaree	None	None
Allium peninsulare var. franciscanum	Franciscan onion	None	None
Astragalus pycnostachyus var. pycnostachyus	coastal marsh milk-vetch	None	None
Dirca occidentalis	western leatherwood	None	None
Astragalus pycnostachyus var. pycnostachyus	coastal marsh milk-vetch	None	None

SNAME	CNAME	FEDLIST	CALLIST
Allium peninsulare var. franciscanum	Franciscan onion	None	None
Arctostaphylos regismontana	Kings Mountain manzanita	None	None
Leptosiphon croceus	coast yellow leptosiphon	None	None
Collinsia multicolor	San Francisco collinsia	None	None
Cirsium andrewsii	Franciscan thistle	None	None
Nothochrysa californica	San Francisco lacewing	None	None
Melospiza melodia pusillula	Alameda song sparrow	None	None
Allium peninsulare var. franciscanum	Franciscan onion	None	None
Speyeria zerene myrtleae	Myrtle's silverspot	Endangered	None
Hydrochara rickseckeri	Ricksecker's water scavenger beetle	None	None
Melospiza melodia pusillula	Alameda song sparrow	None	None
Malacothamnus hallii	Hall's bush mallow	None	None
Silene verecunda ssp. verecunda	San Francisco campion	None	None

SNAME	CNAME	FEDLIST	CALLIST
Malacothamnus davidsonii	Davidson's bush mallow	None	None
Melospiza melodia pusillula	Alameda song sparrow	None	None
Malacothamnus arcuatus	arcuate bush mallow	None	None
Dipodomys venustus venustus	Santa Cruz kangaroo rat	None	None
Collinsia multicolor	San Francisco collinsia	None	None
Melospiza melodia pusillula	Alameda song sparrow	None	None
Taxidea taxus	American badger	None	None
Allium peninsulare var. franciscanum	Franciscan onion	None	None
Malacothamnus hallii	Hall's bush mallow	None	None
Malacothamnus davidsonii	Davidson's bush mallow	None	None
Malacothamnus aboriginum	Indian Valley bush mallow	None	None
Allium peninsulare var. franciscanum	Franciscan onion	None	None
Triphysaria floribunda	San Francisco owl's-clover	None	None
Collinsia multicolor	San Francisco collinsia	None	None

SNAME	CNAME	FEDLIST	CALLIST
Nyctinomops macrotis	big free -tailed bat	None	None
Speyeria zerene myrtleae	Myrtle's silverspot	Endangered	None
Cordylanthus maritimus ssp. palustris	Point Reyes bird's-beak	None	None
Grindelia hirsutula var. maritima	San Francisco gumplant	None	None
Riparia riparia	bank swallow	None	Threatened
Lichnanthe ursina	bumblebee scarab beetle	None	None
Centromadia parryi ssp. parryi	pappose tarplant	None	None
Chorizanthe cuspidata var. cuspidata	San Francisco Bay spineflower	None	None
Collinsia multicolor	San Francisco collinsia	None	None
Fritillaria liliacea	fragrant fritillary	None	None
Lessingia arachnoidea	Crystal Springs lessingia	None	None
Dirca occidentalis	western leatherwood	None	None
Pentachaeta bellidiflora	white-rayed pentachaeta	Endangered	Endangered
Chorizanthe cuspidata var. cuspidata	San Francisco Bay spineflower	None	None

SNAME	CNAME	FEDLIST	CALLIST
Eriophyllum latilobum	San Mateo woolly sunflower	Endangered	Endangered
Serpentine Bunchgrass	Serpentine Bunchgrass	None	None
Microcina edgewoodensis	Edgewood Park micro-blind harvestman	None	None
Lessingia arachnoidea	Crystal Springs lessingia	None	None
Fritillaria liliacea	fragrant fritillary	None	None
Fritillaria biflora var. ineziana	Hillsborough chocolate lily	None	None
Erysimum ammophilum	coast wallflower	None	None
Cirsium andrewsii	Franciscan thistle	None	None
Horkelia cuneata ssp. sericea	Kellogg's horkelia	None	None
Chorizanthe robusta var. robusta	robust spineflower	Endangered	None
Thamnophis sirtalis tetrataenia	San Francisco garter snake	Endangered	Endangered
Melospiza melodia pusillula	Alameda song sparrow	None	None
Rallus longirostris obsoletus	California clapper rail	Endangered	Endangered
Triphysaria floribunda	San Francisco owl's-clover	None	None

SNAME	CNAME	FEDLIST	CALLIST
Grindelia hirsutula var. maritima	San Francisco gumplant	None	None
Chorizanthe cuspidata var. cuspidata	San Francisco Bay spineflower	None	None
Chorizanthe robusta var. robusta	robust spineflower	Endangered	None
Amsinckia lunaris	bent-flowered fiddleneck	None	None
Triphysaria floribunda	San Francisco owl's-clover	None	None
Monterey Pine Forest	Monterey Pine Forest	None	None
Acanthomintha duttonii	San Mateo thorn-mint	Endangered	Endangered
Rallus longirostris obsoletus	California clapper rail	Endangered	Endangered
Triphysaria floribunda	San Francisco owl's-clover	None	None
Helianthella castanea	Diablo helianthella	None	None
Dirca occidentalis	western leatherwood	None	None
Charadrius alexandrinus nivosus	western snowy plover	Threatened	None
Trifolium depauperatum var. hydrophilum	saline clover	None	None
Cordylanthus maritimus ssp. palustris	Point Reyes bird's-beak	None	None

SNAME	CNAME	FEDLIST	CALLIST
Pedicularis dudleyi	Dudley's lousewort	None	Rare
Acanthomintha duttonii	San Mateo thorn-mint	Endangered	Endangered
Fritillaria liliacea	fragrant fritillary	None	None
Allium peninsulare var. franciscanum	Franciscan onion	None	None
Malacothamnus arcuatus	arcuate bush mallow	None	None
Serpentine Bunchgrass	Serpentine Bunchgrass	None	None
Dipodomys venustus venustus	Santa Cruz kangaroo rat	None	None
Monardella villosa ssp. globosa	robust monardella	None	None
Malacothamnus davidsonii	Davidson's bush mallow	None	None
Dirca occidentalis	western leatherwood	None	None
Tropidocarpum capparideum	caper-fruited tropidocarpum	None	None
Eryngium aristulatum var. hooveri	Hoover's button-celery	None	None
Charadrius alexandrinus nivosus	western snowy plover	Threatened	None
Eriogonum nudum var. decurrens	Ben Lomond buckwheat	None	None

SNAME	CNAME	FEDLIST	CALLIST
Asio flammeus	short-eared owl	None	None
Charadrius alexandrinus nivosus	western snowy plover	Threatened	None
Sterna antillarum browni	California least tern	Endangered	Endangered
Circus cyaneus	northern harrier	None	None
Potamogeton filiformis	slender-leaved pondweed	None	None
Ambystoma californiense	California tiger salamander	Threatened	None
Cirsium praeteriens	lost thistle	None	None
Cordylanthus maritimus ssp. palustris	Point Reyes bird's-beak	None	None
Sterna antillarum browni	California least tern	Endangered	Endangered
N. Central Coast Calif. Roach/Stickleback/Steelhead Stream	N. Central Coast Calif. Roach/Stickleback/Steelhead Stream	None	None
Reithrodontomys raviventris	salt-marsh harvest mouse	Endangered	Endangered
Arctostaphylos regismontana	Kings Mountain manzanita	None	None
Melospiza melodia pusillula	Alameda song sparrow	None	None

SNAME	CNAME	FEDLIST	CALLIST
Plebejus icarioides missionensis	Mission blue butterfly	Endangered	None
Northern Coastal Salt Marsh	Northern Coastal Salt Marsh	None	None
Thamnophis sirtalis tetrataenia	San Francisco garter snake	Endangered	Endangered
North Central Coast Steelhead/Sculpin Stream	North Central Coast Steelhead/Sculpin Stream	None	None
Oncorhynchus mykiss irideus	steelhead-central California coast esu	Threatened	None
Northern Coastal Salt Marsh	Northern Coastal Salt Marsh	None	None
Rallus longirostris obsoletus	California clapper rail	Endangered	Endangered
Callophrys mossii bayensis	San Bruno elfin butterfly	Endangered	None
Rallus longirostris obsoletus	California clapper rail	Endangered	Endangered
Northern Coastal Salt Marsh	Northern Coastal Salt Marsh	None	None
Euphydryas editha bayensis	Bay checkerspot butterfly	Threatened	None

SNAME	CNAME	FEDLIST	CALLIST
Taxidea taxus	American badger	None	None
Arctostaphylos regismontana	Kings Mountain manzanita	None	None
Arctostaphylos andersonii	Santa Cruz manzanita	None	None
Geothlypis trichas sinuosa	saltmarsh common yellowthroat	None	None
Plagiobothrys chorisianus var. chorisianus	Choris's popcorn-flower	None	None
Plagiobothrys chorisianus var. chorisianus	Choris's popcorn-flower	None	None
Malacothamnus arcuatus	arcuate bush mallow	None	None
Collinsia multicolor	San Francisco collinsia	None	None
Arctostaphylos andersonii	Santa Cruz manzanita	None	None
Callophrys mossii bayensis	San Bruno elfin butterfly	Endangered	None
Oncorhynchus mykiss irideus	steelhead-central California coast esu	Threatened	None
Plebejus icarioides missionensis	Mission blue butterfly	Endangered	None

SNAME	CNAME	FEDLIST	CALLIST
Phalacrocorax auritus	double-crested cormorant	None	None
Northern Maritime Chaparral	Northern Maritime Chaparral	None	None
Rallus longirostris obsoletus	California clapper rail	Endangered	Endangered
Northern Coastal Salt Marsh	Northern Coastal Salt Marsh	None	None
Laterallus jamaicensis coturniculus	California black rail	None	Threatened
N. Central Coast Calif. Roach/Stickleback/Steelhead Stream	N. Central Coast Calif. Roach/Stickleback/Steelhead Stream	None	None
Geothlypis trichas sinuosa	saltmarsh common yellowthroat	None	None
Astragalus pycnostachyus var. pycnostachyus	coastal marsh milk-vetch	None	None
Arctostaphylos montaraensis	Montara manzanita	None	None
Oncorhynchus mykiss irideus	steelhead-central California coast esu	Threatened	None
Euphydryas editha bayensis	Bay checkerspot butterfly	Threatened	None

SNAME	CNAME	FEDLIST	CALLIST
Northern Maritime Chaparral	Northern Maritime Chaparral	None	None
Arctostaphylos andersonii	Santa Cruz manzanita	None	None
Potentilla hickmanii	Hickman's cinquefoil	Endangered	Endangered
Leptosiphon rosaceus	rose leptosiphon	None	None
Microseris paludosa	marsh microseris	None	None
Lasthenia macrantha ssp. macrantha	perennial goldfields	None	None
Leptosiphon croceus	coast yellow leptosiphon	None	None
Leptosiphon rosaceus	rose leptosiphon	None	None
Astragalus pycnostachyus var. pycnostachyus	coastal marsh milk-vetch	None	None
Astragalus pycnostachyus var. pycnostachyus	coastal marsh milk-vetch	None	None
Collinsia multicolor	San Francisco collinsia	None	None
Collinsia multicolor	San Francisco collinsia	None	None
Ischnura gemina	San Francisco Forktail Damselfly	None	None
Microseris paludosa	marsh microseris	None	None

SNAME	CNAME	FEDLIST	CALLIST
Geothlypis trichas sinuosa	saltmarsh common yellowthroat	None	None
Cirsium andrewsii	Franciscan thistle	None	None
Dirca occidentalis	western leatherwood	None	None
Arctostaphylos regismontana	Kings Mountain manzanita	None	None
Collinsia multicolor	San Francisco collinsia	None	None
Thamnophis sirtalis tetrataenia	San Francisco garter snake	Endangered	Endangered
Dirca occidentalis	western leatherwood	None	None
Emys (=Clemmys) marmorata	western pond turtle	None	None
Ambystoma californiense	California tiger salamander	Threatened	None
Thamnophis sirtalis tetrataenia	San Francisco garter snake	Endangered	Endangered
Rallus longirostris obsoletus	California clapper rail	Endangered	Endangered
Oncorhynchus mykiss irideus	steelhead-central California coast esu	Threatened	None
Eucyclogobius newberryi	tidewater goby	Endangered	None

SNAME	CNAME	FEDLIST	CALLIST
Ardea herodias	great blue heron	None	None
Plebejus icarioides missionensis	Mission blue butterfly	Endangered	None
Euphydryas editha bayensis	Bay checkerspot butterfly	Threatened	None
Callophrys mossii bayensis	San Bruno elfin butterfly	Endangered	None
Oncorhynchus mykiss irideus	steelhead-central California coast esu	Threatened	None
Valley Needlegrass Grassland	Valley Needlegrass Grassland	None	None
Hesperolinon congestum	Marin western flax	Threatened	Threatened
Serpentine Bunchgrass	Serpentine Bunchgrass	None	None
Plebejus icarioides missionensis	Mission blue butterfly	Endangered	None
Thamnophis sirtalis tetrataenia	San Francisco garter snake	Endangered	Endangered
Charadrius alexandrinus nivosus	western snowy plover	Threatened	None
Rana aurora draytonii	California red-legged frog	Threatened	None
Serpentine Bunchgrass	Serpentine Bunchgrass	None	None

SNAME	CNAME	FEDLIST	CALLIST
Fritillaria liliacea	fragrant fritillary	None	None
Arctostaphylos regismontana	Kings Mountain manzanita	None	None
Amsinckia lunaris	bent-flowered fiddleneck	None	None
Plagiobothrys chorisianus var. chorisianus	Choris's popcorn-flower	None	None
Arctostaphylos andersonii	Santa Cruz manzanita	None	None
Laterallus jamaicensis coturniculus	California black rail	None	Threatened
Geothlypis trichas sinuosa	saltmarsh common yellowthroat	None	None
Melospiza melodia pusillula	Alameda song sparrow	None	None
Pedicularis dudleyi	Dudley's lousewort	None	Rare
Reithrodontomys raviventris	salt-marsh harvest mouse	Endangered	Endangered
Rallus longirostris obsoletus	California clapper rail	Endangered	Endangered
Serpentine Bunchgrass	Serpentine Bunchgrass	None	None
Sorex vagrans halicoetes	salt-marsh wandering shrew	None	None

SNAME	CNAME	FEDLIST	CALLIST
Plebejus icarioides missionensis	Mission blue butterfly	Endangered	None
Eucyclogobius newberryi	tidewater goby	Endangered	None
Lessingia arachnoidea	Crystal Springs lessingia	None	None
Arctostaphylos montaraensis	Montara manzanita	None	None
Arctostaphylos regismontana	Kings Mountain manzanita	None	None
Lessingia arachnoidea	Crystal Springs lessingia	None	None
Melospiza melodia pusillula	Alameda song sparrow	None	None
Reithrodontomys raviventris	salt-marsh harvest mouse	Endangered	Endangered
Speyeria callippe callippe	callippe silverspot butterfly	Endangered	None
Plebejus icarioides missionensis	Mission blue butterfly	Endangered	None
Rallus longirostris obsoletus	California clapper rail	Endangered	Endangered
Northern Coastal Salt Marsh	Northern Coastal Salt Marsh	None	None
Arctostaphylos andersonii	Santa Cruz manzanita	None	None

SNAME	CNAME	FEDLIST	CALLIST
Dirca occidentalis	western leatherwood	None	None
Agrostis blasdalei	Blasdale's bent grass	None	None
Plebejus icarioides missionensis	Mission blue butterfly	Endangered	None
Geothlypis trichas sinuosa	saltmarsh common yellowthroat	None	None
Rana aurora draytonii	California red-legged frog	Threatened	None
Rana aurora draytonii	California red-legged frog	Threatened	None
Collinsia multicolor	San Francisco collinsia	None	None
Leptosiphon rosaceus	rose leptosiphon	None	None
Malacothamnus arcuatus	arcuate bush mallow	None	None
Taxidea taxus	American badger	None	None
Thamnophis sirtalis tetrataenia	San Francisco garter snake	Endangered	Endangered
Rana aurora draytonii	California red-legged frog	Threatened	None
Danaus plexippus	monarch butterfly	None	None

SNAME	CNAME	FEDLIST	CALLIST
Geothlypis trichas sinuosa	saltmarsh common yellowthroat	None	None
Thamnophis sirtalis tetrataenia	San Francisco garter snake	Endangered	Endangered
Danaus plexippus	monarch butterfly	None	None
Geothlypis trichas sinuosa	saltmarsh common yellowthroat	None	None
Northern Coastal Salt Marsh	Northern Coastal Salt Marsh	None	None
Charadrius alexandrinus nivosus	western snowy plover	Threatened	None
Tryonia imitator	mimic tryonia (=California brackishwater snail)	None	None
Geothlypis trichas sinuosa	saltmarsh common yellowthroat	None	None
Geothlypis trichas sinuosa	saltmarsh common yellowthroat	None	None
Geothlypis trichas sinuosa	saltmarsh common yellowthroat	None	None

SNAME	CNAME	FEDLIST	CALLIST
Danaus plexippus	monarch butterfly	None	None
Thamnophis sirtalis tetrataenia	San Francisco garter snake	Endangered	Endangered
Danaus plexippus	monarch butterfly	None	None
Thamnophis sirtalis tetrataenia	San Francisco garter snake	Endangered	Endangered
Danaus plexippus	monarch butterfly	None	None
Danaus plexippus	monarch butterfly	None	None
Thamnophis sirtalis tetrataenia	San Francisco garter snake	Endangered	Endangered
Thamnophis sirtalis tetrataenia	San Francisco garter snake	Endangered	Endangered
Thamnophis sirtalis tetrataenia	San Francisco garter snake	Endangered	Endangered
Geothlypis trichas sinuosa	saltmarsh common yellowthroat	None	None
Danaus plexippus	monarch butterfly	None	None
Thamnophis sirtalis tetrataenia	San Francisco garter snake	Endangered	Endangered
Thamnophis sirtalis tetrataenia	San Francisco garter snake	Endangered	Endangered

SNAME	CNAME	FEDLIST	CALLIST
Thamnophis sirtalis tetrataenia	San Francisco garter snake	Endangered	Endangered
Charadrius alexandrinus nivosus	western snowy plover	Threatened	None
Callophrys mossii bayensis	San Bruno elfin butterfly	Endangered	None
Arctostaphylos regismontana	Kings Mountain manzanita	None	None
Arctostaphylos andersonii	Santa Cruz manzanita	None	None
Callophrys mossii bayensis	San Bruno elfin butterfly	Endangered	None
Hydrochara ricksecker	Ricksecker's water scavenger beetle	None	None
Thamnophis sirtalis tetrataenia	San Francisco garter snake	Endangered	Endangered
Thamnophis sirtalis tetrataenia	San Francisco garter snake	Endangered	Endangered
Caecidotea tomalensis	Tomales isopod	None	None
Calicina (=sitalcina) minor	Edgewood blind harvestman	None	None
Thamnophis sirtalis tetrataenia	San Francisco garter snake	Endangered	Endangered

SNAME	CNAME	FEDLIST	CALLIST
Lessingia arachnoidea	Crystal Springs lessingia	None	None
Acanthomintha duttonii	San Mateo thorn-mint	Endangered	Endangered
Thamnophis sirtalis tetrataenia	San Francisco garter snake	Endangered	Endangered
Thamnophis sirtalis tetrataenia	San Francisco garter snake	Endangered	Endangered
Calicina (=sitalcina) minor	Edgewood blind harvestman	None	None
Thamnophis sirtalis tetrataenia	San Francisco garter snake	Endangered	Endangered
Riparia riparia	bank swallow	None	Threatened
Cypseloides niger	black swift	None	None
Thamnophis sirtalis tetrataenia	San Francisco garter snake	Endangered	Endangered
Rana aurora draytonii	California red-legged frog	Threatened	None
Danaus plexippus	monarch butterfly	None	None
Danaus plexippus	monarch butterfly	None	None
Horkelia cuneata ssp. sericea	Kellogg's horkelia	None	None
Danaus plexippus	monarch butterfly	None	None

SNAME	CNAME	FEDLIST	CALLIST
Grindelia hirsutula var. maritima	San Francisco gumplant	None	None
Acanthomintha duttonii	San Mateo thorn-mint	Endangered	Endangered
Euphydryas editha bayensis	Bay checkerspot butterfly	Threatened	None
Euphydryas editha bayensis	Bay checkerspot butterfly	Threatened	None
Pentachaeta bellidiflora	white-rayed pentachaeta	Endangered	Endangered
Thamnophis sirtalis tetrataenia	San Francisco garter snake	Endangered	Endangered
Hesperolinon congestum	Marin western flax	Threatened	Threatened
Helianthella castanea	Diablo helianthella	None	None
Ischnura gemina	San Francisco Forktail Damselfly	None	None
Danaus plexippus	monarch butterfly	None	None
Reithrodontomys raviventris	salt-marsh harvest mouse	Endangered	Endangered
Northern Interior Cypress Forest	Northern Interior Cypress Forest	None	None
Thamnophis sirtalis tetrataenia	San Francisco garter snake	Endangered	Endangered

SNAME	CNAME	FEDLIST	CALLIST
Thamnophis sirtalis tetrataenia	San Francisco garter snake	Endangered	Endangered
Thamnophis sirtalis tetrataenia	San Francisco garter snake	Endangered	Endangered
Legenere limosa	legenere	None	None
Sorex vagrans halicoetes	salt-marsh wandering shrew	None	None
Elanus leucurus	white-tailed kite	None	None
Elanus leucurus	white-tailed kite	None	None
Elanus leucurus	white-tailed kite	None	None
Reithrodontomys raviventris	salt-marsh harvest mouse	Endangered	Endangered
Cordylanthus maritimus ssp. palustris	Point Reyes bird's-beak	None	None
Geothlypis trichas sinuosa	saltmarsh common yellowthroat	None	None
Arctostaphylos regismontana	Kings Mountain manzanita	None	None
Plagiobothrys chorisianus var. chorisianus	Choris's popcorn-flower	None	None
Charadrius alexandrinus nivosus	western snowy plover	Threatened	None

SNAME	CNAME	FEDLIST	CALLIST
Eriophyllum latilobum	San Mateo woolly sunflower	Endangered	Endangered
Sacramento-San Joaquin Coastal Lagoon	Sacramento-San Joaquin Coastal Lagoon	None	None
Valley Oak Woodland	Valley Oak Woodland	None	None
Collinsia multicolor	San Francisco collinsia	None	None
Hesperolinon congestum	Marin western flax	Threatened	Threatened
Malacothamnus arcuatus	arcuate bush mallow	None	None
Euphydryas editha bayensis	Bay checkerspot butterfly	Threatened	None
Chorizanthe cuspidata var. cuspidata	San Francisco Bay spineflower	None	None
Stebbinsoseris decipiens	Santa Cruz microseris	None	None
Melospiza melodia pusillula	Alameda song sparrow	None	None
Geothlypis trichas sinuosa	saltmarsh common yellowthroat	None	None
Reithrodontomys raviventris	salt-marsh harvest mouse	Endangered	Endangered

SNAME	CNAME	FEDLIST	CALLIST
Pentachaeta bellidiflora	white-rayed pentachaeta	Endangered	Endangered
Eucyclogobius newberryi	tidewater goby	Endangered	None
Rana aurora draytonii	California red-legged frog	Threatened	None
Geothlypis trichas sinuosa	saltmarsh common yellowthroat	None	None
Tryonia imitator	mimic tryonia (=California brackishwater snail)	None	None
Lessingia arachnoidea	Crystal Springs lessingia	None	None
Rana aurora draytonii	California red-legged frog	Threatened	None
Rana aurora draytonii	California red-legged frog	Threatened	None
Thamnophis sirtalis tetrataenia	San Francisco garter snake	Endangered	Endangered
Leptosiphon rosaceus	rose leptosiphon	None	None
Eriophyllum latilobum	San Mateo woolly sunflower	Endangered	Endangered
Dirca occidentalis	western leatherwood	None	None

SNAME	CNAME	FEDLIST	CALLIST
Plebejus icarioides missionensis	Mission blue butterfly	Endangered	None
Plebejus icarioides missionensis	Mission blue butterfly	Endangered	None
Speyeria callippe callippe	callippe silverspot butterfly	Endangered	None
Melospiza melodia pusillula	Alameda song sparrow	None	None
Danaus plexippus	monarch butterfly	None	None
Thamnophis sirtalis tetrataenia	San Francisco garter snake	Endangered	Endangered
Acanthomintha duttonii	San Mateo thorn-mint	Endangered	Endangered
Plebejus icarioides missionensis	Mission blue butterfly	Endangered	None
Speyeria callippe callippe	callippe silverspot butterfly	Endangered	None
Rana aurora draytonii	California red-legged frog	Threatened	None
Rana aurora draytonii	California red-legged frog	Threatened	None
Astragalus pycnostachyus var. pycnostachyus	coastal marsh milk-vetch	None	None

SNAME	CNAME	FEDLIST	CALLIST
Rana aurora draytonii	California red-legged frog	Threatened	None
Limnanthes douglasii ssp. sulphurea	Point Reyes meadowfoam	None	Endangered
Melospiza melodia pusillula	Alameda song sparrow	None	None
Arctostaphylos regismontana	Kings Mountain manzanita	None	None
Silene verecunda ssp. verecunda	San Francisco campion	None	None
Astragalus pycnostachyus var. pycnostachyus	coastal marsh milk-vetch	None	None
Rana aurora draytonii	California red-legged frog	Threatened	None
Arctostaphylos andersonii	Santa Cruz manzanita	None	None
Reithrodontomys raviventris	salt-marsh harvest mouse	Endangered	Endangered
Rana aurora draytonii	California red-legged frog	Threatened	None
Allium peninsulare var. franciscanum	Franciscan onion	None	None
Geothlypis trichas sinuosa	saltmarsh common yellowthroat	None	None

SNAME	CNAME	FEDLIST	CALLIST
Rana aurora draytonii	California red-legged frog	Threatened	None
Rana aurora draytonii	California red-legged frog	Threatened	None
Horkelia cuneata ssp. sericea	Kellogg's horkelia	None	None
Astragalus pycnostachyus var. pycnostachyus	coastal marsh milk-vetch	None	None
Arctostaphylos imbricata	San Bruno Mountain manzanita	None	Endangered
Speyeria callippe callippe	callippe silverspot butterfly	Endangered	None
Astragalus pycnostachyus var. pycnostachyus	coastal marsh milk-vetch	None	None
Cupressus abramsiana	Santa Cruz cypress	Endangered	Endangered
Cirsium fontinale var. fontinale	fountain thistle	Endangered	Endangered
Helianthella castanea	Diablo helianthella	None	None
Emys (=Clemmys) marmorata	western pond turtle	None	None
Fritillaria liliacea	fragrant fritillary	None	None
Cirsium fontinale var. fontinale	fountain thistle	Endangered	Endangered
Thamnophis sirtalis tetrataenia	San Francisco garter snake	Endangered	Endangered

SNAME	CNAME	FEDLIST	CALLIST
Rana aurora draytonii	California red-legged frog	Threatened	None
Rana aurora draytonii	California red-legged frog	Threatened	None
Astragalus pycnostachyus var. pycnostachyus	coastal marsh milk-vetch	None	None
Euphydryas editha bayensis	Bay checkerspot butterfly	Threatened	None
Tryonia imitator	mimic tryonia (=California brackishwater snail)	None	None
Rana aurora draytonii	California red-legged frog	Threatened	None
Astragalus pycnostachyus var. pycnostachyus	coastal marsh milk-vetch	None	None
Fritillaria liliacea	fragrant fritillary	None	None
Arctostaphylos imbricata	San Bruno Mountain manzanita	None	Endangered
Rana aurora draytonii	California red-legged frog	Threatened	None
Rana aurora draytonii	California red-legged frog	Threatened	None

SNAME	CNAME	FEDLIST	CALLIST
Sacramento-San Joaquin Coastal Lagoon	Sacramento -San Joaquin Coastal Lagoon	None	None
Valley Needlegrass Grassland	Valley Needlegrass Grassland	None	None
Dirca occidentalis	western leatherwood	None	None
Dirca occidentalis	western leatherwood	None	None
Lessingia germanorum	San Francisco lessingia	Endangered	Endangered
Chorizanthe cuspidata var. cuspidata	San Francisco Bay spineflower	None	None
Arctostaphylos andersonii	Santa Cruz manzanita	None	None
Hesperolinon congestum	Marin western flax	Threatened	Threatened
Lessingia arachnoidea	Crystal Springs lessingia	None	None
Arctostaphylos montaraensis	Montara manzanita	None	None
Potentilla hickmanii	Hickman's cinquefoil	Endangered	Endangered
Dirca occidentalis	western leatherwood	None	None
Leptosiphon rosaceus	rose leptosiphon	None	None

SNAME	CNAME	FEDLIST	CALLIST
Plagiobothrys chorisianus var. chorisianus	Choris's popcorn-flower	None	None
Arctostaphylos imbricata	San Bruno Mountain manzanita	None	Endangered
Thamnophis sirtalis tetrataenia	San Francisco garter snake	Endangered	Endangered
Rana aurora draytonii	California red-legged frog	Threatened	None
Rana aurora draytonii	California red-legged frog	Threatened	None
Rana aurora draytonii	California red-legged frog	Threatened	None
Oncorhynchus mykiss irideus	steelhead-central California coast esu	Threatened	None
Rana aurora draytonii	California red-legged frog	Threatened	None
Rana aurora draytonii	California red-legged frog	Threatened	None
Rana aurora draytonii	California red-legged frog	Threatened	None
Potentilla hickmanii	Hickman's cinquefoil	Endangered	Endangered
Rana aurora draytonii	California red-legged frog	Threatened	None

SNAME	CNAME	FEDLIST	CALLIST
Rana aurora draytonii	California red-legged frog	Threatened	None
Circus cyaneus	northern harrier	None	None
Rana aurora draytonii	California red-legged frog	Threatened	None
Rana aurora draytonii	California red-legged frog	Threatened	None
Rana aurora draytonii	California red-legged frog	Threatened	None
Neotoma fuscipes annectens	San Francisco dusky-footed woodrat	None	None
Rana aurora draytonii	California red-legged frog	Threatened	None
Ambystoma californiense	California tiger salamander	Threatened	None
Rana boylii	foothill yellow-legged frog	None	None
Rana aurora draytonii	California red-legged frog	Threatened	None
Rana aurora draytonii	California red-legged frog	Threatened	None
Rana aurora draytonii	California red-legged frog	Threatened	None

SNAME	CNAME	FEDLIST	CALLIST
Rana aurora draytonii	California red-legged frog	Threatened	None
Emys (=Clemmys) marmorata	western pond turtle	None	None
Rana aurora draytonii	California red-legged frog	Threatened	None
Rana aurora draytonii	California red-legged frog	Threatened	None
Rana aurora draytonii	California red-legged frog	Threatened	None
Rana aurora draytonii	California red-legged frog	Threatened	None
Rana aurora draytonii	California red-legged frog	Threatened	None
Thamnophis sirtalis tetrataenia	San Francisco garter snake	Endangered	Endangered
Rana aurora draytonii	California red-legged frog	Threatened	None
Rana aurora draytonii	California red-legged frog	Threatened	None
Rana aurora draytonii	California red-legged frog	Threatened	None
Arctostaphylos andersonii	Santa Cruz manzanita	None	None
Arctostaphylos andersonii	Santa Cruz manzanita	None	None

SNAME	CNAME	FEDLIST	CALLIST
Arctostaphylos andersonii	Santa Cruz manzanita	None	None
Plagiobothrys chorisianus var. chorisianus	Choris's popcorn-flower	None	None
Phalacrocorax auritus	double-crested cormorant	None	None
Rallus longirostris obsoletus	California clapper rail	Endangered	Endangered
Eriophyllum latilobum	San Mateo woolly sunflower	Endangered	Endangered
Rana aurora draytonii	California red-legged frog	Threatened	None
Arctostaphylos andersonii	Santa Cruz manzanita	None	None
Rana aurora draytonii	California red-legged frog	Threatened	None
Thamnophis sirtalis tetrataenia	San Francisco garter snake	Endangered	Endangered
Hydroporus leechi	Leech's skyline diving beetle	None	None
Melospiza melodia pusillula	Alameda song sparrow	None	None
Rana aurora draytonii	California red-legged frog	Threatened	None

SNAME	CNAME	FEDLIST	CALLIST
Thamnophis sirtalis tetrataenia	San Francisco garter snake	Endangered	Endangered
Rana aurora draytonii	California red-legged frog	Threatened	None
Rana aurora draytonii	California red-legged frog	Threatened	None
Thamnophis sirtalis tetrataenia	San Francisco garter snake	Endangered	Endangered
Banksula incredula		None	None
Rana aurora draytonii	California red-legged frog	Threatened	None
Silene verecunda ssp. verecunda	San Francisco campion	None	None
Rana aurora draytonii	California red-legged frog	Threatened	None
Ardea herodias	great blue heron	None	None
Plebejus icarioides missionensis	Mission blue butterfly	Endangered	None
Rana aurora draytonii	California red-legged frog	Threatened	None
Rana aurora draytonii	California red-legged frog	Threatened	None
Rana aurora draytonii	California red-legged frog	Threatened	None

SNAME	CNAME	FEDLIST	CALLIST
Danaus plexippus	monarch butterfly	None	None
Danaus plexippus	monarch butterfly	None	None
Danaus plexippus	monarch butterfly	None	None
Hesperolinon congestum	Marin western flax	Threatened	Threatened
Cirsium fontinale var. fontinale	fountain thistle	Endangered	Endangered
Acanthomintha duttonii	San Mateo thorn-mint	Endangered	Endangered
Hesperolinon congestum	Marin western flax	Threatened	Threatened
Hesperolinon congestum	Marin western flax	Threatened	Threatened
Hesperolinon congestum	Marin western flax	Threatened	Threatened
Fritillaria liliacea	fragrant fritillary	None	None
Fritillaria liliacea	fragrant fritillary	None	None
Cirsium fontinale var. fontinale	fountain thistle	Endangered	Endangered
Hesperolinon congestum	Marin western flax	Threatened	Threatened
Cirsium fontinale var. fontinale	fountain thistle	Endangered	Endangered
Dirca occidentalis	western leatherwood	None	None
Thamnophis sirtalis tetrataenia	San Francisco garter snake	Endangered	Endangered

SNAME	CNAME	FEDLIST	CALLIST
Rana aurora draytonii	California red-legged frog	Threatened	None
Malacothamnus arcuatus	arcuate bush mallow	None	None
Rana aurora draytonii	California red-legged frog	Threatened	None
Rana aurora draytonii	California red-legged frog	Threatened	None
Rana aurora draytonii	California red-legged frog	Threatened	None
Arctostaphylos regismontana	Kings Mountain manzanita	None	None
Fritillaria biflora var. ineziana	Hillsborough chocolate lily	None	None
Arctostaphylos regismontana	Kings Mountain manzanita	None	None
Centromadia parryi ssp. congdonii	Congdon's tarplant	None	None
Collinsia multicolor	San Francisco collinsia	None	None
Plagiobothrys diffusus	San Francisco popcorn-flower	None	Endangered
Arctostaphylos regismontana	Kings Mountain manzanita	None	None

SNAME	CNAME	FEDLIST	CALLIST
Arctostaphylos andersonii	Santa Cruz manzanita	None	None
Arctostaphylos regismontana	Kings Mountain manzanita	None	None
Malacothamnus arcuatus	arcuate bush mallow	None	None
Leptosiphon croceus	coast yellow leptosiphon	None	None
Dirca occidentalis	western leatherwood	None	None
Dirca occidentalis	western leatherwood	None	None
Arctostaphylos montaraensis	Montara manzanita	None	None
Fritillaria liliacea	fragrant fritillary	None	None

Appendix D: NRCS's 9-Step Planning Process

THE 9-STEP CONSERVATION PLANNING PROCESS

Phase I - Collection and Analysis

(Understanding the Problems and Opportunities)

1. Identify Problems and Opportunities
2. Determine Objectives
3. Inventory Resources
4. Analyze Resource Data

Phase II - Decision Support

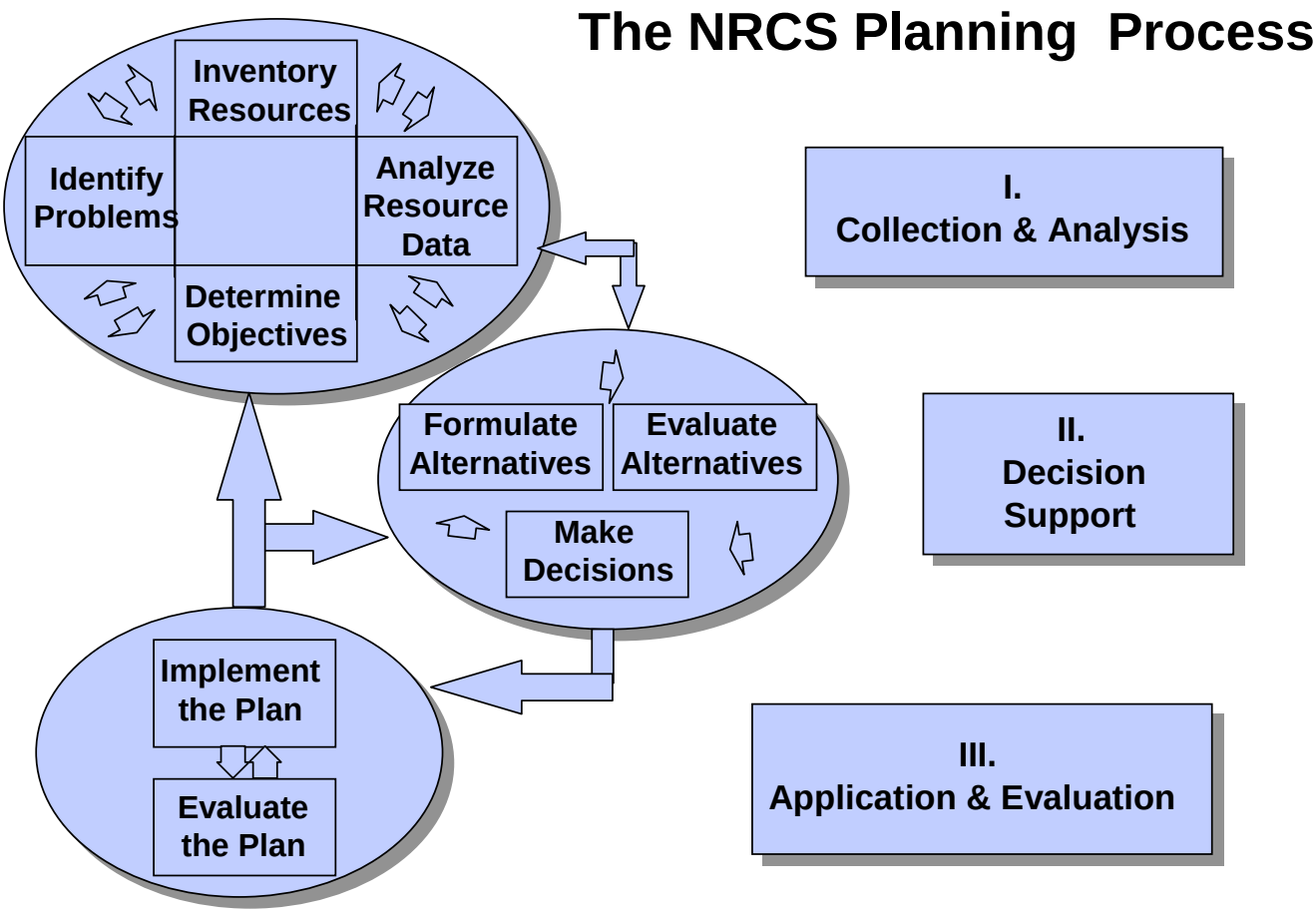
(Understanding the Solutions)

5. Formulate Alternatives
6. Evaluate Alternatives
7. Make Decisions

Phase III - Application and Evaluation

(Understanding the Results)

8. Implement the Plan
9. Evaluate the Plan



An illustration of the dynamic nature of the planning process.

Appendix E: NRCS Practice Standards and Specifications

NATURAL RESOURCES CONSERVATION SERVICE

CONSERVATION PRACTICE STANDARD

CRITICAL AREA PLANTING

(Ac.)

CODE 342

DEFINITION

Establishing permanent vegetation on sites that have or are expected to have high erosion rates, and on sites that have physical, chemical or biological conditions that prevent the establishment of vegetation with normal practices.

PURPOSE

- Stabilize areas with existing or expected high rates of soil erosion by water.
- Stabilize areas with existing or expected high rates of soil erosion by wind.
- Restore degraded sites that cannot be stabilized through normal methods.

CONDITIONS WHERE PRACTICE APPLIES

On areas with existing or expected high rates of erosion or degraded sites that usually cannot be stabilized by ordinary conservation treatment and/or management, and if left untreated, could be severely damaged by erosion or sedimentation or could cause significant off-site damage.

CRITERIA

General Criteria Applicable To All Purposes

Species selected for seeding or planting shall be suited to current site conditions and intended uses. Selected species will have the capacity to achieve adequate density and vigor within an appropriate time frame to stabilize the site sufficiently to permit suited uses with ordinary management activities.

Species, rates of seeding or planting, minimum quality of planting stock, such as PLS or stem caliper, and method of establishment shall be specified before application. Only viable, high quality seed or planting stock will be used.

Plant species and their cultivars shall be selected based on:

- Climate conditions, such as annual rainfall, seasonal rainfall pasterns growing season length, temperature extremes.
- Species selected for use shall be in conformance with the respective Major Land Resource Area (MLRA) Vegetative Guide in Section II of the Field Office Technical Guide.
- Soil condition and position attributes such as soil texture, pH, available water holding capacity, slope, aspect, soil depth, restrictive pans, fertility, salinity and alkalinity, drainage class, flooding and ponding, and severe levels of toxic elements.
- Plant resistance to disease and insects common to the site or location.
- Plant compatibility with irrigation when applied.

All seed and planting materials shall be labeled and meet state seed quality law standards and use of certified seed, if available, will be encouraged.

Based on seed tags, adjust seeding rates to insure the required amount of pure live seed (PLS) is applied to site.

Fertilization, mulching, or other facilitating practices for plant growth shall be timed and

applied to accelerate establishment of selected species.

Additional Criteria To Restore Degraded Sites

If gullies or deep rills are present, they will be treated, if feasible, to allow equipment operation and ensure proper site and seedbed preparation.

Soil amendments will be added as necessary to ameliorate or eliminate physical or chemical conditions that inhibit plant establishment and growth. Required amendments, such as compost or manure to add organic matter and improve soil structure and water holding capacity; agricultural limestone to increase the pH of acid soils; or elemental sulfur to lower the pH of calcareous soils shall be included in the site specification with amounts, timing, and method of application.

CONSIDERATIONS

Critical area planting sites are generally severely eroded or disturbed and have low fertility and few, if any, resident seeds. High seeding and fertilizer rates are needed to insure adequate vegetative cover.

Sites reshaped with heavy equipment may have a smooth hard surface and soil compaction making it difficult to prepare a good seedbed. Disking, ripping or other treatment may be necessary to prepare the site for seeding.

The horizontal indentations left by tracked equipment may provide a suitable planting site on steep slopes.

Straw is the preferred mulch but needs to be anchored in place with equipment such as rollers and crimpers. Tackifiers, woven netting, and other covers can be used to anchor mulch when slopes are too steep to use equipment on the site. Wheat straw deteriorates less rapidly and results in less volunteer growth compared to barley straw. Use clean straw to minimize spread of noxious weeds. Woven, fabric, and artificial mulches scan also be used.

Many soils in critical area planting sites are low in most plant nutrients and should be tested for fertilizer recommendations. Consider initial and follow up applications of fertilizer to ensure stand establishment.

When soils are course sandy, gravelly or granitic, or when water quality will be adversely affected reduce fertilizer rates.

Consider using hydro planting and mulching on steep, inaccessible sites not suitable for straw mulch planting. Do not use when high winds or animal or foot traffic are expected to interfere. Consider the effective range of straw blowing equipment and hydro seeders when use is planned.

A split hydromulch, hydroplanting operation is recommended on sites suitable to hydromulch planting. Seed and fertilizer should be applied first to provide better seed to soil contact and then the mulch is hydromulched over the site.

When plantings are to be irrigated, use non-erosive methods to maintain adequate moisture in at least the upper six (6) inches of soil during the first four (4) weeks and then in the upper 12 inches until the end of the growing season. Seedlings may be susceptible to excessive irrigation during establishment.

Consider exclusion of domestic livestock and other disturbances.

Consider effects on erosion and the movement of sediment and soluble and sediment-attached substances carried by runoff including filtering effect of vegetation on movement of sediment and dissolved and sediment-attached substance.

Native species or mixes that are adapted to the site and have multiple values should be considered.

Avoid species that may harbor pests. Species diversity should be considered to avoid loss of function due to species-specific pests.

CULTURAL RESOURCES CONSIDERATIONS

NRCS policy is to avoid any effect to cultural resources and protect them in their original location. Determine if installation of this practice or associated practices in the plan could have an effect on cultural resources. The National Historic Preservation Act may require

consultation with the California State Historic Preservation Officer.

http://www.nrcs.usda.gov/technical/cultural.html is the primary website for cultural resources information. The California Environmental Handbook and the California Environmental Assessment Worksheet also provide guidance on how the NRCS must account for cultural resources. The e-Field Office Technical Guide, Section II contains general information, with Web sites for additional information.

Document any specific considerations for cultural resources in the design docket and the Practice Requirements worksheet.

ENDANGERED SPECIES CONSIDERATIONS

If during the Environmental Assessment NRCS determines that installation of this practice, along with any others proposed, will have an effect on any federal or state listed Rare, Threatened or Endangered species or their habitat, NRCS will advise the client of the requirements of the Endangered Species Act and recommend alternative conservation treatments that avoid the adverse effects. Further assistance will be provided only if the client selects one of the alternative conservation treatments for installation; or with concurrence of the client, NRCS initiates consultations concerning the listed species with the U.S. Fish and Wildlife Service, National Marine Fisheries Service and/or California Department of Fish and Game.

Comply with all applicable federal, state, and local laws, rules, and regulations.

PLANS AND SPECIFICATIONS

Specifications for applying this practice shall be prepared for each site and recorded and filed using the approved specification sheets or narrative statements in the conservation plan.

Site preparation and seeding or planting shall be done at a time and in a manner that best ensures survival and growth of the selected species. What constitutes successful establishment, e.g. minimum percent ground/canopy cover, percent survival, stand density, etc. shall be specified before application.

Species, rates of seeding or planting, minimum quality of planting stock, such as PLS or stem caliper, and method of establishment shall be specified before application. Only viable, high quality seed or planting stock will be used.

OPERATION AND MAINTENANCE

Use of the area shall be managed as long as necessary to stabilize the site and achieve the intended purpose.

Control or exclude pests that will interfere with the timely establishment of vegetation.

Inspections, reseeding or replanting, fertilization, and pest control may be needed to insure that this practice functions as intended throughout its expected life.

NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE SPECIFICATION

342A - CRITICAL AREA PLANTING - STRAW MULCH

I. SCOPE

The work shall consist of furnishing all materials and placing them on all exposed, disturbed, or barren areas within the designated areas to the limits as shown on the drawings, or as staked in the field.

II. MATERIALS

Seed

All seed shall be delivered to the site tagged and labeled in accordance with the California Agricultural Code, and shall be acceptable to the County Agricultural Commissioner.

Bag tag figures will be evidence of purity and germination. Time since date of seed test shall not exceed 9 months.

Seed shall be of a quality that weed seed shall not exceed 0.5 percent of the aggregate of pure live seed (PLS) (percent germination x percent purity) and other material.

Fertilizer

Unless otherwise specified on the Practice Requirements sheet, all fertilizer shall be Ammonium Phosphate Sulfate containing a minimum of 16 percent Nitrogen, 20 percent available phosphoric acid and 0 percent water soluble potash and be uniform in composition, dry and free flowing, pelleted or granular.

All fertilizer shall be labeled in accordance with applicable state regulations and bear the warranty of the producer for the grade furnished.

Inoculants

The inoculant for treating legume seeds shall be a pure culture of Nitrogen fixing bacteria prepared specifically for the plant species and shall not be used later than the date indicated on the container. A mixing medium, as recommended by the manufacturer or approved substitute, shall be used to bond the inoculant to the seed. For nonpellet inoculated seed, two times the amount of the inoculant recommended by the manufacturer shall be used and seed shall be sown with 24 hours.

For pellet inoculated seed, at least 30 pounds of inoculant shall be used per 1,000 pounds of raw seed and the seed shall be labeled to show the Lot Number, Expiration Date, and Percent Coat of the finished product. Pellet inoculated seed shall be kept cool and sown within 180 days.

Straw

Straw shall be new straw derived from rice, wheat, oats, or barley that meets the County Agricultural Commissioner's standards for weed pests. Clearance shall be obtained from the County Agricultural Commissioner, as required by law, before straw obtained outside the county in which it is to be used is delivered to the site.

Jute Matting

Jute matting shall be cloth mesh of uniform plain weave of undyed and unbleached jute yarn with a minimum weight of one pound per 10 square feet, and a maximum opening size of 1 inch by 1 inch.

Plastic Netting

Plastic netting shall be a polypropylene extruded plastic netting with square or rectangular openings not greater than 3/4 inches and weight of not less than 2.6 pounds per 1000 square feet.

Excelsior Matting

Excelsior matting shall consist of a machine-produced mat of wood excelsior fiber with consistent thickness and fiber evenly distributed over the entire area of the blanket. At least 70 percent of the fibers shall be 6 inches or longer in length. The topside of each blanket shall be covered with a biodegradable extruded plastic mesh with a maximum opening size of 2-inch by 2-inch.

Staples

Staples shall be made of 0.09 inch diameter or heavier wire, "U" shaped, with legs at least 8 inches in length.

Anchor pins may also be used to anchor jute matting. Anchor pins shall be made of rigid 0.12 inch diameter or heavier galvanized wire with a minimum length of 10 inches for hook or "J" type pins.

III. SEEDING MIXTURE AND PLANTING DATE

The seed(s) and rate(s) specified on the Practice Requirements sheet shall be used.

The seeding rate(s) shall be the weight exclusive of any coating material. Any legume seed used shall be inoculated. Based on bag tags, seeding rates shall be adjusted to insure the required amounts of pure live seed.

Planting shall be performed after final grading is completed unless otherwise specified on the Practice Requirements sheet.

IV. SEEDBED PREPARATION

The area to be planted shall be weed free and have a firm seedbed which has previously been roughened by scarifying, disking, harrowing, chiseling, or otherwise worked to a depth of 2 to 4 inches. No implement shall be used that will create an excessive amount of downward movement of clods on sloping areas. Seedbed may be prepared at time of completion of earth moving work. The horizontal indentations left by tracked equipment is acceptable on steep slopes.

Rocks larger than 6 inches in diameter, trash, weeds, and other debris that will interfere with seeding or maintenance shall be removed.

Seedbed preparation shall be suspended when soil moisture conditions are not suitable for obtaining a satisfactory seedbed.

V. FERTILIZING, SEEDING, MULCHING

Fertilizing

Fertilizer shall be distributed uniformly over the seedbed at the rate of 500 pounds per acre unless a different amount is specified on the Practice Requirements sheet.

Fertilizer shall be applied in any way that will result in uniform distribution. The fertilizer shall be incorporated into the soil. Incorporation may be as part of the seedbed preparation, or as part of the seeding operation.

Seeding

Seed shall be drilled or broadcast by hand, mechanical hand seeder, or power operated seeder. Seed shall be incorporated into the soil, but not more than 1 inch deep.

Mulching

A straw covering shall be distributed uniformly over the seeded area within 48 hours after seeding. Straw shall be applied at the rate of 2 tons per acre unless a different amount is specified on the Practice Requirements sheet. The straw shall be applied by hand, blower, or other suitable equipment. If straw is applied by blower, it shall not be chopped in lengths less than 6 inches.

Anchoring the Mulch

The mulch shall be anchored in place using one of the following methods as specified on the Practice Requirements sheet.

Method 1

The straw shall be anchored using hand tools, mulching rollers, straight serrated disks, or similar types of suitable equipment and shall be performed in a satisfactory manner. The straw shall be tucked in a minimum of 3 inches on a spacing not to exceed one foot in both directions.

Method 2

The straw shall be anchored in place by the placement of jute matting or excelsior matting. The matting shall be applied up and down the slope and shall continue beyond the edge of the mulched or seeded area at least 1 foot at the sides and at the top and bottom of the mulched area. If existing vegetation or structures mark the boundaries of the area, the matting shall be continued into the stable vegetated area or to the edge of the structure. The matting shall be cut around objects so it will lay flat on the soil surface.

The upper end of the matting at the top of the area shall be buried in a trench at least 6 inches deep. Sides of rolls shall overlap at least 4 inches, and rolls shall

overlap at least 3 feet where an uphill roll joins a downhill roll. The uphill roll shall overlie the downhill roll.

Staples shall be installed perpendicular to the slope and shall be spaced approximately 5 feet apart down the sides in the overlap area and center of the roll. Staples spaced not more than 1 foot apart shall be installed across the upper end of each roll and across the overlap area where an uphill roll joins a downhill roll.

Method 3

The straw mulch shall be anchored in place by covering the mulch with plastic netting. The netting shall be applied up and down the slope, and shall continue beyond the edge of the mulched area at least 1 foot at the sides and at the top and bottom of the area.

The upper end of the netting at the top of the area shall be buried in a trench at least 6 inches deep. Sides of rolls shall overlap at least 4 inches and rolls shall overlap at least 3 feet where an uphill roll joins a downhill roll. The uphill roll shall overlie the downhill roll.

Staples shall be installed perpendicular to the slope and shall be spaced 5 feet apart in both directions. The staples on the exterior edges of the netting shall be spaced 5 feet apart.

Method 4

No anchoring is required.

VI. IRRIGATION

When specified, irrigation water shall be applied during the establishment period at the times and rates as listed on the Practice Requirements sheet.

VII. OTHER REQUIREMENTS

Other details for the establishment and maintenance of the plants including, but not limited to, the need for livestock and traffic control shall be applied when specified on the Practice Requirements sheet.

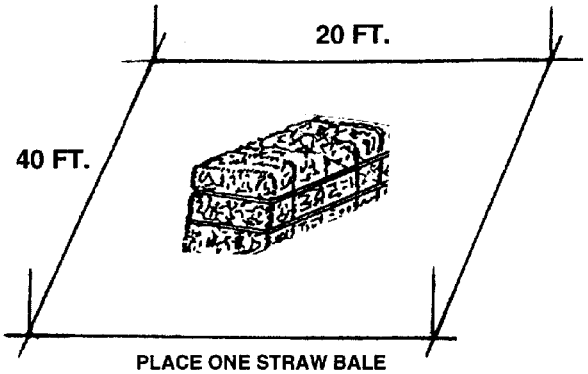
Measures and methods that enhance fish and wildlife values, protect visual resources, and maintain key shade, food, and den trees shall be performed when specified on the Practice Requirements sheet.

Operations shall be done in such a manner that soil erosion and air and water pollution are minimized and held within legal limits.

The owner, operator, contractor, or other persons shall conduct all work and operations in accordance with proper safety codes for the type of work being performed with due regards to the safety of all persons and property.

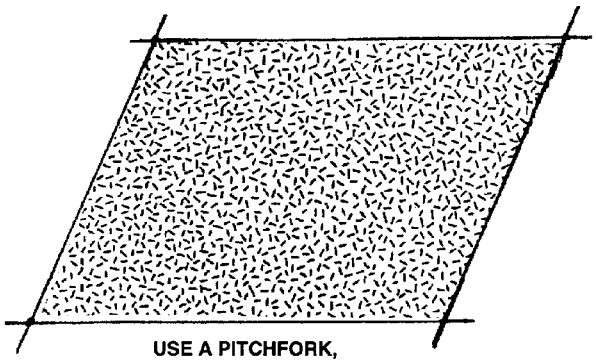
SPREAD THE STRAW

MARK OFF 800 SQ FT. PLOTS



PLACE ONE STRAW BALE PER PLOT (~74 POUNDS). THIS IS EQUIVALENT TO 2 TONS PER ACRE.

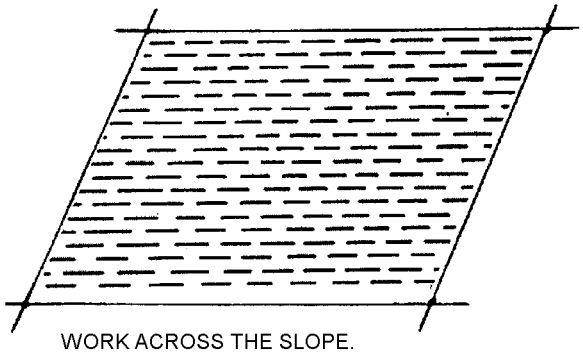
SPREAD EVENLY



USE A PITCHFORK, SPADING FORK, OR BY HAND

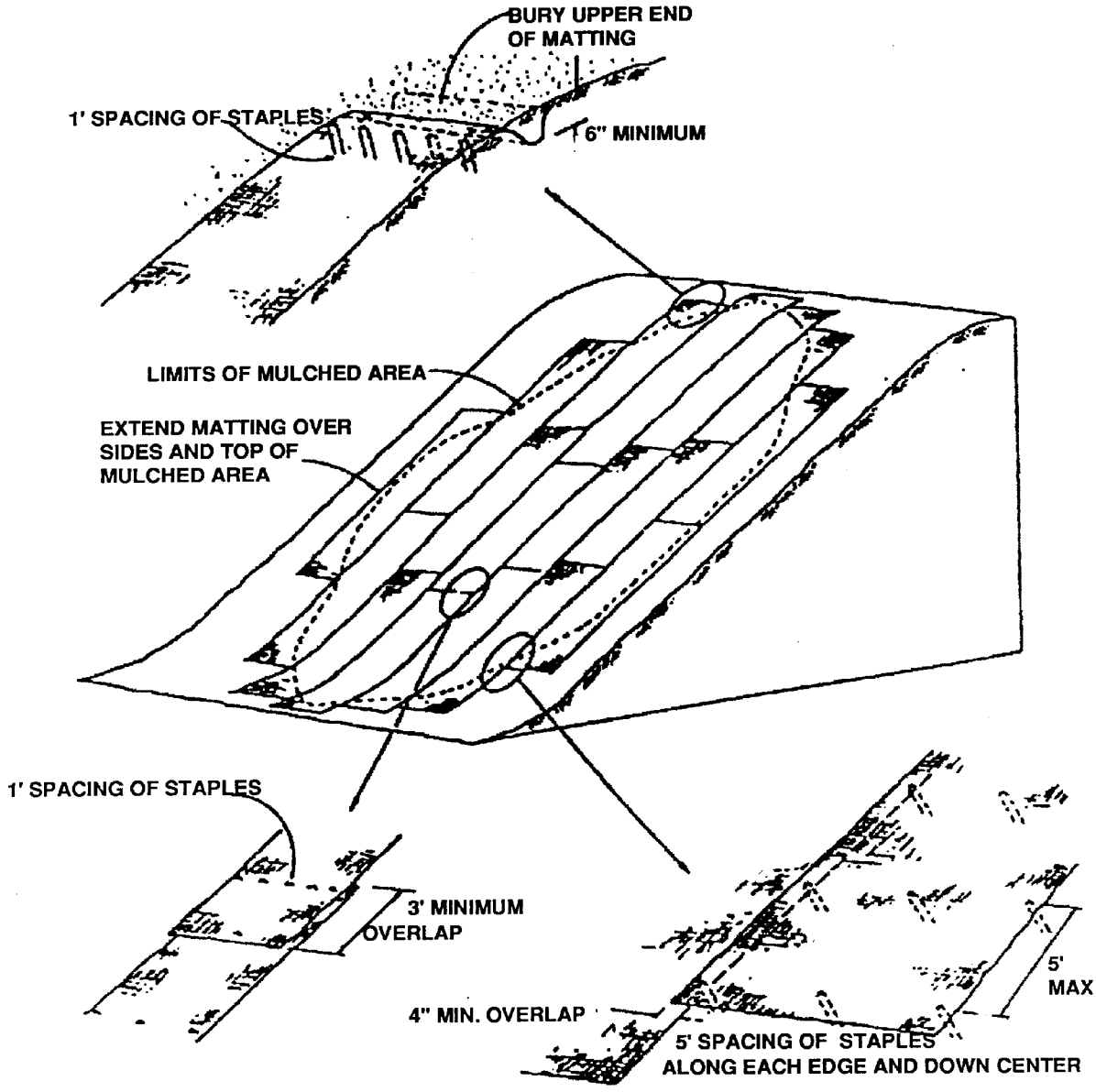
ANCHOR THE STRAW - METHOD 1

CRIMP BY HAND



WORK ACROSS THE SLOPE.
PUNCH STRAW 3 TO 4 INCHES DEEP.
A SQUARE END SPADE WORKS WELL.
MAKE PUNCH EVERY 12 INCHES.

ANCHOR THE STRAW - METHOD 2

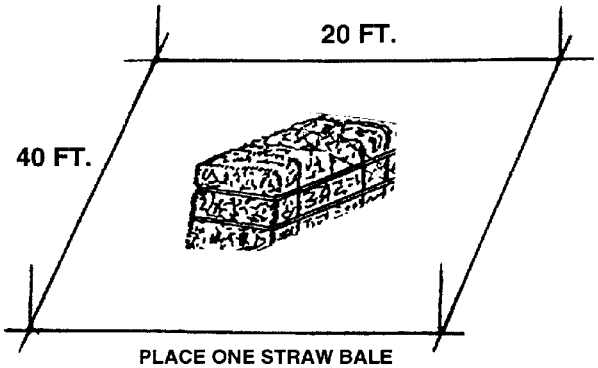


DRAWING 342A - 2

ANCHOR THE STRAW - METHOD 2

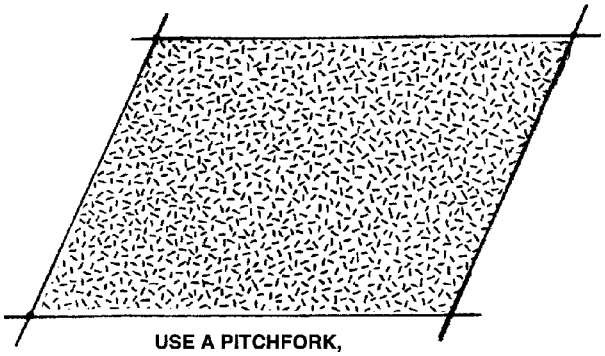
SPREAD THE STRAW

MARK OFF 800 SQ FT. PLOTS



PLACE ONE STRAW BALE PER PLOT (~74 POUNDS). THIS IS EQUIVALENT TO 2 TONS PER ACRE.

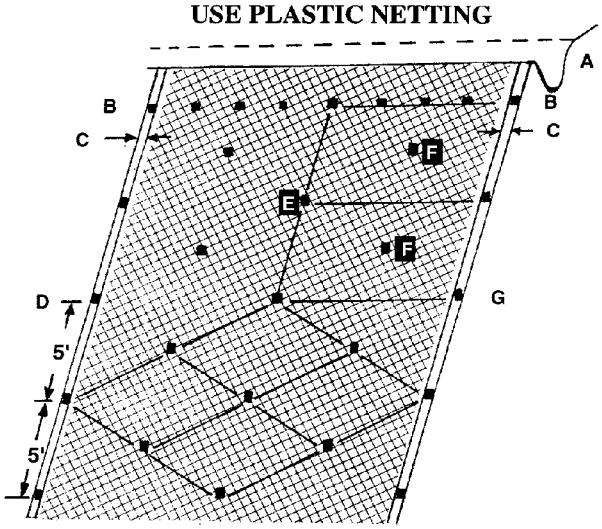
SPREAD EVENLY



USE A PITCHFORK, SPADING FORK, OR BY HAND

ANCHOR THE STRAW - METHOD 3

USE PLASTIC NETTING



A. LAY BIRD CONTROL NETTING OR SIMILAR MATTING IN STRIPS DOWN THE SLOPE OVER THE STRAW. BURY UPPER END IN 6-8 INCH DEEP AND WIDE TRENCH. MOST NETTING COMES IN 14 TO 17 FT. WIDE ROLLS.

B. SECURE THE UPPER END WITH STAKES EVERY 2 FEET.

C. OVERLAP SEAMS ON EACH SIDE 4-5 INCHES.

D. SECURE SEAMS WITH STAKES EVERY 5 FEET.

E. STAKE DOWN THE CENTER EVERY 5 FEET.

F. STAKE MIDDLES TO CREATE DIAMOND PATTERN THAT PROVIDES STAKES SPACED 4-5 FEET APART.

G. USE POINTED 1X2 INCH STAKES 8 TO 9 INCHES LONG. LEAVE 1 TO 2 INCH TOP ABOVE NETTING, OR USE "U" SHAPED METAL PINS AT LEAST 9 INCHES LONG.

NOTE WHEN JOINING TWO STRIPS, OVERLAP UPPER STRIP 3 FEET OVER LOWER STRIP AND SECURE WITH STAKES EVERY 2 FEET LIKE IN "B" ABOVE.

DRAWING 342A - 3

NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE SPECIFICATION

342B - CRITICAL PLANTING AREA - HYDRO MULCH

I. SCOPE

The work shall consist of furnishing all materials and placing them on all exposed, disturbed, or barren areas within the project area or site to the limits as show on the drawings or as staked in the field.

II. MATERIALS

Seed

All seed shall be delivered to the site tagged and labeled in accordance with the California Agricultural Code, and shall be acceptable to the County Agricultural Commissioner.

Bag tag figures will be evidence of purity and germination. Time since date of seed test shall not exceed 9 months.

Seed shall be of a quality that weed seed shall not exceed 0.5 percent of the aggregate of pure live seed (PLS) (percent germination x percent purity) and other material.

Fertilizer

Unless otherwise specified on the Practice Requirements sheet, all fertilizer shall be Ammonium Phosphate Sulfate containing a minimum of 16 percent Nitrogen, 20 percent available phosphoric acid and 0 percent water soluble potash and be uniform in composition, dry and free flowing, pelleted or granular.

All fertilizer shall be labeled in accordance with applicable state regulations and bear the warranty of the producer for the grade furnished.

Inoculants

The inoculant for treating legume seeds shall be a pure culture of Nitrogen fixing bacteria prepared specifically for the plant species and shall not be used later than the date indicated on the container. A mixing medium, as recommended by the manufacturer or approved substitute, shall be used to bond the inoculant to the seed. For nonpellet inoculated seed, two times the amount of the inoculant recommended by the manufacturer shall be used and seed shall be sown with 24 hours.

For pellet inoculated seed, at least 30 pounds of inoculant shall be used per 1,000 pounds of raw seed and the seed shall be labeled to show the Lot Number, Expiration Date, and Percent Coat of the finished product. Pellet inoculated seed shall be kept cool and sown within 180 days.

Wood Fiber

Wood fiber shall be a wood cellulose fiber that contains no germination nor growth inhibiting factors. The wood fiber shall be produced from nonrecycled wood such as wood chips or similar wood materials and shall have the property to be evenly dispersed and suspended when agitated in water. It shall be colored with a nontoxic water soluble green dye to provide a proper gauge for metering of material over ground surfaces.

The wood fiber mulch may also be produced from the following materials:

a. recycled wood fiber, such as wood chips or similar wood materials

b. a combination of recycled newsprint and cardboard materials that contain at least 50 percent cardboard, or

c. a combination of recycled newsprint and non-recycled wood fiber or recycled wood fiber materials that does not contain more than 50 percent newsprint

Tackifier

Tackifier material shall be one of the following or other material specified on the Practice Requirements sheet and shall have the property to be evenly dispersed and suspended in water when agitated: M-Binder, Sentinel, Ecotak-SAT, Fish-STIK, and Soil Master WR.

III. SEEDING MIXTURE AND PLANTING DATE

The seed(s) and rate(s) specified on the Practice Requirements sheet shall be used. The seeding rate(s) shall be the weight exclusive of any coating material. Any legume seed used shall be inoculated. Based on bag tags, seeding rates shall be adjusted to insure the required amounts of pure live seed.

Planting shall be performed after final grading is completed unless otherwise specified on the Practice Requirements sheet.

IV. SEEDBED PREPARATION

The area to be planted shall be weed free and have a firm seedbed which has previously been roughened by scarifying, disking, harrowing, chiseling, or otherwise worked to a depth of 2 to 4 inches. No implement shall be used that will create an excessive amount of downward movement of clods on sloping areas. Seedbed may be prepared at time of completion of earth moving work.

Rocks larger than 6 inches in diameter, trash, weeds, and other debris that will interfere with seeding or maintenance shall be removed.

Seedbed preparation shall be suspended when soil moisture conditions are not suitable for obtaining a satisfactory seedbed.

V. FERTILIZING, SEEDING, MULCHING

Fertilizing

Fertilizer shall be distributed uniformly over the seedbed at the rate of 500 pounds per acre unless a different amount is specified on the Practice Requirements sheet.

Fertilizer shall be applied hydraulically by hydroseeder in the form of a slurry that also contains the required seed. Fertilizer shall not remain in the slurry longer than two (2) hours.

Seeding and Mulching

Seed shall be distributed uniformly in a water slurry by hydroseeder.

The hydroseeder shall be equipped with a built-in continuous agitation system of sufficient operating capacity to produce a homogeneous slurry and a discharge system which will apply the slurry to the slopes at a continuous and uniform rate.

Seed shall not remain in the slurry longer than thirty (30) minutes. The slurry shall also contain wood fiber at the rate of 1500 pounds per acre, tackifier, and the required fertilizer unless otherwise specified on the Practice Requirements sheet. The wood fiber shall not remain in the slurry longer than two (2) hours. Water used shall be potable water or Class 1 or 2 agricultural irrigation water.

Application rates for wood fiber mulch products that have moisture contents greater than 15 percent shall be increased by the following factor, c:

$$c: = \frac{85 \text{ percent}}{\text{percent fiber (solids) in product}}$$

The application rate of the tackifier shall be:

Tackifier	Rate	Wood Fiber Mulch
M-Binder	100lbs	1,500 to 2,000lbs
Sentinel	100lbs	1,500 to 2,000lbs
Ecotak-SAT	100lbs	1,500 to 2,000lbs
Fish-STIK	100lbs	1,500 to 2,000lbs
Soil Master WR	100gal	2,000 to 2,500lbs

The slurry shall be continuously mixed and shall be mixed for at least five (5) minutes after the last addition before application starts. The slurry shall be applied uniformly over the site at a rate that is nonerosive and minimizes runoff.

VI. IRRIGATION

When specified, irrigation water shall be applied at the times and rates as listed on the Practice Requirements sheet.

VII. SPECIAL MEASURES

Measures and methods that enhance fish and wildlife values, protect visual resources, and maintain key shade, food, and den trees shall be performed when specified on the Practice Requirements sheet.

VIII. OTHER REQUIREMENTS

Other details for the establishment and maintenance of the plants including, but not limited to, the need for livestock and traffic control shall be applied when specified on the Practice Requirements sheet.

Operations shall be done in such a manner that erosion and air and water pollution are minimized and held with legal limits.

The owner, operator, contractor, or other persons shall conduct all work and operations in accordance with proper safety codes for the type of equipment and operations being performed with due regards to the safety of all persons and property.

NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE SPECIFICATION

342C - CRITICAL AREA PLANTING - SPLIT HYDRO MULCH

I. SCOPE

The work shall consist of furnishing all materials and placing them on all exposed, disturbed, or barren areas within the project area or site to the limits as shown on the drawings, or as staked in the field.

II. MATERIALS

Seed

All seed shall be delivered to the site tagged and labeled in accordance with the California Agricultural Code, and shall be acceptable to the Country Agricultural Commissioner.

Bag tag figures will be evidence of purity and germination. Time since date of seed test shall not exceed 9 months.

Seed shall be of a quality that weed seed shall not exceed 0.5 percent of the aggregate of pure live seed (PLS) (percent germination x percent purity) and other material.

Fertilizer

Unless otherwise specified on the Practice Requirements sheet, all fertilizer shall be Ammonium Phosphate Sulfate containing a minimum of 16 percent Nitrogen, 20 percent available phosphoric acid and 0 percent water soluble potash and be uniform in composition, dry and free flowing, pelleted or granular.

All fertilizer shall be labeled in accordance with applicable state regulations and bear the warranty of the producer for the grade furnished.

Inoculants

The inoculant for treating legume seeds shall be a pure culture of Nitrogen fixing bacteria prepared specifically for the plant species and shall not be used later than the date indicated on the container. A mixing medium, as recommended by the manufacturer or approved substitute, shall be used to bond the inoculant to the seed. For nonpellet inoculated seed, two times the amount of the inoculant recommended by the manufacturer shall be used and seed shall be sown within 24 hours.

For pellet inoculated seed, at least 30 pounds of inoculant shall be used per 1,000 pounds of raw seed and the seed shall be labeled to show the Lot Number, Expiration Date, and Percent Coat of the finished product. Pellet inoculated seed shall be kept cool and sown within 180 days.

Wood Fiber

Wood fiber shall be a wood cellulose fiber that contains neither germination nor growth inhibiting factors. The wood fiber shall be produced from nonrecycled wood such as wood chips or similar wood materials and shall have the property to be evenly dispersed and suspended when agitated in water. It shall be colored with a nontoxic water-soluble green dye to provide a proper gauge for metering of material over ground surfaces.

The wood fiber mulch may also be produced from the following materials:

a. recycled wood fiber, such as wood chips or similar wood materials

b. a combination of recycled newsprint and cardboard materials that contain at least 50 percent cardboard, or

c. a combination of recycled newsprint and non-recycled wood fiber or recycled wood fiber materials that does not contain more than 50 percent newsprint

Tackifier

Tackifier material shall be one of the following or other material specified on the Practice Requirements sheet and shall have the property to be evenly dispersed and suspended in water when agitated: M-Binder, Sentinel, Ecotak-SAT, Fish-STIK, and Soil Master WR.

III. SEEDING MIXTURE AND PLANTING DATE

The seed(s) and rate(s) specified on the Practice Requirements sheet shall be used.

The seeding rate(s) shall be the weight exclusive of any coating material. Any legume seed used shall be inoculated. Based on bag tags, seeding rates shall be adjusted to insure the required amounts of pure live seed.

Planting shall be performed after final grading is completed unless otherwise specified on the Practice Requirements sheet.

IV. SEEDBED PREPARATION

The area to be planted shall be weed free and have a firm seedbed which has previously been roughened by scarifying, disking, harrowing, chiseling, or otherwise worked to a depth of 2 to 4 inches. No implement shall be used that will create an excessive amount of downward movement of clods on sloping areas. Seedbed may be prepared at time of completion of earth moving work.

Rocks larger than 6 inches in diameter, trash, weeds, and other debris that will interfere with seeding or maintenance shall be removed.

Seedbed preparation shall be suspended when soil moisture conditions are not suitable for obtaining a satisfactory seedbed.

V. FERTILIZING, SEEDING, MULCHING

Fertilizing

Fertilizer shall be distributed uniformly over the seedbed at the rate of 500 pounds per acre unless a different amount is specified on the Practice Requirements sheet.

Fertilizer shall be applied hydraulically by hydroseeder in the form of a slurry that also contains the required seed. Fertilizer shall not remain in the slurry longer than two (2) hours.

Seeding

Seed shall be distributed uniformly in a water slurry by hydroseeder.

The hydroseeder shall be equipped with a built-in continuous agitation system of sufficient operating capacity to produce a homogeneous slurry and a discharge system that will apply the slurry to the slopes at a continuous and uniform rate.

Seed shall not remain in the slurry longer than thirty (30) minutes. The slurry shall also contain wood fiber at the rate of 500 pounds per acre and the required fertilizer. The wood fiber shall not remain in the slurry longer than two (2) hours. Water used shall be potable water or Class I or 2 agricultural irrigation water.

Application rates for wood fiber mulch products that have moisture contents greater than 15 percent shall be increased by the following factor, c:

$$c: = \frac{85 \text{ percent}}{\text{percent fiber (solids) in product}}$$

The slurry shall be continuously mixed and shall be mixed for at least five (5) minutes after the last addition before application starts. The slurry shall be applied uniformly over the site at a rate that is nonerosive and minimizes runoff.

Mulching

Wood fiber with tackifier shall be distributed uniformly over the seeded area in a water slurry by hydroseeder. Application shall be made within 48 hours following seeding.

The hydroseeder shall be equipped with a built-in continuous agitation system of sufficient operating capacity to produce a homogeneous slurry and a discharge system that will apply the slurry to the slopes at a continuous and uniform rate.

The slurry shall contain wood fiber at the rate of 1500 pounds per acre and tackifier unless otherwise specified on the Practice Requirement sheet. The wood fiber shall not remain in the slurry longer than two (2) hours. Water used shall be potable water or Class 1 or 2 agricultural irrigation water.

Application rates for wood fiber mulch products that have moisture contents greater than 15 percent shall be increased by the following factor, c:

$$c: = \frac{85 \text{ percent}}{\text{percent fiber (solids) in product}}$$

The application rate for the tackifier shall be:

Tackifier	Rate	Wood Fiber Mulch
M-Binder	100lbs	1,500 to 2,000lbs
Sentinel	100lbs	1,500 to 2,000lbs
Ecotak-SAT	100lbs	1,500 to 2,000lbs
Fish-STIK	100lbs	1,500 to 2,000lbs
Soil Master WR	100gal	2,000 to 2,500lbs

The slurry shall be continuously mixed and shall be mixed for at least five (5) minutes after the last addition before application starts. The slurry shall be applied uniformly over the site at a rate that is nonerosive and minimizes runoff.

VI. IRRIGATION

When specified, irrigation water shall be applied at the times and rates as listed on the Practice Requirements sheet.

VII. SPECIAL MEASURES

Measures and methods that enhance fish and wildlife values, protect visual resources, and maintain key shade, food, and den trees shall be performed when specified on the Practice Requirements sheet.

VIII. OTHER REQUIREMENTS

Other details for the establishment and maintenance of the plants including, but not limited to, the need for livestock and traffic control shall be applied when specified on the practice Requirements sheet.

Operations shall be done in such a manner that erosion and air and water pollution are minimized and held within legal limits.

The owner, operator, contractor, or other persons shall conduct all work and operations in accordance with proper safety codes for the type of equipment and operations being performed with due regards to the safety of all persons and property.

NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE SPECIFICATION

342D - CRITICAL AREA PLANTING - TACKIFIED STRAW

I. SCOPE

The work shall consist of furnishing all materials and placing them on all exposed, disturbed, or barren areas within the project area or site to the limits as shown on the drawings, or as staked in the field.

II. MATERIALS

Seed

All seed shall be delivered to the site tagged and labeled in accordance with the California Agricultural Code, and shall be acceptable to the County Agricultural Commissioner.

Bag tag figures will be evidence of purity and germination. Time since date of seed test shall not exceed 9 months.

Seed shall be of a quality that weed seed shall not exceed 0.5 percent of the aggregate of pure live seed (PLS) (percent germination x percent purity) and other material.

Fertilizer

Unless otherwise specified on the Practice Requirements sheet, all fertilizer shall be Ammonium Phosphate Sulfate containing a minimum of 16 percent Nitrogen, 20 percent available phosphoric acid and 0 percent water soluble potash and be uniform in composition, dry and free flowing, pelleted or granular.

All fertilizer shall be labeled in accordance with applicable state regulations and bear the warranty of the producer for the grade furnished.

Inoculants

The inoculant for treating legume seeds shall be a pure culture of Nitrogen fixing bacteria prepared specifically for the plant species and shall not be used later than the date indicated on the container. A mixing medium, as recommended by the manufacturer or approved substitute, shall be used to bond the inoculant to the seed. For nonpellet inoculated seed, two times the amount of the inoculant recommended by the manufacturer shall be used and seed shall be sown within 24 hours.

For pellet inoculated seed, at least 30 pounds of inoculant shall be used per 1,000 pounds of raw seed and the seed shall be labeled to show the Lot Number, Expiration Date, and Percent Coat of the finished product. Pellet inoculated seed shall be kept cool and sown within 180 days.

Wood Fiber

Wood fiber shall be a wood cellulose fiber that contains neither germination nor growth inhibiting factors. The wood fiber shall be produced from nonrecycled wood such as wood chips or similar wood materials and shall have the property to be evenly dispersed and suspended when agitated in water. It shall be colored with a nontoxic water-soluble green dye to provide a proper gauge for metering of material over ground surfaces.

The wood fiber mulch may also be produced from the following materials:

a. recycled wood fiber, such as wood chips or similar wood materials

b. a combination of recycled newsprint and cardboard materials that contain at least 50 percent cardboard, or

c. a combination of recycled newsprint and non-recycled wood fiber or recycled wood fiber materials that does not contain more than 50 percent newsprint

Tackifier

Tackifier material shall be one of the following or other material specified on the Practice Requirements sheet and shall have the property to be evenly dispersed and suspended in water when agitated: M-Binder, Sentinel, Ecotak-SAT, Fish-STIK, and Soil Master WR.

Straw

Straw shall be new straw derived from rice, wheat, oats, or barley that meets the County Agricultural Commissioner's standards for weed pests. Clearance shall be obtained from the County Agricultural Commissioner, as required by law, before straw obtained outside the county in which it is to be used is delivered to the site.

III. SEEDING MIXTURE AND PLANTING DATE

The seed(s) and rate(s) specified on the Practice Requirements sheet shall be used.

The seeding rate(s) shall be the weight exclusive of any coating material. Any legume seed used shall be inoculated. Based on bag tags, seeding rates shall be adjusted to insure the required amounts of pure live seed.

Planting shall be performed after final grading is completed unless otherwise specified on the Practice Requirements sheet.

IV. SEEDBED PREPARATION

The area to be planted shall be weed free and have a firm seedbed which has previously been roughened by scarifying, disking, harrowing, chiseling, or otherwise worked to a depth of 2 to 4 inches. No implement shall be used that will create an excessive amount of downward movement of clods on sloping areas. Seedbed may be prepared at time of completion of earth moving work.

Rocks larger than 6 inches in diameter, trash, weeds, and other debris that will interfere with seeding or maintenance shall be removed.

Seedbed preparation shall be suspended when soil moisture conditions are not suitable for obtaining a satisfactory seedbed.

V. FERTILIZING, SEEDING, MULCHING

Fertilizing

Fertilizer shall be distributed uniformly over the seedbed at the rate of 500 pounds per acre unless a different amount is specified on the Practice Requirements sheet.

Fertilizer shall be applied in any way that will result in uniform distribution. When specified on the Practice Requirements sheet, fertilizer shall be incorporated into the soil as part of the seedbed preparation or as part of the seeding operation.

Fertilizer shall be applied hydraulically by hydroseeder in the form of a slurry that also contains the required seed. Fertilizer shall not remain in the slurry longer than two (2) hours.

Seeding

The seed shall be drilled, broadcast, or distributed uniformly in a water slurry by hydroseeder. When specified on the Practice Requirements sheet, seed shall be incorporated into the soil but not more than the specified depth.

The hydroseeder shall be equipped with a built-in continuous agitation system of sufficient operating capacity to produce a homogeneous slurry and a discharge system that will apply the slurry to the slopes at a continuous and uniform rate.

Seed shall not remain in the slurry longer than thirty (30) minutes. The slurry shall also contain wood fiber at the rate of 500 pounds per acre and the required fertilizer.

Application rates for wood fiber mulch products that have moisture contents greater than 15 percent shall be increased by the following factor, c:

$$c: = \frac{85 \text{ percent}}{\text{percent fiber (solids) in product}}$$

The wood fiber shall not remain in the slurry longer than two (2) hours. Water used shall be potable water or Class 1 or 2 agricultural irrigation water.

The slurry shall be continuously mixed and shall be mixed for at least five (5) minutes after the last addition before application starts. The slurry shall be applied uniformly over the site at a rate that is nonerosive and minimizes runoff.

Mulching

A straw covering shall be distributed uniformly over the seeded area within 48 hours after seeding. Straw shall be applied at the rate of two (2) tons per acre unless a different amount is specified on the Practice Requirements sheet. The straw shall be applied by hand, blower, or other suitable equipment. If straw is

applied by blower, it shall not be chopped in lengths less than six (6) inches.

Anchoring the Mulch

When specified on the Practice Requirements sheet, the straw mulch shall be anchored in place. Anchoring process may include hand tools, mulching rollers, disks, or similar types of suitable equipment alone or in combination with a hydro-mulch material and shall be performed in a satisfactory manner. When specified on the Practice Requirements sheet, hydro-mulch material alone may be used.

The hydro-mulch material shall be applied uniformly over the straw in a water slurry by hydroseeder within 48 hours following mulching. Unless otherwise specified on the Practice Requirements sheet, the hydo-mulch shall be wood fiber mulch, a tackifier, and water in the following portions per acre:

Tackifier	Rate	Wood Fiber Mulch	Water
M-Binder	100 lbs	150 lbs	700 gal
Ecotak-SAT	100 lbs	150 lbs	700 gal
Sentinel	100 lbs	500 lbs	2,000 gal
Fish-STIK	60 lb	500 lbs	3,000 gal
Soil Master WR	100 lbs	250 lbs	1,000 gal

The hydroseeder shall be equipped with a built-in continuous agitation system of sufficient operating capacity to produce a homogeneous slurry and a discharge system that will apply the slurry to the slopes at a continuous and uniform rate.

The materials shall not remain in the slurry longer than two (2) hours. Water used shall be potable water or Class 1 or 2 agricultural irrigation water.

The slurry shall be continuously mixed and shall be mixed for at least five (5) minutes after the last addition before application starts. The slurry shall be applied uniformly over the site at a rate that is nonerosive and minimizes runoff.

VI. IRRIGATION

When specified, irrigation water shall be applied at the times and rates as listed on the Practice Requirements sheet.

VII. SPECIAL MEASURES

Measures and methods that enhance fish and wildlife values, protect visual resources, and maintain key shade, food, and den trees shall be performed when specified on the Practice Requirements sheet.

VIII. OTHER REQUIREMENTS

Other details for the establishment and maintenance of the plants including, but not limited to, the need for livestock and traffic control shall be applied when specified on the Practice Requirements sheet.

Operations shall be done in such a manner that erosion and air and water pollution are minimized and held within legal limits.

The owner, operator, contractor, and other persons shall conduct all work and operations in accordance with proper safety codes for the type of equipment and operations being performed with due regards to the safety of all persons and property.

NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE SPECIFICATION

342E - CRITICAL AREA PLANTING - EROSION CONTROL BLANKET

I. SCOPE

The work shall consist of furnishing all materials and placing them on all exposed, disturbed, or barren areas within the project area or site to the limits as shown on the drawings, or as staked in the field.

II. MATERIALS

Seed

All seed shall be delivered to the site tagged and labeled in accordance with the California Agricultural Code, and shall be acceptable to the County Agricultural Commissioner.

Bag tag figures will be evidence of purity and germination. Time since date of seed test shall not exceed 9 months.

Seed shall be of a quality that weed seed shall not exceed 0.5 percent of the aggregate of pure live seed (PLS) (percent germination x percent purity) and other material.

Fertilizer

Unless otherwise specified on the Practice Requirements sheet, all fertilizer shall be Ammonium Phosphate Sulfate containing a minimum of 16 percent Nitrogen, 20 percent available phosphoric acid and 0 percent water soluble potash and be uniform in composition, dry and free flowing, pelleted or granular.

All fertilizer shall be labeled in accordance with applicable state regulations and bear the warranty of the producer for the grade furnished.

Inoculants

The inoculant for treating legume seeds shall be a pure culture of Nitrogen fixing bacteria prepared specifically for the plant species and shall not be used later than the date indicated on the container. A mixing medium, as recommended by the manufacturer or approved substitute, shall be used to bond the inoculant to the seed. For nonpellet inoculated seed, two times the amount of the inoculant recommended by the manufacturer shall be used and seed shall be sown within 24 hours.

For pellet inoculated seed, at least 30 pounds of inoculant shall be used per 1,000 pounds of raw seed and the seed shall be labeled to show the Lot Number, Expiration Date, and Percent Coat of the finished product. Pellet inoculated seed shall be kept cool and sown within 180 days.

Wood Fiber

Wood fiber shall be a wood cellulose fiber that contains neither germination nor growth inhibiting factors. The wood fiber shall be produced from nonrecycled wood such as wood chips or similar wood materials and shall have the property to be evenly dispersed and suspended when agitated in water. It shall be colored with a nontoxic water-soluble green dye to provide a proper gauge for metering of material over ground surfaces.

The wood fiber mulch may also be produced from the following materials:

a. recycled wood fiber, such as wood chips or similar wood materials

b. a combination of recycled newsprint and cardboard materials that contain at least 50 percent cardboard, or

c. a combination of recycled newsprint and non-recycled wood fiber or recycled wood fiber materials that does not contain more than 50 percent newsprint

Erosion Control Blanket

The erosion control blanket shall consist of a machine-produced mat of wood excelsior fiber with consistent thickness and fiber evenly distributed over the entire area of the blanket. At least 70- percent of the fibers shall be six (6) inches or longer in length. The topside of each blanket shall be covered with biodegradable

extruded plastic mesh with openings not exceeding two inches by two inches.

Erosion control blankets may also be machine produced mats of 70 percent wheat straw and 30 percent coconut fiber or 100 percent coconut fiber with consistent thickness and fiber evenly distributed over the entire area of the blanket. These blankets shall have a minimum density of 0.5 pounds per square yard and be enclosed in netting material.

Staples

Staples shall be "U" shaped with legs at least ten (10) inches in length and have a two (2) inch crown and shall be made of eleven (ll) gauge or heavier wire.

III. SEEDING MIXTURE AND PLANTING DATE

The seed(s) and rate(s) specified on the Practice Requirements sheet shall be used. The seeding rate(s) shall be the weight exclusive of any coating material. Any legume seed used shall be inoculated. Based on bag tags, the seeding rates shall be adjusted to insure the required amounts of pure live seed.

Planting shall be performed after final grading is completed unless otherwise specified on the Practice Requirements sheet.

IV. SEEDBED PREPARATION

The area to be planted shall be weed free and have a firm seedbed which has previously been roughened by scarifying, disking, harrowing, chiseling, or otherwise worked to a depth of 2 to 4 inches. No implement shall be used that will create an excessive amount of downward movement of clods on sloping areas. Seedbed may be prepared at time of completion of earth moving work.

Rocks larger than 6 inches in diameter, trash, weeds, and other debris that will interfere with seeding or maintenance shall be removed.

Seedbed preparation shall be suspended when soil moisture conditions are not suitable for obtaining a satisfactory seedbed.

V. FERTILIZING, SEEDING, MULCHING

Fertilizing

Fertilizer shall be distributed uniformly over the seedbed at the rate of 500 pounds per acre unless a different amount is specified on the Practice Requirements sheet.

Fertilizer shall be applied in any way that will result in uniform distribution. When specified on the Practice Requirements sheet, fertilizer shall be incorporated into the soil as part of the seedbed preparation or as part of the seeding operation.

Fertilizer shall be applied hydraulically by hydroseeder in the form of a slurry that also contains the required seed. Fertilizer shall not remain in the slurry longer than two (2) hours.

Seeding

Seed shall be drilled, broadcast, or distributed uniformly in a water slurry by hydroseeder. When specified on the Practice Requirements sheet, seed shall be incorporated into the soil but not more than the specified depth.

The hydroseeder shall be equipped with a built-in continuous agitation system of sufficient operating capacity to produce a homogeneous slurry and a discharge system that will apply the slurry to the slopes at a continuous and uniform rate.

Seed shall not remain in the slurry longer than thirty (30) minutes. The slurry shall also contain wood fiber at the rate of 500 pounds per acre and the required fertilizer. The wood fiber shall not remain in the slurry longer than two (2) hours. Water used shall be potable water or Class 1 or 2 agricultural irrigation water.

Application rates for wood fiber mulch products that have moisture contents greater than 15 percent shall be increased by the following factor, c:

$$c: = \frac{85 \text{ percent}}{\text{percent fiber (solids) in product}}$$

The slurry shall be continuously mixed and shall be mixed for at least five (5) minutes after the last addition before application starts. The slurry shall be applied uniformly over the site at a rate that is nonerosive and minimizes runoff.

Mulching

Erosion control blankets shall be distributed uniformly over the surface of the seeded area within 48 hours following seeding. The blankets shall be started on the backside three (3) feet below the crest of the treated slope and installed vertically down the treated slope. The netting shall be on top and the fibers in contact with the soil. The edges shall overlap at least four (4) inches onto adjoining blankets.

Anchoring the Mulch

Staples shall be driven vertically into the ground with reference to the slope. Four (4) staples shall be uniformly spaced across the start and end of each roll and placed four (4) inches from the starting edge at the crest of the slope and two (2) inches from the end of each roll.

Staples shall also be uniformly spaced down both sides of each roll at six (6) foot intervals and two (2) inches from the edge. Staples shall also be spaced down the center of each roll at six (6) foot intervals and alternately spaced with respect to the staples on each side.

VI. IRRIGATION

When specified, irrigation water shall be applied at the times and rates as listed on the Practice Requirements sheet.

VII. SPECIAL MEASURES

Measures and methods that enhance fish and wildlife values, protect visual resources, and maintain key shade, food, and den trees shall be performed when specified on the Practice Requirements sheet.

VIII. OTHER REQUIREMENTS

Other details for the establishment and maintenance of the plants including, but not limited to, the need for livestock and traffic control shall be applied when specified on the Practice Requirements sheet.

Operations shall be done in such a manner that erosion and air and water pollution are minimized and held with legal limits.

The owner, operator, contractor, and other persons shall conduct all work and operations in accordance with proper safety codes for the type of equipment and operations being performed with due regards to the safety of all persons and property.

NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE SPECIFICATION

342G - CRITICAL AREA PLANTING - WOODY CUTTINGS

I. SCOPE

The work shall consist of furnishing all materials and placing them within the project area or site to the limits as shown on the drawings, or as staked in the field.

II. MATERIALS

Woody cuttings shall be made from healthy green plants during the dormant season. No more than 2/3ds of each plant will be removed. Select cuttings with leaf buds near the top of each cut.

Stem or branch cuttings of soft wood, hard wood or firm wood should be taken whenever possible from plants that are native to the locality or grown on similar sites.

Cuts shall be made clean with sharp tools. The butt end of the stem shall be a slant cut and the tip end shall be cut square across the stem.

Size:

Slips: The diameter of the cutting shall not be more than 11/2 inches at the butt end nor smaller than 1/4 inch at the tip. Cuttings shall have a minimum length of 2 feet and a maximum length of 4 feet unless otherwise specified on the Practice Requirements Sheet.

Poles: The diameter of the cutting shall not be more than 4 inches nor smaller than 1inch at the butt end and ½ inch at the tip. Cuttings shall have a minimum length of the depth to the water table plus 3 feet unless otherwise specified on the Practice Requirements Sheet.

Cuttings shall not be allowed to dry and shall not be more than 7 days old when planted unless otherwise specified on the Practice Requirements sheet.

III. PLANT MATERIALS AND PLANTING DATE

The kinds of cuttings specified on the Practice Requirement sheet shall be used.

Planting shall be performed after final grading is completed unless otherwise specified on the Practice Requirements sheet.

IV. SITE PREPARATION

The area to be planted shall be weed free and have a uniform surface. No implement shall be used that will create an excessive amount of downward movement of clods on sloping areas. The site may be prepared at time of completion of earth moving work.

Trash, weeds, and other debris that will interfere with planting or maintenance shall be removed.

V. PLANTING REQUIREMENTS

Cuttings shall be planted in one or more rows as shown on the drawing(s) as vertical as possible. Cuttings shall be spaced 3 feet apart in the row and in multiple row plantings, spacing between rows shall be 3 feet . Cuttings shall be staggered with respect to those in adjacent rows unless otherwise specified on the Practice Requirement sheet.

Cuttings shall be planted in prepared holes or "V" furrows to avoid stripping the bark, especially in rocky or hard soils. Cuttings may be pushed into soil if the soil is saturated with moisture. Cuttings shall be placed in the soil with the butt end in a downward position

All cuttings shall have 6 inches to a maximum of 1-foot including at least two nodes above the ground level.

Cuttings shall be placed into the soil to a depth specified on the Practice Requirements sheet. If however, due to some physical condition in the soil this planting depth cannot be attained, the cuttings shall be set with 3/4 of its length in the soil upon approval of the NRCS technician. At a minimum they must be placed into the soil 18 inches.

Poles: Plant in adequately sized, sod-free holes. Auger a hole to the water table. Place materials in the

augured hole one-half foot above the growing season water table.

After planting, pack the soil firmly around each pole to eliminate air pockets. "Mudding" by filling the hole with water and then adding more soil to make a slurry can remove air pockets.

VI. IRRIGATION

When specified, irrigation water shall be applied at the times and rates as listed on the Practice Requirements sheet to keep the soil in the lower two feet of the planted cutting moist.

VII. SPECIAL MEASURES

Measures and methods that enhance fish and wildlife values, protect visual resources, and maintain key shade, food, and den trees shall be performed when specified on the Practice Requirements sheet.

VIII. OTHER REQUIREMENTS

Other details for the establishment and maintenance of the plants including, but not limited to, the need for livestock and traffic control shall be applied when specified on the Practice Requirements sheet.

Operations shall be done in such a manner that erosion and air and water pollution are minimized and held within legal limits.

The owner, operator, contractor, and other persons shall conduct all work and operations in accordance with proper safety codes for the type of equipment and operations being performed with due regards to the safety of all persons and property.

NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE SPECIFICATION

342H - CRITICAL AREA PLANTING - CONTAINER PLANTS

I. SCOPE

The work shall consist of furnishing all materials and placing them on areas within the project area or site to the limits as shown on the drawings, or as staked in the field.

II. MATERIALS

Plants

Plants shall be healthy, shapely, and well rooted, with roots showing no evidence of having been damaged, restricted, or deformed. Plants found to be root or pot bound will not be acceptable. Plants shall be vigorous and free of disease, insect pests, eggs or larvae and shall be subject to inspection and approval at the place of growth or upon delivery. Plants shall not be allowed to freeze or dry.

Unless otherwise noted, all plant material shall be grown in nurseries which have been inspected by the State Department of Food and Agriculture and have complied with the regulations thereof. Clearance shall be obtained from the County Agricultural Commissioner, as required by law, before planting plants delivered from outside the county in which they are to be planted.

All specified one-quart and one-gallon plant stock shall be of the standard one-quart and one-gallon size and shall be delivered to the site in one-quart and one-gallon containers or equivalent. All specified five-gallon plant stock shall be of the standard five-gallon size and shall be delivered to the site in five-gallon containers. All specified 15-gallon plant stock shall be of the standard 15-gallon size and shall be delivered to the site in 15-gallon containers.

Manure

Manure shall be well composted, weed free, pulverized, sterilized, and may be furnished in bulk.

Commercial Fertilizer

Commercial fertilizer for trees and shrubs shall be a compressed long lasting slow release tablet form containing a minimum of 20 percent nitrogen, 10 percent available phosphoric acid, and 5 percent water soluble potash with each tablet approximately 21 grams in weight unless otherwise specified on the Practice Requirements sheet.

Commercial fertilizer for flat size plants shall contain a minimum of 10 percent nitrogen, 8 percent available phosphoric acid and 4 percent water soluble potash unless otherwise specified on the Practice Requirements sheet.

All fertilizer shall be delivered in original, unopened factory packaging, shall be free of lumps or other moisture damage, and shall be labeled in accordance with applicable state regulations and bear the warranty of the producer for the grade furnished.

Sand

Sand shall be clean, sharp, silica sand, uniform in size and irregular in shape.

Stakes

Stakes shall be straight and sound heart grade redwood, and shall be two inches by two inches and length as shown on the plans.

Flexible Rods

Flexible rods shall be 1/4-inch diameter steel for five-gallon plants and 3/8-inch diameter for 15-gallon plants and length as shown in plans.

Ties

Ties shall be heavy-duty vinyl, minimum .010 inches thick, or approved flexible rubberized cloth webbing, 1-inch width.

Steel Straps

Straps shall be 1/16-inch by 1-inch mild steel nailed to stakes with 8d box nails.

Mulch

Mulch shall consist of medium ground redwood, fir, cedar, or pine bark chips, 3/8-inch to 1-1/4 inch in size.

III. PLANT MATERIALS AND PLANTING DATE

The plant varieties shown on the drawings and specified on the Practice Requirements sheet shall be used.

Planting shall be performed after final grading is completed and during the period specified on the Practice Requirements sheet.

IV. SITE PREPARATION

All planting areas shall be cultivated and raked to remove any and all weeds or weed clumps and stones or other foreign material exceeding 2-inch diameter to a depth of 8 inches. No planting will be allowed in soil that, in the opinion of the NRCS technician is too wet, too dry, or otherwise improperly conditioned.

Plants shall be the varieties and arranged as shown on the plans. The locations of plants shall be marked for approval by the NRCS technician prior to excavating the plant holes. The locations shall be marked by flags or other approved means. Two days notice shall be given prior to the date desired for inspection by the NRCS technician.

Holes for trees and shrubs shall be excavated to minimum diameters and depths as follows:

Container Size	Hole Diameter	Hole Depth
One quart	12"	12"
One gallon	12"	12"
Five gallon	20"	20"
Fifteen gallon	32"	24"

The sides of the hole shall be vertical, lightly scarified and the bottom of the hole shall be loosened to a minimum additional depth of six inches.

V. PLANTING, FERTILIZING, MULCHING

Planting Trees and Shrubs

Partially backfill planting hole with planting mixture consisting of 50 percent native soil, 25 percent sand, and 25 percent manure by volume, unless otherwise specified on the Practice Requirements sheet, that has been uniformly mixed and is free of clods or lumps and blend planting mix into top two inches of soil in bottom of hole.

Plants shall be removed from the containers in such a manner that the ball of earth surrounding the roots is not broken, except for root bound plants that need their roots pruned, and shall be planted immediately. Cans shall be cut on at least two sides.

Set plants in center of pits, adjusting so that after settlement the crown of the plant will stand one or two inches above finish grade as shown on the plans.

Backfill with planting mixture to one-half root ball height, place one fertilizer tablet per foot of plant height two inches out from root ball and water thoroughly. Backfill rest of hole with planting mixture. Firm down, eliminating all air pockets, do not pack. Build a four-inch high berm around edge of root ball to form a basin for holding water. The bottom of the basin shall be at surrounding finish grade.

Fill basin with water immediately after planting, being careful not to break down the berm, gouge out holes in the backfill, or expose plant roots with hose stream. Settled plants shall be reset to proper grade position and planting basin restored.

No more plants shall be distributed or cans cut than can be planted and watered on that day.

Planting - Flat Size Plants

The 10-8-4 fertilizer shall be distributed uniformly over the areas to be planted to flat size plants at the rate of 20 pounds per 1000 square feet. Fertilizer may be applied in any way that will result in uniform distribution. The fertilizer shall be incorporated into the soil prior to planting. If fertilizing is performed as part of Section IV, Site Preparation, it shall not be accomplished more than (15) days prior to planting.

Prior to planting flat size plants, the areas shall also be watered thoroughly to insure optimum soil moisture to a minimum depth of 8 inches.

Flat size plants shall be planted at spacing specified on plans. Cultivate immediately after completion of planting and water lightly, but thoroughly, taking care to avoid erosion.

Planting -Tree Seedlings

Planting holes shall be made using the Western planting tool, mattock, or other suitable tool. The hole shall have one flat vertical side and be deeper than the plant container.

A single plant shall be immediately placed against the flat vertical side of the hole with roots straight and vertical and the hole carefully backfilled with excavated soil without damaging the roots. Plants in biodegradable containers shall be planted in their container. Plants in nonbiodegradable containers shall be removed from their container at time of planting. The soil around the plant shall be firmed by tamping to eliminate all air pockets, without packing the soil, and the ground line on the plant shall correspond to the adjacent ground line.

A 1.5 foot radius around each plant shall be cleared of any living grasses, legumes, and forbs.

Planting operations shall not create an excessive amount of downward movement of soil or clods on sloping areas and shall not damage newly placed plants, existing trees or tree seedlings. All plants that show damage or improper planting as determined by the NRCS Technician shall be replaced.

Mulching

Mulch shall be applied around each tree and shrub covering the bottom of the basin to a depth of two inches.

Pruning

Plants shall not be pruned prior to planting and after planting only at the direction of the NRCS Technician.

Staking

All 5-gallon and 15-gallon size trees installed shall be supported by three stakes plus ties as shown on the drawings within 48 hours after planting. Spindly trees shall also be supported by a flexible rod plus ties and the three stakes shall be held by a steel strap as shown on the plans. The type of support used for each tree shall be subject to the approval of the NRCS Technician.

VI. IRRIGATION

All trees, shrubs, and flat size plants shall be watered immediately after planting and thereafter as necessary to keep the soil reasonably moist throughout the root system during the first and second growing seasons unless otherwise specified on the Practice Requirements sheet.

Water shall be intermittently applied in a moderate stream that does not displace the mulch or soil around the plant until the surrounding soil is thoroughly saturated. Damage, erosion or slippage of the soil caused by watering shall be repaired by the Contractor at his expense

When specified, irrigation water shall be applied at the times and rates as listed on the Practice Requirements sheet.

VII. SPECIAL MEASURES

Measures and methods that enhance fish and wildlife values, protect visual resources, and maintain key shade, food, and den trees shall be performed when specified on the Practice Requirements sheet.

VIII. OTHER REQUIREMENTS

For the first two growing seasons all plants and planting areas shall be maintained weed and pest free and shall be protected against animal depredation and other hazards that will adversely affect the plants. All plants that show damage or indicate failure to grow will be replaced. Papers, trash, debris, and surplus earth which accumulate in the planted areas shall be removed and disposed of away from the site and the planted areas shall be cared for as to present a neat and clean condition at all times. Basins, basin walls and other earth areas shall be kept well formed or graded.

Weeding shall be by hand or with a herbicide. When pulled by hand they shall be pulled before they exceed four inches in height or with a herbicide before they exceed two inches in height, unless otherwise specified on the Practice Requirements sheet. When any insecticide or herbicide is used, all manufacturer's label directions and Sate and Federal regulations shall be followed.

No herbicide may be used within 30 days of planting and shall be applied with a photosensitive dye, unless otherwise specified on the Practice Requirements sheet, which will produce a color when sprayed upon the ground. The color shall disappear within two or three

days after being applied and shall not stain concrete, nor be injurious to plant or animal life when applied at the manufacturers recommended application rate.

Other details for the establishment and maintenance of the plants including, but not limited to rodent protection and livestock and traffic control shall be applied when specified on the Practice Requirements sheet.

Operations shall be done in such a manner that erosion and air and water pollution are minimized and held within legal limits. All work and operations shall be conducted in accordance with proper safety codes for the type of equipment and operations being performed with due regards to the safety of all persons and property.

NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE SPECIFICATION

342I - CRITICAL AREA PLANTING – DUNE STABILIZATION

I. SCOPE

The work shall consist of furnishing all materials and placing them on all exposed, disturbed, or barren areas within the project area or site to the limits as shown on the drawings, or as staked in the field.

II. MATERIALS

Seed

All seed shall be delivered to the site tagged and labeled in accordance with the California Agricultural Code, and shall be acceptable to the County Agricultural Commissioner.

Bag tag figures will be evidence of purity and germination. Time since date of seed test shall not exceed 9 months.

Seed shall be of a quality that weed seed shall not exceed 0.5% of the aggregate of pure live seed (PLS) (% germination x % purity) and other material.

Inoculants

The inoculant for treating legume seeds shall be a pure culture of Nitrogen fixing bacteria prepared specifically for the plant species and shall not be used later than the date indicated on the container. A mixing medium, as recommended by the manufacturer or approved substitute, shall be used to bond the inoculant to the seed. For nonpellet inoculated seed, two times the amount of the inoculant recommended by the manufacturer shall be used and seed shall be sown within 24 hours.

For pellet inoculated seed, at least 30 pounds of inoculant shall be used per 1,000 pounds of raw seed and the seed shall be labeled to show the Lot Number, Expiration Date, and Percent Coat of the finished product. Pellet inoculated seed shall be kept cool and sown within 180 days.

Chemicals

All pesticides used in performing this practice shall be Federally, State, and locally registered and shall be applied strictly in accordance with authorized and registered uses, directions on the label, and other Federal or State policies and requirements. Chemical containers shall be properly stored and disposed of in a safe manner.

Clearance shall be obtained from the County Agricultural Commissioner, has required by law, before plant materials from outside the County in which it is to be used is delivered to the site.

Fertilizer

Unless otherwise specified on the Practice Requirements sheet, all fertilizer shall be Ammonium Phosphate Sulfate containing a minimum of 16 percent nitrogen, 20 percent available phosphoric acid and 0 percent water soluble potash and be uniform in composition, dry and free flowing, pelleted or granular.

All fertilizer shall be labeled in accordance with applicable state regulations and bear the warranty of the producer for the grade furnished.

Temporary Wind Barriers

The parallel barriers will be laid out across the area to be stabilized prior to seeding and mulching activities.

The spacing will not exceed the width specified on the Practice Requirements Sheet.

Mulching

The mulching will be applied as described on the attached Practice Specification and Practice Requirements Sheet.

III. PLANT MATERIALS AND PLANTING DATE

The seed(s) and rate(s) specified on the Practice Requirements sheet shall be used.

The seeding rate(s) shall be the weight exclusive of any coating material. Any legume seed used shall be inoculated. Based on bag tags, seeding rates shall be adjusted to insure the required amounts of pure live seed.

Planting shall be performed during the period that is specified on the Practice Requirements sheet.

IV. SEEDBED PREPARATION

The area to be planted shall be weed free and have a firm seedbed which has previously been roughened by scarifying, disking, harrowing, chiseling, or otherwise worked to a depth of 2 to 4 inches. No implement shall be used that will create an excessive amount of downward movement of clods on sloping areas. Seedbed may be prepared at time of completion of earth moving work.

Rocks larger than 6 inches in diameter, trash, weeds, and other debris that will interfere with planting or maintenance shall be removed.

Seedbed preparation shall be suspended when soil moisture conditions are not suitable for obtaining a satisfactory seedbed.

V. FERTILIZING AND SEEDING

Fertilizing

Fertilizer shall be distributed uniformly over the seedbed at the rate of 500 pounds per acre unless a different amount is specified on the Practice Requirements sheet.

Fertilizer shall be applied in any way that will result in uniform distribution. The fertilizer shall be incorporated into the soil. Incorporation may be as part of the seedbed preparation, or part of the seeding operation unless otherwise specified on the Practice Requirements Worksheet.

Seeding

Seed shall be drilled or broadcast by hand, mechanical hand seeder, or power operated seeder. Seed shall be incorporated into the soil, but not more than 1 inch deep unless otherwise specified on the Practice Requirements Sheet.

Seeding shall be performed as nearly as practical across the slope unless otherwise specified on the Practice Requirements Sheet.

VI. IRRIGATION

When specified, irrigation water shall be applied at the times and rates as listed on the Practice Requirements sheet.

VII. SPECIAL MEASURES

Measures and methods that enhance fish and wildlife values, protect visual resources, and maintain key shade, food, and den trees shall be performed when specified on the Practice Requirements sheet.

VIII. OTHER REQUIREMENTS

Other details for the establishment and maintenance of the plants including, but not limited to, the need for livestock and traffic control shall be applied when specified on the Practice Requirements sheet.

Operations shall be done in such a manner that erosion and air and water pollution are minimized and held within legal limits.

The owner, operator, contractor, and other persons shall conduct all work and operations in accordance with proper safety codes for the type of equipment and operations being performed with due regards to the safety of all persons and property.

NATURAL RESOURCES CONSERVATION SERVICE

CONSERVATION PRACTICE STANDARD

RESTORATION AND MANAGEMENT OF RARE OR DECLINING HABITATS

(Ac.)

CODE 643

DEFINITION

Restoring and managing rare and declining habitats and their associated wildlife species to conserve biodiversity.

PURPOSE

Provide habitat for rare and declining species.

CONDITIONS WHERE PRACTICE APPLIES

Sites that previously or currently support the rare or declining habitat targeted for restoration or management.

Rare and declining habitats in California include but are not limited to the following [1]

- Coastal dunes in southern CA
- Native Grasslands
- Alkali sink scrub in southern CA
- Central Valley riparian forest
- Sagebrush steppe in Intermountain West
- Old Growth Coniferous Forests
- Coastal Redwood forests
- Riparian forests
- Coastal sage scrub in southern CA
- Coastal mixed chaparral in southern CA
- Wetlands (all types)
- Large streams and rivers

CRITERIA

Methods used will be designed to protect the soil resource from erosion and compaction.

Invasive species and noxious weeds shall be controlled. When possible, control will be done on a “spot” basis to protect native forbs and legumes that benefit native pollinators and other wildlife.

Undisturbed areas shall be conserved on a sufficient extent of the area to sustain disturbance-intolerant species.

Species and seeding rate specifications, as prescribed in the California Vegetation Guide specific to the MLRA for the site, will be used to achieve desired habitat condition. When feasible, only local ecotypes will be used.

Site preparation, planting dates and methods, and plant material care and handling shall optimize vegetation survival and growth.

A pretreatment assessment of the targeted habitat will be documented to provide a baseline for comparison with post-treatment habitat assessment.

Use of fertilizers, pesticides and other chemicals shall not compromise the intended purpose of this practice, and shall be done in accordance will all pertinent labels, laws, and regulations.

All activities will be scheduled to minimize impact to the priority wildlife species of all classes.

CONSIDERATIONS

All necessary local, state, and federal permits shall be obtained by the landowner (or designee) prior to the restoration.

Confer with other agencies and organizations to develop guidelines and specifications for conserving declining habitats.

Haying, grazing and other management activities (including exclusion) will be planned and managed as necessary to achieve and maintain the intended purpose.

Vegetative manipulations to restore plant and/or animal diversity can be accomplished by prescribed burning or mechanical, biological or chemical methods, or a combination of the four.

Vegetation management and maintenance activities shall not be conducted during the nesting season except when necessary to achieve the desired habitat condition.

Cultural Resources Considerations

NRCS policy is to avoid any effect to cultural resources and protect them in their original location. Determine if installation of this practice or associated practices in the plan could have an effect on cultural resources. The National Historic Preservation Act may require consultation with the California State Historic Preservation Officer.

http://www.nrcs.usda.gov/technical/cultural.html is the primary website for cultural resources information. The California Environmental Handbook and the California Environmental Assessment Worksheet also provide guidance on how the NRCS must account for cultural resources. The e-Field Office Technical Guide, Section II contains general information, with Web sites for additional information.

Document any specific considerations for cultural resources in the design docket and the Practice Requirements worksheet.

Endangered Species Considerations

If during the Environmental Assessment, NRCS determines that installation of this practice, along with any others proposed, will have an effect on any federal or state listed Rare, Threatened or Endangered species or their habitat, NRCS will advise the client of the requirements of the Endangered Species Act and recommend alternative conservation treatments that avoid the adverse effects. Further assistance will be provided only if the client selects one of the alternative conservation treatments for installation; or with concurrence of the client, NRCS initiates consultations concerning the listed species with the U.S. Fish and Wildlife Service, National Marine Fisheries Service and/or California Department of Fish and Game.

PLANS AND SPECIFICATIONS

Specifications for this practice shall be prepared for each habitat type. Recommendations shall be provided using approved specifications and job sheets. Narrative statements in the conservation plan or other acceptable documentation may provide supplemental information to the specifications and job sheets.

Written specifications, schedules and maps shall be prepared for each planning area and each habitat type.

Specifications shall:

- Identify the amounts and types of habitat elements, locations and management actions necessary to achieve the client's management objectives.
- Describe the appropriate method, timing, frequency, duration, and intensity of management needed to produce the desired habitat conditions and sustain them over time.

OPERATION AND MAINTENANCE

Habitat conditions should be evaluated on a regular basis to adapt the conservation plan and schedule maintenance to ensure the desired habitat condition.

Management and maintenance activities should be rotated to mimic natural disturbance regimes.

REFERENCES

[1] Noss, R.F, E.T. La Roe III, and J.M Scott 1995. Endangered ecosystems of the United States: a preliminary assessment of the loss and degradation. Biological Report 28; National Biological Service, Washington D.C.

Barbour, M.G., and J. Major. 1988. Terrestrial Vegetation of California. California Native Plant Society, Special Publication 9. 1020 pp (Expanded Edition) 1977.

Kuchler, A.W. 1964 Potential Natural Vegetation of the Conterminous United States. American Geography Society, Special Publication 36. 116 pp. + map, Second edition (revised), 1975.

NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE SPECIFICATION

643 - RESTORATION AND MANAGEMENT OF DECLINING HABITATS

I. SCOPE

The work shall consist of furnishing all materials and placing them on all designated areas to the limits as shown on the drawings, or as staked in the field, and performing cultural operations to grow the plants or develop the habitat.

II. MATERIALS

Seed

All seed shall be delivered to the site tagged and labeled in accordance with the California Agricultural Code, and shall be acceptable to the County Agricultural Commissioner.

Seed shall be of a quality which has a minimum pure live seed content of 80% (% purity X % germination) and weed seed shall not exceed 0.5% of the aggregate of pure live seed and other material.

Bag tag figures will be evidence of purity and germination. Time since date of seed test shall not exceed 9 months.

Containerized or Bare Root Plants

All containerized or bare root plants shall be delivered to the site tagged and labeled in accordance with the California Agricultural Code, and shall be acceptable to the County Agricultural Commissioner.

Plants shall be healthy, shapely, and well rooted, with roots showing no evidence of having been damaged, restricted, or deformed. Plants foend to be root or pot bound will not be acceptable. Plants shall be vigorous and free of disease, insect pests, eggs or larvae.

Fertilizer

Unless otherwise specified on the Practice Requirements sheet, all fertilizer for seeded areas shall be Ammonium Phosphate Sulfate containing a minimum of 16% Nitrogen, 20% available phosphoric acid and 0% water soluble potash plus about 15% sulfur and be uniform in composition, dry and free flowing, pelleted or granular. For containerized or bare root plants fertilizer shall be commercially processed and shall be compressed, long-lasting slow-release tablet form of 20-10-5 formula (20% N, 10% P_2O_5, 5% K_2O).

All fertilizer shall be labeled in accordance with applicable state regulations and bear the warranty of the producer for the grade furnished.

Inoculants

The inoculant for treating legume seeds shall be a pure culture of Nitrogen fixing bacteria prepared specifically for the plant species and shall not be used later than the date indicated on the container. A mixing medium, as recommended by the manufacturer or approved substitute, shall be used to bond the inoculant seed, two times the amount of the inoculant recommended by the manufacturer shall be used and seed shall be sown within 24 hours.

For pellet inoculated seed, at least 30 pounds of inoculant shall be used per 1,000 pounds of raw seed and the seed shall be labeled to show the Lot Number, Expiration Date, and Percent Coat of the finished product. Pellet inoculated seed shall be kept cool and sown within 180 days.

Chemicals

All pesticides used in performing this practice shall be Federally, State, and locally registered and shall be applied strictly in accordance with authorized and registered uses, directions on the label, and other Federal or State policies and requirements. Chemical containers shall be properly stored and disposed of in a safe manner.

III. PLANTING MIXTURE AND DATES

The plant(s)/seed(s) and rate(s)/spacing specified on the Practice Requirements sheet shall be used. The seeding rate(s) shall be the weight exclusive of any coating material. Any legume seed used shall be inoculated.

Planting shall be performed during the period that is specified on the Practice Requirements sheet.

IV. PLANTING/SEEDBED PREPARATION

The area to be planted shall be weed free. Rocks larger than 6 inches in diameter, trash, weeds and other debris that will interfere with planting or maintenance shall be removed.

Seeding area shall have a firm seedbed which has previously been roughened by scarifying, disking, harrowing, chiseling, or otherwise worked to a depth of 2 to 4 inches, except when planting no-till. No implement shall be used that will create an excessive amount of downward movement of clods on sloping areas. Seedbed preparation shall be suspended when soil moisture conditions are not suitable for obtaining a satisfactory seedbed.

Containerized/bare root plants shall be the varieties and arranged as shown on the drawings. Planting, mulching, and staking shall be as indicated on the Practice Requirements sheet.

V. FERTILIZING, SEEDING, MULCHING

Fertilizing

For seeded areas fertilizing shall be distributed uniformly over the seedbed at the rate of 40 pounds per acre unless a different amount is specified on the Practice Requirements sheet. Fertilizer shall be applied in any way that will result in uniform distribution. The fertilizer shall be incorporated into the soil. Incorporation may be as part of the seedbed preparation, or as part of the seeding operation.

Seeding

Seed shall be drilled or broadcast by hand, mechanical hand seeder, or power operated seeder. Seed shall be incorporated into the soil, but not more than 1 inch deep. Seeding shall be performed as nearly as practical across the slope.

VI. IRRIGATION

When specified, irrigation water shall be applied during the establishment period at the times and rates listed on the Practice Requirements sheet.

VII. ADDITIONAL CULTURAL OPERATIONS

The types of equipment used and cultural operations performed shall maintain healthy plant growth.

VIII. OTHER REQUIREMENTS

Other details for the establishment and maintenance of the plants including, but not limited to, the need for livestock and traffic control shall be applied when specified on the Practice Requirements sheet.

Measures and methods that enhance fish and wildlife values, protect visual resources, and maintain key shade, food, and den trees shall be performed when specified on the Practice Requirements sheet.

Operations shall be done in such a manner that erosion, air and water pollution are minimized and held within legal limits.

All work and operations shall be conducted in accordance with proper safety codes for the type of work being performed with due regards to safety of all persons and property.