

SECTION 1.0 INTRODUCTION

The County of San Mateo Department of Public Works has developed these procedures to minimize impacts to water quality and fish and wildlife habitat throughout the unincorporated area of the County. These procedures supersede the draft Performance Standards for Rural Road Maintenance submitted to the Regional Water Quality Control Board in compliance with the County-wide National Pollutant Discharge Elimination System (NPDES) permit dated July 1999. These procedures are intended to meet both the NPDES permit requirement, and the Endangered Species Act Section 4(d) Rule for Steelhead and Salmon (September 8, 2000).

The February 2001 version of this manual contained standards, Best Management Practices (BMPs) and Conservation Outcomes for Road and Parks Maintenance Division activities expected to take place during the winter. Those activities, which include Large Woody Debris Management/Removal, Streambank Stabilization, and road-related erosion control, are the primary operational aspects of the NPDES permit program requirement.

The July 2003 version has been expanded to include standards, BMPs and Conservation Outcomes for all activities routinely undertaken by the Department of Public Works Road Maintenance and Parks Department Maintenance Divisions (including approved County-wide Stormwater Pollution Prevention Program [STOPPP] standards). Future volumes will address engineering design, construction management and inspection, and facility maintenance.

The final document will be made available to other agencies seeking to adopt similar programs.

SECTION 2.0

DEFINITIONS

Berm An elevated area constructed of asphalt materials, base rock, soils, sandbags or other materials to divert runoff. Typically located along roadway shoulders.

Bioengineering Refers to the practice of vegetative engineering. The biologic parts of plants are used to arrest and prevent slope failures and erosion.

Biotechnical Methods Refers to a "mixed construction" approach that combines both vegetative and structural inert materials. Vegetation - living and/or dead - is planted, inserted, driven, buried or placed on the ground surface in ways favorable for the mitigation or prevention of erosion, to protect structural components, and to provide favorable site conditions for the establishment of a permanent vegetative cover.

Brush Vegetative material smaller in length/diameter than large woody debris. May consist of cuttings of native vegetation intended for use in slope stabilization BMPs such as brushlayering, brushpacking, willow wattles, etc.

Cut and Plug The practice of cutting woody debris in streams into small pieces and/or short lengths that may become lodged in downstream obstructions (culverts, log jams, etc.).

Coastal Zone The area west of the Coastal Zone Boundary as shown on the Coastal Zone map (Appendix A). The area is subject to special regulations under the Local Coastal Program.

Dewatering Elimination of standing or flowing water from a watercourse or excavation by means of cofferdams, bypass structures, diversions, pumping, etc.

Emergency An emergency consists of circumstances creating a substantial risk of loss, damage, interruption of essential services, or threat to public health or safety that could not have been reasonably foreseen. "Emergency" includes any man-made or natural event or circumstances causing or threatening loss of life, injury to person or property, including but not limited to fire, explosion, flood, severe weather, earthquake, volcanic activity, spills or releases of oil or hazardous material, contamination, actual or imminent loss of transportation facilities, civil disturbance, riot, sabotage and war.

The distinction must be made as to when the emergency is over and cleanup begins. An emergency ends when threats of loss of life or injury are mitigated and pre-emergency service is restored. Examples of emergency operations include, but are not limited to, modification of large woody debris/log jams in streams, streambank/slope stabilization, flood response and emergency road opening measures.

Habitat An area used by a species for migration, breeding, spawning, foraging, shelter, etc. May refer to generic types of habitat, such as riparian (near water bodies), upland (above riparian habitat), etc.

DEFINITIONS (continued)

Large Woody Debris Large pieces of woody material 6 inches and larger in diameter and at least 10 feet long. Also includes rootwads and stumps. Typically refers to woody debris in water bodies. Large woody debris may be used to reduce water velocity and erosive forces, and to provide habitat for fish.

Minimization and Avoidance Measures undertaken to minimize or avoid damage to any endangered species or its habitat, water quality and vegetation.

Mitigation Mitigation typically refers to efforts to restore areas damaged by construction or maintenance activities, or to replacing habitat values lost as a result of those activities whether at the same location or off-site. Mitigation work may be required by resource agencies when issuing permits.

Natural Resource A naturally occurring element of the San Mateo County environment. Includes water, air, vegetation, fish, wildlife, and soils.

Resource Agency A local, state or federal agency or department responsible for preservation of natural resources and/or regulation of activities affecting natural resources.

Revegetation The placement, planting and/or fostering of growth of beneficial plant species.

Right of Way The term “right of way” when used in unincorporated San Mateo County generally refers to roadway and drainage easements. The right of way often extends beyond the edges of the paved roads. Right of way widths are typically between 40 and 60 feet, but may be much wider. For purposes of determining maintenance responsibility, half the width of the right of way is measured from the approximate centerline of the road surface.

Riparian Riparian refers to areas adjacent to aquatic resources such as streams and ponds. Riparian areas are characterized and identified by vegetation that is tolerant of inundation and adapted to wet conditions, such as cottonwood, alder and redwood trees, sedges, etc.

Riprap Solid rock or boulder that generally ranges in size from 1' to 5' at its widest dimension. Riprap typically refers to an assemblage of rocks, versus a single boulder, and is often used in embankment repairs and slope stabilization.

Rock Slope Protection (RSP) Rock or boulder matrices constructed against embankments or slopes as a buttress against sliding, or to protect against erosion due to rainfall or runoff. Rock slope protection does not refer to the placement of rock or rip rap on streambanks.

Sensitive Area/Habitat Sensitive areas and habitats are those areas identified as critical to the survival of threatened or endangered species and those areas where disturbances may negatively impact downstream or down-slope areas or habitats. The Local Coastal Program defines sensitive areas in the Coastal Zone as including all areas within 100' of any water body.

Sidecast Material placed on or within the bank(s) of any water body; the practice of placing material on or within the bank(s) of any water body.

DEFINITIONS (continued)

Slide A slope failure with ensuing debris or soil deposits, typically involving the cut side of a road or trail. Slides may involve shallow surface failures, or may be deep planar or rotational failures.

Slipout A shallow slope failure, typically involving the shoulder of a road or trail. May be caused by high groundwater, falling trees (windthrow), etc. “Slipout” generally refers to the fill (downhill) side of a facility; “slide” generally refers to slope failure on the cut slope (uphill) side.

Washout A slope or bank failure caused by the erosive forces of water. Typically involves the shoulder of a road or trail. May be caused by high flows in streams, concentrated runoff, etc.

Water Body Any permanent or seasonal water source, excluding certain types of culverts and ditches and agricultural and domestic water supply conveyances. Includes streams, creeks, tributaries, lakes, ponds, wetlands, marshes, ocean, bays, any areas populated by wetland vegetation, on-stream culverts and certain ditches

Windthrow Fallen tree(s).

SECTION 3.0

PROGRAM REVIEW

These procedures will be submitted for review and comments to the California Department of Fish and Game, the National Marine Fisheries Service, the United States Fish and Wildlife Service, the Army Corps of Engineers, the Regional Water Quality Control Board, and the California Coastal Commission. They will also be distributed to interested citizens and watershed groups for comments.

The final document will be submitted for approval and development of inter-agency agreements and/or general permits to the various agencies that regulate water quality and endangered species throughout San Mateo County.

We anticipate that the standards and BMPs will be reviewed internally and with resource agency input at least once annually, and will be updated as methods are improved within the context of sound scientific research.

SECTION 4.0

HOW TO USE THIS MANUAL

This manual is organized to assist maintenance managers, supervisors and crews in adhering to the standards. The standards are presented in Part 8, "Maintenance Activities." Each maintenance activity is presented in the following manner:

DEFINITION

Brief definition of the activity. Note that one project or work performed at one site may incorporate several different activities and the applicable standards.

PURPOSE

General description of the purpose for performing the activity.

BMP OUTCOMES

Expected outcome of utilizing one or more of the listed BMPs for the activity.

CONSERVATION OUTCOMES

Resulting conservation of natural and man-made resources achieved by performing the maintenance activity (provided the standard is followed and BMPs are employed).

STANDARD

The manner in which the activity is to be performed, employing the professional judgment of managers and supervisors responsible for the work.

BMPs

A list of Best Management Practices appropriate to the activity. One or more BMPs will be required in order to fully meet the standard. BMP selection will be made based on site conditions, weather and the availability of materials. BMP descriptions and detail drawings are included in Part 10 of this manual.

As this manual is used, it is anticipated that standards and BMPs will be revised to be more successful. Records of successes, failures and adaptations reported will be used to improve upon the manual and incorporate maintenance crew feedback.

SECTION 5.0 DISCRETION

The standards in this manual do not include phrases such as “where feasible,” “where appropriate,” or “where practicable” as compliance with Clean Water (NPDES) and Endangered Species regulations is not discretionary. It is anticipated that road and park maintenance managers, supervisors and equipment operators will exercise professional judgment in applying these standards. If adherence to these standards is impossible in some situation, whether due to equipment, weather, safety considerations, etc., managers and supervisors will be responsible for documenting the situation and the impact minimization or avoidance measures taken, and for reporting the actions at the first opportunity.

Refer to Part 7, “Permits and Reporting,” for forms and reporting procedures.

SECTION 6.0

MAINTENANCE ZONES

The County of San Mateo is generally divided by the Santa Cruz Mountains into a “Bay Side” (east of the mountain ridges and bordering San Francisco Bay) and a “Coast Side” (west of the mountain ridges and bordering the Pacific Ocean). The Coast Side is divided by the Coastal Zone Boundary (shown on the map in Appendix A), within which provisions of the Local Coastal Program apply. The unincorporated (County maintained) area is further divided into Public Works maintenance districts.

Appendix B is a map of the water resources of San Mateo County, and shows the approximate watershed boundaries for the streams and lakes. Users of this manual should be aware that those watersheds are tributaries to the San Francisco Bay and Pacific Ocean, and that maintenance activities in the watersheds have the potential to affect water quality and endangered species far beyond the limits of their work.

The U.S. Fish and Wildlife Service has designated over 90% of San Mateo County as critical habitat for the endangered California Red-legged Frog. Critical habitat has also been designated for other species, including the Bay Checkerspot Butterfly. Streams that are currently, were historically, or have the potential in the future to be habitat for coho salmon and steelhead trout are considered sensitive areas. Information about various endangered species indigenous to San Mateo County is included in Appendix D.

The standards and BMPs in this manual apply to all of the unincorporated area of San Mateo County. BMP selection may vary depending on the sensitivity of a particular area such as aquatic resources or critical habitat for endangered species. Permit requirements may also vary depending on the zone where an activity is located.

SECTION 7.0 PREVENTION & CONSERVATION

Maintenance managers and supervisors are encouraged to undertake prevention and conservation measures to avoid emergencies and impacts to endangered species habitats, water resources and other sensitive areas. Such measures may include the planned installation of rolling dips; revegetation and other erosion control measures; designating and preparing storage areas for slide debris; monitoring obstructions to stream flows adjacent to public facilities; installing trash racks and other culvert inlet improvements; installing energy dissipaters and other culvert outlet improvements; and/or improvements to drainage facilities to avoid concentrated runoff.

Minimization and Avoidance Measures

Minimization and avoidance measures refers to measures undertaken by Maintenance Division managers, supervisors and crews to minimize or avoid damage to any endangered species or its habitat, water quality and vegetation. Such measures include, but are not limited to: avoiding the use of heavy equipment within the banks of a stream or lake; using of natural materials (such as logs or stumps) in place of hard armoring with rip rap or concrete; scheduling work during the dry season to avoid polluted runoff; performing hand seeding or hydroseeding just prior to the first rains, etc.

Managers and supervisors shall document and report minimization and avoidance measures employed during emergency work for inclusion in Departmental reports and after-the-fact permits. Report form RM-E01 shall be used for this purpose.

Permits and Reporting

Permits or written exemptions are required for work involving any of the following:

1. Discharge or placement of any structure or fill below the ordinary high water line of any body of water (including rip rap, soil, concrete or asphalt, and woody material)
2. Dredging, removal or modification of any structure, fill, sediment, large woody debris or vegetation from below the ordinary high water line of any body of water
3. Any work that potentially alters the habitat of any endangered species (including streams, tributaries, lakes, ponds, certain ditches, beaches, wetlands, marshes, banks and riparian areas, and upland areas)
4. Any work in the Coastal Zone involving excavation, fill, or vegetation removal (including culvert replacements and headwall construction)

The practices indicated in this manual are intended to satisfy the requirements of general, regional and/or "blanket" permits for the routine maintenance activities described herein. Activities which are not included in this manual are not covered by such permits. Separate permits must be obtained for work other than these routine maintenance activities.

PREVENTION & CONSERVATION (continued)

Maintenance supervisors shall keep in their possession copies of permits for work being performed under their supervision.

Emergency conditions may require that work be performed prior to obtaining written permits or exemptions. Maintenance managers and/or supervisors shall complete report form RM-E01 for emergency work involving any of the elements described in 1 through 4 above. Forms shall be forwarded to the Maintenance Division Manager at the earliest opportunity, and not more than three (3) working days after completion of the work.

Form RM-E01 is included as Appendix E in this manual.