STATE OF CALIFORNIA—THE RESOURCES AGENCY GRAY DAVIS, *GOVERNOR*

CALIFORNIA COASTAL COMMISSION
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Tu 14b

January 27, 2000

TO: **Coastal Commissioners and Interested Parties**

FROM: Peter Douglas, Executive Director
Mark Delaplaine, Federal Consistency Supervisor
Larry Simon, Federal Consistency Staff

SUBJECT: Water Quality, Thermal Discharge, and Emergency Plan Elements, U.S. Navy CVN Homeporting Project, Naval Air Station North Island, Coronado, Submitted in Compliance with CD-89-99.

I. BACKGROUND:

On December 8, 1999, the Commission concurred with the U.S. Navy's consistency determination (CD-89-99) for the homeporting of two NIMITZ-class nuclear-powered aircraft carriers (CVN) at Naval Air Station North Island, Coronado, San Diego County (NASNI). At that hearing, the Navy committed to bring before the Commission at a future public hearing additional project information regarding water quality, thermal discharge, and emergency planning. The Navy agreed that this would occur no later than the April 2000 meeting, and sooner if feasible. Since the December hearing, the Commission staff has met with Navy representatives in San Francisco and San Diego to determine the information needed to address the three aforementioned issues and to tour the CVN wharf at NASNI. On January 24, the Commission staff received the water quality and emergency plan information requested of the Navy.

The timing of this submittal did not provide sufficient time for the staff to analyze the information and prepare a staff recommendation for the February meeting mailing deadline on whether the proposed project, as clarified with the recently-submitted information, would continue to be carried out in a manner consistent to the maximum extent practicable with the California Coastal Management Program. However, the Commission staff determined it was in the public interest to schedule this item for the February meeting in San Diego, to send all the materials submitted by the Navy to the Commission in the mailing packet, to ensure that the

Environmental Health Coalition and the City of Coronado also received the Navy materials, and to hand-carry to the February meeting the Commission staff's analysis and recommendation on the adequacy of the Navy's submittal. In this way the interested public can review the Navy materials and submit comments to the Commission staff prior to completion of the staff recommendation, Commissioners have the opportunity to review the Navy materials prior to the hearing, the Navy is given the opportunity to obtain Commission review in a timely manner, and public participation is maximized by holding the public hearing in San Diego. If the Commission determines it will need more time to review this late staff analysis and recommendation, the matter could be held over until the March meeting in Carmel.

II. MATERIALS SUBMITTED BY U.S. NAVY:

The Navy materials attached to this memo are organized as follows:

Water Quality:
- Cover Letter
- Monitoring and Reporting Plan
- Storm Water Pollution Prevention Plan – Existing Stennis CVN Wharf
- Draft Storm Water Pollution Prevention Plan – Proposed VN Wharf
- Comparison of Industrial Shipyard and CVN Wharf Activities
- Photographs of Structural BMPs
- Construction BMPs
- Navy Comments and Clarifications on CD-89-99 Staff Report
- Information From Navy/Commission Staff Meeting on 1/12/00

Thermal Discharge:
- Information From Navy/Commission Staff Meeting on 1/12/00

Emergency Planning:
- Information From Navy/Commission Staff Meeting on 1/12/00
- Relevant Excerpts from Unified San Diego County Emergency Services Organization Operational Area Emergency Plan (September 1996)

WATER QUALITY

DEPARTMENT OF THE NAVY
COMMANDER NAVY REGION SOUTHWEST
937 NO. HARBOR DR.
SAN DIEGO, CALIFORNIA 92132-0058

IN REPLY REFER TO:
5090
Ser N4512/0032
January 21, 2000

RECEIVED
JAN 24 2000
CALIFORNIA
COASTAL COMMISSION

Mr. Derrick Lee
California Coastal Commission
45 Fremont Street, Suite 2000
San Francisco, CA 94105-2219

Dear Mr. Lee:

This letter and the enclosures are submitted to your office as additional information that may clarify any storm water questions you may have regarding the proposed CVN Wharf construction.

Enclosure (1) is a copy of the Monitoring and Reporting Plan (MRPP) for NAS North Island. Table 5.2-7 provides a list of contaminants that are included in the storm water analysis for each sample location. Outfalls 21, 22A, 23A, 24, CVN 8, CVN 9, CVN 13, CVN 14, and CVN 14B are sample locations associated with the Stennis CVN Wharf. A similar monitoring plan will be developed for the outfalls discharging from the proposed CVN Wharf.

Enclosure (2) is a copy of the section from the existing Storm Water Pollution Prevention Plan that applies to the Stennis CVN Wharf. This section describes both the site specific and facility wide Best Management Practices (BMPs) in place on the Stennis CVN Wharf.

Enclosure (3) is a draft SWPPP section for the proposed CVN Wharf. This draft SWPPP section describes proposed BMPs and the activities that will occur on the proposed CVN Wharf.

Enclosure (4) is a comparison of the industrial activities that occur in a shipyard and the activities that are performed on the CVN Wharf. The comparison is included to emphasize the differences between a shipyard and the CVN Wharf.

Enclosure (5) includes photographs of the structural BMPs implemented at the Stennis CVN Wharf and some plastic pilings installed on Navy piers to replace treated pilings. The same structural BMPs will be installed on the proposed CVN Wharf. The plastic piling pictures highlight one of the Navy initiatives to improve water quality in San Diego Bay.

Enclosure (6) contains a list of Navy construction BMPs and the CALTRANS Storm Water Quality Handbooks, Construction Contractor's Guide and Specifications, April 1997. The CALTRANS handbook has a list of construction related BMPs developed by CALTRANS. The contractor in charge of the proposed CVN Wharf construction will implement the Navy BMPs, the BMPs listed in the handbook and the BMPs included in the Commission's Procedural Guidance Manual: Addressing Polluted Runoff in the California Coastal Zone (2nd Edition: June 1666), where appropriate.

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Ser N4512/0032
January 21, 2000

Enclosure (7) is additional information submitted to clarify any questions you may have regarding the Staff Recommendation on the Consistency Determination (CD-89-99). Items in Italics are Navy responses to questions or statements from CD-89-99.

We hope these enclosures clarify any questions you may have regarding the proposed CVN Wharf project. If you have any further questions regarding this letter or the enclosures please contact me at (619) 524-6390.

Sincerely,

Brian S. Gordon

BRIAN S. GORDON
Director, Water Program
By direction of the Commander

Enclosures:
1. NASNI Monitoring and Reporting Program Plan
2. Stennis Pier Storm Water Pollution Prevention Plan
3. Draft CVN Wharf Storm Water Pollution Prevention Plan
4. Comparison of CVN Wharf Activities and Shipyard Activities
5. Photographs of Structural BMPs and Plastic Pilings
6. CALTRANS Storm Water Quality Handbooks, Construction Contractor's Guide and Specifications, April 1997
7. Additional Navy Responses CD-89-99

ENCLOSURE 1

DRAFT

MONITORING AND REPORTING PROGRAM PLAN UPDATE

For

NAVAL AIR STATION NORTH ISLAND SAN DIEGO, CALIFORNIA

CONTRACT N68711-97-D-8815
DELIVERY ORDER 0005

Prepared for

DEPARTMENT OF THE NAVY
SOUTHWEST DIVISION
Naval Facilities Engineering Command
South Bay Area Focus Team
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Prepared by

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January 2000

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5.0
MONITORING AND REPORTING PROGRAM PLAN

5.1 INTRODUCTION

The purpose of this Monitoring and Reporting Program Plan (MRPP) is to provide the strategies and rationale for monitoring and reporting to ensure compliance with the General Permit. The MRPP includes four components: (1) storm water sampling and analysis; (2) non-storm water discharge visual observations; (3) storm water discharge visual observations; and (4) provides guidance for collecting and maintaining records, and reporting the program results to the RWQCB.

5.1.1 Program Objectives

Section B.2 of the General Permit describes several specific objectives to be achieved through the monitoring program. These objectives are as follows:

- *Ensure that storm water discharges are in compliance with the discharge prohibitions, effluent limitations, and receiving water limitations specified in the General Permit.*

  The monitoring provisions of the General Permit are intended to conform with existing discharge prohibitions, numeric and narrative effluent limitations, and any applicable water quality standards for receiving waters. Industrial activities that are subject to numeric storm water effluent guidelines must sample for all applicable pollutants identified in 40 CFR Subchapter N and must collect additional data. The General Permit requires ten specific categories of industrial activities to comply with numeric effluent limitations which are specified in 40 CFR Subchapter N. At this time, NASNI has no activities subject to numeric effluent limitations for its storm water discharges. If NASNI is modified to add activities subject to 40 CFR Subchapter N, then the discharges associated with these activities would have storm water discharges subject to numeric effluent limitations.

- *Ensure practices at the Activity to reduce or prevent pollutants in storm water discharges and non-storm water discharges are evaluated and revised to meet changing conditions.*

  The monitoring program is intended to provide information that can eventually be used to reflect changes in storm water discharges that may result from a change in activities, operational procedures, or materials handled. The Annual Comprehensive

Site Compliance Evaluation and the associated BMP and SWPPP revisions are designed to meet this requirement.

- *Aid in the implementation and revision of the SWPPP required by the General Permit.*

  The monitoring program has three major components that are intended to aid in the implementation of the SWPPP: (1) non-storm water discharge visual observations; (2) storm water discharge visual observations; and (3) sampling and analysis. Non-storm water discharge visual observations are intended to: (1) eliminate unauthorized non-storm water discharges; and (2) to reduce or prevent pollutants from contacting authorized non-storm water discharges. Storm water discharge visual observations and storm water sampling and analysis are intended to provide an objective measurement of storm water quality. As storm water quality data is accumulated and assessed, the SWPPP may be modified to reflect this data.

- *Measure the effectiveness of BMPs to prevent or reduce pollutants in storm water discharges and authorized non-storm water discharges.*

  The SWPPP requires implementation of BMPs that are selected on a site-specific basis to reduce or prevent pollutants from contacting storm water or authorized non-storm water discharges. Analytical and visual monitoring provides a means of evaluating the effectiveness of the selected BMPs. Information gained from analytical data and visual observations may result in modification of selected BMPs or identification of different BMPs as the program evolves.

5.1.2 Information Sources

The SWDMP has been in effect for several years and the data now available provides information useful in making management and monitoring decisions to accomplish the objectives of the program. The information sources used in the selection of outfalls and preparation of the MRPP include:

- *COMNAVAIRPAC, SE Repair Facility, Hazardous Materials Business Plan,* Building 801 & 789, dated 1996.
- Condition Map of Naval Air Station North Island, San Diego, California, dated June 1991.
- *Department of the Navy, Naval Facilities Engineering Command, U.S. Naval Air Station North Island, Storm Drainage System, NASNI Drawing No. N30(785),* Sheets 1-24, dated November 1985.
- *FASOTRAGRUPAC Site Specific Hazardous Material Spill Contingency Plan* dated November 1991.

- *FASOTRAGRUPAC Written Hazard Communication Plan*, dated January 1997.
- *Feasibility Study for Alternative Sampling Locations at Naval Air Station North Island*, dated January 1997.
- Field observations, correspondence, and telephone conversations with various Activity personnel.
- *Hazardous Materials Business Plan/Emergency Response Plan*, U.S. Customs Service Air Operations Branch, Building 1480, dated June 1996.
- *Hazardous Materials Business Plan, HSL 49, Building 1477*, NAS North Island, dated September 1996.
- *Hazardous Materials Business Plan, Power Plant Services*, dated April 1996.
- *Master Plan 1991, Naval Air Station, North Island, San Diego, California.*
- *Status of Investigations* (Installation Restoration Program), Naval Air Station North Island, San Diego, California, dated August 1996.
- *Storm Drain Illicit Connection Survey/Non-Storm Discharge Elimination and Prevention Program, Naval Air Station North Island, San Diego, CA*, dated August 1995.
- *Storm Drain Illicit Connection Survey/Non-Storm Discharge Elimination and Prevention Program, Naval Air Station North Island, San Diego, CA*, dated October 1999.
- *Storm Drainage System, Composite Map NASNI Drawing, No. N30 (774)*, dated November 1991.
- *Update of Spill Prevention Control and Countermeasure (SPCC) Plan*, prepared by Benmol Corporation for Department of the Navy, Aircraft Environmental Support Office, Naval Aviation Depot, NASNI, dated September 1990.

5.2 STORM WATER SAMPLING AND ANALYSIS

This section describes the requirements and methods for the sampling portion of the storm water monitoring program. Although all industrial outfalls will be observed, only selected industrial outfalls will be sampled. The rationale for removing or including outfalls in the sampling program is described in this section. Sampling methods and procedures are important to the success of the program. The protocol for field sampling is provided in Appendix G. Health and safety issues are discussed in Appendix K. Quality assurance/quality control (QA/QC) procedures such as detection

limits, container types holding times, and method recoveries related to sampling and analysis are described in detail in the QA/QC Plan, Appendix I.

5.2.1 Industrial Outfalls and Sampling Locations

The General Permit (Sections B.5 and B.7) requires that samples be collected from all drainage areas that represent the quality and quantity of the industrial facility's storm water discharges. Outfalls that drain only non-industrial areas (such as administrative buildings) need not be sampled provided that there is no potential for storm water to contain significant quantities of pollutants. Where there are two or more drainage areas that have industrial facilities and BMPs which are substantially identical, samples may either be: (1) collected from a reduced number of substantially identical drainage areas; or (2) samples from each substantially identical drainage area may be combined and analyzed.

During the development of the SWPPP, the Activity was visited to identify outfalls and associated industrial facilities. Each outfall was inspected, photographed, and assigned a unique identification number. The drainage area for each outfall and the associated industrial facilities were identified. Based on this survey, outfalls were selected for sampling. Outfalls draining exclusively non-industrial areas, were not selected for monitoring. In addition, where several outfalls discharge runoff from the same or substantially identical facilities, a "representative" outfall was selected for sampling.

Outfalls selected for monitoring are described in Table 5.2-1. Outfalls draining exclusively non-industrial areas are not included in Table 5.2-1 or this monitoring program. Included in the table are the outfall number, whether the outfall has been selected for sampling, a description of the outfall location, the name and location of industrial facilities located in the drainage area of the outfall, the section number of the facility-specific SWPPP that describes the industrial facility, and a brief description of the location of the sampling point.

Of the 52 outfalls in the storm water monitoring program, 19 outfalls will be sampled twice each year. The remaining 33 outfalls will not be sampled because they drain areas that are "substantially identical" to another drainage area that is to be sampled (refer to Table 5.2-1 for details).

Sampling points were chosen at the outfall unless the outfall could not be sampled due to difficult access (i.e., security, tidal influence, or outfall not safely accessible); in that case, the sampling point was selected as far downstream in the drainage area as safe and practical. Table 5.2-2 presents descriptions of the sampling point locations.

5.2.2 Analytical Parameters

Section B.5.c of the General Permit requires that storm water samples be analyzed for four routine parameters, toxic pollutant parameters likely to be present in storm water discharges in significant quantities, and other analytical parameters as listed in Table D of the General Permit. Parameters listed in Table D of the General Permit are dependent on the facility's standard industrial classification (SIC) code. A discussion of SIC code-based sampling parameters is presented in Section 5.2.2.3. Table 5.2-3 lists analytical parameters that were considered for use at the Activity, the associated unit of measurement, container size and type needed for samples, laboratory methodology and method of analysis, and the reference for the analytical method. Sections 5.2.2.1, 5.2.2.2, and 5.2.2.3 discuss the process for selecting which analyses will be conducted on samples from the outfalls at the Activity.

5.2.2.1 Routine Parameters

Storm water samples collected from each outfall will be analyzed for the following four routine parameters:

Routine Parameter	Analysis Method Number
pH	USEPA 150.1
Specific Conductance	USEPA 120.1
Total Suspended Solids (TSS)	USEPA 160.2
Oil and Grease	USEPA 413.2 or USEPA 1664 when adopted

Specific conductance and pH may be measured in the field if the meters are calibrated and maintained in accordance with the manufacturers' specifications to ensure accurate measurements.

5.2.2.2 Toxic Pollutant Parameters

Section B.5.c.ii of the General Permit requires that storm water samples be analyzed for "toxic chemicals and other chemicals that are likely to be present in storm water discharge in significant quantities." The following approach was used to develop the list of toxic pollutant parameters:

- Specific analytical parameters associated with various potential pollutants are presented in Tables 5.2-4 (organic parameters) and 5.2-5 (inorganic and general parameters). As an example, if antifreeze/coolant is identified as a potential pollutant, the associated analytical parameters would be glycol from Table 5.2-4 and copper (Cu) from Table 5.2-5. A wide range of potential pollutants that might be found at an Activity have been included in these tables.

- A list of significant materials (products and chemicals used and/or stored) was prepared by field personnel during visits to the Activity. Based upon an assessment of the likelihood of the pollutants to be present in significant quantities in storm water discharges, a list of potential pollutants was developed. The potential pollutants associated with each facility-specific SWPPP in Section 4.6 and the associated outfalls selected for sampling are listed in Table 5.2-6.

- Based upon the potential pollutants identified at each outfall, Table 5.2-7 was developed listing the analytical parameters to be tested for at each outfall, including routine, toxic pollutant parameters, and parameters based on the facility's SIC code.

- Historical data was reviewed to identify analyses that could be eliminated as provided in the General Permit, Table D. The eliminated analyses are identified in Table 5.2-7 by footnotes.

5.2.2.3 SIC Code-Based Parameters

The General Permit requires dischargers to analyze for other analytical parameters based on the facility's SIC code. These parameters are not required for analysis if either of the two following conditions are met: (1) the parameter has not been detected in significant quantities from two consecutive storm events; or (2) the parameter is not likely to be present in storm water discharges and authorized non-storm water discharges in significant quantities based upon evaluation of the industrial activities, potential pollutant sources, and the SWPPP.

The following approach was used to develop the list of SIC code-based parameters:

- Specific analytical parameters associated with a facility's SIC code are presented in Tables 5.2-4 (organic parameters) and 5.2-5 (inorganic and general parameters). As an example, if a facility is a Scrap Recycling Facility (SIC Code 5093), the associated analytical parameters would be Total Suspended Solids (TSS), iron (Fe), lead (Pb), aluminum (Al), copper (Cu), zinc (Zn), and Chemical Oxygen Demand (COD) as identified in Table 5.2-5.

- Each facility's SIC code was evaluated to determine whether SIC code-based parameters were required for analysis. Parameters were not identified for analysis if two consecutive samples did not detect significant quantities of pollutants or if evaluation of the SWPPP indicated that the parameter was not likely to be present in storm water discharge in significant quantities.

- Based upon the assessment described above, Table 5.2-7 was revised to list analytical parameters at each outfall to include: routine parameters, toxic pollutant parameters, and parameters based on the facility's SIC code.

5.2.3 Sampling Schedule

5.2.3.1 Routine Parameters

Each year, storm water samples will be collected during the first hour of discharge from the first storm event of the wet season (October 1 through May 31) and at least one other storm event during the wet season. The storm water samples will be analyzed for the routine parameters.

5.2.3.2 Toxic Pollutant and SIC Code-Based Parameters

Storm water samples will be analyzed for toxic pollutant parameters and SIC code-based parameters as listed in Table 5.2-7. If these parameters are not detected in significant quantities after two consecutive sampling events, the Activity may discontinue analysis for those parameters in future sampling events for that outfall, as allowed by Section B.5.ii. of the General Permit. Significant quantities are defined in the General Permit as the volume, concentrations, or mass of a pollutant in storm water discharge that cause or threaten to cause pollution, contamination, or nuisance; adversely impact human health or the environment; and/or cause or contribute to a violation of any applicable water quality standards for the receiving water.

5.2.3.3 Sampling and Analysis Reduction

NASNI may reduce the number of sampling events required for the remaining term of the General Permit if certification of the following conditions is made:

- The Activity has collected and analyzed samples from a minimum of six storm events from all required drainage areas;
- All prohibited non-storm water discharges have been eliminated or otherwise permitted;
- The Activity has demonstrated compliance with the General Permit for the previous two years;
- The Activity demonstrates that its storm water discharges and authorized non-storm water discharges do not contain significant quantities of pollutants; and
- The above mentioned conditions would remain in effect for a minimum of one year after filing certification with the RWQCB.

Unless otherwise directed by the RWQCB, the sampling and analysis program can be reduced to two additional storm events during the remaining term of the General Permit, in accordance with the following schedule:

Sampling Reduction Certification Filed by:	**Samples Will Be Collected and Analyzed in These Wet Seasons**	
	Sample 1	**Sample 2**
September 1, 1997	October 1, 1997-May 31, 1998	October 1, 1999-May 31, 2000
September 1, 1998	October 1, 1998-May 31, 1999	October 1, 2000-May 31, 2001
September 1, 1999	October 1, 1999-May 31, 2000	October 1, 2001-May 31, 2002
September 1, 2000	October 1, 2000-May 31, 2001	October 1, 2002-May 31, 2003
September 1, 2001	October 1, 2001-May 31, 2002	October 1, 2003-May 31, 2004

Sample collection is required during the first storm event of the wet season. If samples cannot be collected during the first storm event, then sample collection from another storm event during the same wet season is required. If samples could not be collected during the wet season, then sample collection during the next wet season is required.

TABLE 5.2-1
SUMMARY OF OUTFALLS AND ASSOCIATED INDUSTRIAL FACILITIES

Outfall					Associated Industrial Facilities			Location of Sampling
						Location		
Outfall	Map No.[1]	Grid No.[1]	Selected for Sampling	Outfall Location	Name[2]	Bldg.	Map Grid No.[1]	
3[3]	18	II-7	Yes	40-foot wide earthen channel located on the southeast section of the golf course; discharges into the Pacific Ocean.	AIMD Airframes (Sect. 4.6.1)	1454, HW-8	R-13	Outfall
					AIMD Avionics (Sect. 4.6.31)	489, 1478, HW-7	T-12	
					Aircraft Maintenance Hangars (Sect. 4.6.5)	502, 503	R-7	
					Aviation Warehouses (Sect. 4.6.45)	656-662	V-6, Y-6, AA-7	
					Equipment Maintenance Facility (Sect. 4.6.74)	655	V-4	
					Flammable Materials Storage (Sect. 4.6.43)	C-84	Q-11	
					Fleet Hangar (Sect. 4.6.10)	1456, HW-24	T-13	
					Flight Lines and Runways (Sect. 4.6.25)	-	-	
					Grounds Maintenance Shop (Sect. 4.6.85)	C-1	V-3	
					Hangar and Shops (Sect. 4.6.12)	525, 1297, 1466, HW-3	V-10	
					Hot Fueling Area 3 (Sect. 4.6.37)	-	U-19	
					Industrial Waste Treatment Plant (Sect. 4.6.83)	738, 803, 1084, 1096, 1606, IWTP	R-11, R-12	
					Intermediate Maintenance Shop (Sect. 4.6.16)	767, 833, HW-4	S-8	
					Landplane Hangar and Shops (Sect. 4.6.18)	482, 526, HW-2	X-10	
					POV Car Wash (Sect. 4.6.96)	1495	AA-9, BB-9	
					PWC Industrial Waste Pump Stations(Sect. 4.6.59)	1340	-	
					Reserves Hangar (Sect. 4.6.23)	1481	S-15, S-16	
					Warehouse (Sect. 4.6.54)	825	R-6	

Notes are provided at the end of the table.

TABLE 5.2-1 (continued)
SUMMARY OF OUTFALLS AND ASSOCIATED INDUSTRIAL FACILITIES

Outfall					Associated Industrial Facilities			
						Location		Location of Sampling
Outfall	Map No.[1]	Grid No.[1]	Selected for Sampling	Outfall Location	Name[2]	Bldg.	Map Grid No.[1]	
5[3]	20	JJ-19	No (similar activities to OF 59)	10-foot wide gunite ditch located near Gate 8 along South Moffet Road; discharges into Pacific Ocean.	AIMD Test Cell (Sect. 4.6.2)	1420	EE-20	N/A
					Flight Lines and Runways (Sect. 4.6.25)	-	-	
					North and South Wash Racks (Sect. 4.6.27)	SWR	CC-14	
					PWC Transformer Building (Sect. 4.6.30)	561	AA-21	
					Red Label Area (Sect. 4.6.38)	-	AA-17	
					Refuse Transfer Station (Sect. 4.6.87)	-	FF-18	
					Small Arms Range (Sect. 4.6.88)	747	FF-18	
					Support Equipment Reworks (Sect. 4.6.82)	39, 201, 573, 873, C-110, C-121, C-122, M-13, M-14, and PS-169	DD-19	
6[3]	23	KK-22	No (similar activities to OF 43)	Listed as a 36-inch diameter concrete pipe south of Taxiway No. 9; catch basins were located; reportedly discharges into the Pacific Ocean	Flight Lines and Runways (Sect. 4.6.25)	-	-	N/A
7[3]	22	LL-25	No (similar activities to OF 43)	Listed as a 36-inch diameter concrete pipe south of Runway No. 36; catch basins were located; reportedly discharges into the Pacific Ocean	Flight Lines and Runways (Sect. 4.6.25)	-	-	N/A
8	14	Y-30	Yes	48-inch diameter concrete pipe located north of Pier 1335 and west of PWC Pumping Station 1346; discharges into San Diego Bay	Aircraft Rework Shelter and Test Line Parking Area (Sect. 4.6.6)	456, 457	W-27	Outfall

Notes are provided at the end of the table.

TABLE 5.2-1 (continued)
SUMMARY OF OUTFALLS AND ASSOCIATED INDUSTRIAL FACILITIES

Outfall					Associated Industrial Facilities			
						Location		Location of Sampling
Outfall	Map No.[1]	Grid No.[1]	Selected for Sampling	Outfall Location	Name[2]	Bldg.	Map Grid No.[1]	
					Flight Lines and Runways (Sect. 4.6.25)	-	-	
					Soil Bio-Remediation System (Sect. 4.6.89)	-	V-29	
9[3]	13	Q-30	No (similar activities to OF 43)	48-inch diameter concrete pipe located north of PWC Pumping Station 1347; discharges into San Diego Bay	Flight Lines and Runways (Sect. 4.6.25)	-	-	N/A
10[3]	4	N-27	No (similar activities to OF 59)	36-inch diameter concrete pipe located west of Target and Pinger Facility (Building 1293); discharges into San Diego Bay	Flight Lines and Runways (Sect. 4.6.25)	-	-	N/A
					Deep Submergence Unit (Sect. 4.6.73)	480, 497, 504, 1292	O-23, O-24	
					GCA Radar Facility and Maintenance and Ready Room (Sect. 4.6.29)	1204, 1213, 1214	S-21, R-22, P-22 N-25	
					Naval Undersea Warfare Detachment San Diego (Sect. 4.6.34)	1293		
11	4	L-25	Yes	36-inch diameter concrete pipe located west of NAS Flying Club (Building 432); discharges into San Diego Bay	Defense Reutilization and Marketing Office (Sect. 4.6.61)	C-63, C-64, C-69, C-71, C-73, C-75, C-77, C-79	L-24	Outfall or Pipe Flow from Upstream of Outfall
					Flight Lines and Runways (Sect. 4.6.25)	-	-	
					NAS Flying Club (Sect 4.6.26)	432	L-25	
					Hot Fueling Area 1 (Sect. 4.6.37)	-	O-21, O-22	
12[3]	4	J-25	No (similar activities to OF 11)	36-inch diameter concrete pipe located south of Pier 1305; discharges into San Diego Bay	Defense Reutilization and Marketing Office (Sect. 4.6.61)	290, 1200, 1228, 1229, C-76, C-80	K-24	N/A
					Reserves Hangar (Sect. 4.6.23)	1481, HW-23	S-15, S-16	
					Flight Lines and Runways (Sect. 4.6.25)	-	-	
					Fuel Tank Farm (Sect. 4.6.36)	970, 1006-1009	L-22	
					GSE Vehicle Storage (Sect. 4.6.46)	C-105, C-107	J-23	
					Helicopter Hangar (Sect. 4.6.13)	1474, HW-21,	P-15	

Notes are provided at the end of the table.

TABLE 5.2-1 (continued)
SUMMARY OF OUTFALLS AND ASSOCIATED INDUSTRIAL FACILITIES

Outfall					Associated Industrial Facilities			Location of Sampling
Outfall	Map No.[1]	Grid No.[1]	Selected for Sampling	Outfall Location	Name[2]	Location: Bldg.	Location: Map Grid No.[1]	
						HW-22		
					NADEP Stricken Aircraft Center (Sect. 4.6.77)	C-9	J-23	
					Hot Fueling Area 1 (Sect. 4.6.37)	-	O-21, O-22	
					Federal Fire Department (Sect. 4.6.42)			
					U.S. Customs Hangar (Sect. 4.6.53)	1480	R-16	
12[3] (cont.)	4	J-25	No (similar activities to OF 11)	36-inch diameter concrete pipe located south of Pier 1305; discharges into San Diego Bay	Vertical Launch System Maintenance and Repair (Sect. 4.6.67)	805	J-23	N/A
14[3]	3	D-18	Yes	72-inch diameter concrete pipe located north of runway No. 18 and west of Pier 1308 (Fishing Pier); discharges into San Diego Bay	Aircraft Accessories Overhaul Facility (Sect. 4.6.3)	472	I-5	Outfall or Upstream of Outfall
					Aircraft Accessories Overhaul Facility (Sect. 4.6.62)	333, 379, 391, 397, 1017, 1018	I-5, K-6, L-5, L-6	
					Aircraft Maintenance Hangar (Sect. 4.6.4)	460, 476	J-8, J-9	
					Aircraft Painting (Sect. 4.6.57)	464, 465, 467, 468	K-11	
					Avionics (Sect. 4.6.32)	463	L-10	
					NADEP Central Berm and Hazardous Substance Control Area (Sect. 4.6.49)	-	M-6	
					Composites Remanufacture and Repair (Sect. 4.6.55)	250	I-7	
					Engineering Laboratory (Sect. 4.6.33)	469	L-9	
					Flight Lines and Runways (Sect. 4.6.25)	-	-	
					Hangar (Sect. 4.6.11)	1477, HW-9	N-15	
					Helicopter Hangar (Sect. 4.6.13)	HW-21	P-15	
					Helo Main Blade Whirl Test (Sect. 4.6.15)	433, 443, 1225	K-7	
					Lamps MKIII Training (Sect. 4.6.17)	1472	P-14	

Notes are provided at the end of the table.

TABLE 5.2-1 (continued)
SUMMARY OF OUTFALLS AND ASSOCIATED INDUSTRIAL FACILITIES

Outfall					Associated Industrial Facilities			
Outfall	Map No.[1]	Grid No.[2]	Selected for Sampling	Outfall Location	Name[2]	Location: Bldg.	Location: Map Grid No.[2]	Location of Sampling
					NADEP Bulk Storage Warehouse (Sect. 4.6.44)	446	L-8	
					PWC Industrial Waste Pump Stations (Sect. 4.6.59)	796	L-14	
15[3]	3	C-17	No (similar activities to OF 43)	36-inch diameter concrete pipe located west of Pier 1308 (Fishing Pier); discharges into San Diego Bay	Flight Lines and Runways (Sect. 4.6.25)	-	-	N/A
					North and South Wash Racks (Sect. 4.6.27)	1476	G-16	
16[3]	3	C-15	No (similar activities to OF 59)	36-inch diameter concrete pipe located north of east-most end of Taxiway No. 10; discharges into San Diego Bay	Construction Battalion Unit-405 (Sect. 4.6.7)	312	J-15	N/A
					Crane Rework (Sect. 4.6.8)	309	J-14	
					Flight Lines and Runways (Sect. 4.6.25)	-	-	
					Gasoline Service Station (Sect. 4.6.40)	588	H-13	
					PWC Industrial Waste Pump Stations (Sect. 4.6.59)	1342	F-13	
					Hoist and Forklift Repair Facility (Sect. 4.6.64)	42, HW-20	I-13	
					Modification Hangar (Sect. 4.6.19)	310	J-15	
					PWC Transportation Department Automotive Shop (Sect. 4.6.80)	802, 826	G-12	
					Weapons Elevator Support Unit (Sect. 4.6.68)	40	H-12	
17	2	B-11	Yes	36-inch diameter concrete pipe located north of Line Operation Shelter (Building 337); discharges into San Diego Bay	Aircraft Painting (Sect. 4.6.57)	464	K-11	Outfall or Pipe Flow from Upstream of Outfall
					Fleet Hangar (Sect. 4.6.9)	340, HW-13	D-11	
					Flight Lines and Runways (Sect. 4.6.25)	-	-	
					Hoist and Forklift Repair Facility (Sect. 4.6.64)	42	I-13	
					Mobile Facilities Compound (Sect. 4.6.76)	323, 342, HW-12	E-12, F-12	

Notes are provided at the end of the table.

TABLE 5.2-1 (continued)
SUMMARY OF OUTFALLS AND ASSOCIATED INDUSTRIAL FACILITIES

Outfall					Associated Industrial Facilities			Location of Sampling
Outfall	Map No.[1]	Grid No.[1]	Selected for Sampling	Outfall Location	Name[2]	Location: Bldg.	Location: Map Grid No.[1]	
					NADEP Aircraft Rework Shop (Sect. 4.6.21)	306, 378, C-48, C-86A, C-86B, C-97A, C-97B	G-10, H-11	
					NAVTRAGRU Det, Aviation Support Equipment (Sect. 4.6.79)	HW-19	D-10	
					PWC Industrial Waste Pump Stations (Sect. 4.6.59)	1341, 1342	E-11, F-13	
17 (cont.)	2	B-11	Yes	36-inch diameter concrete pipe located north of Line Operation Shelter (Building 337); discharges into San Diego Bay	PWC Transportation Department Automotive Shop (Sect. 4.6.80)	802	G-12	Outfall or Pipe Flow from Upstream of Outfall
					Weapons Elevator Support Unit (Sect. 4.6.68)	40	H-12	
21	1	F-2	Yes	36-inch diameter concrete pipe located under the CVN Pier northeast of Building 2013; discharges into San Diego Bay	Equipment Laydown Building (Sect. 4.6.91)	2013	F-2	Sheet Flow from CVN Pier at the 1st Upstream Catch Basin
					CVN Pier (Sect. 4.6.92)	CVN-P	E-2 to I-2	
22A	1	F-2	Yes	30-inch diameter concrete pipe located under the CVN Pier southeast of Building 2012; discharges into San Diego Bay	CVN Pier (Sect. 4.6.92)	CVN-P	E-2 to I-2	Sheet Flow from CVN Pier at the 1st Upstream Catch Basin
22B	1	F-2	Yes	30-inch diameter concrete pipe located under the CVN Pier southeast of Building 2012; discharges into San Diego Bay	Helo Blade Repair (Sect. 4.6.14)	2	F-3	Pipe Flow at the 1st Upstream Catch Basin
					NADEP Administration/Warehouse (Sect. 4.6.20)	94	G-3, H-3, I-3	
23A	1	G-2	Yes	30-inch diameter concrete pipe located under the CVN Pier northeast of Building 2004; discharges into San Diego Bay	Waterfront Operations Facility (Sect. 4.6.90)	2004	H-2	Sheet Flow from CVN Pier at the Catch Basin Located East of Building 2004
					CVN Pier (Sect. 4.6.92)	CVN-P	E-2 to I-2	

Notes are provided at the end of the table.

TABLE 5.2-1 (continued)
SUMMARY OF OUTFALLS AND ASSOCIATED INDUSTRIAL FACILITIES

Outfall					Associated Industrial Facilities			
						Location		Location of Sampling
Outfall	Map No.[1]	Grid No.[1]	Selected for Sampling	Outfall Location	Name[2]	Bldg.	Map Grid No.[1]	
23B	1	G-2	Yes	30-inch diameter concrete pipe located under the CVN Pier northeast of Building 2004; discharges into San Diego Bay	NADEP Administration/Warehouse (Sect. 4.6.20)	94	G-3, H-3, I-3	Pipe Flow at the Catch Basin Located in Parking Lot East of Building 94
24	7	H-2	Yes	30-inch diameter concrete pipe located under the CVN Pier southeast of Building 2006; discharges into San Diego Bay	Aircraft Accessories Overhaul Facility (Sect. 4.6.3)	472	I-5, I-6, J-5, J-6	Pipe Flow at the 1st Upstream Catch Basin
					Waterfront Operations Facility and Boom Storage Facility (Section 4.6.90)	2004, 2006	H-2, I-2	
24 (cont.)	7	H-2	Yes	30-inch diameter concrete pipe located under the CVN Pier southeast of Building 2006; discharges into San Diego Bay	NADEP Administration/Warehouse (Sect. 4.6.20)	94	G-3, H-3, I-3	Pipe Flow at the 1st Upstream Catch Basin
					NADEP Bearing and Storage (Sect. 4.6.48)	35	J-4	
					SE Maintenance and Repair (Sect. 4.6.81)	801	I-4	
					CVN Pier (Sect. 4.6.92)	CVN-P	E-2 to I-2	
25	7	K-3	Yes	24-inch diameter concrete pipe located east of Building 275; discharges into San Diego Bay	Aircraft Accessories Overhaul Facility (Sect. 4.6.62)	333	K-5, L-5	Outfall or Pipe Flow at the 1st Upstream Manhole
					SE Maintenance and Repair (Sect. 4.6.81)	801	I-4	
					Fuel Tank Farm (Sect. 4.6.36)	971	J-4	
					Metal Components Shop (Sect. 4.6.65)	27, 249	K-3	
					NADEP Bearing and Storage (Sect. 4.6.48)	35	J-4	
					Paint Shop and Lead Foundry (Sect. 4.6.22)	65, C-58	K-4	
					Public Works Center Maintenance Shops (Sect. 4.6.66)	343, 125, 315	M-3, N-4	
26	7	K-3	Yes	Three 36-inch diameter concrete pipes located east of Building 384 and at Station 0+40 on the Quay Wall that discharge into San Diego Bay	Air Compressor Plant (Sect. 4.6.84)	653, 956	M-3	Outfall or Pipe Flow at the 1st Upstream Manhole

Notes are provided at the end of the table.

TABLE 5.2-1 (continued)
SUMMARY OF OUTFALLS AND ASSOCIATED INDUSTRIAL FACILITIES

Outfall					Associated Industrial Facilities			Location of Sampling
Outfall	Map No.[3]	Grid No.[3]	Selected for Sampling	Outfall Location	Name[2]	Location: Bldg.	Location: Map Grid No.[3]	
					Aircraft Maintenance Hangars (Sect. 4.6.5)	HW-5	Q-7	
					Fuel Tank (Sect. 4.6.35)	991	M-3	
					Warehouse (Sect. 4.6.54)	825	R-6	
					Grounds Control Building (Sect. 4.6.63)	338	O-4	
					Hobby Shop Garage (Sect. 4.6.75)	500, C-139, HW-25	R-5, Q-5, Q-6	
					Public Works Center Storage (Sect. 4.6.50)	C-149, 689	M-3	
					Quay Wall (Sect. 4.6.71)	QW	K-3 to N-6E	
					NADEP Administration/Warehouse (Sect. 4.6.20)	94	G-3, H-3, I-3	
					Spray Paint Booth and Sandblasting Facility (Sect. 4.6.58)	305, 789, 790, HW-16	N-3	
27[9]	7	K-2	No (similar activities to OF 35)	24-inch diameter concrete pipe located at Station 250 on the quay wall; discharges into San Diego Bay	Quay Wall (Sect. 4.6.71)	-	M-3 to N-6E	N/A
28[9]	7	K-2	No (similar activities to OF 35)	24-inch diameter concrete pipe located at Station 400 on the quay wall; discharges into San Diego Bay	Quay Wall (Sect. 4.6.71)	-	M-3 to N-6E	N/A
29	7	L-1	Yes	24-inch diameter concrete pipe located at Station 700 on the Quay Wall; discharges into San Diego Bay	PWC Oily Waste Pump Stations (Sect. 4.6.60)	1352	L-1	Outfall or Pipe Flow at the 2nd Upstream Catch Basin
					Cogeneration Plant (Sect. 4.6.28)	370	M1, M2	
					Quay Wall (Sect. 4.6.71)	-	K-3 to N-6E	
30[9]	7	L-1E	No (similar activities to OF 35)	24-inch diameter concrete pipe located at Station 1000 on the quay wall; discharges into San Diego Bay	Material Division Shipping and Receiving (Sect. 4.6.47)	652 (Bays 1, 2)	O-1E	N/A
					Quay Wall (Sect. 4.6.71)	-	K-3 to N-6E	

Notes are provided at the end of the table.

TABLE 5.2-1 (continued)
SUMMARY OF OUTFALLS AND ASSOCIATED INDUSTRIAL FACILITIES

Outfall					Associated Industrial Facilities			Location of Sampling
Outfall	Map No.[1]	Grid No.[1]	Selected for Sampling	Outfall Location	Name[2]	Location: Bldg.	Location: Map Grid No.[1]	
31[9] and 31A[9]	7	L-1E	No (similar activities to OF 35)	Two 24-inch diameter pipes located at Stations 1120 and 1140 on the quay wall; discharge in San Diego Bay	Material Division Shipping and Receiving (Sect. 4.6.47) Ship Supply Storage Facility (Sect. 4.6.52) Quay Wall (Sect. 4.6.71)	652 (Bays 2, 3, 4) 651 (Bays 1, 2) -	O-1E N-2E K-3 to N6E	N/A
32[9]	7	L-1E	No (similar activities to OF 35)	24-inch diameter concrete pipe located at Station 1300 on the quay wall; discharges into San Diego Bay	Ship Supply Storage Facility (Sect. 4.6.52) Quay Wall (Sect. 4.6.71)	651 (Bay 1, 2) -	N-2E K-3 to N6E	N/A
33[9]	8	L-2E	No (similar activities to OF 35)	24-inch diameter concrete pipe located at Station 1600 on the quay wall; discharges into San Diego Bay	Ship Supply Storage Facility (Sect. 4.6.52) Quay Wall (Sect. 4.6.71)	651 (Bay 2, 3) -	N-2E K-3 to N6E	N/A
34[9]	8	M-3E	No (similar activities to OF 35)	24-inch diameter concrete pipe located at Station 1900 on the quay wall; discharges into San Diego Bay	Quay Wall (Sect. 4.6.71) SERVMART (Sect. 4.6.51) Ship Supply Storage Facility (Sect. 4.6.52)	- 651 (Bay 4) 651 (Bay 3)	- N-2E N-2E	N/A
35	8	M-3E	Yes	Two 24-inch diameter pipes located at Station 2200 on the quay wall that discharge into San Diego Bay	Material Division Shipping and Receiving (Sect. 4.6.47) Quay Wall (Sect. 4.6.71) SERVMART (Sect. 4.6.51) Ship Supply Storage Facility (Sect. 4.6.52)	652 (Bay 5) - 651 (Bay 4) 651 (Bay 3), HW-17	O-1E N-2E N-2E N-2E	Outfall or Catch Basin Located at the Intersection of Colorado Street and Quay Road
36[9]	8	M-4E	No (similar activities to OF 35)	24-inch diameter concrete pipe located at Station 2500 on the quay wall; discharges into San Diego Bay	Quay Wall (Sect. 4.6.71)	-	-	N/A
37[9]	8	N-5E	No (similar activities to OF 35)	24-inch diameter concrete pipe located at Station 2800 on the quay wall; discharges into San Diego Bay	Quay Wall (Sect. 4.6.71)	-	-	N/A
38[9]	8	N-6E	No (similar activities to OF 35)	24-inch diameter concrete pipe located at Station 3100 on the quay wall; discharges into San Diego Bay	Quay Wall (Sect. 4.6.71)	-	-	N/A

Notes are provided at the end of the table.

TABLE 5.2-1 (continued)
SUMMARY OF OUTFALLS AND ASSOCIATED INDUSTRIAL FACILITIES

Outfall					Associated Industrial Facilities			Location of Sampling
Outfall	Map No.[1]	Grid No.[1]	Selected for Sampling	Outfall Location	Name[2]	Location: Bldg.	Location: Map Grid No.[1]	
					Underground Fuel Storage Tanks (Sect. 4.6.39)	1044 - 1046	O-6E	
39[9]	8	N-6E	No (similar activities to OF 35)	24-inch diameter concrete pipe located at Station 3250 on the quay wall; discharges into San Diego Bay	Quay Wall (Sect. 4.6.71)	-	-	N/A
40[9]	8	O-6E	Yes	Three 42-inch diameter concrete pipes located at the extreme east end of the quay wall; discharges into San Diego Bay	Material Division Shipping and Receiving (Sect. 4.6.47) Navy Exchange (Sect. 4.6.86) NEX Auto Service Center (Sect. 4.6.41)	652 (Bays 1-5) 483 484	O-1E R-4E Q-5E	Upstream of Outfall
43	19	FF-14	Yes	36-inch diameter concrete pipe northeast of Building 710 (Chief Petty Officers' Club) and southwest of the intersection of Rogers Road and "L" Road; discharges into Pacific Ocean and ground	Flight Lines and Runways (Sect. 4.6.25)	-	-	Outfall
46	14	Z-30	Yes	10-inch diameter concrete pipe south of Building 1057 at Pier 1335 (Bravo); discharges into San Diego Bay	Weapons Compound (Sect. 4.6.56)	812	Z-30	Outfall or at the 1st Upstream Catch Basin
50[9]	4	J-25	No (similar activities to OF 35)	Sheet flow off Pier "E" (1305) located north of Recycling Center (Building 380); discharges into San Diego Bay	Pier E (Sect. 4.6.70)	1305	J-25	N/A
53[9]	3	F-21	No (similar activities to OF 8)	18-inch diameter corrugate plastic pipe located north of the PWC Waste Pumping Station 1349 that discharges into San Diego Bay	Fuel Tank Farm (Sect. 4.6.36) Flight Lines and Runways (Sect. 4.6.25)	376, 385, 429, 948, 949 962, 963, 2003	G-21 -	N/A
59	2	B-12	Yes	18-inch diameter concrete pipe located east of Ready Service Lockers along Moffet Road; discharges into San Diego Bay	Fleet Hangar (Sect. 4.6.9)	202, 203, 204, HW-14	B-11	Outfall
62[9]	2	B-9	No (similar activities to OF 35)	24-inch diameter concrete pipe located east of 1302 (Ramp 10) and north of Building 352; discharges into San Diego Bay	NAVTRAGRU Det, Aviation Support Equipment (Sect. 4.6.79)	285	D-9	N/A

Notes are provided at the end of the table.

TABLE 5.2-1 (continued)
SUMMARY OF OUTFALLS AND ASSOCIATED INDUSTRIAL FACILITIES

Outfall					Associated Industrial Facilities			Location of Sampling
Outfall	Map No.[1]	Grid No.[1]	Selected for Sampling	Outfall Location	Name[2]	Location: Bldg.	Location: Map Grid No.[1]	
					SH-60F Training Facility (Sect. 4.6.24)	352	B-9	
74[9]	1	D-1	No (similar activities to OF 35)	4-inch diameter drain holes in Pier 1311 (Mooring K); discharges into San Diego Bay	Moorings J and K (Sect. 4.6.69)	1310, 1311	C-1, C-2	N/A
CVN1	1	B-6	Yes	12-inch diameter plastic pipe located north of Building 73; discharges into San Diego Bay.	Ship Maintenance Facility and Maintenance Support Building (Sect. 4.6.93)	73	B-6	Outfall
CVN2[9]	1	B-5	No (similar activities to OF CVN1)	12-inch diameter plastic pipe located northeast of Building 73; discharges into San Diego Bay.	Ship Maintenance Facility and Maintenance Support Building (Sect. 4.6.93)	73	B-6	N/A
CVN4[9]	1	B-5	No (similar activities to OF CVN1)	30-inch diameter plastic pipe located northwest of Building 72; discharges into San Diego Bay.	Ship Maintenance Facility and Maintenance Support Building (Sect. 4.6.93)	72, 73	B-5, B-6	N/A
CVN5[9]	1	B-4	No (similar activities to OF CVN1)	12-inch diameter plastic pipe located north of Building 71; discharges into San Diego Bay.	Ship Maintenance Facility and Maintenance Support Building (Sect. 4.6.93) Controlled Industrial Facility and Mixed Waste Storage Facility (Section 4.6.94)	72 71, 74	B-5 C-4	N/A
CVN6	1	C-4	Yes	18-inch diameter concrete pipe located northeast of Building 71; discharges into San Diego Bay.	Controlled Industrial Facility and Mixed Waste Storage Facility (Section 4.6.94) PWC Oily Waste Pump Stations (Sect. 4.6.60)	71 1351	C-4 D-3	Outfall
CVN8	1	E-1	Yes	24-inch diameter concrete pipe located under the north end of the CVN Pier; discharges into San Diego Bay.	CVN Pier (Section 4.6.92)	CVN-P	E-2 to I-2	Sheet Flow from CVN Pier at the 1st Upstream Catch Basin
CVN9	1	G-1	Yes	18-inch diameter concrete pipe located under the CVN Pier east of Building 2012;	CVN Pier (Section 4.6.92)	CVN-P	E-2 to I-2	Sheet Flow from CVN Pier at the

Notes are provided at the end of the table.

TABLE 5.2-1 (continued)
SUMMARY OF OUTFALLS AND ASSOCIATED INDUSTRIAL FACILITIES

Outfall					Associated Industrial Facilities			Location of Sampling
						Location		
Outfall	Map No.[1]	Grid No.[1]	Selected for Sampling	Outfall Location	Name[2]	Bldg.	Map Grid No.[1]	
				discharges into San Diego Bay.				1st Upstream Catch Basin
CVN10[3]	7	J-2	No (similar activities to OF 46)	18-inch diameter concrete pipe located southeast of Building 94; discharges into San Diego Bay.	Waterfront Operations Facility and Boom Storage Facility (Section 4.6.90)	2006	I-2	N/A
CVN12[2]	1	B-7	No (similar activities to OF CVN1)	Overland flow at NW corner of Building 73.	Ship Maintenance Facility and Maintenance Support Building (Sect. 4.6.93)	73	B-6	N/A
CVN13[2]	1, 7	E-2 to I-2	No (similar activities to CVN 14)	Inlets on the CVN pier between crane tracks.	CVN Pier (Sect. 4.6.92)	CVN-P	E-2 to I-2	N/A
CVN14A	1, 7	E-2 to I-2	Yes	Cutouts along the CVN pier east of crane tracks.	CVN Pier (Sect. 4.6.92)	CVN-P	E-2 to I-2	CVN Pier Cutout East of the Main CVN Pier Entrance Gate
CVN14B	1, 7	E-2 to I-2	Yes	Cutouts along the CVN pier east of crane tracks.	CVN Pier (Sect. 4.6.92)	CVN-P	E-2 to I-2	CVN Pier Cutout East of Outfall 22

NOTES:
(1) Condition Map of Naval Air Station North Island, San Diego, California, dated June 1, 1996
(2) Section number corresponds to facility Section number in Section 4.6.
(3) If industrial activities and BMPs within two or more drainage areas are substantially identical, only one drainage area (outfall) needs to be sampled.
OF Outfall

Notes are provided at the end of the table.

TABLE 5.2-2
LOCATIONS FOR OUTFALL SAMPLING

Outfall	Sampling Point Description
3[1]	At the downstream end of the open channel south of the golf course.
8[1]	The outfall, a 48-inch diameter concrete pipe located north of Pier 1335.
11	The outfall, a 36-inch diameter concrete pipe west of Building 432, or pipe flow from the first upstream catch basin located east of Building 432.
14[1]	The outfall, a 72-inch diameter concrete pipe north of Runway 18 and west of Pier 1308, or upstream at the manhole marked 14-036.M located 50 feet southwest of the southwest corner of Building 311.
17	The outfall, a 36-inch diameter concrete pipe located north of Building 340, or pipe flow from the second upstream manhole located west of Building 340.
21	Sheet flow from CVN Pier at the first upstream catch basin located northeast of Building 2013.
22A	Sheet flow from CVN Pier at the first upstream catch basin located southeast of Building 2012.
22B	Pipe flow from the 30-inch diameter concrete pipe at the first upstream catch basin located southeast of Building 2012.
23A	Sheet flow from CVN Pier at the catch basin located east of Building 2004.
23B	Pipe flow from the 30-inch diameter concrete pipe at the catch basin located in the parking lot east of Building 94.
24	Pipe flow from the 30-inch diameter concrete pipe at the first upstream catch basin located south of Building 2004.
25	The outfall, a 24-inch concrete pipe east of Building 66, or pipe flow from the first upstream manhole located at the southwest corner of Building 66.
26[1]	The outfall, three 36-inch diameter concrete pipes east of Building 384, or pipe flow from the first upstream manhole located east of Building 399.
29	The outfall, a 24-inch diameter concrete pipe located at Station 700 on the Quay Wall, or pipe flow from the second upstream catch basin located north of Building 370.
35[1]	The outfall, a 24-inch diameter concrete pipe located at Station 2200, or the catch basin at the intersection of Colorado Street and Quay Road.
40	At the downstream end of the gunite ditch north of Building 680.
43	The outfall, a 36-inch diameter concrete pipe located northeast of Building 710.
46[1]	The outfall, a 10-inch diameter concrete pipe located southwest of Building 812 or the first upstream catch basin adjacent to Building 812.
59	The outfall, an 18-inch diameter concrete pipe located northwest of Building 340.
CVN1	The outfall, a 12-inch diameter plastic pipe located north of Building 73.
CVN6	The outfall, an 18-inch diameter concrete pipe located northeast of Building 71.
CVN8	Sheet flow at the first upstream catch basin located at the north end of the CVN Pier.
CVN9	Sheet flow at the first upstream catch basin located east of Building 2012.
CVN14A	Sheet flow through a CVN Pier cutout located east of the CVN Pier main entrance gate in the material loading and unloading area for ships at the CVN Pier.
CVN14B	Sheet flow through a CVN Pier cutout located east of Outfall 22 in the material loading and unloading area for ships at the CVN Pier.

Notes: (1) Additional information is provided in the January 1997 Feasibility Study for Alternative Sampling Locations at

TABLE 5.2-2 (continued)
LOCATIONS FOR OUTFALL SAMPLING

Naval Air Station North Island (Law/Crandall, 1997).

TABLE 5.2-3
ANALYTICAL PARAMETERS AND METHODOLOGIES

Parameter — Organic Based	Unit	Container Size/Type[1]	Methodology[2]	Method	Reference[3]
TOC: Total Organic Carbon	mg/L	250 mL glass amber	IR	415.1	a
O&G[4]: Oil and Grease	mg/L	1x1 liter glass amber	IR	413.2 or 1664 when adopted	a
PCBs: Polychlorinated Biphenyls	µg/L	1x1 liter glass amber	GC/MS	625	e
VOCs: Volatile Organic Compounds	µg/L	3x40 mL VOA	GC/MS	624	e
BNA[5]: Base/Neutral-Acid Organic Compounds	µg/L	1x1 liter glass amber	GC/MS	625	e
MBAS: Methylene Blue Active Substances	mg/L	1x25 mL	Colorimetric	5540C	b
Carbamates	µg/L	1x1 liter glass amber	HPLC	632	a
Chlorinated Herbicides	µg/L	1x1 liter glass amber	GC/ECD	3550/8150	d
Glycol	mg/L	1x1 liter glass amber	GC/FID	8015 mod.	d
Alcohols	mg/L	1x1 liter glass amber	GC/FID	8015 mod.	d
Explosives (Nitroaromatics and Nitroamines)	mg/L	1x1 liter glass amber	HPLC	8330	d
Cyanide[6]	µg/L	250 mL plastic	Spectrophotometric	335.2	e

Notes and a key to abbreviations are provided at the end of the table.

TABLE 5.2-3 (continued)
ANALYTICAL PARAMETERS AND METHODOLOGIES

Parameter — Inorganic Based	Unit	Container Size/Type[1]	Methodology[2]	Method	Reference[3]
Ag[6]: Silver	µg/L	500 mL plastic	ICP	200.7	c
Al[6]: Aluminum	µg/L	500 mL plastic	ICP	200.7	c
As[6]: Arsenic	µg/L	500 mL plastic	ICP	200.7	c
Cd[6]: Cadmium	µg/L	500 mL plastic	ICP	200.7	c
Cr: Chromium (Total)	µg/L	500 mL plastic	ICP	200.7	c
Cu[6]: Copper	µg/L	500 mL plastic	ICP	200.7	c
Fe[6]: Iron	µg/L	500 mL plastic	ICP	200.7	a
Hg[6]: Mercury	µg/L	500 mL plastic	Cold Vapor- AA	245.1	c
Mg[6]: Magnesium	µg/L	500 mL plastic	ICP	200.7	a
Ni: Nickel	µg/L	500 mL plastic	ICP	200.7	c
Pb[6]: Lead	µg/L	500 mL plastic	ICP	200.7	c
Se[6]: Selenium	µg/L	500 mL plastic	ICP	200.7	c
Ti: Titanium	µg/L	500 mL plastic	ICP	200.7	c
Zn[6]: Zinc	µg/L	500 mL plastic	ICP	200.7	c
Ten Metals	µg/L	500 mL plastic	ICP	200.7	c
pH[4]: pH	units	100 mL plastic	Electrode	150.1	a
NH_3: Ammonia[6]	mg/L	500 mL plastic	Colorimetric	4500-NH_3	b
NO_3^- and NO_2^{-2}: Nitrate & Nitrite[6]	mg/L	500 mL plastic	Colorimetric	353.3	a
Total P: Total Phosphorus	mg/L	500 mL plastic	Colorimetric	4500 PB,E	b
SO_4^{-2}: Sulfate	mg/L	100 mL plastic	Turbimetric	375.4	e

Notes and a key to abbreviations are provided at the end of the table.

TABLE 5.2-3 (continued)
ANALYTICAL PARAMETERS AND METHODOLOGIES

Parameter — Inorganic Based	Unit	Container Size/Type[1]	Methodology[2]	Method	Reference[3]
Anions & Cations: (HCO_3^-, CO_3^{-2}, Cl^-, SO_4^{-2}, NO_3^-, F^-, OH^-, Na^+, K^+, Ca^{+2}, Mg^{+2})	mg/L	100 mL plastic	IC	300	d
Residual Chlorine	mg/L	4 oz glass amber	Titrimetric	330.5	a
Asbestos	million fibers/L	250 mL plastic	TEM	TEM	a
Fecal Coliform	MPN/100 mL	Sterile 250 mL plastic	Assay	SM 9221C	b
Fecal Streptococci	MPN/100 mL	Sterile 250 mL plastic	Assay	SM 9230C	b
SC[4]: Specific Conductance	µmhos/cm	100 mL plastic	Electrode	120.1	a
BOD[6]: Biochemical Oxygen Demand	mg/L	100 mL plastic	Dissolved Oxygen Depletion	405.1	a
COD[6]: Chemical Oxygen Demand	mg/L	100 mL plastic	Titrimetric	410.1	a
TSS[4,6]: Total Suspended Solids	mg/L	100 mL plastic	Gravimetric	160.2	a

Notes and a key to abbreviations are provided at the end of the table.

TABLE 5.2-3 (continued)
ANALYTICAL PARAMETERS AND METHODOLOGIES

NOTES:

Ten Metals Metals (As, Cd, Cr, Cu, Pb, Hg, Ni, Se, Ag, Zn) analysis by ICP and AA methods.

(1) This table will be given to the laboratory analyzing the storm water samples to confirm that the container size/type and method are acceptable for their use. Various laboratories may have different requirements.

(2) Methodologies:

AA	Atomic absorption spectroscopy
ECD	Electron capture detection
FID	Flame ionization detection
GC	Gas chromatography
HPLC	High performance liquid chromatography
IC	Ion chromatography
ICP	Inductively coupled plasma atomic emission spectroscopy
IR	Infrared spectroscopy
MS	Mass spectrometry
TEM	Transmission electron microscopy

(3) References:
(a) Methods for Chemical Analysis of Water and Wastewater, USEPA/600/4-79-020, 1983
(b) Standard Methods for the Examination of Water and Wastewater, 18th ed. APHA-WPCF, 1992
(c) Methods for the Determination of Metals in Environmental Samples, USEPA/600/4-91/010, 1991
(d) Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., update 2A, 1994
(e) Method for Organic Chemical Analysis of Municipal and Industrial Wastewater, 40 CFR 136, Appendix A

(4) Routine analytical parameters.

(5) When pesticides are identified as a potential pollutant, the analyses for base neutral acid organic compounds will include organophosphorus pesticides. If the pesticides are known to be organophosphorus pesticides, Method 8140 may be used. (d).

(6) SIC Code-based parameters identified in the General Permit.

TABLE 5.2-4
ORGANIC ANALYTICAL PARAMETERS ASSOCIATED WITH POTENTIAL POLLUTANTS AND SIC CODES

Potential Pollutant/ Facility SIC Code[1]	Analytical Parameter											
	TOC	O&G	PCBs	VOCs[2]	BNAs	MBAS	Carb	Herb	Glycol	Alcohols	Cyanide	Expls
Acids												
Adhesives/Resins/Glue				X	X							
Alcohols										X		
Alodine				X	X						X	
Antifreeze/Coolant									X			
Aviation Fuel	X	X										
Bilgewater	X	X										
Caustics (bases)												
Chromate												
Cyanide											X	
Detergents/Surfactants						X						
Diesel Fuel	X	X										
Dye				X	X							
Explosives												X
Fertilizers												
Firefighting Foam						X						
Gasoline	X											
Hydraulic/Calibration Fluid	X	X										
Kerosene	X	X										
Lubricants	X	X										

Notes and a key to abbreviations are provided at the end of the table.

TABLE 5.2-4 (continued)
ORGANIC ANALYTICAL PARAMETERS ASSOCIATED WITH POTENTIAL POLLUTANTS AND SIC CODES

Potential Pollutant/ Facility SIC Code[1]	Analytical Parameter											
	TOC	O&G	PCBs	VOCs[2]	BNAs	MBAS	Carb	Herb	Glycol	Alcohols	Cyanide	Expls
Metal Cleaners		X										
Metals												
Oil & Grease	X	X										
Otto Fuel												X
Oxidizers												
Paint Chips					X							
Paint Thinner	X	X										
Paint/Varnish												
PCBs			X									
Pesticides/Herbicides					X		X	X				
Photographic Chemicals				X	X							
Salts												
Sandblasting Waste Solids												
Sanitary Waste												
Sediment												
Solvents	X	X		X								
Tar	X	X				X						
Transformer Oil	X		X									
Trash and Debris												
Waste Wash Water	X	X				X						

Notes and a key to abbreviations are provided at the end of the table.

TABLE 5.2-4 (continued)
ORGANIC ANALYTICAL PARAMETERS ASSOCIATED WITH POTENTIAL POLLUTANTS AND SIC CODES

Potential Pollutant/ Facility SIC Code[1]	Analytical Parameter											
	TOC	O&G	PCBs	VOCs[2]	BNAs	MBAS	Carb	Herb	Glycol	Alcohols	Cyanide	Expls
Water Treatment Chemicals[3]				X	X							
FACILITY SIC CODE												
244X Wood Containers												
331X Steel Works, Blast Furnaces, Rolling & Finishing Mill												
336X Nonferrous Foundries (Castings)												
4953 Hazardous Waste Treatment, Storage, or Disposal											X	
4953 Landfills and Land Application Sites												
5015 Automobile Salvage Yards												
5093 Scrap Recycling Facilities												
4911 Steam Electric Generating Facilities												
44XX Water Transportation Facilities That Have Vessel & Equipment Maintenance Shops and/or Equipment Cleaning Operations												
45XX Air Transportation Facilities That Have Vehicle Maintenance Shops, Material Handling Facilities, Equipment Cleaning Operations, or Airport and/or Aircraft Deicing/Anti-icing Operations												
3444 Sheet Metal Work												

Notes and a key to abbreviations are provided at the end of the table.

TABLE 5.2-4 (continued)
ORGANIC ANALYTICAL PARAMETERS ASSOCIATED WITH POTENTIAL POLLUTANTS AND SIC CODES

Potential Pollutant/ Facility SIC Code[1]	Analytical Parameter											
	TOC	O&G	PCBs	VOCs[2]	BNAs	MBAS	Carb	Herb	Glycol	Alcohols	Cyanide	Expls
3471 Electroplating, Plating, Polishing, Anodizing, and Coloring												

NOTES:

BNAs	Base neutral acid organic compounds
Carb	Carbamates
Expls	Explosives (nitroaromatics and nitroamines)
Herb	Chlorinated herbicides
MBAS	Methylene blue active substances
O&G	Oil and Grease
PCBs	Polychlorinated biphenyls
TOC	Total Organic Carbon
VOCs	Volatile organic compounds

(1) SIC Codes associated with Naval facilities that are identified in the General Permit and that have sampling and analysis requirements.

(2) VOCs are analytical parameters of a potential pollutant; however, because they have not been found in significant quantities in storm water discharge, they have not been included in the analytical requirements identified in Table 5.2-7.

(3) Water treatment chemicals are identified by name in the facility-specific SWPPP. Organic analyses for each chemical are as follows:

Algaecides: None	Barium Chloride: None	Hydrochloric Acid: None	Lime: None	Sulfuric and Sulfamic Acids: None
Aqueous Morpholine: BNAs	Bromine Chloride: None	Hydrogen Peroxide: None	Organic Polymers: None	Soda Ash: Anions and Cations; None
Ammonia: None	Chlorine: None	Hydroxides: None	Phosphates: None	Stannous Chloride: None
Aluminum: None	Diatomaceous Earth: None	Hypochlorite Solutions: None	Sewer Solvent: VOCs	Sodium Bisulfate: None

Notes and a key to abbreviations are provided at the end of the table.

TABLE 5.2-5
INORGANIC AND GENERAL ANALYTICAL PARAMETERS ASSOCIATED WITH POTENTIAL POLLUTANTS AND SIC CODES

Potential Pollutant/ Facility SIC Code[1]	Analytical Parameter																												
	Ag	Al	As	Cd	Cr	Cu	Fe	Hg	Mg	Ni	Pb	Se	Ti	Zn	Ten Metals	pH	NH_3	Nitrate & Nitrite	Total P	Sulfate	Anions & Cations	Resid Cl_2	Asb.	Fec. Col.	Fec. Str.	SC	BOD[2]	COD[2]	TSS
Acids																X													
Adhesives/Resins/Glue																													
Alcohols																													
Alodine															X														
Antifreeze/Coolant						X																							
Aviation Fuel																													
Bilgewater																													
Caustics (bases)																X													
Chromate					X											X													
Cyanide																													
Detergents/Surfactants																X													
Diesel Fuel																													
Dye	X							X										X											
Explosives																													
Fertilizers																	X	X	X	X									
Firefighting Foam																													
Gasoline																													
Hydraulic /Calibration Fluid																													
Kerosene																													
Lubricants															X														
Metal Cleaners															X	X													

Notes and a key to abbreviations are provided at the end of the table.

TABLE 5.2-5 (continued)
INORGANIC AND GENERAL ANALYTICAL PARAMETERS ASSOCIATED WITH POTENTIAL POLLUTANTS AND SIC CODES

Potential Pollutant/ Facility SIC Code[1]	Analytical Parameter																												
	Ag	Al	As	Cd	Cr	Cu	Fe	Hg	Mg	Ni	Pb	Se	Tl	Zn	Ten Metals	pH	NH_3	Nitrate & Nitrite	Total P	Sulfate	Anions & Cations	Resid Cl_2	Asb.	Fec. Col.	Fec. Str.	SC	BOD[2]	COD[2]	TSS
Metals															X														
Oil & Grease																													
Otto Fuel																													
Oxidizers															X	X													
Paint Chips					X								X																
Paint Thinner																													
Paint/Varnish					X								X																
Pesticides/Herbicides																													
Photographic Chemicals	X							X										X											
PCBs																													
Salts																X					X								
Sandblasting Waste Solids															X														
Sanitary Waste																	X							X	X				
Sediment																													X
Solvents																													
Tar															X														
Transformer Oil															X														
Trash and Debris																													
Waste Wash Water																													
Water Treatment Chemicals[3]		X				X										X	X		X		X	X							X

Notes and a key to abbreviations are provided at the end of the table.

TABLE 5.2-5 (continued)
INORGANIC AND GENERAL ANALYTICAL PARAMETERS ASSOCIATED WITH POTENTIAL POLLUTANTS AND SIC CODES

Potential Pollutant/ Facility SIC Code[1]	Analytical Parameter																												
	Ag	Al	As	Cd	Cr	Cu	Fe	Hg	Mg	Ni	Pb	Se	Tl	Zn	Ten Metals	pH	NH_3	Nitrate & Nitrite	Total P	Sulfate	Anions & Cations	Resid Cl_2	Asb.	Fec. Col.	Fec. Str.	SC	BOD[2]	COD[2]	TSS
FACILITY SIC CODE																													
244X Wood Containers																												X	X
331X Steel Works, Blast Furnaces, Rolling & Finishing Mill		X												X															
336X Nonferrous Foundries (Castings)						X								X															
4953 Hazardous Waste Treatment, Storage, or Disposal	X		X	X				X	X		X	X					X											X	
4953 Landfills and Land Application Sites							X																						X
5015 Automobile Salvage Yards		X					X				X																		X
5093 Scrap Recycling Facilities		X				X	X				X			X														X	X
4911 Steam Electric Generating Facilities							X																						
44XX Water Transportation Facilities That Have Vessel & Equipment Maintenance Shops and/or Equipment Cleaning Operations		X					X				X			X															
45XX Air Transportation Facilities That Have Vehicle Maintenance Shops, Material Handling Facilities, Equipment Cleaning Operations, or Airport and/or Aircraft Deicing/Anti-icing Operations																X	X										X	X	
3444 Sheet Metal Work		X					X							X				X											

Notes and a key to abbreviations are provided at the end of the table.

TABLE 5.2-5 (continued)
INORGANIC AND GENERAL ANALYTICAL PARAMETERS ASSOCIATED WITH POTENTIAL POLLUTANTS AND SIC CODES

Potential Pollutant/ Facility SIC Code[1]	Analytical Parameter																												
	Ag	Al	As	Cd	Cr	Cu	Fe	Hg	Mg	Ni	Pb	Se	Ti	Zn	Ten Metals	pH	NH_3	Nitrate & Nitrite	Total P	Sulfate	Anions & Cations	Resid Cl_2	Asb.	Fec. Col.	Fec. Str.	SC	BOD[2]	COD[2]	TSS
3471 Electroplating, Plating, Polishing, Anodizing, and Coloring		X					X							X				X											

NOTES:

Ag	Silver
Al	Aluminum
As	Arsenic
Cd	Cadmium
Cr	Chromium (total)
Cu	Copper
Fe	Iron
Hg	Mercury
Mg	Magnesium
Ni	Nickel
Pb	Lead
Se	Selenium
Zn	Zinc

Anions & Cations

HCO_3^-	Bicarbonate
CO_3^{-2}	Carbonate
Cl^-	Chloride
SO_4^{-2}	Sulfate
NO_3^-	Nitrate
F^-	Fluoride
OH^-	Hydroxide
Na^+	Sodium
K^+	Potassium
Ca^{+2}	Calcium
Mg^{+2}	Magnesium

Asb.	Asbestos
BOD	Biochemical Oxygen Demand
COD	Chemical Oxygen Demand
Fec. Col.	Fecal coliform
Fec. Str.	Fecal streptococci
NH_3	Ammonia
Total P	Total Phosphorus
Resid Cl_2	Residual chlorine
SC	Specific conductance
Ten Metals	Metals (As, Cd, Cr, Cu, Pb, Hg, Ni, Se, Ag, Zn) analysis by ICP and AA methods
Ti	Titanium
TSS	Total suspended solids

(1) SIC Codes associated with Naval facilities that are identified in the General Permit and that have sampling and analysis requirements.

(2) BOD and COD analyses will only be used as indicators for potential pollutants associated with SIC codes.

(3) Water treatment chemicals are identified by name in the facility-specific SWPPP. Inorganic and general parameter analyses for each chemical is as follows:

Algaecides: Cu	Barium Chloride: Cl^-	Hydrochloric Acid: pH	Lime: pH	Sulfuric and Sulfamic Acids: pH
Aqueous Morpholine: None	Bromine Chloride: Cl^-	Hydrogen Peroxide: pH	Organic Polymers: Anions & Cations	Soda Ash: Anions and Cations, pH
Ammonia: NH_3	Chlorine: Resid Cl_2	Hydroxides: pH	Phosphates: Total P	Stannous Chloride: Cl^-
Aluminum: Al	Diatomaceous Earth: TSS	Hypochlorite Solutions: Resid Cl_2	Sewer Solvent: None	Sodium Bisulfate: Anions & Cations, pH

TABLE 5.2-6
POTENTIAL POLLUTANTS AND SIC CODES ASSOCIATED WITH OUTFALLS TO BE SAMPLED

Outfall	Facility-Specific SWPPP Section	Potential Pollutant																																			
		Acids	Adhesives / Resins / Glue	Alcohols	Alodine	Antifreeze / Coolant	Aviation Fuel	Caustics (bases)	Chromate	Cyanide	Detergents / Surfactants	Diesel Fuel	Dye	Explosives	Fertilizers	Firefighting Foam	Gasoline	Kerosene	Metal Cleaners	Metals(1)	Oil & Grease(2)	Otto Fuel	Oxidizers	Paint / Varnish	PCBs	Pesticides / Herbicides	Photographic Chemicals	Salts	Sandblasting Waste Solids(3)	Sanitary Waste	Sediments(4)	Solvents(5)	Tar	Trash and Debris	Waste Wash Water	Water Treatment Chemicals(6)	Applicable SIC(7)
8	4.6.6						X				X	X					X				X																45XX
	4.6.25						X														X																45XX
	4.6.89						X					X																			X						
11	4.6.25						X														X																45XX
	4.6.26																X																				
	4.6.37						X														X																
	4.6.61	X					X					X					X							X													5093
17	4.6.9						X														X			X													45XX
	4.6.21																				X																45XX
	4.6.25						X										X				X																45XX
	4.6.57			X							X													X								X					45XX
	4.6.59																																				
	4.6.64																				X																
	4.6.68																																				
	4.6.76																																				45XX
	4.6.79																																				45XX
	4.6.80	X				X															X																
21	4.6.59																																				
	4.6.91																				X																
	4.6.92																				X																

Notes provided at the end of the table.

TABLE 5.2-6
POTENTIAL POLLUTANTS AND SIC CODES ASSOCIATED WITH OUTFALLS TO BE SAMPLED

Outfall	Facility-Specific SWPPP Section	Potential Pollutant																																		
		Acids	Adhesives / Resins / Glue	Alcohols	Alodine	Antifreeze / Coolant	Aviation Fuel	Caustics (bases)	Chromate	Cyanide	Detergents / Surfactants	Diesel Fuel	Dye	Explosives	Fertilizers	Firefighting Foam	Gasoline	Kerosene	Metal Cleaners	Metals[1]	Oil & Grease[2]	Otto Fuel	Oxidizers	Paint / Varnish	PCBs	Pesticides / Herbicides	Photographic Chemicals	Salts	Sandblasting Waste Solids[3]	Sanitary Waste	Sediments[4]	Solvents[5]	Tar	Trash and Debris	Waste Wash Water	Water Treatment Chemicals[6]	Applicable SIC[7]
22A	4.6.92																				X																
22B	4.6.14																				X											X					
	4.6.20																			Al																	45XX
	4.6.92																				X																
23A	4.6.90																																				44XX
	4.6.92																				X																
23B	4.6.20																			Al																	45XX
24	4.6.3																				X			X								X					45XX, 3471
	4.6.20																			Al																	45XX
	4.6.48																				X																
	4.6.81										X										X											X					45XX
	4.6.90																																				44XX
	4.6.92																				X																
25	4.6.22																			X												X					3444, 336X
	4.6.36						X					X					X				X																
	4.6.48																				X																
	4.6.62	X																			X											X					45XX
	4.6.65																				X																
	4.6.66																				X																
	4.6.81										X										X											X					45XX

Note[illegible] provided at the end of the table.

TABLE 5.2-6
POTENTIAL POLLUTANTS AND SIC CODES ASSOCIATED WITH OUTFALLS TO BE SAMPLED

Outfall	Facility-Specific SWPPP Section	Potential Pollutant																																			
		Acids	Adhesives / Resins / Glue	Alcohols	Alodine	Antifreeze / Coolant	Aviation Fuel	Caustics (bases)	Chromate	Cyanide	Detergents / Surfactants	Diesel Fuel	Dye	Explosives	Fertilizers	Firefighting Foam	Gasoline	Kerosene	Metal Cleaners	Metals(1)	Oil & Grease (2)	Otto Fuel	Oxidizers	Paint / Varnish	PCBs	Pesticides / Herbicides	Photographic Chemicals	Salts	Sandblasting Waste Solids (3)	Sanitary Waste	Sediments (4)	Solvents (5)	Tar	Trash and Debris	Waste Wash Water	Water Treatment Chemicals (6)	Applicable SIC (7)
26	4.6.5						X														X																45XX
	4.6.20																			Al																	45XX
	4.6.35																																				
	4.6.50																				X																
	4.6.54																				X																
	4.6.58																				X			X								X					45XX
	4.6.63																X				X													X			
	4.6.71																				X																
	4.6.75										X										X										X						
	4.6.84																																				
29	4.6.28																																				4911
	4.6.60																																				
	4.6.71																				X																
35	4.6.47											X									X			X								X					
	4.6.51																																				
	4.6.52																																				
	4.6.71																				X																
43	4.6.25						X														X																45XX
46	4.6.56																																				
59	4.6.9						X														X			X													45XX

Notes provided at the end of the table.

TABLE 5.2-6
POTENTIAL POLLUTANTS AND SIC CODES ASSOCIATED WITH OUTFALLS TO BE SAMPLED

Outfall	Facility-Specific SWPPP Section	Potential Pollutant																																			
		Acids	Adhesives / Resins / Glue	Alcohols	Alodine	Antifreeze / Coolant	Aviation Fuel	Caustics (bases)	Chromate	Cyanide	Detergents / Surfactants	Diesel Fuel	Dye	Explosives	Fertilizers	Firefighting Foam	Gasoline	Kerosene	Metal Cleaners	Metals(1)	Oil & Grease (2)	Otto Fuel	Oxidizers	Paint / Varnish	PCBs	Pesticides / Herbicides	Photographic Chemicals	Salts	Sandblasting Waste Solids (3)	Sanitary Waste	Sediments (4)	Solvents (5)	Tar	Trash and Debris	Waste Wash Water	Water Treatment Chemicals (6)	Applicable SIC (7)
CVN1	4.6.93																																				3444, 44XX
CVN6	4.6.60																																				
	4.6.94																																				44XX
CVN8	4.6.92																				X																
CVN9	4.6.92																				X																
CVN14A	4.6.92																				X																
CVN14B	4.6.92																				X																

NOTES:

(1) X refers to 10 metals. Abbreviation refer to specific metals.

Al - Aluminum Ar - Arsenic Cd - Cadmium Cr - Chromium Cu - Copper Fe - Iron Pb - Lead Hg - Mercury Ni - Nickel Se - Selenium Ag - Silver Ti - Titanium Zn - Zinc

(2) Oil and Grease includes motor oil, lubricants, transmission fluid, hydraulic oil, calibration fluids, bilgewater, etc.

(3) Sandblasting waste also includes sanding waste and paint chips.

(4) Sediment may include soil, sawdust, fiberglass, gypsum, sanding waste, etc.

(5) Stoddard Solvent, TCE, PCE, etc.

(6) Water treatment chemicals are identified by name in the facility specific SWPPP. Analyses will be determined by the type of chemical. Water treatment chemicals include:

Algaecide	Aluminum	Chlorine	Hydrochloric Acid	Hypochlorite Solutions	Molybdate Reagent	Sewer Solvent	Stannous Chloride
Aquious Morpholine	Barium Chloride	Diatomaceous Earth	Hydrogen Peroxide	Iodide Iodate	Organic Polymers	Soda Ash	Sulfuric/Sulfamic Acids
Ammonia	Bromine	Demulsifiers	Hydroxides	Lime	Phosphates	Sodium Bisulfate	Sodium Bisulfate

(7) SIC Codes associated with Naval Activities that are identified in the General Permit and that have sampling and analysis requirements.

Notes provided at the end of the table.

TABLE 5.2-7
ANALYTICAL PARAMETERS FOR SELECTED OUTFALLS

	Outfall[5]																								
Parameter	**3**	**8**	**11**	**14**	**17**	**21**	**22A**	**22B**	**23A**	**23B**	**24**	**25**	**26**	**29**	**35**	**40**	**43**	**46**	**59**	**CVN1**	**CVN6**	**CVN8**	**CVN9**	**CVN14A**	**CVN14B**
TOC		X	X		X	X	X	X	X		X	X	X	X	X		X		X			X	X	X	X
O&G[1]	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
PCBs																									
VOCs						(3)	(3)	(3)				(3)													
BNAs					(3)	(3)					(3)														
Surfactants (MBAS)		(3)			X						X	X	X												
Carbamates																									
Herbicides																									
Glycol					(3)																				
Alcohols					X																				
Explosives																									
Cyanide (total)					(3)	(3)																			

Notes and a key to abbreviations are provided at the end of the table.

TABLE 5.2-7 (continued)
ANALYTICAL PARAMETERS FOR SELECTED OUTFALLS

	Outfall[5]																								
Parameter	3	8	11	14	17	21	22A	22B	23A	23B	24	25	26	29	35	40	43	46	59	CVN1	CVN6	CVN8	CVN9	CVN14A	CVN14B
Silver (Ag)[2]												(3, 4)													
Aluminum (Al)			X					X	X	X	X	X	X							X	X				
Arsenic (As)[2]												(3, 4)													
Cadmium (Cd)[2]												(3, 4)													
Chromium (Cr)[2]			X		(3)						X	(3)	(3)		X	X			X						
Hex. Chromium (Cr)															X										
Copper (Cu)[2]			X		(3)							(3, 4)													
Iron (Fe)			X						X		X	X	X	X						X	X				
Dissolved Iron (Fe)													X												
Mercury (Hg)[2]												(3, 4)													
Magnesium (Mg)												X													
Nickel (Ni)[2]												(3)													
Lead (Pb)[2]			X									(3, 4)								X	X				
Selenium (Se)[2]												(3, 4)													
Titanium (Ti)			X		X						X		X		X				X						
Zinc (Zn)[2]			X									(3, 4)								X	X				
Ten Metals					(3)	X[6]	X[6]	X[6]	X[6]	X[6]	X[6]	(3)	(3)									X[6]	X[6]	X[6]	X[6]
pH[1]	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
NH_3		X	X		X			X		X	X	X	X			X	X		X						
NO_3^- & NO_2^{-2}				X							X	X								X					
Total Phosphorus																									
SO_4^{-2}																									
Anions & Cations																									

Notes and a key to abbreviations are provided at the end of the table.

TABLE 5.2-7 (continued)
ANALYTICAL PARAMETERS FOR SELECTED OUTFALLS

	Outfall[5]																								
Parameter	**3**	**8**	**11**	**14**	**17**	**21**	**22A**	**22B**	**23A**	**23B**	**24**	**25**	**26**	**29**	**35**	**40**	**43**	**46**	**59**	**CVN1**	**CVN6**	**CVN8**	**CVN9**	**CVN14A**	**CVN14B**
Residual Chlorine																									
Asbestos																									
Fecal Coliform																									
Fecal Streptococci																									
BOD		X	X		X			X		X	X	X	X				X		X						
COD	X	X	X		X			X		X	X	X	X				X		X						
SC[1]	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
TSS[1]	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

NOTES:

Anions & Cations	HCO_3^-, CO_3^{-2}, Cl^-, SO_4^{-2}, NO_3^-, F^-, OH^-, Na^+, K^+, Ca^{+2}, Mg^{+2}
BNAs	Base-neutral acid extractable organic compounds
BOD	Biochemical oxygen demand (5-day)
COD	Chemical oxygen demand
Explosives	Explosive nitroaromatics and nitroamines
Herbicides	Chlorinated herbicides
Hex. Chromium	Hexavalent Chromium
MBAS	Methylene blue active substances
NO_3^- & NO_2^{-2}	Nitrate and nitrite
NH_3	Ammonia
O&G	Oil and Grease
PCBs	Polychlorinated biphenyls
pH	Indicator of acidity or basicity
SC	Specific conductance/electric conductivity
SO_4^{-2}	Sulfate
Ten Metals	Metals (As, Ag, Cd, Cr, Cu, Hg, Ni, Pb, Se, Zn) analysis by inductively coupled plasma atomic emission spectroscopy method and atomic absorption spectroscopy method
TOC	Total organic carbon
TSS	Total suspended solids
VOCs	Volatile organic compounds

(1) O&G, pH, SC, and TSS are the routine analytical parameters for storm water samples.

(2) If Ten Metals is also indicated for an outfall, this analysis is not needed.

(3) Eliminated because it is no longer considered a potential storm water pollutant; two consecutive sample results were non-detects for all analytes, or were not detected in significant quantities.

(4) SIC code-based parameter not required for analysis because: (1) the parameter has not been detected in significant quantities within two consecutive sampling events; or (2) the parameter is not likely to be present in storm water discharges and authorized non-storm water discharges in significant quantities.

(5) A description of the outfall is presented in Table 5.2-1 and a description of the sample location is presented in Table 5.2-2.

(6) Ten Metals will be sampled in the CVN Pier area to establish a metals baseline for the area. No apparent source that could be expected to contribute metals to storm water runoff in significant quantities has been identified; therefore, metals are not listed as a potential pollutant in Table 5.2-6 for the CVN Pier and associated facilities.

5.3 NON-STORM WATER DISCHARGE VISUAL OBSERVATIONS

The General Permit requires that non-storm water discharge visual observations be performed quarterly (January-March, April-June, July-September, and October-December). These observations will occur during daylight hours that are preceded by at least three working days without storm water discharges. Non-storm water discharge visual observations are required for each drainage area at an Activity associated with industrial facilities. Non-storm water discharge visual observations are also required at each authorized non-storm water discharge source. Detailed instructions to complete non-storm water discharge observations are provided in Appendix E.

Industrial facilities and industrial drainage basins identified in the SWDMP are surveyed for non-storm water discharges. These observations will document the presence of any discolorations, stains, odors, etc., as well as indications of any non-storm water discharges at the outfall. If indications of non-storm water discharge are observed, additional visual observations will be performed upstream to determine the non-storm water discharge source. Where illicit connections or other unauthorized non-storm water discharges are suspected, the Non-Storm Water Discharge Identification and Testing Plan (Appendix D) will be implemented.

Once a non-storm water discharge source has been determined, the non-storm water discharge will be cataloged and identified as unauthorized or authorized. Unauthorized non-storm water discharges include illegal dumping and illicit connections. All unauthorized discharges will be eliminated or permitted.

Authorized non-storm water discharges that are identified at industrial facilities at an Activity are described in the facility-specific SWPPPs in Section 4.6 and are summarized in Table 5.3-1.

Authorized discharges that may occur at the Activity include:

- fire hydrant flushing;
- potable water sources including water related to the operation, maintenance, or testing of potable water systems;
- drinking fountain water;

- atmospheric condensate including refrigeration, air conditioning, and compressor condensate;
- irrigation drainage;
- landscape watering;
- springs;
- ground water;
- foundation and footing drainage; and
- sea water infiltration where the sea waters are discharged back into the sea water source.

The non-storm water discharges listed above are authorized by the General Permit if all the following conditions are met:

- The non-storm water discharges are in compliance with RWQCB requirements.
- The non-storm water discharges are in compliance with local agency ordinances and/or requirements.
- BMPs are specifically included in the SWPPP to: (1) prevent or reduce the contact of non-storm water discharges with significant materials or equipment; and (2) minimize, to the extent practicable, the flow or volume of non-storm water discharges.
- The non-storm water discharges do not contain significant quantities of pollutants.
- The monitoring program includes quarterly visual observations of each non-storm water discharge and its source to ensure that BMPs are being implemented and are effective.
- The non-storm water discharges are reported and described annually as part of the Annual Report.

Table 5.3-1 provides a list of authorized non-storm water discharge sources that have a potential to contact industrial sources of storm water pollutants, their locations, and the associated BMPs found at NASNI.

TABLE 5.3-1
AUTHORIZED NON-STORM WATER DISCHARGE SOURCES

Source ID[1]	Description	Location	Assigned BMPs	Associated Outfall
001	Air conditioning condensate containing brown staining.	Bldg. 489	029 Maintain Equipment in Good Condition The air conditioning unit will be maintained to prevent contamination from the unit.	3

Notes:
(1) Source ID numbers are unique and sequential to individual buildings.

Each of these potential sources will be inspected quarterly to determine if the BMPs are implemented properly and if additional BMPs are warranted. Authorized non-storm water discharges with little potential to contact industrial sources of storm water pollutants will be handled in a programmatic way as described in Section 4.3.4. Quarterly observations will include an interview of appropriate personnel responsible for each discharge type and an annual inspection of a representative discharge from each discharge type, as described in Appendix E.

5.4 STORM WATER DISCHARGE VISUAL OBSERVATIONS

The General Permit requires storm water discharge visual observations of all storm water discharge locations during the first hour of one storm event per month during the wet season (October 1 through May 31). The storm water discharge visual observations are required during daylight hours, that are preceded by at least three working days without storm water discharges, and that occur during scheduled facility operating hours. The observations will document the presence of any floating and suspended material, oil and grease, discolorations, turbidity, odor, and source of any pollutant observed. If the presence of pollutants are observed, efforts will be made following the observations to identify the source of the pollutants. The investigation will begin at the outfall and continue through the drainage basin until the pollutant source is located, if possible. Once located, actions to reduce or prevent pollutants from contacting storm water discharge will be taken. Detailed instructions to complete storm water discharge visual observations are presented in Appendix F.

5.5 RECORDS MANAGEMENT AND REPORTING REQUIREMENTS

5.5.1 Records Management

The SWDMP and supporting records are considered to be public documents under Section 308(b) of the CWA. This means that any member of the public may request to review the Activity's storm water permit documentation. Additionally, the SWDMP and supporting records must be made available upon request of a representative of the USEPA, SWRCB, RWQCB, and/or the local storm water management agency. Copies of the SWDMP will be retained on site and made available to the public as requested.

Copies of the Annual Report will be retained for a minimum period of five years from the date of measurement, inspection, observation, report, or application. These records will be maintained and managed by the recordkeeper designated in Section 4. Other records archived may include copies of reports and other correspondence with the SWRCB, RWQCB, and the local storm water management agency. Records will contain the names of individuals, date, time, and place of the task, observation, inspection, sample collection, or measurement.

Records regarding the SWPPP will include the following:

- Results of any physical investigation of the storm drain system;
- Documents pertaining to the elimination of illicit connections and prohibited discharges to the storm drain system;
- Documents pertaining to the Non-Storm Water Discharge Identification and Testing Plan, such as the following:
  - Field Data Sheets,
  - Source Identification Sheets, and
  - Copies of NPDES permits for non-storm discharges (where applicable).
- Certification of Elimination of Prohibited Non-Storm Water Discharges;

- Documents pertaining to changes in the design, construction, operation, or maintenance of a facility, including changes in significant materials stored and/or used;
- Documents pertaining to changes in personnel assigned responsibility for implementing and revising the SWPPP;
- Documents pertaining to training programs for the SWPPP;
- Summaries of storm water sampling analytical data;
- Documents pertaining to preventive maintenance tasks related to storm water pollution prevention;
- Source area master list and schedule for BMPs; and
- Annual Comprehensive Site Compliance Evaluation Report that includes: (1) identification of personnel performing the evaluation; (2) the date(s) of the evaluation; (3) necessary SWPPP revisions; (4) a schedule for revision and implementation compliant with the General Permit; (5) any incidents of non-compliance and the corrective actions taken; and (6) a certification that the facility operator is in compliance with the General Permit. If the above certification cannot be provided, an explanation as to why the facility operator is not in compliance is required.

Records regarding the MRPP will include the following:

- Date, place, and time of the sampling, visual observations, and/or measurements;
- Individual(s) who performed the sampling, visual observations, and/or measurements;
- Date and approximate time of analyses;
- Individual(s) who performed the analyses;
- Analytical results, method detection limits, and the analytical techniques or methods used;
- Quality assurance/quality control records and results;
- Non-storm water discharge inspections and visual observation records;
- Visual observation and sample collection exemption records;
- Calibration and maintenance records of on-site instruments used;

- Sampling and Analysis Exemption and Reduction Certifications and supporting documentation;
- Records of any corrective actions and follow-up activities that resulted from the visual observations; and
- Annual Report.

5.5.2 Reporting Requirements

5.5.2.1 Annual Report

An Annual Report will be submitted by July 1 of each year to the Executive Officer of the RWQCB, San Diego Region.

The Annual Report will include the following:

- A summary of the visual observations and sampling results;
- An evaluation of the visual observation and sampling and analysis results;
- Laboratory reports;
- Method detection limits and analytical parameters; analytical results that are less than the detection limit of each analytical parameter will be reported as "less than the method detection limit";
- The Annual Comprehensive Site Compliance Evaluation Report;
- Explanation of why a facility did not implement any activities required by the General Permit (if applicable and not already included in the Evaluation Report);
- Certification of the Activity's compliance or non-compliance with the requirements of the General Permit;
- Any information on sampling and analysis exemptions and reductions; and
- Description of why sampling or visual observations could not be conducted (if appropriate).

The Annual Report will be signed by a principal executive officer having responsibility for overall operations. The principal executive officer of a federal agency is the chief executive officer of the agency, or the senior executive officer having responsibility for the overall operations of a principal

geographic unit of the agency. A duly authorized representative may sign the certification if the authorization is made in writing by the principal/senior executive officer; the authorization will be kept as part of the SWPPP. The "duly authorized representative" may be either a named individual or any individual occupying a given named position.

Tables 5.5-1 and 5.5-2 may be used as checklists for the components of the monitoring program that will be conducted and for information to be included in the Annual Report.

5.5.2.2 Planned Changes

The Activity will give notice to the RWQCB and the local storm water management agency as soon as possible of any planned physical alteration or additions to the facilities subject to the General Permit. Notice is required only when the alteration or addition could significantly change the nature or increase the quantity of pollutants discharged.

5.5.2.3 Anticipated Non-Compliance

The Activity will give advance notice to the RWQCB and the local storm water management agency of any planned changes to facilities that may result in non-compliance with the General Permit.

5.5.2.4 Non-Compliance Reporting

The Activity will report any non-compliance at the time monitoring reports are submitted. The written reports will contain: (1) a description of the non-compliance and its cause; (2) the period of non-compliance, including exact dates and times, and if the non-compliance has not been corrected, the anticipated time it is expected to continue; and (3) steps taken or planned to reduce and prevent recurrence of non-compliance.

5.5.2.5 Compliance Scheduling

Progress reports pertaining to interim or final requirements of a compliance schedule for the General Permit will be submitted no later than 14 days following the compliance schedule date. Progress reports will address both compliance and non-compliance with the interim or final requirements.

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TABLE 5.5-1
STORM WATER PERMIT ANNUAL COMPLIANCE CHECKLIST

Year: _____

Signature: _____

Description	Completed (Date)	By (Signature)	Comments
SWPPP			
1. SWPPP reviewed and modified for _____ (year).			
2. Annual Comprehensive Site Compliance Evaluation			
3. Records archived? (note where archived)			
MRPP			
1. Non-storm water discharge visual observations (first quarter)			
2. Non-storm water discharge visual observations (second quarter)			
3. Non-storm water discharge visual observations (third quarter)			
4. Non-storm water discharge visual observations (fourth quarter)			
5. Sampling & analysis of storm water discharge (first storm of monitoring year)			
6. Sampling & analysis of storm water discharge (second storm of monitoring year)			
7. Storm water discharge visual observation (Oct.)			
8. Storm water discharge visual observation (Nov.)			
9. Storm water discharge visual observation (Dec.)			
10. Storm water discharge visual observation (Jan.)			
11. Storm water discharge visual observation (Feb.)			
12. Storm water discharge visual observation (Mar.)			
13. Storm water discharge visual observation (Apr.)			
14. Storm water discharge visual observation (May)			
15. Annual Report submitted to RWQCB			

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TABLE 5.5-2
RWQCB ANNUAL REPORT CHECKLIST

Instructions	Date Completed	Initials
1. Report must be sent to: Executive Officer Regional Water Quality Control Board San Diego Region 9771 Claremont Mesa Blvd., Suite A San Diego, CA 92124		
2. Report due on July 1 at RWQCB.		
3. Report must include the following:		
a. Summary of visual observations and sampling results;	a.	
b. Evaluation of the visual observations and sampling and analysis results;	b.	
c. Laboratory reports;	c.	
d. Method detection limits and analytical parameters used;	d.	
e. Annual Comprehensive Site Compliance Evaluation Report;	e.	
f. An explanation of why the Activity did not comply with the requirements of the General Permit (if applicable);	f.	
g. Sampling and Analysis Exemptions and Reductions information;	g.	
h. Description of why sampling or visual observations could not be conducted (if appropriate); and	h.	
i. Signature and certification in accordance with the General Permit.	i.	
4. Archive copy made		

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5.6 MONITORING PROGRAM REVISION

The General Permit requires that the Activity revise the monitoring program whenever appropriate. In general, a monitoring program can be evaluated quantitatively, based on assessment of water quality results (i.e., long-term trends in chemical concentrations or other measurements), or qualitatively, by keeping track of the extent to which observations and analytical monitoring are implemented. The monitoring program will be evaluated at least once each year for consistency with the evolving goals of the storm water monitoring program. The General Permit requires submittal of an Annual Report to the RWQCB by July 1 of each year. This report will describe the monitoring tasks performed over the course of the year, as well as any results. The Annual Report will also present any information on sampling and analysis exemptions and reductions.

Quantifying the effectiveness of the storm water quality monitoring program poses some challenging issues with regard to statistical significance. Since the General Permit requires that grab samples be obtained and analyzed for only two storms per year, there will be relatively little data to consider to develop any type of trend analysis until several years of monitoring have been performed. In addition, since chemical concentrations vary considerably during a given storm and between different storms, it is unclear whether statistically significant data can ever be obtained using this protocol. Consequently, trends observed in water quality data will be viewed as indicators rather than definitive data on chemical loading. As an example, a consistent trend of high pH in storm water discharge from a given outfall might indicate a source area within the drainage of that outfall (such as outdoor soda ash storage). The analytical monitoring data can be used as an initial step in identifying the source of the problem, and a BMP can be selected to minimize storm water contact in that suspected source area. Lower pH results following implementation of the example soda ash BMP may indicate that the BMP is working. In many instances, however, consistent water quality trends may not occur, and it may not be possible to identify discrete source areas or observe the improvement in water quality caused by the implementation of a given BMP.

Such trends (or lack thereof) in water quality data, as well as actions implemented to identify source areas and BMPs will be documented. These records form a basis for evaluating the effectiveness of the overall monitoring program because they help meet the General Permit's objectives of implementing the SWPPP and measuring the effectiveness of BMPs.

Basic recordkeeping is another method of evaluating the effectiveness of the monitoring program. The Activity will carefully track all visual and analytical monitoring activities to document compliance with the requirements listed in the General Permit. The State of California Storm Water Best Management Practice Handbook for Industrial/Commercial Dischargers 1993 states that such recordkeeping constitutes an acceptable means of measuring effectiveness.

By documenting activities and incidents in this way, the Activity may identify problem areas and take action by selecting or modifying BMPs to mitigate the problems. The "measure of effectiveness" will include a description of actions that the Activity takes in response to the observations.

NASNI Activity-wide BMPs

001 Label all drums, cans, containers, tanks and valves
002 Restrict access to area and equipment
003 Perform regular cleaning
004 Avoid hosing down the site
005 Perform regular pavement sweeping
006 Control spills
007 Place trash receptacles at appropriate locations
009 Train employees to properly dispose of wastes
010 Permanently seal floor drains that discharge to the storm drain system
014 Provide valve for outlet pipe in containment area
015 Recycle
016 Store waste and recycling materials in proper containers
017 Limit significant materials inventory
021 Reduce waste
022 Permanently seal drains within critical areas that discharge to the storm drain
026 Routinely clean catch basins
028 Keep equipment and vehicles clean
029 Maintain equipment in good condition
030 Implement qualifying tests for equipment and vehicle operators
031 Conduct refresher courses in operating and safety procedures
032 Properly dispose of obsolete equipment, inoperable vehicles, and surplus materials
037 Park vehicles on an impervious surface
041 Wash equipment and vehicles in designated area
048 Reduce the amount of liquid cleaning agents used
050 Substitute non-toxic or less-toxic cleaning solvents
051 Use solvents efficiently
052 Use outside contractor for handling used solvents and other significant materials
059 Do not allow open flames near flammable material
061 Employ proper handling procedures to transport materials and waste
064 Monitor major fueling operations
066 Eliminate topping off tanks
069 Restrict access to tanks
071 Keep tanks, piping, and valves in good condition
083 Do not empty toilet tanks during transit or in the port
085 Do not discharge bildge water in harbor
094 Establish integrated pest control
095 Conduct pesticide operations under the supervision of licensed applicator
110 Regularly inspect and maintain storm water conveyance systems
111 Regularly inspect and test equipment
112 Prepare appropriate spill prevention and response plans
113 Conduct personnel training regarding the SWPPP
117 Do not pour or deposit waste into storm drains
118 Routinely report any observed non-storm water discharges

4.6.92 CVN Pier

The CVN Pier is located along the eastern side of the Activity (Figures 4.6.92-1 through 4.6.92-6). It is a berthing facility for aircraft carriers and other deep draft ships. Material loading and unloading and onboard repairs and maintenance of aircraft carriers are conducted at this facility.

Storm water runoff from this facility flows into six-inch diameter storm drains in the crane track (Outfall CVN13), cutouts in the concrete curbing along the CVN Pier (Outfall CVN 14), and catch basins in paved areas throughout the facility (Outfalls CVN8, CVN9, 21, 22, 23, and 24) that discharge into San Diego Bay.

4.6.92.1 Material Loading and Unloading Areas

Oily waste water (bilge) and sanitary sewage are transferred from and aviation fuel, marine diesel fuel, potable water, steam, and compressed air are transferred to ships through pipe manifolds along the CVN Pier.

4.6.92.2 Methods of On-Site Storage and Disposal of Significant Materials

Significant materials are stored and disposed of at the CVN Pier using the following methods:

- Oily waste water (bilge water) is pumped from ships through manifolds located within a berm to an oily waste water lift station and pumped to the Industrial Waste Treatment Plant (IWTP) for disposal.
- Sanitary waste is pumped from ships through manifolds located within a berm to sewage lift stations and pumped to the City of San Diego domestic waste water treatment system.
- Aviation fuels and marine diesel fuel are transferred from the CVN Pier to ships through pipe manifolds located within a berm.
- Contractors set up temporary containment areas for hazardous material and hazardous waste storage throughout the facility.
- Trash is stored in waste bins throughout the facility.

- Paper, plastic, and aluminum are stored in recycling containers located throughout the facility.

4.6.92.3 Outdoor Activities

The following outdoor activities are conducted at the CVN Pier:

- Transfer of oily waste water and sanitary waste from bermed manifolds;
- Transfer of aviation fuel and marine diesel fuel from bermed manifolds to ships;
- Transfer of potable water, steam, and compressed air to ships:
- Loading and unloading of supplies using cranes and forklifts;
- Loading and unloading of equipment and materials for on board repair and maintenance of ships, including cleaning, sandblasting, and painting; and
- Use of equipment such as air compressors, electrical junction station, and pumps.

4.6.92.4 Best Management Practices

Best Management Practices (BMPs) are presented in Table 4.6.92-1. The table identifies the relationship between the BMPs and activities with the potential to contribute significant materials to storm water runoff. Significant materials source areas and significant materials are also indicated for each activity.

BMPs identified in this SWPPP are organized into two categories, Activity-wide BMPs and facility-specific BMPs. Activity-wide BMPs are Base or Navy policies that should be implemented everywhere they apply. The Activity-wide BMPs listed below apply everywhere at NASNI and are not repeated for each source area in Table 4.6.92-1:

001 Label All Drums, Cans, Containers, Tanks and Valves
002 Restrict Access to Area and Equipment
003 Perform Regular Cleaning
004 Avoid Hosing Down the Site
005 Perform Regular Pavement Sweeping
006 Control Spills
021 Reduce Waste

022 Permanently Seal Drains within Critical Areas that Discharge to the Storm Drain

031 Conduct Refresher Training in Operating and Safety Procedures

032 Properly Dispose of Obsolete Equipment, Inoperable Vehicles, and Surplus Materials

110 Regularly Inspect and Maintain Storm Water Conveyance Systems

111 Regularly Inspect and Test Equipment

112 Prepare Appropriate Spill Prevention and Response Plans

113 Conduct Personnel Training Regarding the SWPPP

117 Do Not Pour or Deposit Waste into Storm Drains

118 Routinely Report Any Observed Non-Storm Water Discharges

Activity-wide BMPs that apply to specific source areas are identified by number within Table 4.6.92-1. The referenced BMP numbers are identified in a comprehensive Activity-wide BMP list on the cover of each section for quick reference and described in detail in Appendix J.

Facility-specific BMPs are practices that are unique to an operation occurring at a specified facility. These BMPs are identified in Table 4.6.92-1 by number, title and, where necessary, a discussion of the implementation details. An additional description for each facility-specific BMP is also presented in Appendix J.

The General Permit requires dischargers to revise the SWPPP prior to changes in industrial activities which may significantly increase the quantities of pollutants in storm water discharge, cause a new area of industrial activity to be exposed to storm water, or introduce a new pollutant source at the facility. Appendix N describes the process used to develop this SWPPP and how to revise it. Table 4.6.92-2 is provided to document the revisions to this section of the SWPPP.

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TABLE 4.6.92-1
ACTIVITY ASSESSMENT AND ASSOCIATED BEST MANAGEMENT PRACTICES FOR CVN PIER

Source Area	Significant Material	Best Management Practices[1]
Activity: Fuel Storage & Dispensing		
Spills or leaks during material transfer	Aviation fuel Diesel fuel	*Activity-wide BMPs* 009, 016, 017, 059, 061, 064, 066 *Facility-specific BMPs* 012 <u>Construct Berm or Dike Around Critical Areas</u> Berms are constructed around manifolds used to transfer fuels. 027 <u>Stencil Signs on Storm Drains</u> Drain inlets adjacent to the CVN Pier will be labeled with the appropriated discharge point either the bay, sanitary sewer, or industrial wastewater. (A) 073 <u>Protect Fill Pipe From Being Damaged by Vehicles</u> Fill pipes and manifolds are protected with bollards. 087 <u>Use Oil Containment Booms</u> Containment booms are in the water around the CVN Pier.

TABLE 4.6.92-1 (continued)
ACTIVITY ASSESSMENT AND ASSOCIATED BEST MANAGEMENT PRACTICES FOR CVN PIER

Source Area	Significant Material	Best Management Practices[1]
Activity: Material Loading & Unloading		
Direct exposure of material	Oil & Grease Paint/varnish Sandblasting waste solids Sanitary waste Trash and debris	*Activity-wide BMPs* 007, 009, 015, 016, 017, 061 *Facility-specific BMPs* 006 <u>Control Spills</u> Spill kits will be placed in close proximity to storm drain inlets in areas of the CVN Pier where loading and unloading occur. (M) 012 <u>Construct Berm or Dike Around Critical Areas</u> Berms are constructed around manifolds and pump stations used to transfer bilge water and sanitary wastes. 023 <u>Place Portable Rubber Mats Over Storm Drain Inlets</u> Covers will be provided for storm drain inlets in areas of the CVN Pier where loading and unloading occur. (A) 027 <u>Stencil Signs on Storm Drains</u> Drain inlets adjacent to the CVN Pier will be labeled with the appropriated discharge point either the bay, sanitary sewer, or industrial wastewater. (A) 033 <u>Check Vehicles and Equipment For Leaks</u> All vehicles and equipment entering the gates to the CVN Pier will be visually inspected. (A) 055 <u>Use Overpack Containers or Containment Pallets to Store 55-Galon Drums Outside of Storage Areas</u> 057 <u>Do Not Store Used Parts or Containers Directly on Ground</u> 061 <u>Employ Proper Handling Procedures to Transport Materials and Wastes</u> The Navy has SOPs for handling and transport of hazardous materials and hazardous wastes. Contractors working on the CVN Pier will handle and transport hazardous materials and hazardous wastes as directed in the Navy SOPs. (M) 087 <u>Use Oil Containment Booms</u> Containment booms are in the water around the CVN Pier.

TABLE 4.6.92-1 (continued)
ACTIVITY ASSESSMENT AND ASSOCIATED BEST MANAGEMENT PRACTICES FOR CVN PIER

Source Area	Significant Material	Best Management Practices[1]
Spills or leaks during material transfer	Oil & Grease Paint/varnish Sandblasting waste solids Sanitary waste Trash and debris	*Activity-wide BMPs* 009, 016, 017, 059, 061, 083, 085 *Facility-specific BMPs* 006 <u>Control Spills</u> Spill kits will be placed in close proximity to storm drain inlets in areas of the CVN Pier where loading and unloading occur. (M) 012 <u>Construct Berm or Dike Around Critical Areas</u> Berms are constructed around manifolds and pump stations used to transfer bilge water and sanitary wastes. 023 <u>Place Portable Rubber Mats Over Storm Drain Inlets</u> Covers will be provided for storm drain inlets in areas of the CVN Pier where loading and unloading occur. (A) 027 <u>Stencil Signs on Storm Drains</u> Drain inlets adjacent to the CVN Pier will be labeled with the appropriated discharge point either the bay, sanitary sewer, or industrial wastewater. (A) 033 <u>Check Vehicles and Equipment For Leaks</u> All vehicles and equipment entering the gates to the CVN Pier will be visually inspected. (A) 055 <u>Use Overpack Containers or Containment Pallets to Store 55-Galon Drums Outside of Storage Areas</u> 057 <u>Do Not Store Used Parts or Containers Directly on Ground</u> 061 <u>Employ Proper Handling Procedures to Transport Materials and Wastes</u> The Navy has SOPs for handling and transport of hazardous materials and hazardous wastes. Contractors working on the CVN Pier will handle and transport hazardous materials and hazardous wastes as directed in the Navy SOPs. (M) 087 <u>Use Oil Containment Booms</u> Containment booms are in the water around the CVN Pier.

TABLE 4.6.92-1 (continued)
ACTIVITY ASSESSMENT AND ASSOCIATED BEST MANAGEMENT PRACTICES FOR CVN PIER

Source Area	Significant Material	Best Management Practices[1]
Activity: Material Storage		
Direct exposure of material	Oil & Grease Paint/varnish Sandblasting waste solids Trash and debris	*Activity-wide BMPs* 007, 009, 015, 016, 017, 061 *Facility-specific BMPs* 012 <u>Construct Berm or Dike Around Critical Areas</u> Temporary berms have been constructed with sandbags and plastic in areas temporarily containing significant materials or activities such as sand blast media painting or baker tanks. 016 <u>Store Wastes and Recycling Materials in Proper Containers</u> Appropriate receptacles are available for both wet and dry solid sanitary waste and for recycled paper, plastic and aluminum. 027 <u>Stencil Signs on Storm Drains</u> Drain inlets adjacent to the CVN Pier will be labeled with the appropriated discharge point either the bay, sanitary sewer, or industrial wastewater. (A) 044 <u>Use Drip Pans Under Leaking Equipment</u> Contractors utilize drip pans under objects that contain significant materials. 054 <u>Properly Store Containers</u> The Navy has SOPs for storage of hazardous materials and hazardous wastes. Contractors working on the CVN Pier will store hazardous materials and hazardous wastes as directed in the Navy SOPs. (M) 055 <u>Use Overpack Containers or Containment Pallets to Store 55-Galon Drums Outside of Storage Areas</u> Contractor liquid waste materials are stored on containment pallets. 057 <u>Do Not Store Used Parts or Containers Directly on Ground</u> Materials are stored on wooden pallets. 061 <u>Employ Proper Handling Procedures to Transport Materials and Wastes</u> The Navy has SOPs for handling and transport of hazardous materials and hazardous wastes. Contractors working on the CVN Pier will handle and transport hazardous materials and hazardous wastes as directed in the Navy SOPs. (M) 111 <u>Regularly Test and Inspect Equipment</u> Equipment operated by Navy and Government personnel is inspected and tested regularly. Contractors will be inspected to insure their equipment and hazardous material/hazardous waste storage which could contribute significant materials to storm water runoff is maintained and operating properly.(M)

TABLE 4.6.92-1 (continued)
ACTIVITY ASSESSMENT AND ASSOCIATED BEST MANAGEMENT PRACTICES FOR CVN PIER

Source Area	Significant Material	Best Management Practices[1]
Spills or leaks during material transfer	Oil & Grease Paint/varnish Sandblasting waste solids Trash and debris	*Activity-wide BMPs* 009, 016, 017, 059, 061 *Facility-specific BMPs* 012 <u>Construct Berm or Dike Around Critical Areas</u> Berms are constructed around manifolds used to transfer fuels, bilge water, and sanitary waste. 016 <u>Store Wastes and Recycling Materials in Proper Containers</u> Appropriate receptacles are available for both wet and dry solid sanitary waste and for recycled paper, plastic and aluminum. 027 <u>Stencil Signs on Storm Drains</u> Drain inlets adjacent to the CVN Pier will be labeled with the appropriated discharge point either the bay, sanitary sewer, or industrial wastewater. (A) 044 <u>Use Drip Pans Under Leaking Equipment</u> Contractors utilize drip pans under objects that contain significant materials. 054 <u>Properly Store Containers</u> The Navy has SOPs for storage of hazardous materials and hazardous wastes. Contractors working on the CVN Pier will store hazardous materials and hazardous wastes as directed in the Navy SOPs. (M) 055 <u>Use Overpack Containers or Containment Pallets to Store 55-Galon Drums Outside of Storage Areas</u> Contractor liquid waste materials are stored on containment pallets. 057 <u>Do Not Store Used Parts or Containers Directly on Ground</u> Materials are stored on wooden pallets. 061 <u>Employ Proper Handling Procedures to Transport Materials and Wastes</u> The Navy has SOPs for handling and transport of hazardous materials and hazardous wastes. Contractors working on the CVN Pier will handle and transport hazardous materials and hazardous wastes as directed in the Navy SOPs. (M) 087 <u>Use Oil Containment Booms</u> Containment booms are in the water around the CVN Pier. 111 <u>Regularly Test and Inspect Equipment</u> Equipment operated by Navy and Government personnel is inspected and tested regularly. Contractors will be inspected to insure their equipment and hazardous material/hazardous waste storage which could contribute significant materials to storm water runoff is maintained and operating properly.(M)

TABLE 4.6.92-1 (continued)
ACTIVITY ASSESSMENT AND ASSOCIATED BEST MANAGEMENT PRACTICES FOR CVN PIER

Source Area	Significant Material	Best Management Practices[1]
Spills or leaks during storage & disposal of materials & processed waste	Oil & Grease Paint/varnish Sandblasting waste solids Trash and debris	*Activity-wide BMPs* 007, 009, 015, 016, 017, 048, 050, 051, 052, 059, 061, 069, 071, 083, 085 *Facility-specific BMPs* 012 <u>Construct Berm or Dike Around Critical Areas</u> Temporary berms have been constructed with sandbags and plastic in areas temporarily containing significant materials or activities such as sand blast media painting or baker tanks. 016 <u>Store Wastes and Recycling Materials in Proper Containers</u> Appropriate receptacles are available for both wet and dry solid sanitary waste and for recycled paper, plastic and aluminum. 027 <u>Stencil Signs on Storm Drains</u> Drain inlets adjacent to the CVN Pier will be labeled with the appropriated discharge point either the bay, sanitary sewer, or industrial wastewater. (A) 044 <u>Use Drip Pans Under Leaking Equipment</u> Contractors utilize drip pans under objects that contain significant materials. 054 <u>Properly Store Containers</u> The Navy has SOPs for storage of hazardous materials and hazardous wastes. Contractors working on the CVN Pier will store hazardous materials and hazardous wastes as directed in the Navy SOPs. (M) 055 <u>Use Overpack Containers or Containment Pallets to Store 55-Galon Drums Outside of Storage Areas</u> Contractor liquid waste materials are stored on containment pallets. 057 <u>Do Not Store Used Parts or Containers Directly on Ground</u> Materials are stored on wooden pallets. 061 <u>Employ Proper Handling Procedures to Transport Materials and Wastes</u> The Navy has SOPs for handling and transport of hazardous materials and hazardous wastes. Contractors working on the CVN Pier will handle and transport hazardous materials and hazardous wastes as directed in the Navy SOPs. (M) 087 <u>Use Oil Containment Booms</u> Containment booms are in the water around the CVN Pier. 111 <u>Regularly Test and Inspect Equipment</u> Equipment operated by Navy and Government personnel is inspected and tested regularly. Contractors will be inspected to insure their equipment and hazardous material/hazardous waste storage which could contribute significant materials to storm water runoff is maintained and operating properly.(M)

TABLE 4.6.92-1 (continued)
ACTIVITY ASSESSMENT AND ASSOCIATED BEST MANAGEMENT PRACTICES FOR CVN PIER

Source Area	Significant Material	Best Management Practices[1]
Activity: Ship Support Services		
Spills or leaks during preparation & finishing	Paint/varnish Sandblasting waste solids	*Activity-wide BMPs* 009, 017, 048, 050, 051, 052, 059, 061 *Facility-specific BMPs* 006 <u>Control Spills</u> Spill kits will be placed in close proximity to storm drain inlets in areas of the CVN Pier where loading and unloading occur. (M) 012 <u>Construct Berm or Dike Around Critical Areas</u> Temporary berms have been constructed with sandbags and plastic in areas temporarily containing significant materials or activities such as sand blast media painting or baker tanks. 027 <u>Stencil Signs on Storm Drains</u> Drain inlets adjacent to the CVN Pier will be labeled with the appropriated discharge point either the bay, sanitary sewer, or industrial wastewater. (A) 044 <u>Use Drip Pans Under Leaking Equipment</u> Contractors utilize drip pans under objects that contain significant materials. 054 <u>Properly Store Containers</u> The Navy has SOPs for storage of hazardous materials and hazardous wastes. Contractors working on the CVN Pier will store hazardous materials and hazardous wastes as directed in the Navy SOPs. (M) 061 <u>Employ Proper Handling Procedures to Transport Materials and Wastes</u> The Navy has SOPs for handling and transport of hazardous materials and hazardous wastes. Contractors working on the CVN Pier will handle and transport hazardous materials and hazardous wastes as directed in the Navy SOPs. (M) 087 <u>Use Oil Containment Booms</u> Containment booms are in the water around the CVN Pier. 111 <u>Regularly Test and Inspect Equipment</u> Equipment operated by Navy and Government personnel is inspected and tested regularly. Contractors will be inspected to insure their equipment and hazardous material/hazardous waste storage which could contribute significant materials to storm water runoff is maintained and operating properly.(M)

TABLE 4.6.92-1 (continued)
ACTIVITY ASSESSMENT AND ASSOCIATED BEST MANAGEMENT PRACTICES FOR CVN PIER

Source Area	Significant Material	Best Management Practices[1]
Spills or leaks of fluids during maintenance	Aviation fuel Bilge water Diesel fuel Oil & Grease Sanitary waste	*Activity-wide BMPs* 009, 010, 016, 017, 028, 029, 030, 037, 050, 051, 052, 059, 061 *Facility-specific BMPs* 006 <u>Control Spills</u> Spill kits will be placed in close proximity to storm drain inlets in areas of the CVN Pier where loading and unloading occur. (M) 012 <u>Construct Berm or Dike Around Critical Areas</u> Temporary berms have been constructed with sandbags and plastic in areas temporarily containing significant materials or activities such as sand blast media painting or baker tanks. 027 <u>Stencil Signs on Storm Drains</u> Drain inlets adjacent to the CVN Pier will be labeled with the appropriated discharge point either the bay, sanitary sewer, or industrial wastewater. (A) 044 <u>Use Drip Pans Under Leaking Equipment</u> Contractors utilize drip pans under objects that contain significant materials. 054 <u>Properly Store Containers</u> The Navy has SOPs for storage of hazardous materials and hazardous wastes. Contractors working on the CVN Pier will store hazardous materials and hazardous wastes as directed in the Navy SOPs. (M) 061 <u>Employ Proper Handling Procedures to Transport Materials and Wastes</u> The Navy has SOPs for handling and transport of hazardous materials and hazardous wastes. Contractors working on the CVN Pier will handle and transport hazardous materials and hazardous wastes as directed in the Navy SOPs. (M) 087 <u>Use Oil Containment Booms</u> Containment booms are in the water around the CVN Pier. 111 <u>Regularly Test and Inspect Equipment</u> Equipment operated by Navy and Government personnel is inspected and tested regularly. Contractors will be inspected to insure their equipment and hazardous material/hazardous waste storage which could contribute significant materials to storm water runoff is maintained and operating properly.(M)

TABLE 4.6.92-1 (continued)
ACTIVITY ASSESSMENT AND ASSOCIATED BEST MANAGEMENT PRACTICES FOR CVN PIER

Source Area	Significant Material	Best Management Practices[1]
Spills, leaks, or operational residue from vehicles or equipment	Aviation fuel Bilge water Diesel fuel Oil & Grease Sanitary waste	*Activity-wide BMPs* 009, 010, 026, 028, 029, 030, 037 *Facility-specific BMPs* 006 <u>Control Spills</u> Spill kits will be placed in close proximity to storm drain inlets in areas of the CVN Pier where loading and unloading occur. (M) 012 <u>Construct Berm or Dike Around Critical Areas</u> Temporary berms have been constructed with sandbags and plastic in areas temporarily containing significant materials or activities such as sand blast media painting or baker tanks. 027 <u>Stencil Signs on Storm Drains</u> Drain inlets adjacent to the CVN Pier will be labeled with the appropriated discharge point either the bay, sanitary sewer, or industrial wastewater. (A) 033 <u>Check Vehicles and Equipment For Leaks</u> All vehicles and equipment entering the gates to the CVN Pier will be visually inspected. (A) 044 <u>Use Drip Pans Under Leaking Equipment</u> Contractors utilize drip pans under objects that contain significant materials. 061 <u>Employ Proper Handling Procedures to Transport Materials and Wastes</u> The Navy has SOPs for handling and transport of hazardous materials and hazardous wastes. Contractors working on the CVN Pier will handle and transport hazardous materials and hazardous wastes as directed in the Navy SOPs. (M) 087 <u>Use Oil Containment Booms</u> Containment booms are in the water around the CVN Pier. 111 <u>Regularly Test and Inspect Equipment</u> Equipment operated by Navy and Government personnel is inspected and tested regularly. Contractors will be inspected to insure their equipment and hazardous material/hazardous waste storage which could contribute significant materials to storm water runoff is maintained and operating properly.(M)

<u>Notes:</u>

1 Numbers refer to BMPs described in Appendix J.

All BMPs are existing unless identified by:
(M) - modifications to existing BMP needed, as described, or
(A) - additional BMP to be implemented.

Activity-wide BMPs applicable to all source areas, but not listed above, include:
001, 002, 003, 004, 005, 006, 021, 022, 031, 032, 110, 111, 112, 113, 117 and 118.

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TABLE 4.6.92-2
REVISIONS TO FACILITY-SPECIFIC
STORM WATER POLLUTION PREVENTION PLAN

SECTION	REVISION	REVISED BY	DATE

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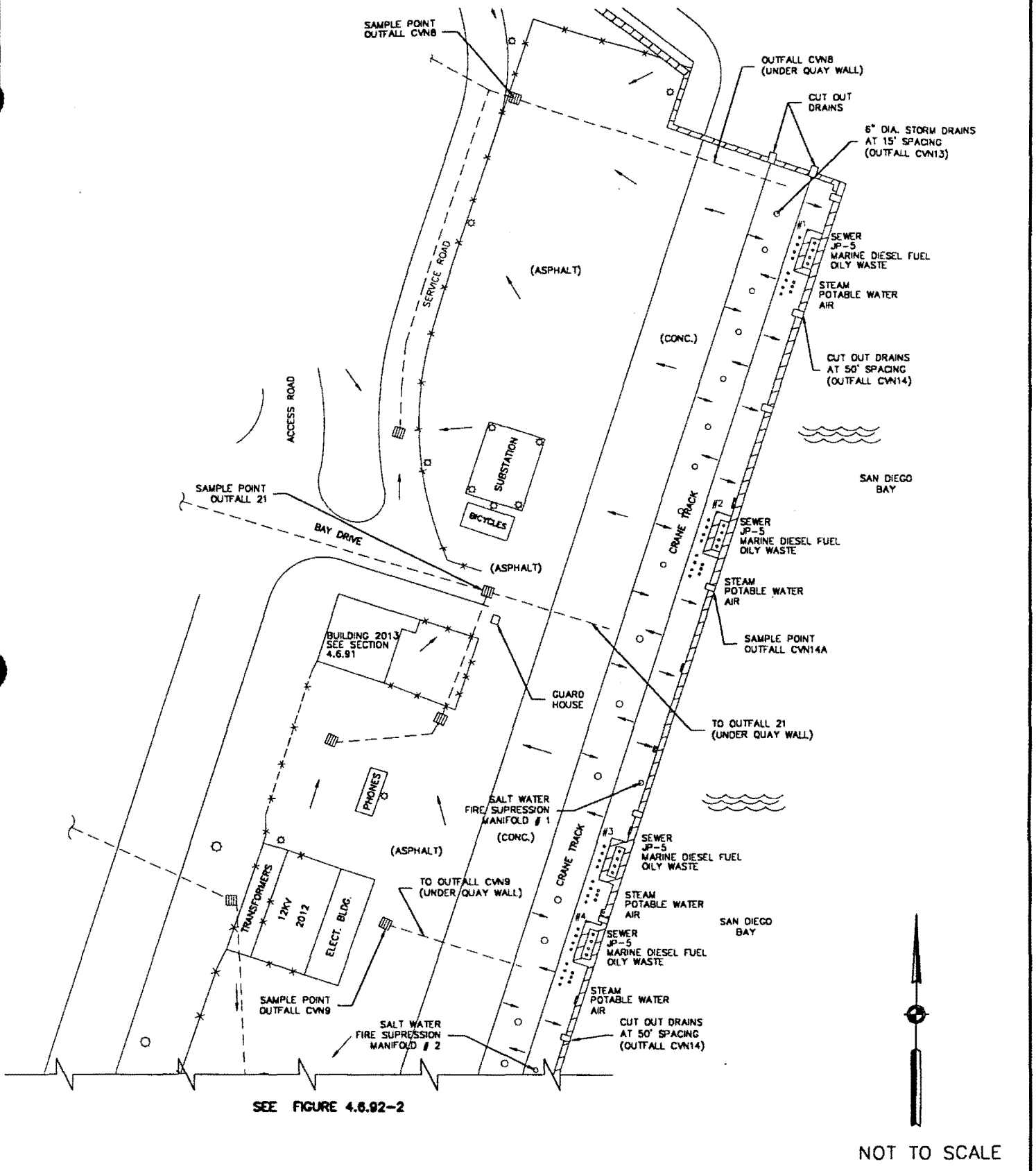

SEE FIGURE 4.6.92-2

NOT TO SCALE

Prepared By: SKR
Checked By:

NAVAL AIR STATION NORTH ISLAND
SAN DIEGO, CALIFORNIA

CVN PIER

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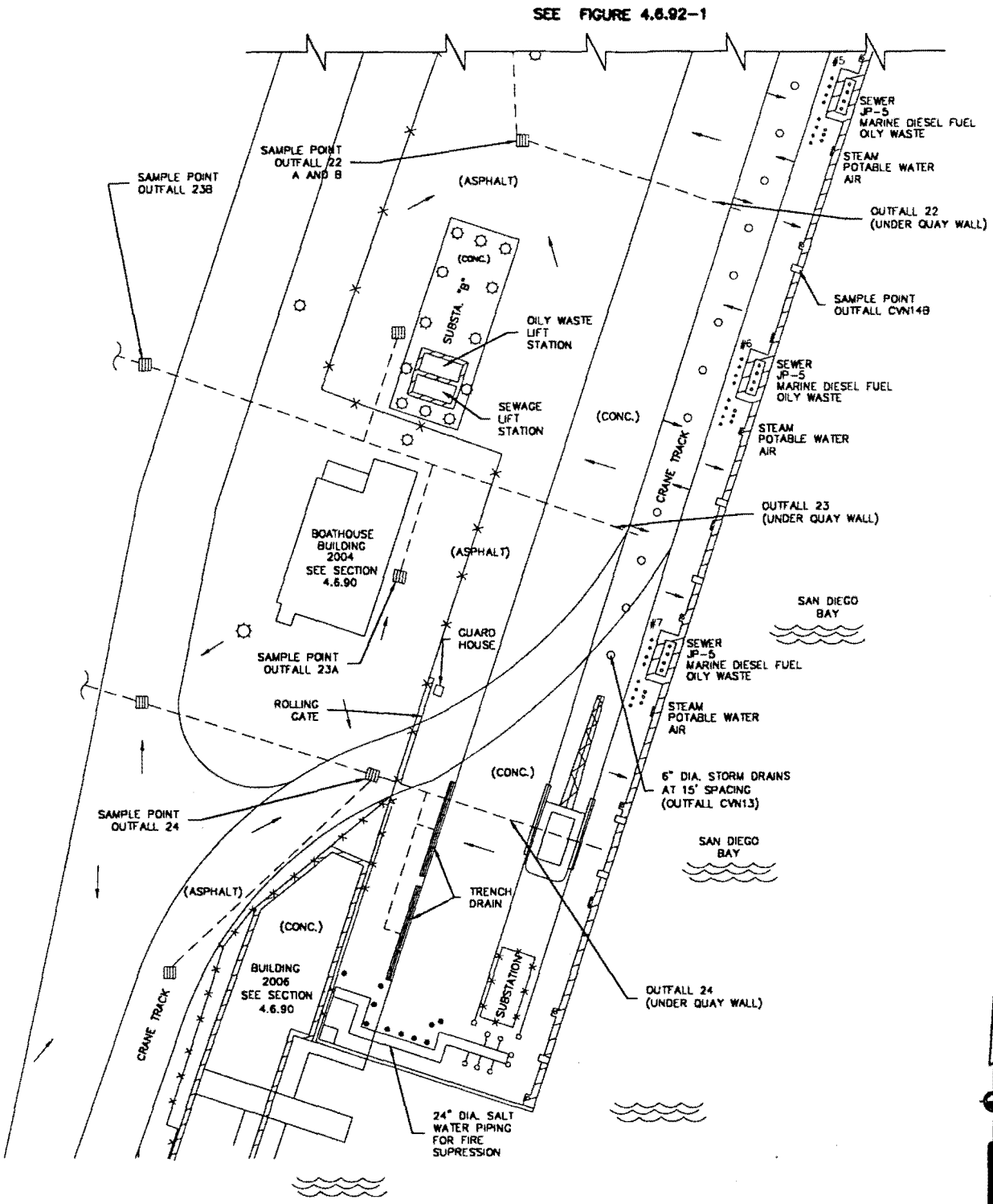

Prepared By: SKR
Checked By:

NAVAL AIR STATION NORTH ISLAND
SAN DIEGO, CALIFORNIA

CVN PIER WALL

D:\70300\80166\TA892b | LAW/CRANDALL | JANUARY 2000 | PROJECT: 70300-8-0166 | FIGURE: 4.6.92-2

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4.6.95 Proposed New CVN Pier

The proposed CVN Pier is located along the eastern side of the Activity ~~(Figures 4.6.95-1 through 4.6.95-6)~~. It is a berthing facility for aircraft carriers and other deep draft ships. Material loading and unloading and onboard repairs and maintenance of aircraft carriers are conducted at this proposed facility.

Storm water runoff from this facility flows is designed to flow away from the bay toward storm drains along the base of the pier. These storm drains discharge into the San Diego Bay.

4.6.95.1 Material Loading and Unloading Areas

Oily waste water (bilge) and sanitary sewage are transferred from and aviation fuel, marine diesel fuel, potable water, steam, and compressed air are transferred to ships through pipe manifolds along the proposed CVN Pier. The Oily waste water, aviation fuel, and marine diesel fuel are transferred through double walled piping. Concrete berms are constructed around the pipe manifolds to contain any spilled material.

4.6.95.2 Methods of On-Site Storage and Disposal of Significant Materials

Significant materials ~~are~~ will be stored and disposed of at the proposed CVN Pier using the following methods:

- Oily waste water (bilge water) is pumped from ships through manifolds located within a berm to an oily waste water lift station and pumped to the Industrial Waste Treatment Plant (IWTP) for disposal. These manifolds are bermed and the pipes are double-walled.
- Sanitary waste is pumped from ships through manifolds located within a berm to sewage lift stations and pumped to the City of San Diego domestic waste water treatment system. These manifolds are bermed.
- Aviation fuels and marine diesel fuel are transferred from the CVN Pier to ships through pipe manifolds located within a berm. These manifolds are bermed and the pipes are double-walled.
- Trash is stored in waste bins located along the pier facility.

- Paper, plastic, and aluminum are stored in recycling containers located along the facility.

4.6.95.3 Outdoor Activities

The following outdoor activities are conducted at the proposed CVN Pier:

- Transfer of oily waste water and sanitary waste from ships to bermed manifolds;
- Transfer of aviation fuel and marine diesel fuel from bermed manifolds, through double-walled pipes, to ships;
- Transfer of potable water, steam, and compressed air to ships;
- Loading and unloading of supplies to ships using cranes and forklifts;
- Loading and unloading of equipment and materials for on board repair and maintenance of ships, including cleaning, sandblasting, and painting; and
- Use of equipment such as air compressors, electrical junction stations, and portable pumps.

4.6.95.4 Best Management Practices

Best Management Practices (BMPs) are presented in Table 4.6.95-1. The table identifies the relationship between the BMPs and activities with the potential to contribute significant materials to storm water runoff. Significant materials source areas and significant materials are also indicated for each activity.

BMPs identified in this SWPPP are organized into two categories, Activity-wide BMPs and facility-specific BMPs. Activity-wide BMPs are Base or Navy policies that are implemented everywhere they apply. The Activity-wide BMPs listed below apply everywhere at NASNI and are not repeated for each source area in Table 4.6.95-1:

001 Label All Drums, Cans, Containers, Tanks and Valves
002 Restrict Access to Area and Equipment
003 Perform Regular Cleaning
004 ~~Avoid Hosing~~Do Not Hose Down the Site
005 Perform Regular Pavement Sweeping
006 Control Spills

021 Reduce Waste

022 Permanently Seal Drains within Critical Areas that Discharge to the Storm Drain

031 Conduct Refresher Training in Operating and Safety Procedures

032 Properly Dispose of Obsolete Equipment, Inoperable Vehicles, and Surplus Materials

110 Regularly Inspect and Maintain Storm Water Conveyance Systems

111 Regularly Inspect and Test Equipment

112 Prepare Appropriate Spill Prevention and Response Plans

113 Conduct Personnel Training Regarding the SWPPP

117 Do Not Pour or Deposit Waste into Storm Drains

118 ~~Routinely~~ Report Any Observed Non-Storm Water Discharges

Activity-wide BMPs that apply to specific source areas are identified by number within Table 4.6.95-1. The referenced BMP numbers are identified in a comprehensive Activity-wide BMP list on the cover of each section for quick reference and described in detail in Appendix J.

Facility-specific BMPs are practices that are unique to an operation occurring at a specified facility. These BMPs are identified in Table 4.6.95-1 by number, title and, where necessary, a discussion of the implementation details. An additional description for each facility-specific BMP is also presented in Appendix J.

The General Permit requires dischargers to revise the SWPPP prior to changes in industrial activities which may significantly increase the quantities of pollutants in storm water discharge, cause a new area of industrial activity to be exposed to storm water, or introduce a new pollutant source at the facility. Appendix N describes the process used to develop this SWPPP and how to revise it. Table 4.6.95-2 is provided to document the revisions to this section of the SWPPP.

TABLE 4.6.95-1
ACTIVITY ASSESSMENT AND ASSOCIATED BEST MANAGEMENT PRACTICES FOR PROPOSED CVN PIER

Source Area	Significant Material	Best Management Practices[1]
Activity: Fuel Storage & Dispensing		
Spills or leaks during material transfer	Aviation fuel Diesel fuel	*Activity-wide BMPs* 009, 016, 017, 059, 061, 064, 066 *Facility-specific BMPs* 012 Construct Berm or Dike Around Critical Areas Berms are constructed around manifolds used to transfer, aviation fuel, diesel fuel marine, oily waste, and sewage ~~fuels~~. 027 Stencil Signs on Storm Drains Drain inlets ~~adjacent to the~~located within the pr-oposed CVN Pier will be labeled with the appropriated discharge point drains to bay dumping prohibited.~~either the bay, sanitary sewer, or industrial wastewater. (A)~~ 073 Protect Fill Pipe From Being Damaged by Vehicles Fill pipes and manifolds are protected with bollards. 087 Use Oil Containment Booms Containment booms are in the water around the CVN Pier. ~~XX~~ Use double-walled piping to transfer fuels and oily waste. Oily waste and fuel transfer lines are double-walled.
Activity: Material Loading & Unloading		
Direct exposure of material	Oil & Grease Paint/varnish Sandblasting waste solids Sanitary waste Trash and debris	*Activity-wide BMPs* 007, 009, 015, 016, 017, 061 *Facility-specific BMPs* 006 Control Spills Spill kits will be ~~placed in close proximity to storm drain inlets in areas of the~~located on the proposed CVN Pier where loading and unloading occur. (M) 012 Construct Berm or Dike Around Critical Areas Berms are constructed around manifolds and pump stations used to transfer bilge water and sanitary wastes, and fuels. 023 Place Portable Rubber Mats Over Storm Drain Inlets Covers will be ~~provided~~ available for storm drain inlets in areas of the proposed CVN Pier where loading and unloading occur. (A) 027 Stencil Signs on Storm Drains Drain inlets located within the proposed ~~adjacent to the~~ CVN Pier will be labeled with the appropriated discharge point ~~either~~ drains to bay dumping prohibited.~~the bay, sanitary sewer, or industrial wastewater~~. (A) 033 Check Vehicles and Equipment For Leaks ~~All vehicles and equipment entering the gates to the CVN Pier will be visually inspected. (A)~~Vehicles and equipment will be inspected for leaks. 055 Use Overpack Containers or Containment Pallets to Store 55-Galon Drums Outside of Storage Areas 057 Do Not Store Used Parts or Containers Directly on Ground

TABLE 4.6.95-1 (continued)
ACTIVITY ASSESSMENT AND ASSOCIATED BEST MANAGEMENT PRACTICES FOR PROPOSED CVN PIER

Source Area	Significant Material	Best Management Practices[1]
		061 Employ Proper Handling Procedures to Transport Materials and Wastes The Navy has SOPs for handling and transport of hazardous materials and hazardous wastes. Contractors working on the CVN Pier will handle and transport hazardous materials and hazardous wastes as directed in the Navy SOPs. (M) 087 Use Oil Containment Booms Containment booms are in the water around the proposed CVN Pier and around the CVN when in port.
Spills or leaks during material transfer	Oil & Grease Paint/varnish Sandblasting waste solids Sanitary waste Trash and debris	*Activity-wide BMPs* 009, 016, 017, 059, 061, 083, 085 *Facility-specific BMPs* 006 Control Spills Spill kits will be located on the proposed CVN Pier where loading and unloading occur. (M)~~Spill kits will be placed in close proximity to storm drain inlets in areas of the CVN Pier where loading and unloading occur. (M)~~ 012 Construct Berm or Dike Around Critical Areas Berms are constructed around manifolds and pump stations used to transfer bilge water and sanitary wastes, and fuels.. 023 Place Portable Rubber Mats Over Storm Drain Inlets Covers will be available~~provided~~ for storm drain inlets in areas of the proposed CVN Pier where loading and unloading occur. (A) 027 Stencil Signs on Storm Drains Drain inlets located within the proposed ~~adjacent to the~~ CVN Pier will be labeled with drains to bay dumping prohibited.~~the appropriated discharge point either the bay, sanitary sewer, or industrial wastewater. (A)~~ 033 Check Vehicles and Equipment For Leaks ~~All vehicles and equipment entering the gates to the CVN Pier will be visually inspected. (A)~~Vehicles and equipment will be inspected for leaks. 055 Use Overpack Containers or Containment Pallets to Store 55-Galon Drums Outside of Storage Areas 057 Do Not Store Used Parts or Containers Directly on Ground 061 Employ Proper Handling Procedures to Transport Materials and Wastes The Navy has SOPs for handling and transport of hazardous materials and hazardous wastes. Contractors working on the proposed CVN Pier will handle and transport hazardous materials and hazardous wastes as directed in the Navy SOPs. (M) 087 Use Oil Containment Booms Containment booms are in the water around the proposed CVN Pier and around the CVN when in port..

TABLE 4.6.95-1 (continued)
ACTIVITY ASSESSMENT AND ASSOCIATED BEST MANAGEMENT PRACTICES FOR PROPOSED CVN PIER

Source Area	Significant Material	Best Management Practices[1]
Activity: Material Storage		
Direct exposure of material	Oil & Grease Paint/varnish Sandblasting waste solids Trash and debris	*Activity-wide BMPs* 007, 009, 015, 016, 017, 061 *Facility-specific BMPs* 012 Construct Berm or Dike Around Critical Areas Temporary berms have been constructed with sandbags and plastic in areas temporarily containing significant materials or activities such as sand blast media painting or baker tanks. 016 Store Wastes and Recycling Materials in Proper Containers Appropriate receptacles are available for both wet and dry solid sanitary waste and for recycled paper, plastic and aluminum. 027 Stencil Signs on Storm Drains Drain inlets located within the ~~adjacent to the~~proposed CVN Pier will be labeled with drains to bay dumping prohibited~~the appropriated discharge point either the bay, sanitary sewer, or industrial wastewater. (A)~~ 044 Use Drip Pans Under Leaking Equipment Contractors utilize drip pans under objects that contain significant materials. 054 Properly Store Containers The Navy has SOPs for storage of hazardous materials and hazardous wastes. Contractors working on the proposed CVN Pier will store hazardous materials and hazardous wastes as directed in the Navy SOPs. (M) 055 Use Overpack Containers or Containment Pallets to Store 55-Galon Drums Outside of Storage Areas Contractor liquid waste materials are stored on containment pallets. 057 Do Not Store Used Parts or Containers Directly on Ground Materials are stored on wooden pallets. 061 Employ Proper Handling Procedures to Transport Materials and Wastes The Navy has SOPs for handling and transport of hazardous materials and hazardous wastes. Contractors working on the proposed CVN Pier will handle and transport hazardous materials and hazardous wastes as directed in the Navy SOPs. (M) 111 Regularly Test and Inspect Equipment Equipment operated by Navy and Government personnel is inspected and tested regularly. Contractors will be inspected to insure their equipment and hazardous material/hazardous waste storage which could contribute significant materials to storm water runoff is maintained and operating properly.(M)
Spills or leaks during material transfer	Oil & Grease Paint/varnish Sandblasting waste solids	*Activity-wide BMPs* 009, 016, 017, 059, 061 *Facility-specific BMPs*

TABLE 4.6.95-1 (continued)
ACTIVITY ASSESSMENT AND ASSOCIATED BEST MANAGEMENT PRACTICES FOR PROPOSED CVN PIER

Source Area	Significant Material	Best Management Practices[1]
	Trash and debris	012 Construct Berm or Dike Around Critical Areas Berms are constructed around manifolds used to transfer fuels, bilge water, and sanitary waste. , and fuels.. 016 Store Wastes and Recycling Materials in Proper Containers Appropriate receptacles are available for both wet and dry solid sanitary waste and for recycled paper, plastic and aluminum. 027 Stencil Signs on Storm Drains Drain inlets located within the ~~adjacent to the~~ proposed CVN Pier will be labeled with drains to bay dumping prohibited~~the appropriated discharge point either the bay, sanitary sewer, or industrial wastewater. (A)~~ 044 Use Drip Pans Under Leaking Equipment Contractors utilize drip pans under objects that contain significant materials. 054 Properly Store Containers The Navy has SOPs for storage of hazardous materials and hazardous wastes. Contractors working on the proposed CVN Pier will store hazardous materials and hazardous wastes as directed in the Navy SOPs. (M) 055 Use Overpack Containers or Containment Pallets to Store 55-Galon Drums Outside of Storage Areas Contractor liquid waste materials are stored on containment pallets. 057 Do Not Store Used Parts or Containers Directly on Ground Materials are stored on wooden pallets. 061 Employ Proper Handling Procedures to Transport Materials and Wastes The Navy has SOPs for handling and transport of hazardous materials and hazardous wastes. Contractors working on the proposed CVN Pier will handle and transport hazardous materials and hazardous wastes as directed in the Navy SOPs. (M) 087 Use Oil Containment Booms Containment booms are in the water around the proposed CVN Pier and around the CVN when in port... 111 Regularly Test and Inspect Equipment Equipment operated by Navy and Government personnel is inspected and tested regularly. Contractors will be inspected to insure their equipment and hazardous material/hazardous waste storage which could contribute significant materials to storm water runoff is maintained and operating properly.(M) XX Use double-walled piping to transfer fuels and oily waste. Oily waste and fuel transfer lines are double-walled.
Spills or leaks during storage & disposal of materials &	Oil & Grease Paint/varnish Sandblasting waste solids Trash and debris	*Activity-wide BMPs* 007, 009, 015, 016, 017, 048, 050, 051, 052, 059, 061, 069, 071, 083, 085 *Facility-specific BMPs*

TABLE 4.6.95-1 (continued)
ACTIVITY ASSESSMENT AND ASSOCIATED BEST MANAGEMENT PRACTICES FOR PROPOSED CVN PIER

Source Area	Significant Material	Best Management Practices[1]
processed waste		012 Construct Berm or Dike Around Critical Areas Temporary berms have been constructed with sandbags and plastic in areas temporarily containing significant materials or activities such as sand blast media painting or baker tanks. 016 Store Wastes and Recycling Materials in Proper Containers Appropriate receptacles are available for both wet and dry solid sanitary waste and for recycled paper, plastic and aluminum. 027 Stencil Signs on Storm Drains Drain inlets located within the ~~adjacent to the~~proposed-CVN Pier will be labeled with drains to bay dumping prohibited~~the appropriated discharge point either the bay, sanitary sewer, or industrial wastewater. (A)~~ 044 Use Drip Pans Under Leaking Equipment Contractors utilize drip pans under objects that contain significant materials. 054 Properly Store Containers The Navy has SOPs for storage of hazardous materials and hazardous wastes. Contractors working on the proposed CVN Pier will store hazardous materials and hazardous wastes as directed in the Navy SOPs. (M) 055 Use Overpack Containers or Containment Pallets to Store 55-Galon Drums Outside of Storage Areas Contractor liquid waste materials are stored on containment pallets. 057 Do Not Store Used Parts or Containers Directly on Ground Materials are stored on wooden pallets. 061 Employ Proper Handling Procedures to Transport Materials and Wastes The Navy has SOPs for handling and transport of hazardous materials and hazardous wastes. Contractors working on the proposed CVN Pier will handle and transport hazardous materials and hazardous wastes as directed in the Navy SOPs. (M) 087 Use Oil Containment Booms Containment booms are in the water around the proposed CVN Pier. and around the CVN when in port... 111 Regularly Test and Inspect Equipment Equipment operated by Navy and Government personnel is inspected and tested regularly. Contractors will be inspected to insure their equipment and hazardous material/hazardous waste storage which could contribute significant materials to storm water runoff is maintained and operating properly.(M) XX Use double-walled piping to transfer fuels and oily waste. Oily waste and fuel transfer lines are double-walled.
Activity: Ship Support Services		
Spills or leaks during preparation	Paint/varnish Sandblasting waste solids	*Activity-wide BMPs* 009, 017, 048, 050, 051, 052, 059, 061

TABLE 4.6.95-1 (continued)
ACTIVITY ASSESSMENT AND ASSOCIATED BEST MANAGEMENT PRACTICES FOR PROPOSED CVN PIER

Source Area	Significant Material	Best Management Practices[1]
& finishing		*Facility-specific BMPs* 006 Control Spills Spill kits will be located on the proposed CVN Pier where loading and unloading occur~~Spill kits will be placed in close proximity to storm drain inlets in areas of the CVN Pier where loading and unloading occur. (M)~~ 012 Construct Berm or Dike Around Critical Areas Temporary berms have been constructed with sandbags and plastic in areas temporarily containing significant materials or activities such as sand blast media painting or baker tanks. 027 Stencil Signs on Storm Drains Drain inlets located within the~~adjacent~~ to the proposed CVN Pier will be labeled with drains to bay dumping prohibited~~the appropriated discharge point either the bay, sanitary sewer, or industrial wastewater. (A)~~ 044 Use Drip Pans Under Leaking Equipment Contractors utilize drip pans under objects that contain significant materials. 054 Properly Store Containers The Navy has SOPs for storage of hazardous materials and hazardous wastes. Contractors working on the proposed CVN Pier will store hazardous materials and hazardous wastes as directed in the Navy SOPs. (M) 061 Employ Proper Handling Procedures to Transport Materials and Wastes The Navy has SOPs for handling and transport of hazardous materials and hazardous wastes. Contractors working on the proposed CVN Pier will handle and transport hazardous materials and hazardous wastes as directed in the Navy SOPs. (M) 087 Use Oil Containment Booms Containment booms are in the water around the proposed CVN Pier and around the CVN when in port.... 111 Regularly Test and Inspect Equipment Equipment operated by Navy and Government personnel is inspected and tested regularly. Contractors will be inspected to insure their equipment and hazardous material/hazardous waste storage which could contribute significant materials to storm water runoff is maintained and operating properly.(M)
Spills or leaks of fluids during maintenance	Aviation fuel Bilge water Diesel fuel Oil & Grease Sanitary waste	*Activity-wide BMPs* 009, 010, 016, 017, 028, 029, 030, 037, 050, 051, 052, 059, 061 *Facility-specific BMPs* 006 Control Spills Spill kits will be located on the proposed CVN Pier where loading and unloading occur~~Spill kits will be placed in close proximity to storm drain inlets in areas of the CVN Pier where loading and~~

TABLE 4.6.95-1 (continued)
ACTIVITY ASSESSMENT AND ASSOCIATED BEST MANAGEMENT PRACTICES FOR PROPOSED CVN PIER

Source Area	Significant Material	Best Management Practices[1]
		~~unloading occur. (M)~~ 012 Construct Berm or Dike Around Critical Areas Temporary berms have been constructed with sandbags and plastic in areas temporarily containing significant materials or activities such as sand blast media painting or baker tanks. 027 Stencil Signs on Storm Drains Drain inlets located within the~~adjacent to the~~~~the~~ proposed CVN Pier will be labeled drains to bay dumping prohibited~~with the appropriated discharge point either the bay, sanitary sewer, or industrial wastewater. (A)~~ 044 Use Drip Pans Under Leaking Equipment Contractors utilize drip pans under objects that contain significant materials. 054 Properly Store Containers The Navy has SOPs for storage of hazardous materials and hazardous wastes. Contractors working on the proposed CVN Pier will store hazardous materials and hazardous wastes as directed in the Navy SOPs. (M) 061 Employ Proper Handling Procedures to Transport Materials and Wastes The Navy has SOPs for handling and transport of hazardous materials and hazardous wastes. Contractors working on the proposed CVN Pier will handle and transport hazardous materials and hazardous wastes as directed in the Navy SOPs. (M) 087 Use Oil Containment Booms Containment booms are in the water around the proposed CVN Pier and around the CVN when in port.~~.~~ 111 Regularly Test and Inspect Equipment Equipment operated by Navy and Government personnel is inspected and tested regularly. Contractors will be inspected to insure their equipment and hazardous material/hazardous waste storage which could contribute significant materials to storm water runoff is maintained and operating properly.(M) XX Use double-walled piping to transfer fuels and oily waste. Oily waste and fuel transfer lines are double-walled.
Spills, leaks, or operational residue from vehicles or equipment	Aviation fuel Bilge water Diesel fuel Oil & Grease Sanitary waste	*Activity-wide BMPs* 009, 010, 026, 028, 029, 030, 037 *Facility-specific BMPs* 006 Control Spills Spill kits will be located on the proposed CVN Pier where loading and unloading occu~~Spill kits will be placed in close proximity to storm drain inlets in areas of the CVN Pier where loading and unloading occur. (M)~~ 012 Construct Berm or Dike Around Critical Areas Temporary berms have been constructed with sandbags and plastic in

TABLE 4.6.95-1 (continued)
ACTIVITY ASSESSMENT AND ASSOCIATED BEST MANAGEMENT PRACTICES FOR PROPOSED CVN PIER

Source Area	Significant Material	Best Management Practices[1]
		areas temporarily containing significant materials or activities such as sand blast media painting or baker tanks. 027 Stencil Signs on Storm Drains Drain inlets located within the ~~adjacent to the~~ the proposed CVN Pier will be labeled with drains to bay dumping prohibited~~the appropriated discharge point either the bay, sanitary sewer, or industrial wastewater. (A)~~ 033 Check Vehicles and Equipment For Leaks Vehicles and equipment will be inspected for leaks.~~All vehicles and equipment entering the gates to the CVN Pier will be visually inspected. (A)~~ 044 Use Drip Pans Under Leaking Equipment Contractors utilize drip pans under objects that contain significant materials. 061 Employ Proper Handling Procedures to Transport Materials and Wastes The Navy has SOPs for handling and transport of hazardous materials and hazardous wastes. Contractors working on the proposed CVN Pier will handle and transport hazardous materials and hazardous wastes as directed in the Navy SOPs. (M) 087 Use Oil Containment Booms Containment booms are in the water around the proposed CVN Pier and around the CVN when in port... 111 Regularly Test and Inspect Equipment Equipment operated by Navy and Government personnel is inspected and tested regularly. Contractors will be inspected to insure their equipment and hazardous material/hazardous waste storage which could contribute significant materials to storm water runoff is maintained and operating properly.(M)

Notes:

1 Numbers refer to BMPs described in Appendix J.

All BMPs are existing unless identified by:
(M) - modifications to existing BMP needed, as described, or
(A) - additional BMP to be implemented.

Activity-wide BMPs applicable to all source areas, but not listed above, include:
001, 002, 003, 004, 005, 006, 021, 022, 031, 032, 110, 111, 112, 113, 117 and 118.

TABLE 4.6.95-2
REVISIONS TO FACILITY-SPECIFIC
STORM WATER POLLUTION PREVENTION PLAN

SECTION	REVISION	REVISED BY	DATE

Comparison of Industrial Activities – Shipyards and CVN Wharf

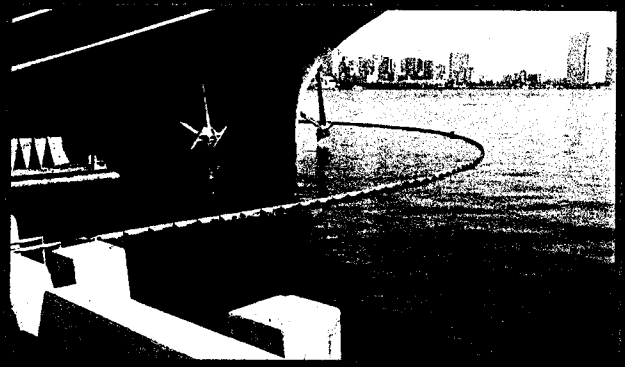
Shipyards are engaged in the construction, conversion, alteration, repair, and maintenance of all types of military and commercial ships and vessels. A considerable amount of this work is performed at onsite facilities such as graving docks, marine railways, floating drydocks and wharfs/piers. With the exception of the wharf, these types of facilities will not be present at the new CVN wharf. Although some repair and maintenance work is performed on the carriers while in port, the CVN wharf is primarily used as a berthing area for the aircraft carrier. Maintenance/repair work is primarily performed on the vessel or inside maintenance buildings located at NASNI. The wharf is utilized as a staging area for contractors and for material/waste loading and unloading.

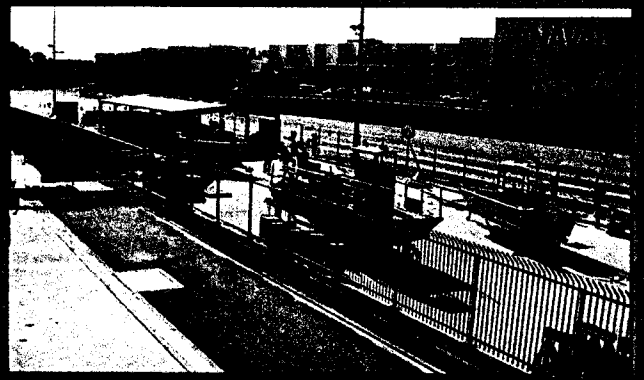
The table presented below compares some of the significant industrial activities that may occur at a shipyard with those that occur at a CVN wharf. A "Yes" indicates that the activity occurs at the facility. A "No" indicates that the activity does not occur at all, is performed on the vessel only, or is performed at a separate facility located at NASNI.

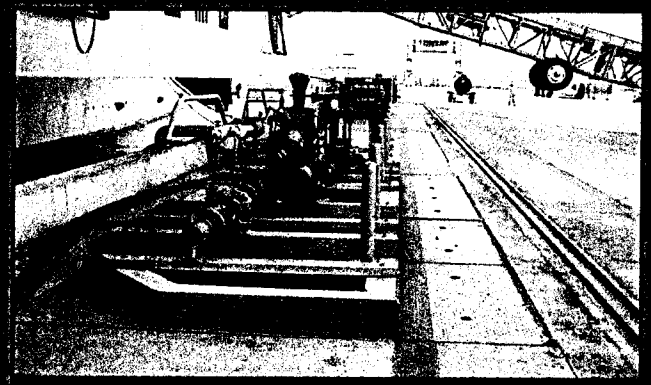
Significant Industrial Activity	Shipyard (typical)	CVN Wharf	Comment
Formation and assembly of structural metal components (steel/aluminum/etc.)	Yes	No	This type of work is not performed on CVN Wharf
Spray painting	Yes	No	Performed on aircraft carrier or other maintenance facilities located at NASNI
Abrasive blasting to remove paint, scale, marine organisms, etc.	Yes	No	Performed on aircraft carrier or other maintenance facilities located at NASNI
Slurry blasting to remove paint, scale, marine organisms, etc.	Yes	No	Performed on aircraft carrier or other maintenance facilities located at NASNI
Chemical paint stripping to remove paint, scale, etc.	Yes	No	Performed on aircraft carrier or other maintenance facilities located at NASNI
Hydroblasting to remove paint, scale, marine organisms, etc.	Yes	No	Performed on aircraft carrier or other maintenance facilities located at NASNI. All waste water captured
Material/waste storage/loading/unloading	Yes	Yes	Except for solid and recycled waste (trash, plastic bottles, etc.) storage on CVN wharf is temporary only.
Bilge water, sewage removal	Yes	Yes	Structural BMPs are installed at CVN wharf to collect any spills/leaks. No discharge to storm water conveyance or bay.
Welding/burning	Yes	No	Performed on aircraft carrier or other maintenance facilities located at NASNI
Grinding and sanding	Yes	No	Performed on aircraft carrier or other maintenance facilities located at NASNI
Fueling operations	Yes	Yes	Diesel and aviation fuel is loaded onto carrier. Structural BMPs have been implemented to capture spills/leaks. No discharge to storm water conveyance or bay.

WATER QUALITY

Structural BMPs at Cold Wharf

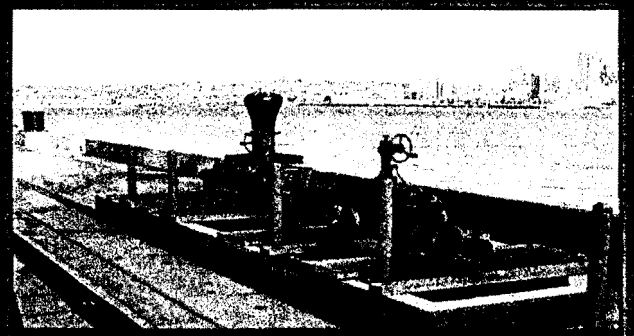






WATER QUALITY

Structural BMPs at CVN Wharf



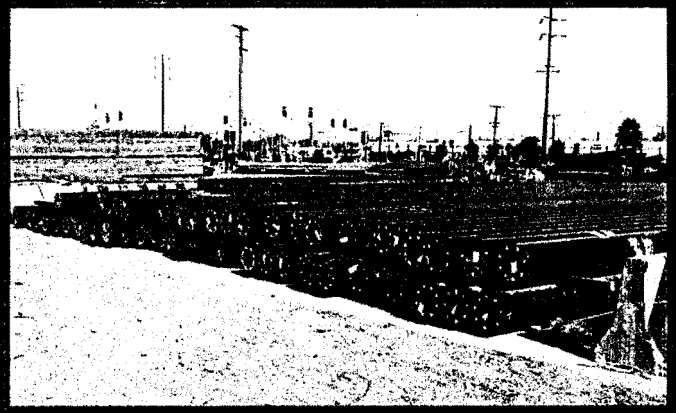
[illegible]

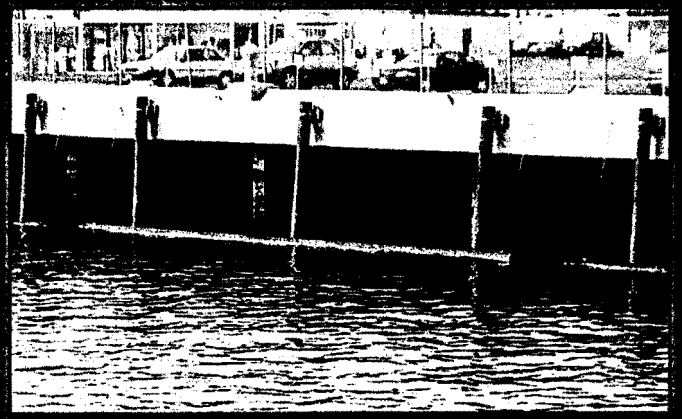
Containment [illegible] pump station

WATER QUALITY

Navy Water Quality Initiative

- Plastic Pier Pilings
  - Plastic pier pilings installed to replace wood creosote treated pilings
  - Over 1,200 plastic pilings installed over last 4 years
  - Water quality monitoring shows significant drop in polynuclear aromatic hydrocarbons since program was implemented





Best Management Practices (BMPs) Applicable to Construction Activities

Construction SWPPP Objective: To identify all pollutant sources that may affect the quality of storm water discharges associated with construction activity from the construction site. Identify, construct, implement and maintain BMPs to reduce or eliminate pollutants in storm water discharges and authorized nonstorm water discharges from the construction site during construction, and develop a maintenance schedule for BMPs installed during construction designed to reduce or eliminate pollutants after construction is completed (post-construction BMPs).

- Chemical Storage/Handling- Chemical Waste / Material Storage shall be stored within containment areas.
- Material Handling - All construction materials will be delivered to and stored in a staging area on site and within the limits of work. Materials will be stored so that they do not have the potential to adversly affect storm water.
- Waste Materials - All waste will be stored in dumpsters that meet all City and State solid waste management regulations and emptied as necessary. All personnel will be instructed regarding the correct procedure for waste disposal.
- Fill - Excavated earth stockpiled during construction will be covered with plastic in accordance with CalTrans standards.
- Construction Equipment - All construction equipment will be stored in the contractor's lay-down area. All on-site vehicle will be inspected for leaks and receive regular preventive maintenance to reduce the chance of leakage. Drips pans will be placed under vehicles.
- Concrete - Concrete trucks will not be allowed to wash out or discharge surplus concrete or drum wash water onto site soils or into the storm drain system.
- Recycling - Excess concrete and asphalt materials will be taken to approved disposal areas. All demolished or excess material shall be disposed or recycled as applicable.
- Erosion Control - Contractor shall implement erosion control measures including but not limited to: covering with mulch, soil stabilizers, binders, fiber rolls or blankets, or other erosion resistant soil coverings or treatments as applicable.
- Sediment Control – Contractor shall implement sediment control practices including but not limited to filtration devices and barriers (such as fiber rolls, silt fence, straw bale barriers, sandbag dikes and gravel inlet filters) and/or settling devices (such as sediment traps or basins).
- Vehicle Tracking - Traffic exiting the construction site will first travel over paved areas within the site boundaries. If excessive sediment is observed on the vehicle, it will be removed prior to exiting onto public roads. If mud, dirt or rock is tracked from the site, it will be swept up by use of hand or mechanical methods as necessary. Tracked materials will not be allowed to adversly affect storm water runoff.
- Existing Storm Drain System - Existing storm drainage system will be blocked to prevent contamination by use of plywood, rubber mats, silt fences, sandbags or other appropriate methods.

General Good Housekeeping BMPs:

- Every effort will be made to store only enough materials necessary to do the job.
- All materials stored on-site will be stored in a neat, orderly manner in their appropriate containers and, if possible under a roof, tarp, or other enclosure.
- Products will be kept in their original containers with the original Manufacturer's label.
- Product containers shall be kept closed at all times except when in use.
- Substances will not be mixed with one another unless recommended by the Manufacturer.

General Spill Control Practices:

- Manufacturer's recommended methods for spill cleanup will be clearly posted and site personal will be made aware of the procedures and the location of the information and cleanup supplies.
- Material and equipment necessary for spill cleanup will be kept in the material storage area onsite.
- All spills will be cleaned up immediately and reported to the Navy.
- Spills of toxic or hazardous materials will be reported to the United States Navy and the Federal Fire Department regardless of the size. The government will then evaluate if Reportable Quantities have been discharged and report to the appropriate State and Federal agencies.

Maintenance and Inspection Procedures:

- A qualified person will conduct inspections. Individuals responsible for SWPPP preparation, implementation, and permit compliance will be appropriately trained.
- Inspections will be performed before and after storm events and once each 24-hour period during extended storm events to identify BMP effectiveness and implement repairs or design changes as soon as feasible depending upon field conditions.
- Equipment, materials, and workers must be available for rapid response to failures and emergencies. All corrective maintenance to BMPs shall be performed as soon as possible after the conclusion of each storm depending upon worker safety.
- For each inspection, an inspection checklist will be prepared.

Post-Construction Storm Water Management :

The SWPPP will include descriptions of the BMPs to reduce pollutants in storm water discharges after all construction phases have been completed at the site (Post-Construction BMPs).

Attached is the *Appendix C "Working Details for Temporary Construction BMPs"* from *Caltrans Storm Water Quality Handbook, April 1997,* used by the Contractor as guidance for the proper application, implementation and maintenance of the BMPs.

Appendix C
Working Details for Temporary Construction BMPs

The following working details are intended to be used as guidelines for the proper application, implementation, and maintenance of the BMPs.

Number	Title
CD4(2)	Water Conservation Practices
CD7(2)	Dewatering
CD8(2)	Paving Operations
CD9(2)	Structure Construction and Painting
CD10(2)	Material Delivery and Storage
CD11(2)	Material Use
CD12(2)	Spill Prevention and Control
CD13(2)	Solid Waste Management
CD14(2)	Hazardous Waste Management
CD15(2)	Contaminated Soil Management
CD16(2)	Concrete Waste Management
CD17(2)	Sanitary/Septic Waste Management
CD18(2)	Vehicle and Equipment Cleaning
CD19(2)	Vehicle and Equipment Fueling
CD20(2)	Vehicle and Equipment Maintenance
CD22(2)	Scheduling
CD23(2)	Preservation of Existing Vegetation
CD24B(2)	Temporary Seeding and Planting
CD25(2)	Mulching
CD26A(2)	Soil Stabilizers
CD26B(2)	Geotextiles, Mats/Plastic Covers & Erosion Control Blankets
CD28(2)	Temporary Stream Crossing
CD29A(2)	Stabilized Construction Entrance
CD29B(2)	Stabilized Construction Roadway
CD29C(2)	Entrance/Outlet Tire Wash
CD30(2)	Sodding, Grass Plugging, and Vegetative Buffer Strips
CD31(2)	Earth Dikes, Drainage Swales, and Lined Ditches
CD32A(2)	Slope Drains and Subsurface Drains
CD32B(2)	Top and Toe of Slope Diversion Ditches/Berms
CD33A(2)	Outlet Protection/Velocity Dissipation Devices
CD33B(2)	Flared Culvert End Sections
CD34(2)	Check Dams
CD35(2)	Slope Roughening/Terracing/Rounding
CD36(2)	Silt Fences

Number	Title
CD37(2)	Straw Bale Barrier
CD38(2)	Sand Bag Barrier
CD39(2)	Brush or Rock Filter
CD40(2)	Storm Drain Inlet Protection
CD41(2)	Sediment Traps
CD42(2)	Sediment Basin
CD43(2)	Fiber Rolls
CD44(2)	Illicit Discharge/Illegal Dumping Reporting

CD4(2)
Water Conservation Practices

BMP Objectives

- ○ Soil Stabilization
- ○ Sediment Control
- ○ Tracking Control
- ○ Wind Erosion Control
- ● Non-Storm Water

Definition and Purpose

Procedures and practices which reduce the discharge of pollutants to the storm drain system or to watercourses resulting from the use of construction waters by using construction water in a manner that does not cause erosion or wash materials off the site.

Appropriate Applications

All construction sites where water is used.

Limitations

None identified.

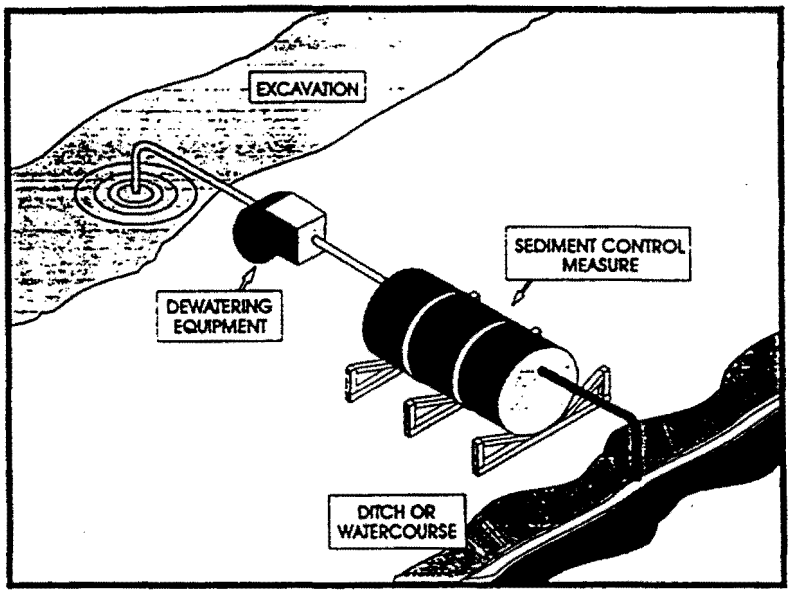
Standards and Specifications

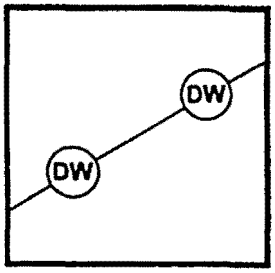
- Keep water equipment in good working condition.
- Repair water leaks promptly.
- Discourage washing of equipment on the construction site.
- Avoid using water to clean construction areas. Sweep paved areas where practical.
- Direct construction water runoff to areas where it can soak into the ground.
- Apply water for dust control in accordance with CD26A(2).

Maintenance and Inspection

- Inspect water equipment at least weekly.

CD7(2)
Dewatering





BMP Objectives

- O Soil Stabilization
- O Sediment Control
- O Tracking Control
- O Wind Erosion Control
- ● Non-Storm Water

Definition and Purpose

Procedures and practices which reduce the discharge of pollutants to the storm drain system or to watercourses from dewatering operations by using sediment controls and by testing the groundwater for pollution.

Appropriate Applications

Where two general classes of pollutants may be encountered from dewatering operations:

- Sediments - A high sediment content in the dewatering discharge is common because of the nature of the operation.
- Toxic and petroleum products - These pollutants are not commonly found in dewatering discharges unless the site has been used for light or heavy industrial activities, or the area has a history of groundwater contamination.

Limitations

- Site conditions will dictate design and use.
- The controls discussed in this BMP address sediment only. If the presence of polluted water is identified in the contract, the contractor shall implement dewatering pollution controls as required by the contract documents. If the quality of water to be removed by dewatering is not identified as polluted in the contract documents, but is later determined by observation or testing to be polluted, the contractor shall notify the Engineer and comply with Standard Specifications Section 5-1.116 - Differing Site Conditions.

- The controls detailed in this BMP only allow for minimal settling time for sediment particles. Use only when site conditions restrict the use of the other control methods.

Standards and Specifications

Use the following sediment controls to remove sediments from water generated by the dewatering discharge:

- Sediment Traps, see CD41(2)
- Sediment Basin, see CD42(2)
- Portable Sediment Tank:
  - Construct with steel drums, sturdy wood or other material suitable for handling the pressure exerted by the water and sediment.
  - Use the following formula to determine the minimum storage volume of the tank:

    Pump discharge (l/s) x 7.3 = m^3 of storage required.
    Note: 1 l/s = 0.001 m^3/s = 15.85 gpm.
  - Design tank to allow for emergency flow over top of tank.
  - Sediment tank minimum depth is 600 mm (24 in).
  - Locate tank to minimize interference with construction activities.
  - Position tank for easy cleanout and disposal of trapped sediment.
  - Once the water level nears top of tank, shut off pump while the tank drains and additional capacity is made available.
  - Clean-out of the tank is required once one-third of the original capacity is depleted due to sediment accumulation. Clearly mark tank to show the clean-out point.
- Filter Box:
  - The box selected should be made of steel, sturdy wood or other materials suitable to handle the pressure requirements imposed by the water and sediment. 208 l (55 gal) drums welded top to

bottom are normally readily available and, in many cases, will suffice.

- Use the following formula to determine the minimum storage volume of the filter box:

  Pump discharge (l/s) x 7.3 = m^3 of storage required.
  Note: 1 l/s =0.001 m^3/s = 15.85 gpm.

- Design box to allow for emergency flow over top of box.

- Make bottom of the box porous by drilling holes or by other methods.

- Place Class 3 Caltrans aggregate base or similar material acceptable to the Engineer over holes to a minimum depth of 300 mm (12 in) (metal "hardware" cloth may need to be placed between aggregate and the holes if holes are drilled larger than the majority of the stone).

- Direct effluent over a well vegetated strip of at least 15 m (50 ft) after leaving base of filter box.

- Once the water level nears top of box, shut off pump while the box drains and additional capacity is made available.

- If the stone filter does becomes clogged with sediment, the stones must be cleared from the inlet, cleaned and replaced.

- Clean-out of box is required once one-third of the original capacity is depleted due to sediment accumulation. Clearly mark box to show the clean-out point.

■ Straw Bale/Silt Fence Pit:

- Use straw bales, silt fence, a stone outlet and a wet storage pit.

- Use the following formula to determine the minimum storage volume of the pit:

  Pump discharge (l/s) x 7.3 = m^3 of storage required.
  Note: 1 l/s = 0.001 m^3/s = 15.85 gpm.

- The excavated area should be a minimum of 1 m (3 ft) below the base of the straw bales and silt fence.

- Installation guidelines can be found under CD36(2) - Silt Fences and CD37(2) - Straw Bale Barrier.

- Once the water level nears crest of stone weir (emergency overflow), shut off pump while the structure drains down to the top of the wet storage pit.

- The wet storage pit may be dewatered only after a minimum of 6 hours of sediment settling time. Pump effluent across a well vegetated area or through a silt fence prior to discharge.

- Once the wet storage area becomes filled to one-half of the excavated depth, accumulated sediment shall be removed and properly disposed.

■ Sump Pit and Perforated Standpipe Wrapped in Filter Fabric:

- Use filter fabric as required for silt fence fabric, described in CD36(2) - Silt Fences, or similar material approved by the Engineer.

- Design pit and size of standpipe according to dewatering discharge requirement.

- Perforated pipe shall conform to requirements in Standard Specifications Section 68 - Subsurface Drain or similar material approved by the Engineer.

- The standpipe wrapped in filter fabric shall be surrounded by stones which filter the water as it collects in the pit before being pumped out.

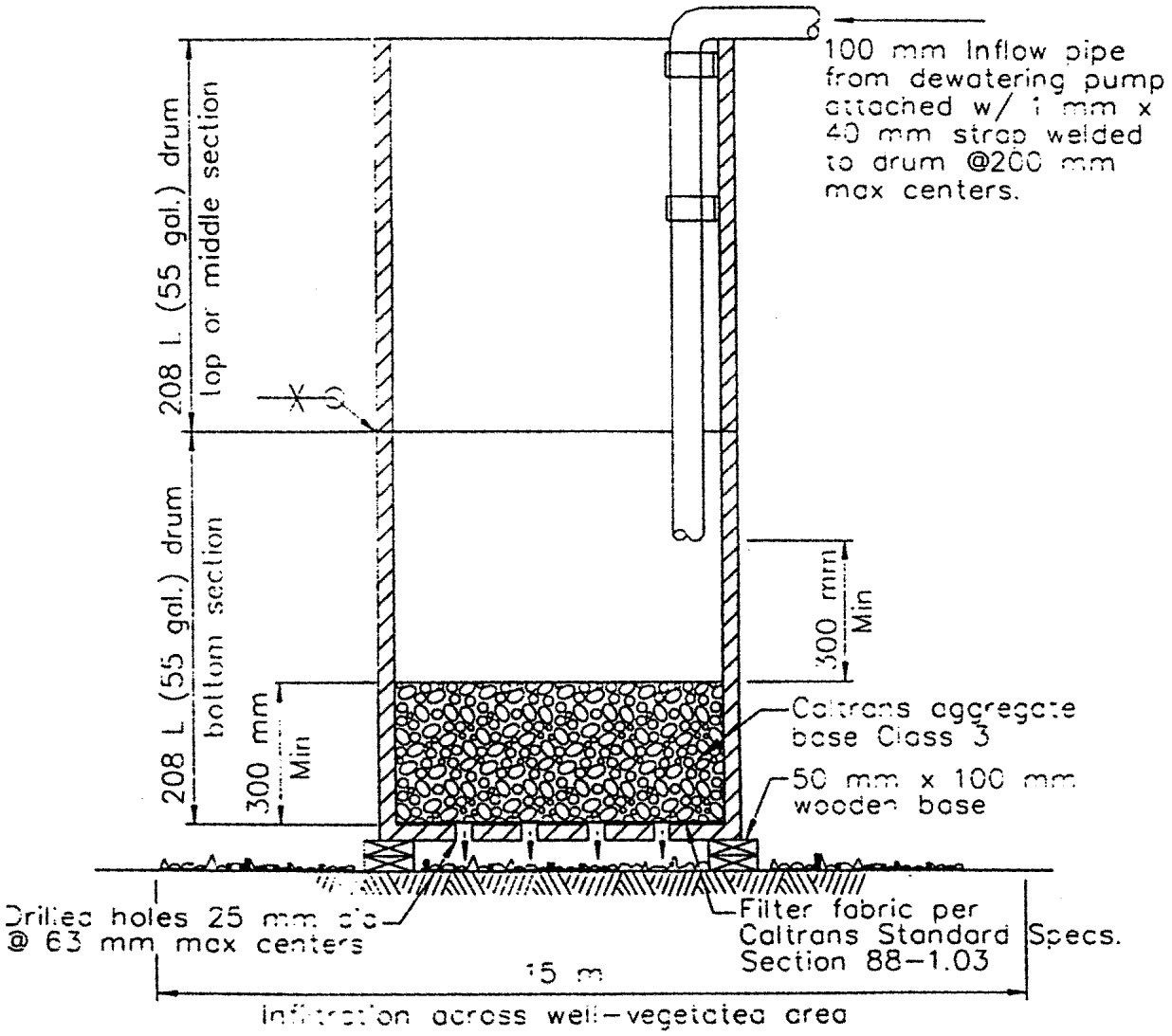
Maintenance and Inspection

■ Inspect filtering device frequently and repair or replace once the sediment build-up prevents the structure from functioning as designed.

■ Accumulated sediment removed from a dewatering device must be spread on site and stabilized or disposed of at a disposal site as approved by the Engineer.

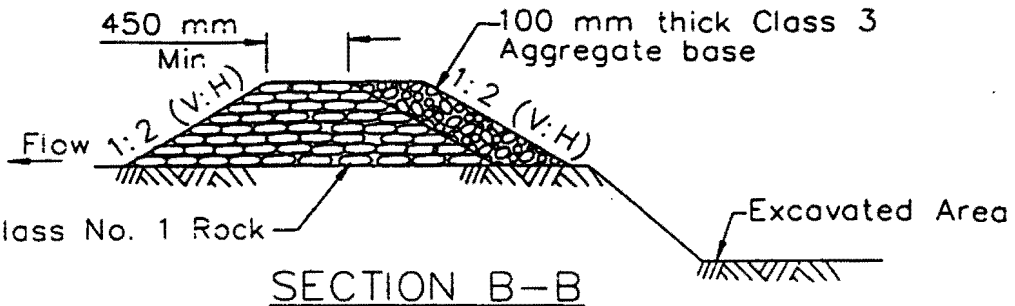
NOTES:

1. Weld shall be designed for the capacity of the tank.
2. For bottom drum, remove top cover only. Remove top & bottom covers for top & middle drums.

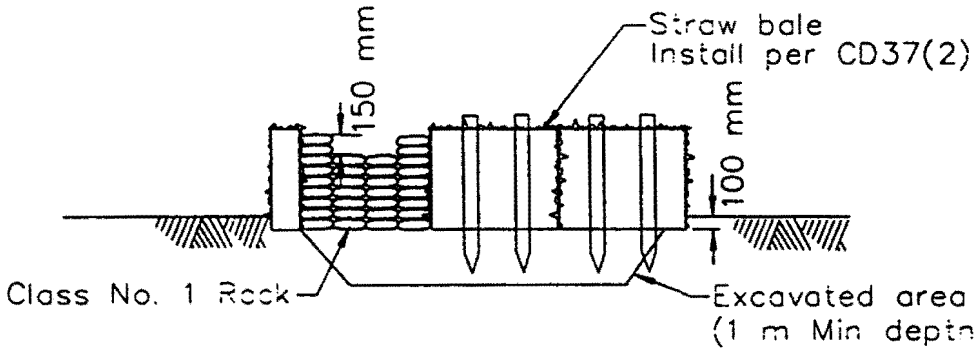


TYPICAL FILTER BOX
NOT TO SCALE

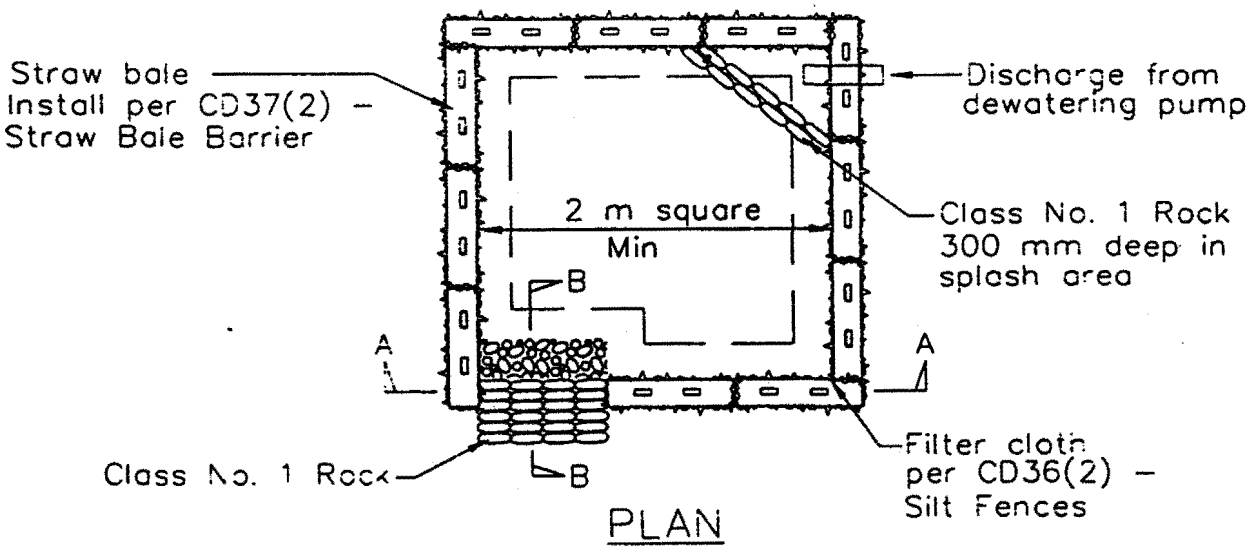
Sheet 1



SECTION B–B



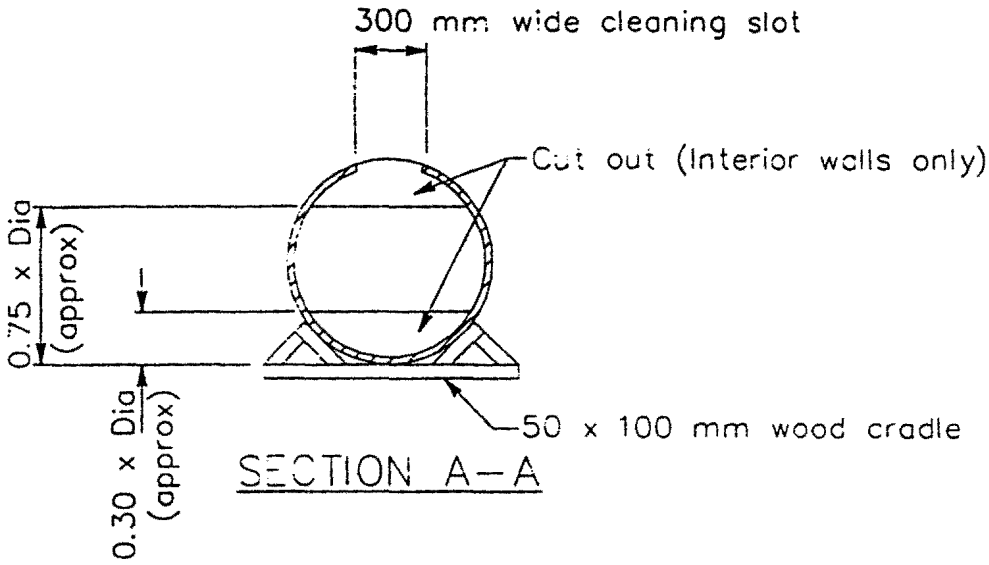
SECTION A–A

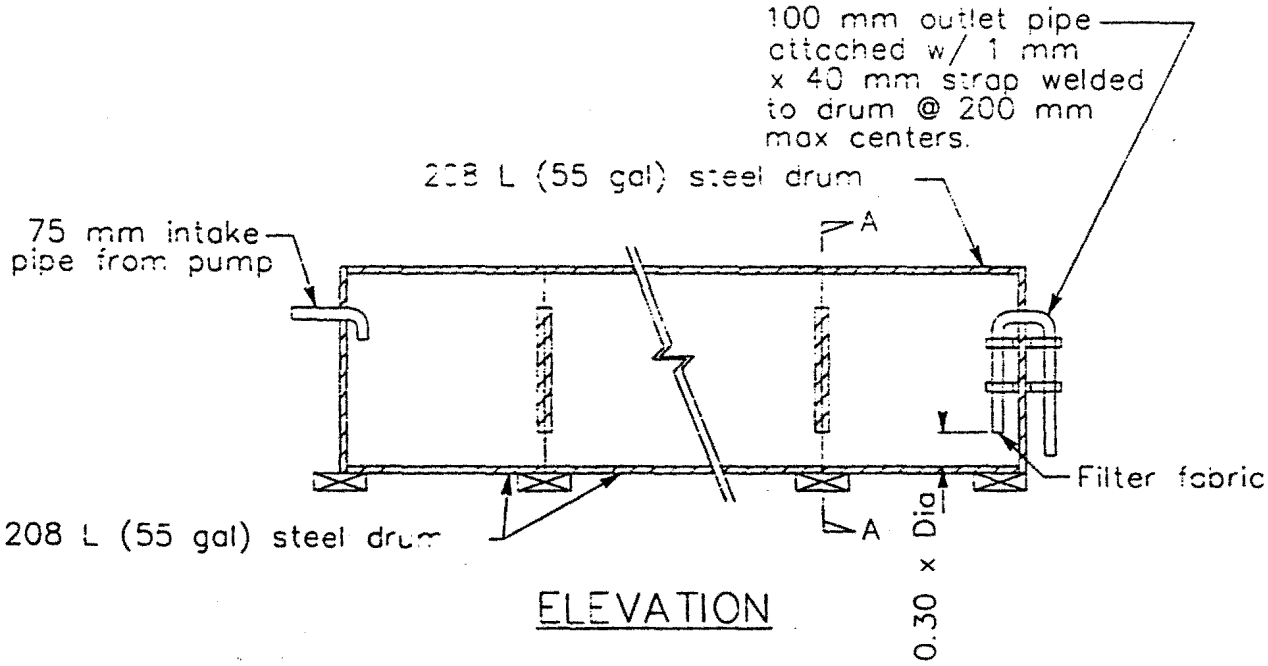


PLAN

TYPICAL STRAW BALE PIT
NOT TO SCALE

Sheet 2

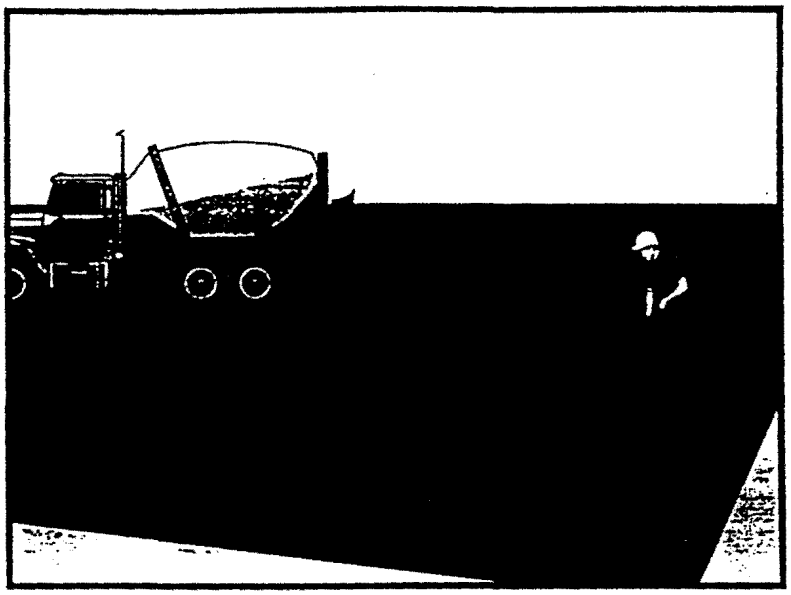


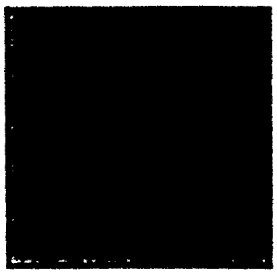


TYPICAL PORTABLE SEDIMENT TANK
NOT TO SCALE

Sheet 3

CD8(2)
Paving Operations





BMP Objectives

- ○ Soil Stabilization
- ○ Sediment Control
- ○ Tracking Control
- ○ Wind Erosion Control
- ● Non-Storm Water

Definition and Purpose

Procedures and practices which reduce the discharge of pollutants to the storm drain system or to watercourses as a result of paving operations by properly disposing of wastes and by implementing measures to control runon and prevent runoff from areas being paved.

Appropriate Applications

- Paving
- Surfacing and resurfacing
- Sawcutting
- Asphalt removing

Limitations

- Finer solids are not effectively removed by filtration systems.
- Paving opportunities may be limited during wet weather.

Standards and Specifications

- Place drip pans or absorbent materials under paving equipment while not in use, to catch and/or contain drips and leaks.
- Cover drainage inlet structures and manholes with filter fabric during application of seal coat, tack coat, slurry seal, and fog seal.

- Prevent saw-cut slurry from entering storm drains by:
  - Covering inlets with filter fabric during wet-cutting operations.
  - Placing straw bales, sand bags, or gravel dams around inlets to prevent slurry from entering storm drains.
  - Shoveling or vacuuming slurry residue and dispose of properly.
- Allow aggregate rinse to settle, and pump the water to the sanitary sewer if allowed by the local wastewater authority.
- Never wash sweepings from exposed aggregate concrete into a storm drain system. Collect and return to aggregate base stockpile, or dispose of properly.
- When paving involves asphaltic concrete, the following steps shall be implemented:
  - Minimize the washing of sand or gravel from new asphalt into storm drains, streets, and creeks by sweeping where practical.
  - Old or spilled asphalt must be disposed as approved by the Engineer.
  - Collect and remove all broken asphalt and recycle when practical; otherwise, dispose in accordance with Standard Specification 7-1.13.
- When on-site mixing takes place, follow storm water permitting requirements for industrial activities.
- Apply CD40(2) - Storm Drain Inlet Protection when needed to prevent discharge of sediment, sand, aggregate, or similar material to the storm drain system.

laintenance and Inspection

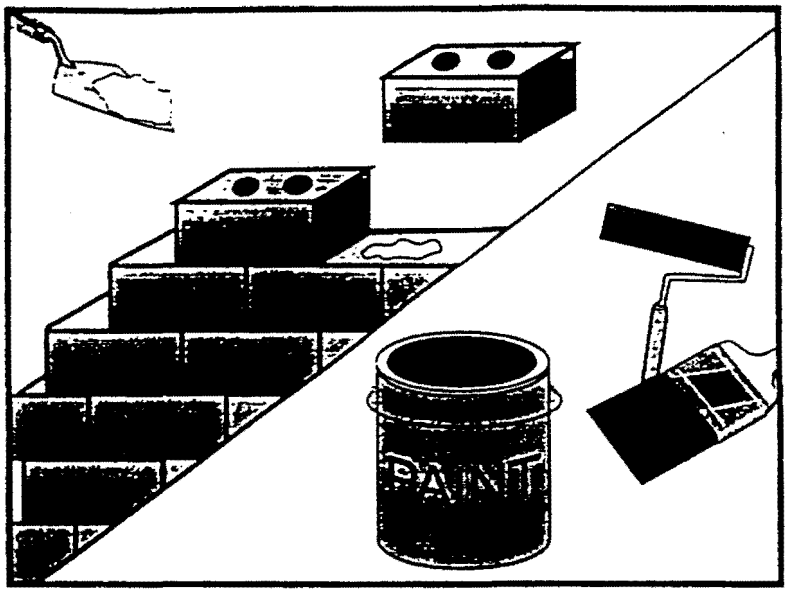
- Inspect and maintain machinery regularly to minimize leaks and drips.
- Maintain inlet protection so that water is not allowed to back up onto areas subject to traffic. If water begins to backup and flood areas subject to traffic, the protective device must be removed and alternative measures deployed.

- Clean inlet protection measures when sediment reaches ½ the sediment storage capacity. Repair inlet protection measures as needed.

- Inspect inlet protection measures before and after rainfall events. During extended storms, inspect at least every day. If subjected to non-storm water flows, inspect daily.

- Check with employees and subcontractors to ensure that measures are being followed.

CD9(2)
Structure Construction and Painting



C/P

BMP Objectives

- ○ Soil Stabilization
- ○ Sediment Control
- ○ Tracking Control
- ○ Wind Erosion Control
- ● Non-Storm Water

Definition and Purpose

Procedures and practices which reduce the discharge of paints and related products to the storm drain system or to watercourses by reducing the opportunities for these materials to come into contact with storm water.

Appropriate Applications

- Structure construction and painting activities, during active construction/painting periods only.

Limitations

- Safer alternative building and construction products may not be available or suitable in every instance.
- Hazardous wastes that cannot be reused or recycled must be disposed of by a licensed hazardous waste hauler.

Standards and Specifications

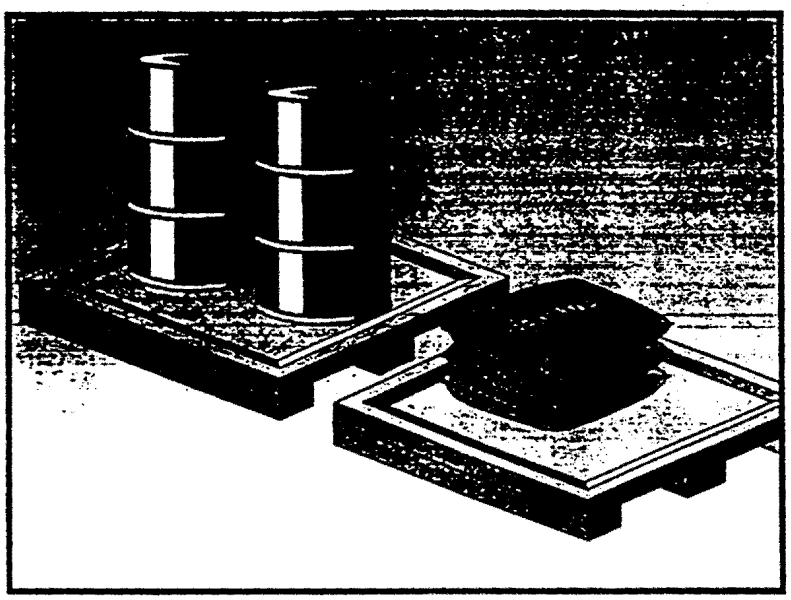
- Remove debris in a timely fashion to keep the work site clean and orderly.
- Collect and properly dispose of roofing debris prior to rainfall and upon completion of work to prevent entry of debris and materials into gutter downspouts.
- Refer to Section 91 Caltrans Standard Specifications for paint.
- Refer to Section 59 Caltrans Standard Specifications for painting.
- Inform employees and subcontractors of acceptable practices and include appropriate provisions in subcontracts to make certain proper housekeeping and disposal practices are implemented.

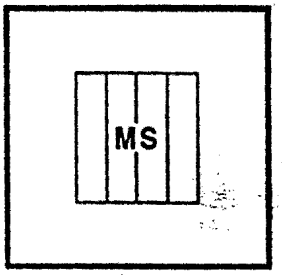
- Do not remove the original product label, it contains important safety and disposal information.
- Mix paint indoors, or in a containment area.
- Use all the product before disposing of the container.
- For water-based paints, paint out brushes to the extent practical, and rinse to a drain leading to a sanitary sewer where permitted, or into a concrete washout pit or temporary sediment trap.
- For oil-based paints, paint out brushes to the extent practical, and filter and reuse thinners and solvents.
- Never clean paint brushes or rinse paint containers into a street, gutter, storm drain or watercourse.
- Dispose of any paint, thinners, residue, and sludges that cannot be recycled as hazardous waste.
- Latex paint and paint cans, used brushes, rags, absorbent materials, and drop cloths, when thoroughly dry and are no longer hazardous, may be disposed of with other construction debris.
- Use recycled and less hazardous products when practical.
- Recycle residual paints, solvents, lumber, and other materials.

Maintenance and Inspection

- Spot check employees and subcontractors at least monthly throughout the job to ensure appropriate practices are being employed.

CD10(2)
Material Delivery and Storage





BMP Objectives

- ○ Soil Stabilization
- ○ Sediment Control
- ○ Tracking Control
- ○ Wind Erosion Control
- ● Non-Storm Water

Definition and Purpose

Procedures and practices that reduce the discharge of pollutants to the storm drain system or to watercourses as a result of material delivery and storage by preventing spills during delivery and by minimizing the contact of materials with runoff.

Appropriate Applications

Construction sites with delivery and storage of the following materials:

- Soil
- Pesticides and herbicides
- Fertilizers
- Detergents
- Plaster or other products
- Petroleum products such as fuel, oil, and grease
- Asphalt and concrete components
- Hazardous chemicals such as acids, lime, glues, adhesives, paints, solvents, and curing compounds
- Concrete compounds
- Other materials that may be detrimental if released to the environment

Material Delivery and Storage

Limitations

- Space limitation may preclude indoor storage.
- Storage sheds must meet building & fire code requirements.

Standards and Specifications

General

- Train employees and subcontractors on the proper material delivery and storage practices.

Material Storage Areas and Practices

- Designate storage areas at the project site.
- Locate the storage area away from the storm drain system and watercourses.
- Prevent spills or leakage of liquid materials from contaminating soil or soaking into the ground by placing storage areas on impervious surfaces.
- Provide curbs or dikes around the perimeter of material storage areas to prevent runon from adjacent areas as well as runoff of storm water from the material storage areas.
- Minimize the material inventory stored on site (e.g., only a few days supply).
- Stockpile soil in a central location and protect the stockpile from runon. Apply suitable controls to remove sediment from runoff from the stockpile. See CD36(2) - Silt Fences, CD37(2) - Straw Bale Barriers, and CD38(2) - Sand Bag Barrier. If the stockpile will be inactive for an extended period, plant temporary vegetation in accordance with CD24B(2) - Temporary Seeding and Planting, or install long-term perimeter controls. Smaller stockpiles may be protected with tarps.
- Store materials indoors within existing structures or sheds when available.
- Have proper storage instructions posted at all times in an open and conspicuous location.
- Minimize hazardous material storage on site.
- Do not store hazardous chemicals, drums, or bagged materials directly on the ground. Place these items on a pallet and when possible, under cover in secondary containment.

- Keep hazardous chemicals in their original containers and keep them well labeled.
- Keep ample supply of appropriate spill clean up material near storage areas.

Material Delivery Practices

- Keep an accurate, up-to-date inventory of material delivered and stored on site.
- Employees trained in emergency spill clean-up procedures should be present when dangerous materials or liquid chemicals are unloaded.

Spill Clean-up

- Contain and clean up any spill immediately.
- If significant residual materials remain on the ground after construction is complete, properly remove and dispose any hazardous materials or contaminated soil.

Maintenance and Inspection

- Inspect storage areas before and after rainfall events, and at least weekly during other times.
- Inspect to ensure that designated storage areas are kept clean and well organized.
- Repair and/or replace perimeter controls, containment structures, and covers as needed to keep them properly functioning.

CD11(2)
Material Use

MU

BMP Objectives

- O Soil Stabilization
- O Sediment Control
- O Tracking Control
- O Wind Erosion Control
- ● Non-Storm Water

Definition and Purpose

Procedures and practices that reduce the discharge of pollutants to the storm drain system or to watercourses as a result of material use by properly storing and utilizing materials.

Appropriate Applications

Construction sites where the following materials are used or prepared on site:

- Pesticides and herbicides
- Fertilizers
- Detergents
- Plaster or other products
- Petroleum products such as fuel, oil, and grease
- Asphalt and other concrete components
- Hazardous chemicals such as acids, lime, glues, adhesives, paints, solvents, and curing compounds
- Concrete compounds
- Other materials that may be detrimental if released to the environment

Limitations

- Safer alternative building and construction products may not be available or suitable in every instance.

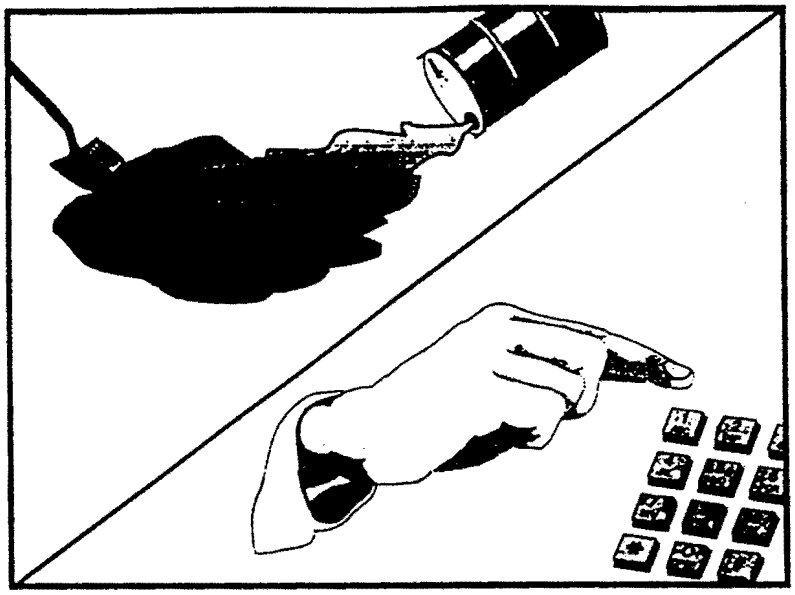
Standards and Specifications

- Use materials only where and when needed to complete the construction activity.
- Follow manufacturer's instructions regarding the preparation, use, and disposal of materials.
- Use safer alternative materials as much as possible.
- Reduce or eliminate use of hazardous materials on site when practical.
- Do not over-apply fertilizers, herbicides, and pesticides. Prepare only the amount needed. Follow strictly the recommended usage instructions. Over-application is expensive and environmentally harmful. Apply surface dressings in smaller applications, as opposed to one large application, to allow time for it to work in and to avoid excess materials being carried off-site by runoff. Do not apply these chemicals just before it rains.
- Avoid exposing applied materials to rainfall and runoff unless sufficient time has been allowed for them to dry.
- Keep an ample supply of spill clean up material near material use areas. Train employees in spill clean up procedures.

Maintenance and Inspection

- Spot check employees and subcontractors monthly throughout the job to ensure appropriate practices are being employed.

CD12(2)
Spill Prevention and Control



BMP Objectives

- ○ Soil Stabilization
- ○ Sediment Control
- ○ Tracking Control
- ○ Wind Erosion Control
- ● Non-Storm Water

Definition and Purpose

Procedures and practices that reduce the discharge of pollutants to the storm drain system or to watercourses as a result of spills by preventing, containing, and cleaning up spilt material.

Appropriate Applications

Spill prevention and control is applicable anytime chemicals and/or hazardous substances are stored or utilized. Sites located near natural watercourses, canals, and reservoirs are at highest risk of an uncontained spill contaminating surface waters.

Spill prevention and control applies to chemicals and hazardous substances including, but not limited to:

- Soil stabilizers
- Palliatives
- Herbicides
- Growth inhibitors
- Fertilizers
- Deicing/anti-icing chemicals
- Fuels
- Lubricants

- Other petroleum distillates

Limitations

- This BMP only applies to spills caused by the contractor.
- Use only a reputable, licensed spill clean up company to clean up large spills.
- Procedures and practices presented in this BMP are general. Contractor shall identify appropriate practices for the specific materials used or stored on site.

Standards and Specifications

Education

- Educate employees and subcontractors on what a "significant spill" is for each material they use, and what is the appropriate response for "significant" and "insignificant" spills.
- Educate employees and subcontractors on potential dangers to humans and the environment from spills and leaks.
- Hold regular meetings to discuss and reinforce appropriate disposal procedures (incorporate into regular safety meetings).
- Establish a continuing education program to indoctrinate new employees.
- Designate a foreman or supervisor to oversee and enforce proper spill prevention and control measures.

Clean up and Storage Procedures

- Minor Spills
  - Minor spills typically involve small quantities of oil, gasoline, paint, etc. which can be controlled by the first responder at the discovery of the spill.
  - Use absorbent materials on small spills rather than hosing down or burying the spill.
  - Remove the absorbent materials promptly and dispose of properly.
  - The practice commonly followed for a minor spill is:
    1. Contain the spread of the spill.

2. Recover spilled materials.

3. Clean the contaminated area and/or properly dispose of contaminated materials.

- Semi-Significant Spills

  - Semi-significant spills still can be controlled by the first responder along with the aid of other personnel such as laborers and the foreman, etc. This response may require the cessation of all other activities.

  - Clean up spills immediately:

    1. Notify the project foreman immediately. The foreman shall notify the Engineer.

    2. Contain spread of the spill.

    3. If the spill occurs on paved or impermeable surfaces, clean up using "dry" methods (absorbent materials, cat litter and/or rags). Contain the spill by encircling with absorbent materials and do not let the spill spread widely.

    4. If the spill occurs in dirt areas, immediately contain the spill by constructing an earthen dike. Dig up and properly dispose of contaminated soil.

    5. If the spill occurs during rain, cover spill with tarps or other material to prevent contaminating runoff.

- Significant/Hazardous Spills

  - For significant or hazardous spills that cannot be controlled by personnel in the immediate vicinity, the following steps shall be taken:

    1. Notify the Engineer immediately and follow up with a written report.

    2. Notify the local emergency response by dialing 911. In addition to 911, the contractor will notify the proper county officials. It is the contractor's responsibility to have all emergency phone numbers at the construction site.

3. Notify the Governor's Office of Emergency Services Warning Center, (805) 852-7550.

4. For spills of federal reportable quantities, the contractor shall notify the National Response Center at (800) 424-8802.

5. Notification should first be made by telephone and followed up with a written report.

6. The services of a spills contractor or a Haz-Mat team shall be obtained immediately. Construction personnel should not attempt to clean up until the appropriate and qualified staff has arrived at the job site.

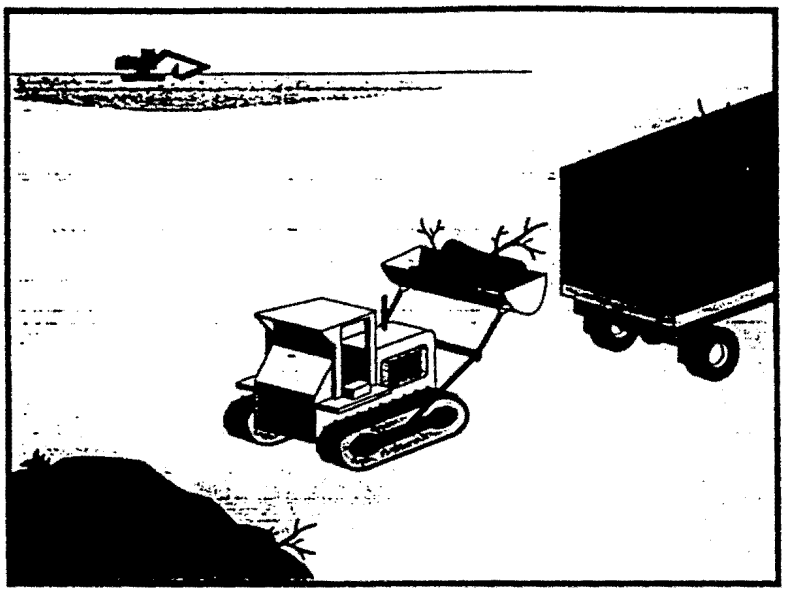
7. Other agencies which may need to be consulted include, but are not limited to, the Fire Department, the Public Works Department, the Coast Guard, the Highway Patrol, the City/County Police Department, Department of Toxic Substances, California Division of Oil and Gas, Cal/OSHA, etc.

Maintenance and Inspection

- Verify weekly that spill control clean up materials are located near material storage, unloading, and use areas.

- Update spill prevention and control plans and stock appropriate clean-up materials whenever changes occur in the types of chemicals on site.

CD13(2)
Solid Waste Management



SWM

BMP Objectives

- ○ Soil Stabilization
- ○ Sediment Control
- ○ Tracking Control
- ○ Wind Erosion Control
- ● Non-Storm Water

Definition and Purpose

Procedures and practices to reduce the discharge of pollutants to the storm drain system or to watercourses as a result of the creation, stockpiling, and removal of litter and other construction wastes.

Appropriate Applications

Solid waste management is applicable to construction projects that generate any of the following byproducts, residuals, or wastes:

- Concrete, brick, and mortar
- Steel and metal scraps (rebar, nails, guardrail, rust residue)
- Tree and shrub wastes from clearing and grubbing
- Pipe and electrical cuttings
- Pavement planing or grinding and removal
- Wood framing or falsework
- Domestic wastes including food containers, beverage cans, coffee cups, paper bags, plastic wrappers, and cigarettes
- Other waste products not specifically identified

Limitations

- Temporary stockpiling of certain construction wastes may not necessitate stringent drainage related controls during the non-winter season or in desert areas with low rainfall.

Standards and Specifications

Education

- Designate a foreman or supervisor to oversee and enforce proper solid waste procedures and practices.
- Instruct employees and subcontractors on identification of solid waste and hazardous waste.
- Educate employees and subcontractors on solid waste storage and disposal procedures.
- Hold regular meetings to discuss and reinforce disposal procedures (incorporate into regular safety meetings).
- Require that employees and subcontractors follow solid waste handling and storage procedures.
- Prohibit littering by employees, subcontractors, and visitors.
- Wherever possible, minimize production of solid waste materials.

Collection

- Collect site trash regularly, daily during rainy and windy conditions.
- Arrange for regular (not less than weekly) container service by local trash hauler. If local trash haulers are not utilized, contractor shall provide for regular (not less than weekly) removal of trash in containers.

Storage

- Notify trash hauling contractors that only watertight dumpsters are acceptable for use on site.
- Plan for additional containers during the demolition phase of construction.
- Designate on-site waste storage areas and obtain approval of the Engineer.
- Designate waste storage areas that are away from storm drain inlets, drainage facilities, or watercourses.

- Provide containers in areas where employees congregate for breaks and lunch.
- Use containment berms for waste storage areas when needed to prevent runoff.
- Segregate potentially hazardous waste from nonhazardous construction site waste.
- Keep solid waste materials shielded by either a covered dumpster or other enclosed trash container that limits contact with rain, runoff, and scattering due to blowing winds.
- Divert runoff which comes into contact with unprotected waste into appropriate control measures in order to remove waste and debris.
- Make sure that toxic liquid wastes (used oils, solvents, and paints) and chemicals (acids, pesticides, additives, curing compounds) are not disposed of in dumpsters designated for construction debris.
- Do not hose out dumpsters on the construction site. Leave dumpster cleaning to the trash hauling contractor, to be conducted at said haulers approved place of business.

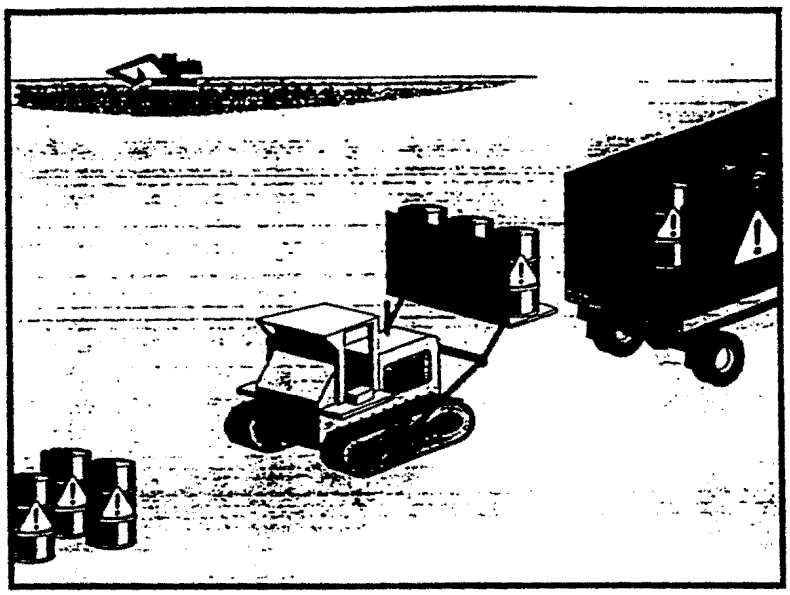
Disposal

- Plan for more frequent pickup during the demolition phase of construction.
- Dispose of nonhazardous waste in accordance with Standard Specification 7-1.13, Disposal of Material Outside the Highway Right-of-Way.
- For disposal of hazardous waste, see BMP CD14(2)-Hazardous Waste Management. Haul hazardous waste to an appropriate disposal and/or recycling facility.
- Salvage or recycle useful vegetation debris, packaging and/or surplus building materials when practical. For example, trees and shrubs from land clearing can be used as a brush barrier, or converted into wood chips, then used as mulch on graded areas. Wood pallets, cardboard boxes, and construction scraps can also be recycled.
- Litter stored in collection areas and containers shall be handled and disposed of by trash hauling contractors..

Maintenance and Inspection

- Foreman and/or construction supervisor shall monitor on-site solid waste storage and disposal procedures.
- Police site for litter and debris.

CD14(2)
Hazardous Waste Management



BMP Objectives

- ○ Soil Stabilization
- ○ Sediment Control
- ○ Tracking Control
- ○ Wind Erosion Control
- ● Non-Storm Water

Definition and Purpose

Procedures and practices to reduce the discharge of pollutants from construction site hazardous waste to the storm drain system or to watercourses by educating staff and proper storage and disposal of wastes.

Appropriate Applications

Hazardous waste management is applicable to construction projects that generate any of the following hazardous wastes:

- Petroleum products such as oils, fuels, and grease
- Asphalt products
- Concrete curing compounds
- Herbicides and pesticides
- Chemical additives used for soil stabilization (e.g., palliative such as calcium chloride)
- Acids for cleaning masonry
- Septic wastes
- Paints and solvents
- Wood preservatives
- Stains

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Storage Procedures

- Ensure that adequate hazardous waste storage volume is available.
- Ensure that hazardous waste collection containers are conveniently located.
- Designate hazardous waste storage areas on site, away from storm drains or watercourses.
- Minimize production or generation of hazardous materials and hazardous waste on the jobsite.
- Use containment berms in fueling and maintenance areas and where the potential for spills is high.
- Segregate potentially hazardous waste from nonhazardous construction site debris.
- Store hazardous materials and wastes in covered containers and protected from vandalism.
- Keep liquid or semi-liquid hazardous waste in appropriate containers (closed drums or similar) and under cover.
- Clearly mark on all hazardous waste containers which materials are acceptable for the container.
- Place hazardous waste containers in secondary containment.
- Do not allow potentially hazardous waste materials to accumulate on the ground.
- Do not mix wastes, as this can cause chemical reactions, make recycling impossible, and complicate disposal.

Disposal Procedures

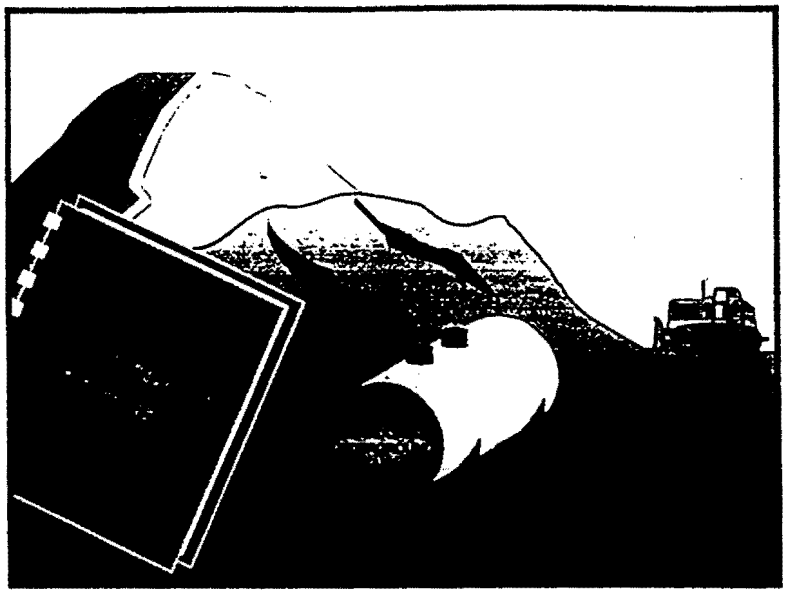
- Regularly schedule hazardous waste removal to minimize on-site storage.
- Arrange for regular waste collection before containers overflow.
- Use only reputable, licensed hazardous waste haulers.

- Make sure that toxic liquid wastes (used oils, solvents, and paints) and chemicals (acids, pesticides, additives, curing compounds) are not disposed of in dumpsters designated for construction debris.
- Recycle any useful material such as used oil or water-based paint when practical.

Maintenance and Inspection

- Foreman and/or construction supervisor shall monitor on-site hazardous waste storage and disposal procedures.

CD15(2)
Contaminated Soil Management



CSM

CSM

BMP Objectives

- ○ Soil Stabilization
- ○ Sediment Control
- ○ Tracking Control
- ○ Wind Erosion Control
- ● Non-Storm Water

Definition and Purpose

Procedures and practices to reduce the discharge of pollutants to the storm drain system or to watercourses as a result of construction activity in or near contaminated soils by identifying and protecting contaminated areas, and conducting appropriate cleanup activities.

Appropriate Applications

- Applicable to many construction projects, especially those in highly urbanized or industrial areas, where soil contamination may have occurred due to spills, illicit discharges, and underground storage tanks.
- Applicable to highway widening projects in older areas where median and shoulder soils may have been contaminated by aerially deposited lead.

Limitations

- The procedures and practices presented in this BMP are general. The contractor shall identify appropriate practices and procedures for the specific contaminants known to exist or discovered on site.

Standards and Specifications

Identifying Contaminated Areas

- Contaminated soils are often identified in the project materials report with known locations identified in the plans and specifications. The contractor shall review applicable reports and investigate appropriate callouts in the plans and specifications.

- The contractor may further identify contaminated soils by investigating:
  - Past site uses and activities.
  - Detected or undetected spills and leaks.
  - Acid or alkaline solutions from exposed soil or rock formations high in acid or alkaline forming elements.
- Look for contaminated soil as evidenced by discoloration, odors, differences in soil properties, abandoned underground tanks or pipes, or buried debris.

Education

- Prior to performing any excavation work at the locations containing material classified as hazardous, employees and subcontractors shall complete a safety training program which meets 29 CFR 1910.120 and 8 CCR 5192 covering the potential hazards as identified.
- Educate employees and subcontractors on contaminated soil handling and disposal procedures.
- Instruct employees and subcontractors in identification of contaminated soil.
- Hold regular meetings to discuss and reinforce disposal procedures (incorporate into regular safety meetings).

Handling Procedures for Material with Aerially Deposited Lead

- Materials from areas designated as containing aerially deposited lead may, if allowed by the contract special provisions, be excavated, transported, and used in the construction of embankments and/or backfill.
- Excavation, transportation, and placement operations shall result in no visible dust.
- Use caution to prevent spillage of lead containing material during transport.
- Monitor the air quality during excavation of soils contaminated with lead.

Contaminated Soil Management

Handling Procedures for Contaminated Soils or Hazardous Materials

- Test suspected soils at a Caltrans approved, certified laboratory.
- If the soil is contaminated, work with the local regulatory agencies to develop options for treatment and/or disposal.
- Avoid temporary stockpiling of contaminated soils or hazardous material.
- If temporary stockpiling is necessary:
  1. Cover the stockpile with plastic sheeting or tarps.
  2. Install a berm around the stockpile to prevent runoff from leaving the area.
  3. Do not stockpile in or near storm drains or watercourses.
  4. Implement stockpile controls as presented in CD10(2) - Material Delivery and Storage.
- Contaminated material and hazardous material on exteriors of transport vehicles shall be removed and placed either into the current transport vehicle or the excavation prior to the vehicle leaving the exclusion zone.
- Monitor the air quality continuously during excavation operations at all locations containing hazardous material.
- Procure all permits and licenses, pay all charges and fees, and give all notices necessary and incident to the due and lawful prosecution of the work, including registration for transporting vehicles carrying the contaminated material and the hazardous material.
- Collect water from decontamination procedures and dispose of at an appropriate disposal site.
- Collect non-reusable protective equipment, once used by any personnel, and dispose of at an appropriate disposal site.
- Install temporary security fence to surround and secure the exclusion zone. Remove fencing when no longer needed.

- Excavation, transport, and disposal of contaminated material and hazardous material shall be in accordance with the rules and regulations of the following agencies (the specifications of these agencies shall supersede the procedures outlined in this BMP):
  - United States Department of Transportation (USDOT);
  - United States Environmental Protection Agency (USEPA);
  - California Environmental Protection Agency (CAL-EPA);
  - California Division of Occupation Safety and Health Administration (CAL-OSHA); and
  - Local regulatory agencies.

Procedures for Underground Storage Tank Removals

- Prior to commencing tank removal operations, obtain the required underground storage tank removal permits and approval from the federal, state, and local agencies which have jurisdiction over such work.
- Arrange to have tested, as directed by the Engineer, any liquid or sludge found in the underground tank prior to its removal to determine if it contains hazardous material.
- Following the tank removal, take soil samples beneath the excavated tank and perform analysis as required by the local agency representative(s).
- The underground storage tank, any liquid and/or sludge found within the tank, and all contaminated material and hazardous material removed during the tank removal shall be transported to disposal facilities permitted to accept such material.

Water Control

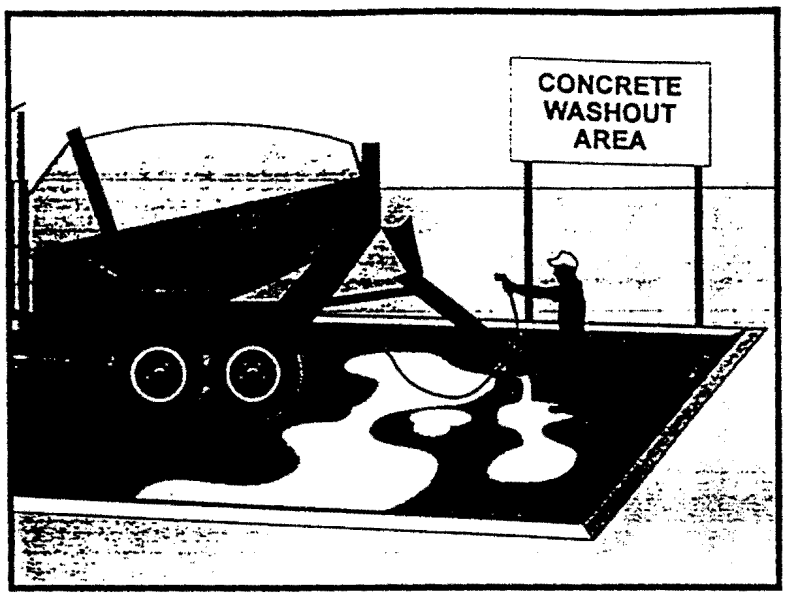
- Take all necessary precautions and preventive measures to prevent the flow of water, including ground water, from entering hazardous material or underground storage tank excavations. Such preventative measures may consist of, but are not limited to: berms, cofferdams, grout curtains, freeze walls, and seal course concrete or any combination thereof.

- If water does enter an excavation and becomes contaminated, such water, when necessary to proceed with the work, shall be discharged to clean, closed top, watertight, transportable holding tanks, and disposed of in accordance with federal, state, and local laws.

Maintenance and Inspection

- Inspect excavated areas daily for signs of contaminated soil.
- Monitor air quality continuously during excavation operations at all locations containing hazardous material.
- Coordinate contaminated soils and hazardous material management with the appropriate federal, state, and local agencies.
- Inspect hazardous waste receptacles and areas regularly.

CD16(2)
Concrete Waste Management



CWM

CWM

BMP Objectives

- O Soil Stabilization
- O Sediment Control
- O Tracking Control
- O Wind Erosion Control
- ● Non-Storm Water

Definition and Purpose

Procedures and practices to reduce the discharge of concrete waste materials to the storm drain system or to watercourses by implementing washout procedures and disposal practices.

Appropriate Applications

Applicable to construction projects where concrete is used as a construction material or where concrete dust and debris result from demolition activities.

Limitations

None identified.

Standards and Specifications

Education

- Instruct drivers and equipment operators on proper disposal and equipment washout practices.
- Educate employees, subcontractors, and suppliers on concrete waste storage and disposal procedures.
- Designate a foreman or supervisor to oversee and enforce concrete waste management procedures. Make supervisors aware of the potential environmental consequences of improperly handled concrete wastes.

Unacceptable Waste Concrete Disposal Practices

- Illicit dumping on-site or off-site without property owners knowledge and consent.

- Dumping into ditches, streams, streets, storm drain facilities or watercourses.

General Practices

- Follow Standard Specifications Section 15-3.02-Removal Methods for concrete removal and on-site disposal.

- Avoid mixing excess concrete or cement which must be discarded on site.

- When washing concrete to remove fine particles and expose the aggregate, do not wash the fines into the street or storm drain. Collect and return the fines to the aggregate base stockpile or dispose of properly.

- Minimize water use by having a positive shutoff on the washout hose.

Disposal Practices

- Designate concrete disposal areas.

- Store dry bulk and bagged cement, mortar, sand, and concrete materials under cover, away from watercourses or storm drains.

On Site Washout Procedures

- Designate areas to be used for washout of transit mix trucks and other vehicles used to transport or move concrete.

- Locate on site washout areas at least 15 m (50 ft) from storm drain inlets, drainage facilities, or watercourses. Contain runoff from this area by constructing a temporary pit or bermed area large enough to contain the liquid and solid waste generated during washout procedures.

- Washout locations may be flagged with lath and surveyors tape or designated as necessary to insure that truck drivers utilize proper areas.

- Perform washout of concrete trucks in designated areas only.

- Wash wastes into a temporary pit where the concrete can set, be broken up, and then disposed of properly. Dispose of hardened concrete on a regular basis.

Demolition Practices

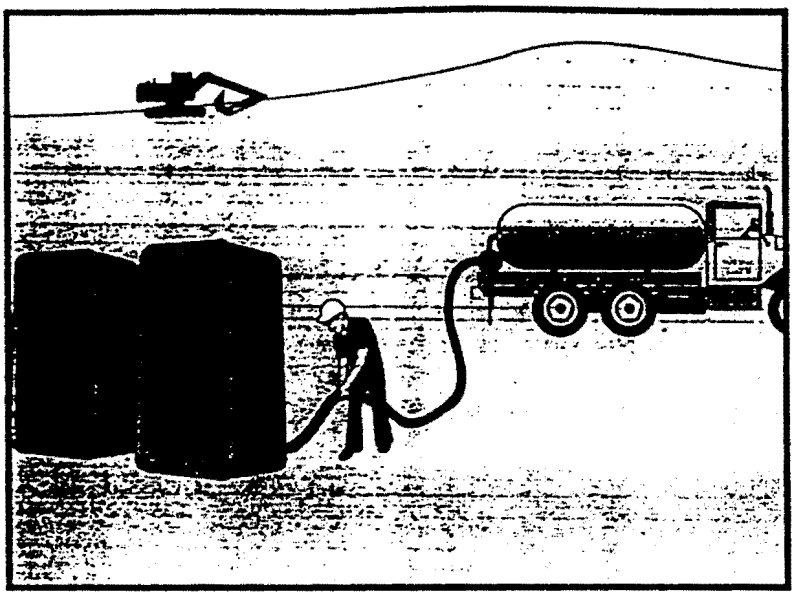
- Monitor weather and wind direction to ensure concrete dust is not entering storm drains, watercourses, or surface waters.

- Where appropriate, construct sediment traps or other types of sediment detention devices downstream of demolition activities.

Maintenance and Inspection

- Foreman and/or construction supervisor shall monitor on site concrete waste storage and disposal procedures at least weekly.

CD17(2)
Sanitary/Septic Waste Management



SS

BMP Objectives

- O Soil Stabilization
- O Sediment Control
- O Tracking Control
- O Wind Erosion Control
- ● Non-Storm Water

Definition and Purpose

Procedures and practices to reduce the discharge of pollutants to the storm drain system or to watercourses as a result of construction site sanitary/septic waste management by properly storing and disposing of these wastes.

Appropriate Applications

Applicable to all construction sites that use temporary or portable sanitary/septic waste systems.

Limitations

Not applicable.

Standards and Specifications

Education

- Educate employees, subcontractors, and suppliers on sanitary/septic waste storage and disposal procedures.
- Educate employees, subcontractors, and suppliers of potential dangers to humans and the environment from sanitary/septic wastes.
- Instruct employees, subcontractors, and suppliers in identification of sanitary/septic waste.
- Hold regular meetings to discuss and reinforce disposal procedures (incorporate into regular safety meetings).
- Establish a continuing education program to indoctrinate new employees.

Sanitary/Septic Waste Management

Storage Procedures

- If using an on site disposal system, such as a septic system, comply with local health agency requirements.
- If discharging to the sanitary sewer, contact the local wastewater agency for their requirements.
- Locate sanitary facilities in a convenient location, but away from storm drain inlets, drainage facilities, and watercourses.
- Properly connect temporary sanitary facilities that discharge to the sanitary sewer system to avoid illicit discharges.
- Anchor portable sanitary facilities, when needed, to prevent them from blowing over or being turned over by vandals.
- Never discharge or bury untreated raw wastewater on site.

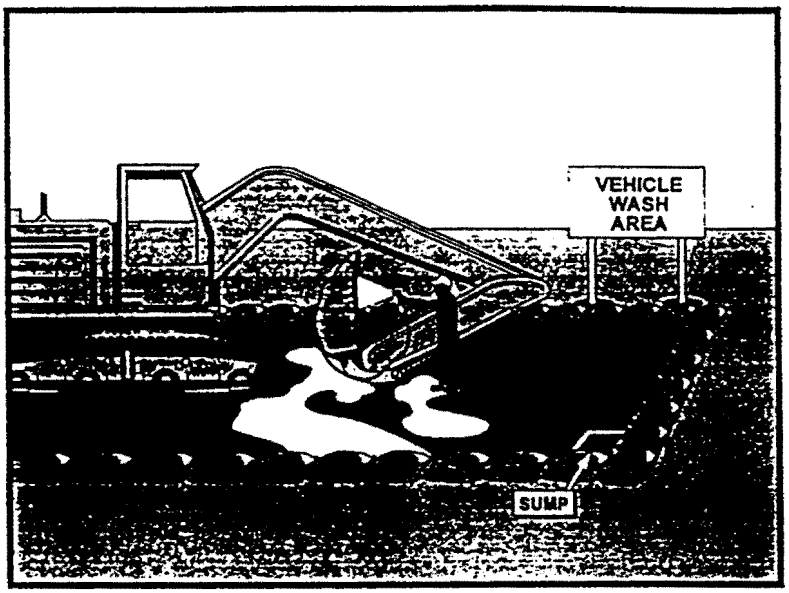
Disposal Procedures

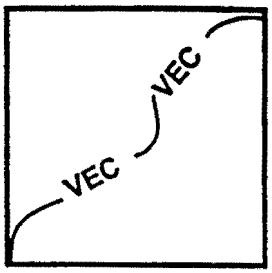
- Ensure that sanitary/septic facilities are maintained in good working order by a licensed service.
- Use only reputable, licensed sanitary/septic waste haulers.

Maintenance and Inspection

- Foreman and/or construction supervisor shall monitor on site sanitary/septic waste storage and disposal procedures at least weekly.

CD18(2)
Vehicle and Equipment Cleaning





BMP Objectives

- O Soil Stabilization
- O Sediment Control
- O Tracking Control
- O Wind Erosion Control
- ● Non-Storm Water

Definition and Purpose

Procedures and practices to reduce the discharge of pollutants to the storm drain system or to watercourses as a result of vehicle and equipment cleaning by conducting these activities off site when practical or by conducting these operations in designated and protected areas when conducted on site.

Appropriate Applications

Applicable to all construction sites where vehicles and equipment cleaning is performed.

Limitations

- Some municipalities may require pretreatment and monitoring of wash water discharges to the sanitary sewer.

Standards and Specifications

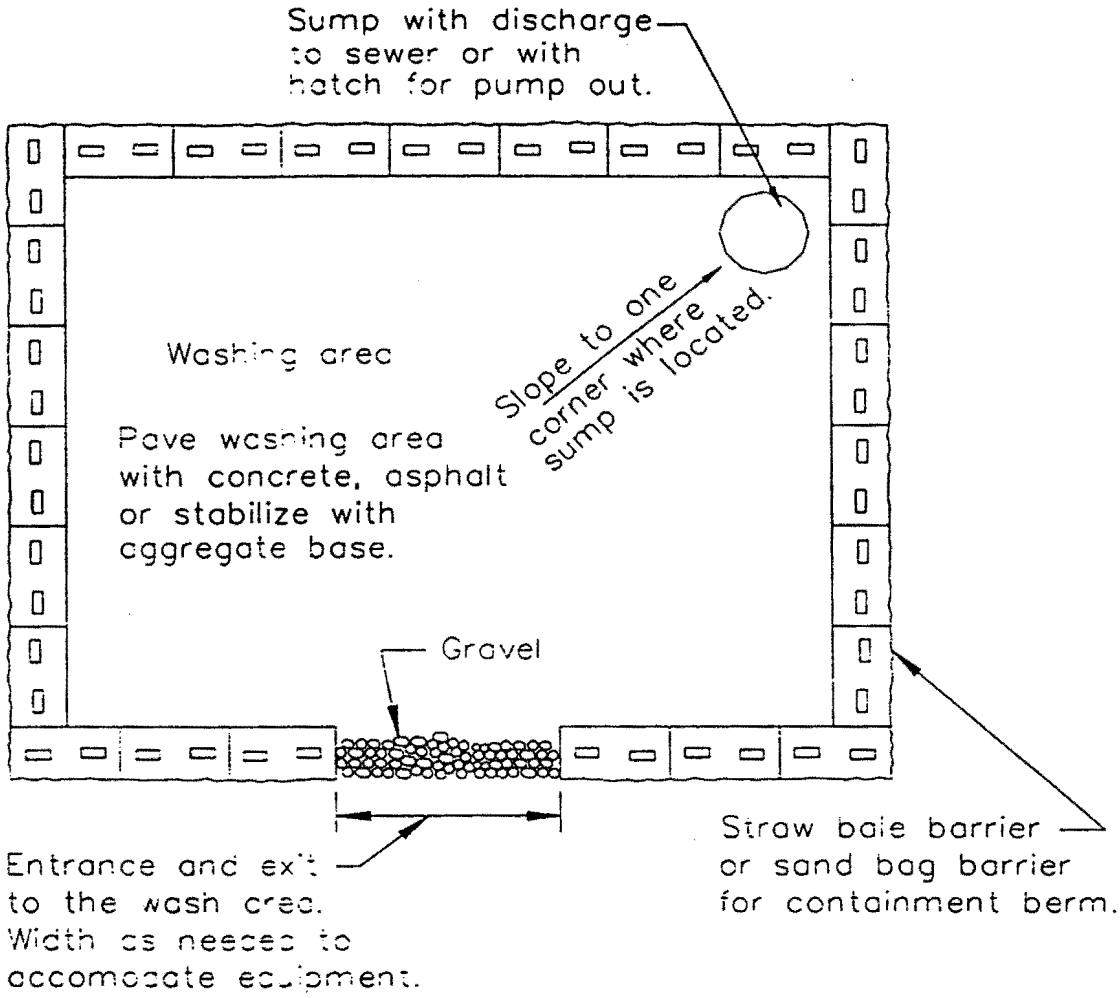
- Clean off site all vehicles/equipment that regularly enter and leave the construction site.
- When vehicle/equipment washing/cleaning must occur on site, and the operation cannot be located within a structure or building equipped with sanitary sewer facilities, the outside cleaning area shall have the following characteristics:
  - Located away from storm drain inlets, drainage facilities, or watercourses
  - Paved with concrete or asphalt, or stabilized with an aggregate base
  - Bermed to contain wash waters and to prevent runon and runoff

- Configured wash area with a sump to allow collection and disposal of wash water
- Discharges wash water to a sanitary or process waste sewer (where permitted), or to a dead end sump. Wash waters shall not be discharged to storm drains or watercourses
- Used only when necessary

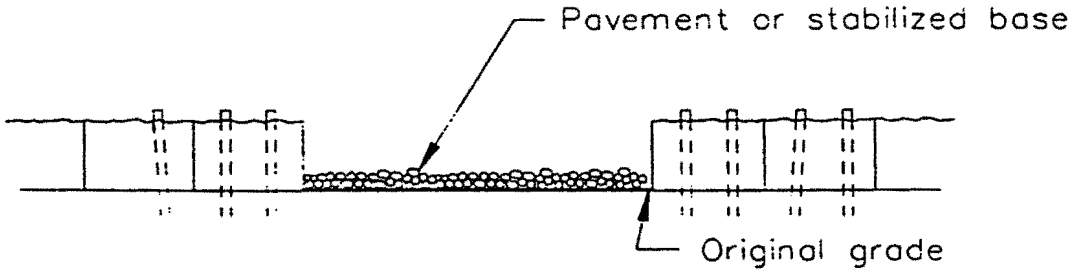
- When cleaning vehicles/equipment with water:
  - Use as little water as possible. High pressure sprayers may use less water than a hose, and should be considered.
  - Use positive shutoff valve to minimize water usage.
- Do not use solvents to clean vehicles/equipment on site.
- Do not permit steam cleaning on site.

Maintenance and Inspection

- The control measure should be inspected at a minimum of once a week.
- Service sump regularly.



PLAN

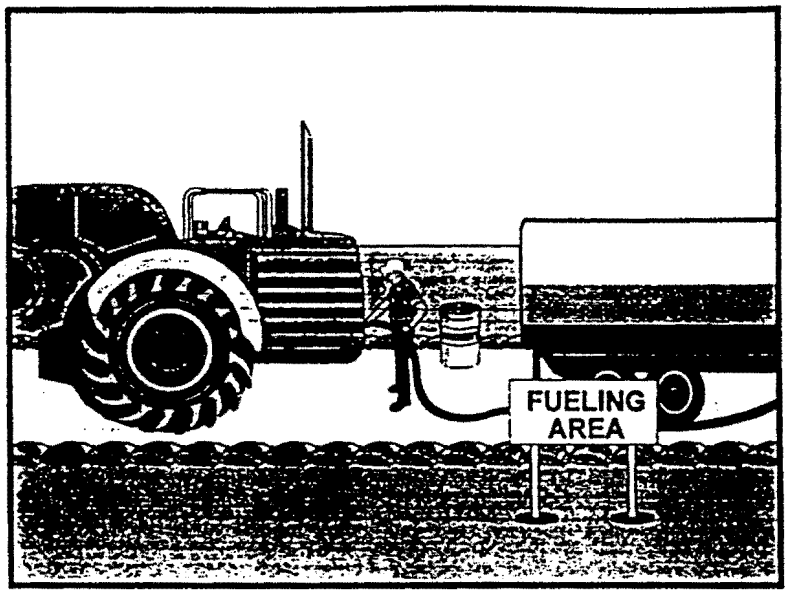


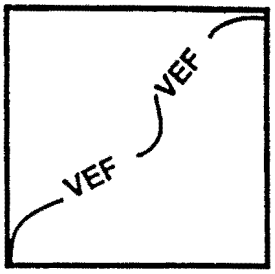
FRONT ELEVATION

TYPICAL VEHICLE & EQUIPMENT CLEANING AREA
NOT TO SCALE

Sheet 1

CD19(2)
Vehicle and Equipment Fueling





BMP Objectives

- O Soil Stabilization
- O Sediment Control
- O Tracking Control
- O Wind Erosion Control
- ● Non-Storm Water

Definition and Purpose

Procedures and practices to reduce the discharge of pollutants to the storm drain system or to watercourses as a result of vehicle and equipment fueling by preventing leaks and spillage and by cleaning up spilt materials when needed.

Appropriate Applications

Applicable to all construction sites where vehicle and equipment fueling takes place.

Limitations

- On-site vehicle and equipment fueling should only be used where it's impractical to send vehicles and equipment offsite for fueling.

Standards and Specifications

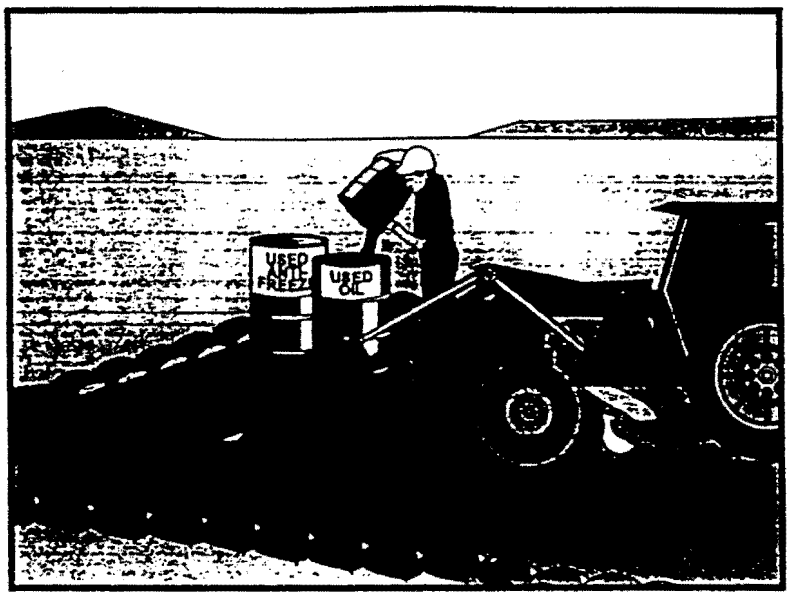
- When fueling must occur on site, the contractor shall select and designate an area to be used, subject to approval of the Engineer.
- Locate designated fueling areas away from storm drain inlets, drainage facilities, or watercourses.
- Locate fueling areas on a paved surface where practical.
- Protect fueling areas with berms and/or dikes to prevent runon, runoff, and to contain spills.
- Secondary containment techniques such as drain pans or drop cloths shall be used when fueling to catch spills or leaks.

- Use vapor recovery nozzles to help control drips as well as air pollution where required by Air Quality Management Districts.
- Use nozzles equipped with automatic shutoff features to prevent overtopping fuel tank.
- Fuel tanks shall not be "topped-off."
- A stockpile of spill clean up materials shall be readily accessible at designated fueling areas.
- Absorbent materials shall be used on small spills instead of hosing down or burying techniques. The spent absorbent material shall be removed promptly and disposed of properly.
- Federal, state, and local requirements shall be observed for any stationary above ground storage tanks.
- Mobile fueling of construction equipment throughout the site should be minimized. Whenever practical, equipment shall be transported to the designated fueling area.

Maintenance and Inspection

- Fueling areas and storage tanks shall be inspected on a regular basis.
- Keep an ample supply of spill cleanup material on the site.
- Immediately cleanup spills and properly dispose contaminated soil and cleanup materials.

CD20(2)
Vehicle and Equipment Maintenance



VEM

BMP Objectives

- O Soil Stabilization
- O Sediment Control
- O Tracking Control
- O Wind Erosion Control
- ● Non-Storm Water

Definition and Purpose

Procedures and practices to reduce the discharge of pollutants to the storm drain system or to watercourses as a result of vehicle and equipment maintenance by conducting these activities off site or in a designated area designed to contain spills and prevent runon or runoff.

Appropriate Applications

Applicable to all construction projects where an onsite yard area is necessary for storage and maintenance of heavy equipment and vehicles.

Limitations

None identified.

Standards and Specifications

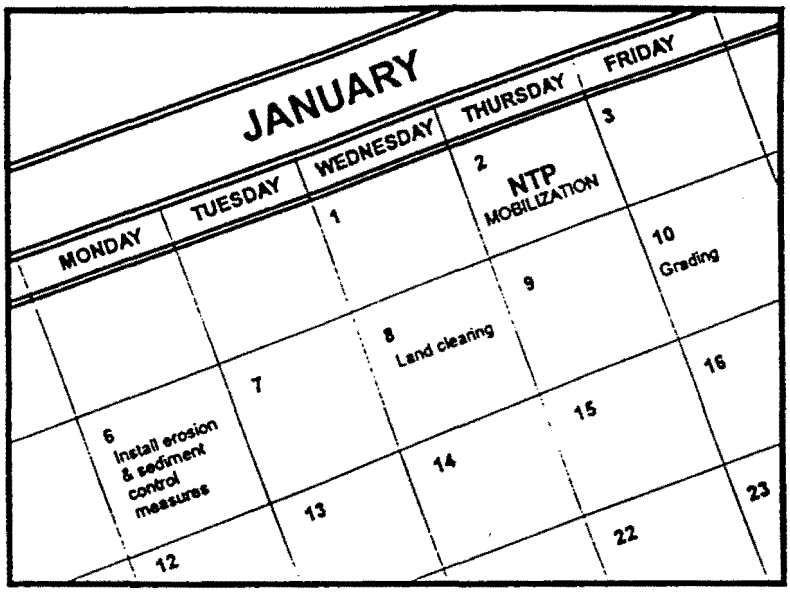
- Use off-site maintenance facilities whenever practical.
- Designate on-site vehicle and equipment maintenance areas, away from storm drain inlets and watercourses.
- Locate on paved surfaces where practical.
- Use berms to protect maintenance areas from runon.
- For long-term projects, consider using portable tents or covers over maintenance areas.
- Properly dispose of used oils, fluids, and lubricants.
- Do not dump fuels and lubricants onto the ground.

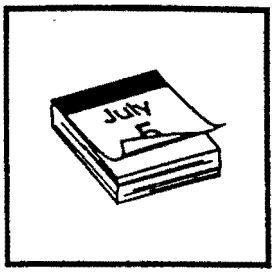
- Do not place used oil in a dumpster or pour into a storm drain or watercourse.
- Properly dispose of or recycle used batteries.
- Do not bury used tires.
- Repair leaks of fluids and oil immediately.
- Provide spill containment dikes or secondary containment around stored oil and chemical drums.
- Maintain an adequate supply of spill cleanup materials in designated areas.

Maintenance and Inspection

- Maintain waste fluid containers in leak proof condition.
- Vehicle and equipment maintenance areas shall be inspected regularly.
- Inspect equipment for damaged hoses and leaky gaskets routinely. Repair or replace as needed.

CD22(2)
Scheduling





BMP Objectives

- ● Soil Stabilization
- ○ Sediment Control
- ○ Tracking Control
- ○ Wind Erosion Control
- ○ Non-Storm Water

Definition and Purpose

Procedures and practices to reduce the discharge of pollutants to the storm drain system or to watercourses as a result of construction activities by scheduling construction activities in a manner that minimize the exposure of disturbed soils to wind, rain, runon and runoff.

Appropriate Applications

All projects involving land-disturbing activities.

Limitations

None Identified.

Standards and Specifications

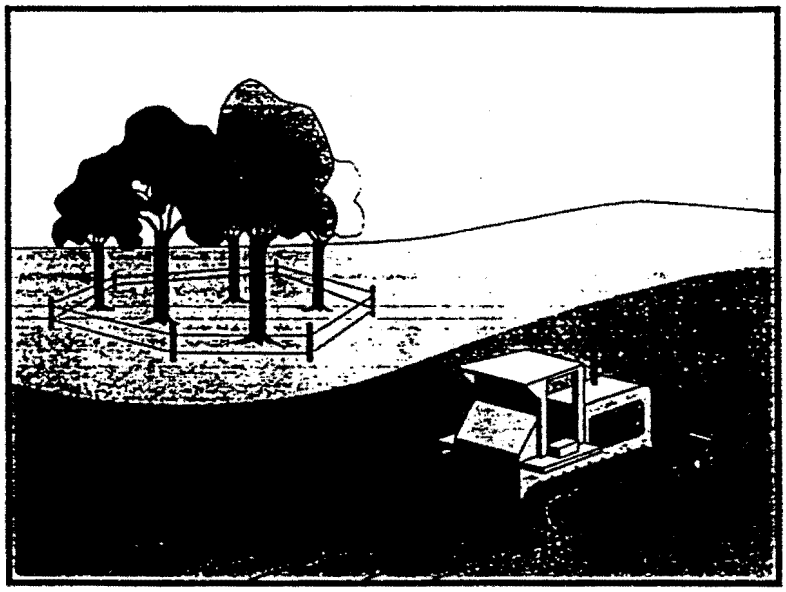
- Plan project to incorporate the use of a schedule or flow chart to layout the construction plan.
- Work out the sequencing and timetable for the start and completion of each item such as site clearing, grading, excavation, pouring foundations, installing utilities, etc.
- Schedule work to minimize the active construction area during the rainy season.
- Incorporate soil stabilization items in the construction schedule.
- Stabilize nonactive areas as soon as practical.
- Minimize land disturbing activities during the winter season.

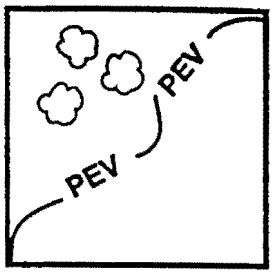
- Schedule major grading operations for the non-winter season when practical.
- Monitor the weather forecast for rainfall.
- When rainfall is predicted, adjust the construction schedule to allow the implementation of erosion and sediment controls and sediment treatment controls on all disturbed areas prior to the onset of rain.
- Be prepared year-round to deploy erosion and sediment control and sediment treatment control practices. Erosion may be caused during dry seasons by unseasonal rainfall, wind and vehicle tracking. Keep the site stabilized year-round, and retain and maintain rainy season sediment trapping devices in operational condition.
- Incorporate staged seeding and re-vegetation of graded slopes as work progresses.
- Sequence trenching activities so that most open portions are closed before new trenching begins.

Maintenance and Inspection

- Routinely verify that work is progressing in accordance with the schedule. If progress deviates, take corrective actions.
- When changes are warranted, amend the sequence scheduling in advance to maintain control.

CD23(2)
Preservation of Existing Vegetation





BMP Objectives

- ● Soil Stabilization
- O Sediment Control
- O Tracking Control
- ● Wind Erosion Control
- O Non-Storm Water

Definition and Purpose

Procedures and practices to reduce the discharge of pollutants to the storm drain system or to watercourses as a result of construction activities by protecting existing vegetation which protects the site from soil erosion.

Appropriate Applications

This technique is applicable to all types of construction sites. Areas where preserving vegetation can be particularly beneficial are floodplain, wetlands, streambanks, steep slopes, and other areas where erosion control would be difficult to establish, install, and maintain, or areas where there are critical resources downstream.

Preservation of existing vegetation should be practiced in the following locations:

- Areas on a site where no construction activity is planned or will occur at a later date.
- Sensitive areas where natural vegetation exists and should be preserved, such as on steep slopes, watercourses, and building sites in wooded areas.
- Areas where federal, state, or local government regulations require preservation, such as delineated wetlands, vernal pools, marshes, etc.

Limitations

Protection of existing vegetation requires planning, and may constrict the area available for construction activities.

Preservation of Existing Vegetation

Standards and Specifications

Timing

Preservation of existing vegetation shall be done before any site disturbance begins.

Tree and Vegetation Marking

Clearing limits shall be outside of the drip line of any retained tree, and at a minimum of 1.5 m (5 ft) from the trunk regardless of the size of the tree. A protective device, to guard against damage to roots, trunk, and tops of trees, shall be placed at these limits.

Individual trees, stands of trees, and areas of vegetation to be retained shall be marked before construction at a height visible to equipment operators. Orange-colored plastic construction fencing or other suitable material shall be used. Within 12 m (40 ft) of a proposed building or excavation, however, retained trees shall be protected by fencing. The following are alternatives for tree and vegetation protection:

- A standard snow fence on steel posts set 1.8 m (6 ft) apart and at a height of 1.0 m (40 in), placed at clearing limits.

- Board fencing on 100 mm (4 in) square posts set securely and 1.8 m (6 ft) apart, and protruding at least 1.2 m (4 ft) above the ground, placed at clearing limits.

- A cord fence with 2 rows of cord at least 6 mm (¼ in) in thickness running between posts. Each post shall be at least 50 mm (2 in) thick set securely and 1.8 m (6 ft) apart, protruding at least 1.2 m (4 ft) above the ground, placed at clearing limits. Strips of colored surveyor's flagging shall be tied securely to the cord at intervals of no more than 900 mm (3 ft).

- Plastic fencing of 1.0 m (40 in) high orange polyethylene webbing, secured to metal "T" or "U" posts driven to a depth of at least 450 mm (18 in), on 1.8 m (6 ft) minimum centers, placed at the clearing limits. Minimum physical qualities (ASTM D638) of this fencing shall be:

  - an average tensile yield of 7,300 N/m (2,000 lbs/4 ft) width,

  - an average ultimate tensile yield of 10,600 N/m (2,900 lbs/4 ft) width,

- elongation at break greater than 1,000%, and
- chemically inert to most chemicals and acids.

- An earth berm constructed according to specifications, but only if its presence does not conflict with drainage patterns. The base of the berm on the tree or vegetation side shall be located at the clearing limits.

- Leaving a buffer zone of existing trees between the trunks of retained trees and the clearing limits. Trees in this buffer zone shall be a maximum of 1.8 m (6 ft) apart so that equipment and material cannot pass. These trees shall be re-examined before construction is completed to check for and ensure survival or be removed.

- As a last resort, a tree trunk may be armored with burlap wrapping and 50 mm (2 in) studs wired vertically, no more than 50 mm (2 in) apart encircling the trunk to a height of 1.5 m (5 ft). No nailing shall ever be done to a retained tree. The root zone, however, will still require protection.

Employees and subcontractors shall be instructed to honor protective devices. No heavy equipment, vehicular traffic, or storage piles of any construction materials shall be permitted within the drip line of any tree to be retained. Removed trees shall not be felled, pushed, or pulled into any retained trees. Fires shall not be permitted within 30 m (100 ft) of the drip line of any retained trees. Any fires shall be of limited size, and shall be kept under continual surveillance. No toxic or construction materials – including paint, acid, nails, gypsum board, chemicals, fuels, and lubricants – shall be stored within 15 m (50 ft) of the drip line of any retained trees, nor disposed of in any way which would injure vegetation.

Grade Protection

Tree wells can be used to protect the root zone of retained trees, when approved by the Engineer. Unless specified otherwise, use the following procedure:

- Remove vegetation and organic matter from beneath the retained tree(s) to at least 1 m (3 ft) beyond the drip line, loosening the soil to at least 75 mm (3 in) in depth without damaging roots.

- Apply fertilizer to the loosened soil at rates not to exceed those recommended by the fertilizer manufacturer.

- Construct a dry well to allow for trunk growth. Provide 300 mm (12 in) between the trunk and the wall for older, slow-growing trees, and at least 600 mm (24 in) for younger trees.

- The well shall be just above the level of the proposed fill, and the wall should taper away from the trunk by 80 mm/m (1 in/ft) of wall height.

- The well wall shall be constructed of large stone, brick, building tile, concrete blocks, or cinder blocks, with openings left in the wall for the flow of air and water. Mortar shall be used only near the top of the well and above the porous fill.

- Drain lines beginning at the lowest point inside the well shall be built extending outward from the trunk in a radial pattern with the trunk as the hub. They shall be made of 100 mm (4 in) drain tiles, sloping away from the well at a rate of 10 mm/m (0.125 in/ft). A circumferential line of tiles shall be located beneath the drip line; vertical tiles or pipes should be placed over the intersections of the two tile systems for fills greater than 600 mm (24 in) in depth, held in place with stone fill. All tile joints should be tight. Drainage may be improved by extending a few radial tiles beyond each intersection and slope sharply downward. Coarse gravel may be substituted for tile in areas where water drainage is not a problem. Stones, crushed rock, and gravel may be added instead of vertical tiles or pipes, so the upper level of these porous materials slopes toward the surface near the drip line.

- Tar paper or an approved equivalent shall be placed over the tile or pipe joint to prevent clogging, and a large stone placed around and over drain tiles or pipes for protection.

- Layer 50 mm (2 in) to 150 mm (6 in) of stone over the entire area under the tree from the well outward at least to the drip line. For fills up to 600 mm (24 in) deep, a layer 200 mm (8 in) to 300 mm (12 in) shall be adequate. Deeper fills require thicker layers of stone to be built to a maximum of 760 mm (30 in).

- A layer of 19 mm (0.75 in) to 25 mm (1 in) stone covered by straw, fiberglass mat, or filter fabric shall be used to prevent soil clogging between stones. Do not use cinders as fill material.

- Complete filling with porous soil (to sustain vegetation) until the desired grade is reached.

- Crushed stone shall be placed inside the dry well over the openings of the radial tiles to prevent clogging of the drain lines. Vertical tiles shall also be filled with crushed rock and covered with a screen.

- The area between the trunk and the well wall shall be covered by an iron grate or filled with a 1:1 mixture of crushed charcoal and sand to prevent anyone from falling into the well or to prevent leaves, debris, rodents, or mosquitoes from accumulating.

One-half of these systems may be constructed if the grade is being raised on only one side of the tree(s).

Trenching and Tunneling

- Trenching should be as far away from tree trunks as possible, usually outside of the tree crown. Curve trenches around trees to avoid large roots or root concentrations. If roots are encountered, consider tunneling under them. When trenching and/or tunneling trees to be retained, tunnels shall be at least 450 mm (18 in) below the ground surface, and not below the tree center to minimize impact on the roots.

- Tree roots shall not be left exposed to air; they shall be covered with soil as soon as possible, protected, and kept moistened with wet burlap or peat moss until the tunnel and/or trench can be completed.

- The ends of damaged or cut roots shall be cut off smoothly and protected by painting them with a tree-wound dressing.

- Trenches and tunnels shall be filled as soon as possible. Careful filling and tamping will eliminate air spaces in the soil which can damage roots.

- To induce and develop root growth, peat moss shall be added to the fill material.

- The tree shall be mulched to conserve moisture and fertilized to stimulate new root growth.

- Remove any trees intended for retention if those trees are damaged seriously enough to affect their survival. If replacement is desired or required, the new tree shall be of similar species, and of at least 50 mm (2 in) caliper balled and burlapped nursery stock, unless otherwise required by the contract documents.

- Because protected trees may be destroyed by carelessness during the final cleanup and landscaping, fences and barriers shall be removed last, after all other work is complete.

Maintenance and Inspection

During construction, the limits of disturbance shall remain clearly marked at all times. Irrigation or maintenance of existing vegetation shall conform to the requirements in the landscaping plan.

If damage to protected trees still occurs, maintenance guidelines described below shall be followed:

- Soil which has been compacted over a tree's root zone shall be aerated by punching holes 300 mm (12 in) deep with an iron bar, and moving the bar back and forth until the soil is loosened. Holes shall be placed 450 mm (18 in) apart throughout the area of compacted soil under the tree crown.

- Any damage to the crown, trunk, or root system of a retained tree shall be repaired immediately.

  - Damaged roots shall be immediately cut cleanly inside the exposed area and surfaces painted with approved tree paint, and moist soil or soil amendments shall be spread over this area.

  - If bark damage occurs, all loosened bark shall be cut back into the undamaged area, with the cut tapered at the top and bottom, and drainage provided at the base of the wood. Cutting of the undamaged area shall be as limited as is possible.

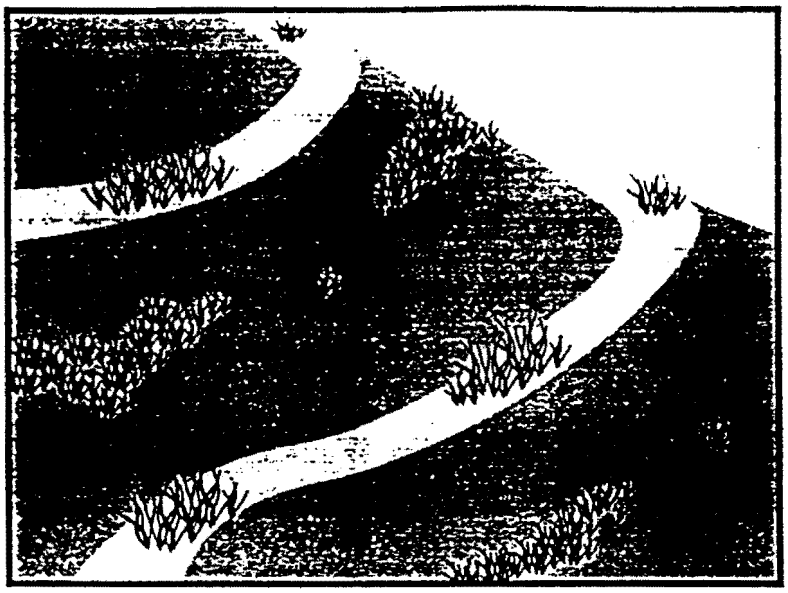
  - Serious tree injuries shall be attended to by an arborist, forester or tree specialist.

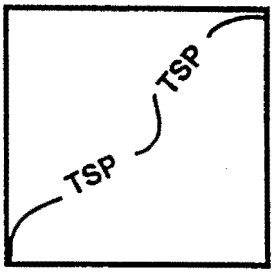
  - Stressed or damaged broadleaf trees shall be fertilized to aid recovery.

  - Trees shall be fertilized in the late fall or early spring.

  - Fertilizer shall be applied to the soil over the feeder roots and in accordance with label instructions, but never closer than 1 m (3 ft) to the trunk. The fertilized area shall be increased by one-fourth of the crown area for conifers, that have extended root systems.

CD24B(2)
Temporary Seeding and Planting





BMP Objectives

- ● Soil Stabilization
- O Sediment Control
- O Tracking Control
- ● Wind Erosion Control
- O Non-Storm Water

Definition and Purpose

Procedures and practices to reduce the discharge of pollutants to the storm drain system or to watercourses as a result of construction activity by establishing a temporary vegetative cover to protect exposed soils from erosion by water and wind.

Appropriate Applications

The purpose of temporary seeding and planting is to reduce erosion by stabilizing disturbed areas. Appropriate applications include:

- Disturbed areas requiring temporary protection until permanent protective measures are established.
- Disturbed areas that will be redisturbed following an extended period of inactivity.
- Exposed soils that need protection from erosion.

Limitations

If the site is susceptible to erosion, additional control measures may be necessary during the establishment of vegetation. Grasses require regular maintenance and uncut dry grass may present a fire hazard. Steep slopes are difficult to protect with temporary seeding. Temporary seeding may not be appropriate in dry periods without supplemental irrigation.

Standards and Specifications

An evaluation of site conditions shall be performed with respect to:

- Soil conditions

- Site topography
- Season and climate
- Vegetation types
- Maintenance requirements
- Sensitive adjacent areas
- Water availability
- Plans for permanent vegetation

The following steps shall be followed for implementation:

- When temporary seeding and planting will be used to protect permanent plantings, strip and stockpile topsoil during construction. Use stockpiled materials in the surface preparation prior to seeding operations.
- Apply fertilizer or other soil amendments as indicated by a soil test and in accordance with the manufacturers label instructions.
- Roughen the slope or area to be seeded by plowing, disking, or raking to a depth of 150 mm (6 in), with the furrows trending along the contours See CD35(2) - Slope Roughening/Terracing/ Rounding.
- Plant seeds using broadcast seeding, drill seeding, or hydraulic seeding, as appropriate.
- Apply a protective mulch to keep seeds in place and to moderate soil moisture and temperature until the seeds germinate and grow.
- Irrigate seeded areas as needed based on rainfall and weather conditions.

All seeds shall be in conformance with the California State Seed Law of the Department of Agriculture. Each seed bag shall be delivered to the site sealed and clearly marked as to species, purity, percent germination, dealer's guarantee, and dates of test. The container shall be labeled to clearly reflect the amount of Pure Live Seed (PLS)

contained. All legume seed shall be pellet-inoculated. Inoculant sources shall be species specific and shall be applied at a rate of 2 kg of inoculant per 100 kg of seed (2 lb inoculant per 100 lb seed).

Commercial fertilizer shall conform to the requirements of the California Food and Agricultural Code. Fertilizer shall be pelleted or granular form.

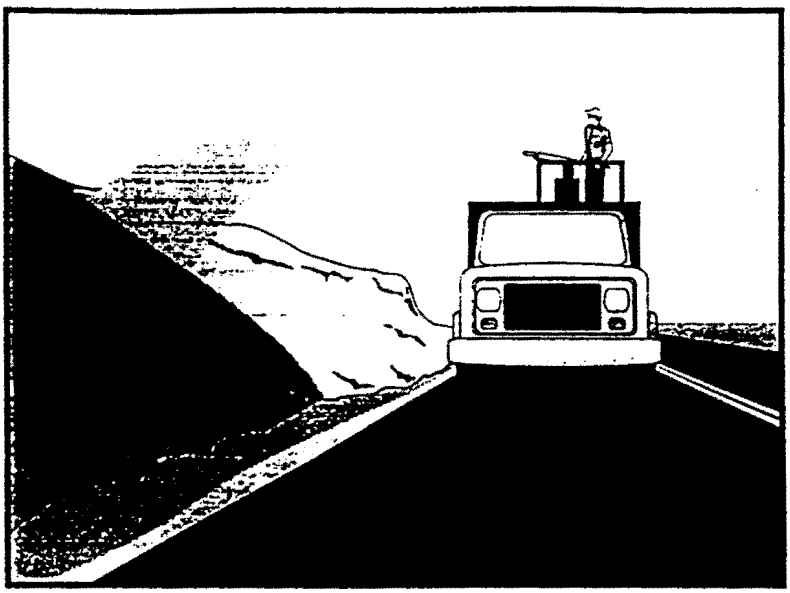
Follow-up applications shall be made as needed to cover weak spots, and to maintain adequate soil protection.

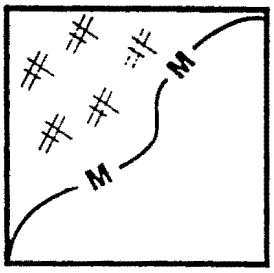
Maintenance and Inspection

If soil moisture is deficient, new vegetation shall be supplied with supplemental irrigation until plants are firmly established. Cutting or mowing grasses will encourage the establishment and spread of the grass.

All seeded areas shall be inspected for failures and reseeded, fertilized, and mulched within the planting season, using not less than half the original application rates. Any temporary revegetation efforts that do not provide adequate cover within 30 days of planting must be revegetated within 40 days of the initial installation.

CD25(2)
Mulching





BMP Objectives

- ● Soil Stabilization
- O Sediment Control
- O Tracking Control
- ● Wind Erosion Control
- O Non-Storm Water

Definition and Purpose

Procedures and practices to reduce the discharge of pollutants to the storm drain system or to watercourses as a result of construction activity by covering exposed soil with mulch to protect it from erosion by raindrop impact or wind.

Appropriate Applications

- As a stand-alone temporary surface cover on disturbed areas until soils can be prepared for revegetation.
- Used in combination with temporary and/or permanent seeding strategies.
- On poor or marginal soils to add organic matter and fertility as strategy to speed the establishment and increase the survival of temporary and/or permanent vegetative cover.
- As short term, non-vegetative ground cover on steepened slopes to reduce rainfall impact, decrease the velocity of sheet flow, and settle out sediment.
- As long term. non-vegetative ground cover around established plants, such as trees or shrubs, and on flat to minor slopes not otherwise protected.

Limitations

Vegetable Fibers (Hay or Straw) - A machine and labor intensive practice that requires either proper crimping or use of tackifiers. Hay stays flexible longer than straw, but is more likely to contain weed and other unwanted seed.

Recycled Paper Hydraulic Mulches - Can be applied rapidly on any large ground surface area. Short fiber length limits erosion control effectiveness unless applied with tackifier and in heavy layers.

Wood Fiber Based Hydraulic Mulches - Can be applied rapidly on any large ground surface area. Has longer fiber length than recycled paper based product, but also has limits on erosion control effectiveness unless applied with tackifier and in heavy layers.

Hydraulic Matrices - Behave like erosion control blankets, but can be applied much more rapidly. Need 24 hours to dry before rainfall occurs to be effective.

Standards and Specifications

Vegetable Fibers (Hay or Straw) - Apply at a rate of 4,250 kg/ha (2 tons/ac) by machine or hand distribution to achieve complete coverage of the target area. Applied straw or hay shall have fiber lengths in excess of 150 mm (6 in). Anchor in place by crimping with approved crimping equipment, by anchoring netting over the straw, or by tackifier.

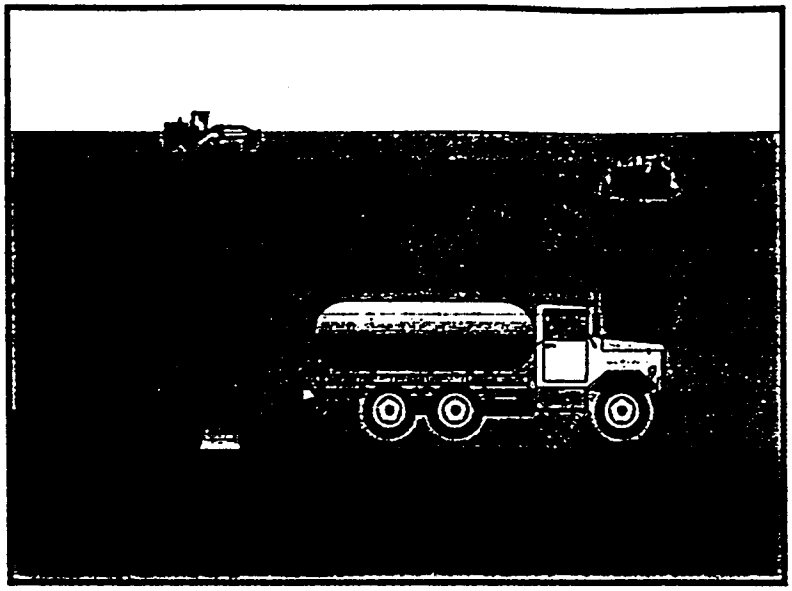
All Hydraulic Mulches - Apply as a liquid slurry using a hydraulic application machine (i.e., hydroseeder) at rates of mulch and tackifier recommended by the manufacturer to achieve complete coverage of the target area. Materials shall conform to Standard Specifications Sections 20-2.07 and 20-2.08.

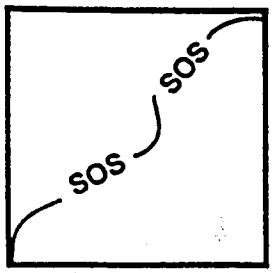
Hydraulic Matrices - Apply either as wood fiber, paper fiber, or combination of both mixed with acrylic polymers as binders. Apply as a liquid slurry using a hydraulic application machine (i.e., hydroseeder) at the following minimum rates to achieve complete coverage of the target area: 570 kg/ha (500 lbs/ac) wood fiber mulch, 1,140 kg/ha (1,000 lbs/ac) recycled paper mulch and 520 liters/ha (55 gal/ac) of acrylic copolymer with a minimum of 55 percent solid content. Alternatively, apply bonded fiber matrix (available mixed in a single bag) at a rate of 3,400 to 4,500 kg/ha (3,000 to 4,000 lbs/ac) based on manufacturers recommendation to achieve complete coverage of the target area. Do not apply immediately before, during, or after a rainfall, in order to allow the matrix to dry.

Maintenance and Inspections

Maintain an unbroken, temporary mulched ground cover throughout the period of construction the soils are not being reworked. Inspect before expected rain storms and repair any damaged ground cover and remulch exposed areas of bare soil.

CD26A(2)
Soil Stabilizers





BMP Objectives

- ● Soil Stabilization
- ○ Sediment Control
- ○ Tracking Control
- ● Wind Erosion Control
- ○ Non-Storm Water

Definition and Purpose

Procedures and practices to reduce the discharge of pollutants to the storm drain system or to watercourses as a result of construction activity by applying soil stabilizers to disturbed areas to prevent wind erosion.

Dust control is considered primarily as a temporary measure-an intermediate treatment between disturbance and either construction, paving, or revegetation.

Appropriate Applications

- Dust control should be practiced at all construction sites by performing phased clearing and grading operations, using temporary stabilization methods, and/or placing undisturbed vegetative buffers of at least 15 m (50 ft) length between areas being graded and those areas to remain undeveloped.
- Dust control is particularly important in windy or wind-prone areas.

Limitations

Dust control agents are temporary in nature, need reapplication, and have environmental impacts.

Standards and Specifications

Temporary dust control measures can be classified into the three main categories described below.

Chemical Methods

Chemical methods are dust suppressant or binding agents that are used on the soil surface to bind finer particles together. Chemical dust control agents must be environmentally benign, easily applied, easily maintained, economical and not significantly detrimental to traffic ability.

Approximately three-quarters of chemical dust control agents are inorganic compounds which are compatible with soil and biota. After application, the compounds dampen and penetrate into the soil; a hygroscopic reaction pulls moisture from the atmosphere into the surface and adheres fines to aggregate surface particles. The compounds may not penetrate soil surfaces made up primarily of silt and clay, so soil tests are required.

Performance of chemical agents depends on temperature, humidity, and traffic. To be effective, a suppressant must effectively limit visible dust emissions. Examples of chemical control agents are provided in Table 26A-1.

Structural and Mechanical Methods

Vegetative methods can often be as useful in dust control as chemical means. Surface materials can be used such that dust control is accounted for in the design process rather than as a reaction to site conditions. Some alternatives are shown in Table 26A-1.

Administrative Methods

Examples of administrative dust control methods are shown in Table 26A-1. Implementing and enforcing a speed limit and limiting traffic reduces the pulverization of road materials. It is recommended that vehicle speeds be limited to 24 kph (15 mph) on unpaved roads, although this may not be possible in all areas. Restrictions on vehicle weight or number of wheels can be useful practices in dust-prone areas. Traffic can also be reduced by restricting access and increasing ride-sharing practices.

Selection of Methods

Selection of dust control agents should be based primarily on cost-effectiveness and environmental hazards. Key factors in determining the method include the following:

- Soil types and surface materials - both fines and moisture content are key properties of surface materials.

- Properties of the agents - the five most important properties are penetration, evaporation, resistance to leaching, abrasion, and aging.

- Traffic volumes - the effectiveness and life span of dust control agents decreases as traffic increases. For high traffic areas, agents need to have strong penetrating and stabilizing capabilities.

- Climate - some hygroscopic agents lose their moisture-absorbing abilities with lower relative humidity, and some may lose resilience. Under rainy conditions, some agents may become slippery or even leach out of the soil.

- Environmental requirements - the primary environmental concern is the presence and concentration of heavy metals in the agent that may leach into the immediate ecosystem, depending on the soil properties.

- Frequencies of application - rates and frequencies of application are based on the type of agent selected, the degree of dust control required, subgrade conditions, surface type, traffic volumes, types of vehicles and their speeds, climate, and maintenance schedule.

Application of Methods

For dust control agents, once all factors have been considered, the untreated soil surface must first contain sufficient moisture to assist the agent in achieving uniform distribution (except when using a highly resinous adhesive agent). The following steps should be followed in general:

- Ideally, application should begin in the spring, after seasonal rains - not during or just before heavy rainfall- so that subgrade and surface materials will not have dried.

- If the surface has minimal natural moisture, the area to be protected must be pre-wetted so that the chemicals can uniformly penetrate the surface.

- In general, cooler and/or more humid periods result in decreased evaporation, increased surface moisture, and thus significant increase in control efficiency. However, chemical and organic agents should not be applied under frozen conditions, rainy conditions, or when the temperature is below 4° C (40° F). Tar and bitumen agents should not be applied in fog or in rain or below 13° (55°F).

- More than one treatment with salts or organic compounds per year is often necessary, although the second treatment should probably be diluted.

Maintenance and Inspection

The primary maintenance requirement is the reapplication of the selected dust control agent at intervals appropriate to the agent type. High traffic areas shall be inspected on a daily basis, and lower traffic areas shall be inspected on a weekly basis.

Table 26A-1
Soil Stabilizers

Method	Selection	Preparation	Application Rate
Chemicals - Inorganic			
Water	- Most commonly used practice - Evaporates quickly - Lasts less than 1 day	For all liquid agents: - Blade a smooth surface. - Crown or slope surface to avoid ponding. - Compact soils if needed. - Uniformly pre-wet at 0.14 - 1.4 l/m³ (0.03-0.3 gal/yd²). - Apply solution under pressure. Overlap solution 100 - 300 mm (6 - 12 in). - Allow treated area to cure 0 - 4 hours. - Compact area after curing. - Apply second treatment before first treatment becomes ineffective, using 50% application Rate. - In low humidities, reactivate chemicals by rewetting at 0.5 - 0.9 l/m² (0.1 - 0.2 gal/yd²)	0.6 l/m² (0.125 gal/yd²) every 20 to 30 minutes.
Salts - Calcium Chloride (CaCl)	- Restricts evaporation - Lasts 6-12 months - Can be corrosive - Less effective in low humidity - Can build up in soils and leach by rain		Apply 38% solution at 1.21 l/m² (0.27 gal/yd²) or as loose, dry granules per manufacturer.
- Magnesium Chloride (MgCl)	- Restrict evaporation - Works at higher temperatures and lower humidity than CaCl - May be more costly than CaCl		Apply 26 - 32% solution at 2.3 l/m² (0.5 gal/yd²).
- Sodium Chloride (NaCl)	- Effective over smaller range of conditions - Less expensive		Per manufacturer.
- Salt Mixes	Reduces cost		Per manufacturer.
Silicates	- Generally expensive - Available in small quantities - Require second application		
Surfactants	- High evaporation rates - Effective for short time periods - Must apply frequently		

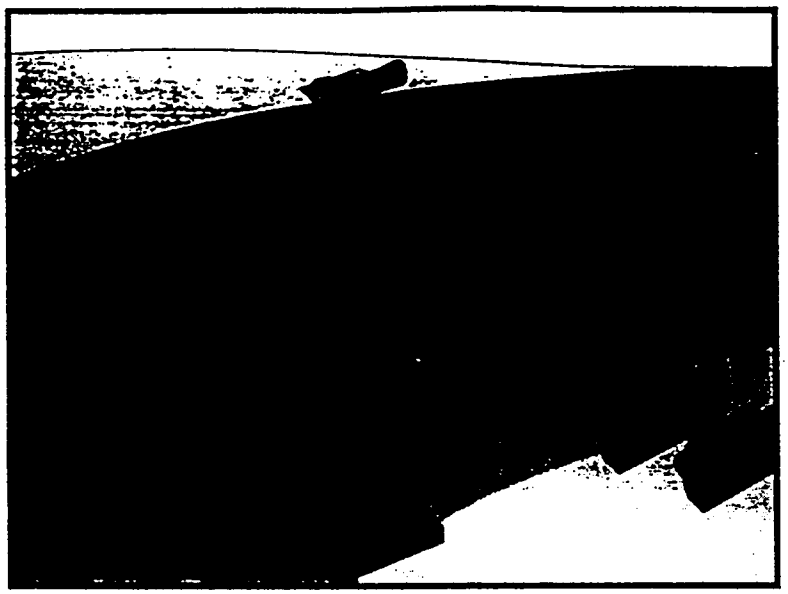
Table 26A-1
Soil Stabilizers

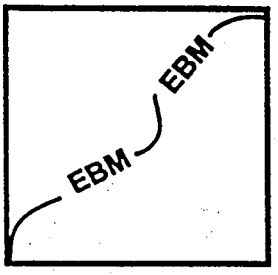
Method	Selection	Preparation	Application Rate
Chemicals - Organic			
- Copolymers	- Form semi-permeable transparent crust. - Resists ultraviolet radiation and moisture induced breakdown. - Lasts 1 to 2 years.	Same as above.	750 - 940 l/ha (80 - 100 gal/ac).
- Petroleum Products	- Bind soil particles - May hinder foliage growth - Environmental and aesthetic concerns - Higher cost		use 57 - 63% resins as base. Apply at 750 - 940 l/ha (80 - 100 gal/ac).
- Lignin Sulfonate	- Paper industry waste product - Acts as dispersing agent - Best in dry climates - Can be slippery		Loosen surface 25 - 50 mm (1 - 2 in). Need 4 - 8% fines.
- Vegetable Oils	- Coat grains of soil, so limited binding ability - May become brittle - Limited availability		Per manufacturer.
- Spray-on Adhesives	- Available as organic or synthetic - Effective on dry, hard soils - Form a crust - Can last 3 to 4 years		Per manufacturer.

Table 26A-1 Soil Stabilizers			
Method	**Selection**	**Preparation**	**Application Rate**
Structural/Mechanical			
- Vegetative	Effective where no construction traffic	- Seed incrementally during project. - Seed at appropriate time of year.	See Temporary Seeding and Planting
- Mulch	- Not appropriate for heavily-trafficked areas. - Fast and effective.	See Mulching (CD25)	See Mulching (CD25)
- Tillage	Roughens soil to reduce wind erosion	- Begin on windward side - Use spring-toothed harrows or chisel-type plows spaced 300 mm (12 in) apart	N/A
- Stone	- Can stabilize roads or other disturbed areas. - Low-cost, stable, effective for highly used roads.	- Blade a smooth surface - Crown or slope to avoid ponding - Compact soils, if needed	Apply 25 - 75 mm (1 - 3 in) stone in uniform layer
- Road Fabrics	- Separate subgrade and base courses. - Flexible, durable, permeable.	(same as above)	Install per manufacturer
- Barriers	- Can be used to interrupt air flow. - Can use board fence, wind fence, silt fence, burlap fence, straw bale, or similar.	- Place barrier perpendicular to prevailing air currents - Place at intervals of 15 times the barrier height	Install per manufacturer.

Table 26A-1 Soil Stabilizers			
Method	**Selection**	**Preparation**	**Application Rate**
Administrative			
Speed Limits	Reduces dust generation and pulverization of road materials	Limit speeds to 24 kph (15 mph)	
Weight/Wheel Restrictions	Reduces dust generation and pulverization of road materials	Use signage and barriers in dust-prone areas	
Carpooling	Reduces number of vehicles at site	Require or encourage employees to ride share	
Restrict Access	Reduces number of vehicles in dust-prone areas	Use signage and barriers	

CD26B(2)
Geotextiles, Mats/Plastic Covers and Erosion Control Blankets





BMP Objectives

- ● Soil Stabilization
- O Sediment Control
- O Tracking Control
- ● Wind Erosion Control
- O Non-Storm Water

Definition and Purpose

Procedures and practices to reduce the discharge of pollutants to the storm drain system or to watercourses as a result of construction activity by applying biodegradable blankets and matting materials to disturbed areas to protect soils from erosion by wind or water.

Appropriate Applications

Construction sites where disturbed soils must be stabilized. Site conditions that may warrant use of blankets and mats include:

- Slopes and disturbed soils where mulch must be anchored and other methods such as crimping or tackifying are not feasible nor adequate.
- Steep slopes, generally steeper than 1:3 (V:H).
- Slopes where the erosion hazard is high.
- Critical slopes adjacent to sensitive areas, such as streams, wetlands, or other highly valued resources needing protection.
- Disturbed soil areas where plants are slow to develop adequate protective cover.
- Channels with flows exceeding 0.6 m/s (2 ft/s) to 1.2 m/s (4 ft/s).

- Channels intended to be vegetated and where the design flow exceeds the permissible velocity. The allowable velocity for turf reinforcement mats after vegetative establishment is up to 3 m/s (10 ft/s).

Appropriate mat and/or blanket materials must be selected for the specific site application.

Limitations

Blankets and mats are typically more expensive than other erosion control measures, primarily due to labor costs. This usually limits their application to areas inaccessible to hydraulic equipment, or where other measures are not applicable, such as channels. Blankets and mats are generally not suitable for excessively rocky sites, or areas where the final vegetation will be mowed (since staples and netting can catch in mowers).

Plastic sheeting is easily vandalized, easily torn, not degradable, and must be disposed of at a landfill. Plastic results in 100 percent runoff, which may cause serious erosion problems in the areas receiving the increased flow. The use of plastic should be limited to covering stockpiles, or very small graded areas for short periods of time (such as through one imminent storm event), until alternative measures, such as seeding and mulching, may be installed.

Standards and Specifications

Material Selection

There are many types of erosion control blankets and mats, and selection of the appropriate type should be based on the type of application and site conditions. The following criteria should be considered in selection of the appropriate material:

- Cost
  - Material cost
  - Preparation cost
  - Installation cost
  - Add-ons
- Effectiveness
  - Reduction of erosion
  - Reduction of flow velocity
  - Reduction of runoff

- Acceptability
  - Environmental compatibility
  - Institutional/regulatory acceptability
  - Visual impact

- Vegetation Enhancement
  - Native plant compatibility
  - Germination rate
  - Growth rate
  - Moisture retention
  - Temperature modification
  - Open space/coverage
  - Nutrient uptake

- Installation
  - Durability
  - Longevity
  - Ease of installation
  - Safety

- Operation and Maintenance
  - Maintenance frequency
  - Need for fertilization
  - Need for irrigation

Site Preparation

- Proper site preparation is essential to ensure complete contact of the blanket or matting with the soil.

- Grade and shape the area of installation.

- Remove all rocks, clods, vegetation or other obstructions so that the installed blankets or mats will have complete, direct contact with the soil.

- Prepare seedbed by loosening 50 mm (2 in) to 75 mm (3 in) of topsoil.

- Incorporate amendments, such as lime and fertilizer, into the soil according to soil tests, the seeding plan, and manufacturer's recommendations.

Seeding

Seed the area before blanket installation for erosion control and revegetation. Seeding after mat installation is often specified for turf reinforcement application. When seeding prior to blanket installation, all check slots and other areas disturbed during installation must be reseeded. Where soil filling is specified, seed the matting and the entire disturbed area after installation and prior to filling the mat with soil.

Anchoring

U-shaped wire staples, metal geotextile stake pins or triangular wooden stakes can be used to anchor mats and blankets to the ground surface. Wire staples should be minimum of 11 gauge. Metal stake pins should be 5 mm (0.188 in) diameter steel with a 40 mm (1.5 in) steel washer at the head of the pin. Wire staples and metal stakes should be driven flush to the soil surface. All anchors should be 150 mm (6 in) to 450 mm (18 in) long and have sufficient ground penetration to resist pullout. Longer anchors may be required for loose soils.

Installation on Slopes

Always consult the manufacturer's recommendations for installation. In general, these will be as follows:

- Begin at the top of the slope and anchor the blanket in a 150 mm (6 in) deep by 150 mm (6 in) wide trench. Backfill trench and tamp earth firmly.
- Unroll blanket downslope in the direction of water flow.
- Overlap the edges of adjacent parallel rolls 50 mm (2 in) to 75 mm (3 in) and staple every 1 m (3 ft).
- When blankets must be spliced, place blankets end over end (shingle style) with 150 mm (6 in) overlap. Staple through overlapped area, approximately 300 mm (12 in) apart.
- Lay blankets loosely and maintain direct contact with the soil—do not stretch.
- Staple blankets sufficiently to anchor blanket and maintain contact with the soil. Staples shall be placed down the center and staggered with the staples placed along the edges. Steep slopes, 1:1

(V:H) to 1:2 (V:H), require a minimum of 2 staples/m^2 (2 staples/yd^2). Moderate slopes, 1:2 (V:H) to 1:3 (V:H), require a minimum of 1½ staples/m^2 (1 ½ staples/yd^2), placing 1 staple/m (1 staple/yd) on centers. Gentle slopes require a minimum of 1 staple/m^2 (1 staple/yd^2).

Installation in Channels

Always consult the manufacturer's recommendations for installation. In general, these will be as follows:

- Dig initial anchor trench 300 mm (12 in) deep and 150 mm (6 in) wide across the channel at the lower end of the project area.
- Excavate intermittent check slots, 150 mm (6 in) deep and 150 mm (6 in) wide across the channel at 8 m (25 ft) to 10 m (30 ft) intervals along the channels.
- Cut longitudinal channel anchor slots 100 mm (4 in) deep and 100 mm (4 in) wide along each side of the installation to bury edges of matting, whenever possible extend matting 50 mm (2 in) to 75 mm (3 in) above the crest of the channel side slopes.
- Beginning at the downstream end and in the center of the channel, place the initial end of the first roll in the anchor trench and secure with fastening devices at 300 mm (12 in) intervals. Note: matting will initially be upside down in anchor trench.
- In the same manner, position adjacent rolls in anchor trench, overlapping the preceding roll a minimum of 75 mm (3 in).
- Secure these initial ends of mats with anchors at 300 mm (12 in) intervals, backfill and compact soil.
- Unroll center strip of matting upstream. Stop at next check slot or terminal anchor trench.
- Unroll adjacent mats upstream in similar fashion, maintaining a 75 mm (3 in) overlap.
- Fold and secure all rolls of matting snugly into all transverse check slots. Lay mat in the bottom of the slot then fold back against itself. Anchor through both layers of mat at 300 mm (12 in) intervals, then backfill and compact soil. Continue rolling all mat widths upstream to the next check slot or terminal anchor trench.

- Alternate method for noncritical installations: Place two rows of anchors on 150 mm (6 in) centers at 8 m (25 ft) to 10 m (30 ft) intervals in lieu of excavated check slots.
- Shingle-lap spliced ends by a minimum of 300 mm (12 in) apart on 300 mm (12 in) intervals.
- Place edges of outside mats in previously excavated longitudinal slots, anchor using prescribed staple pattern, backfill and compact soil.
- Anchor, fill and compact upstream end of mat in a 300 mm (12 in) by 150 mm (6 in) terminal trench.
- Secure mat to ground surface using U-shaped wire staples, geotextile pins, or wooden stakes.
- Seed and fill turf reinforcement matting with soil, if specified.

Soil Filling (if specified for turf reinforcement)

Always consult the manufacturer's recommendations for installation. In general, these will be as follows:

- After seeding, spread and lightly rake 6 mm (0.25 in) to 13 mm (0.5 in) of fine topsoil into the mat apertures to completely fill mat thickness. Use backside of rake or other flat implement.
- Spread topsoil using lightweight loader, backhoe, or other power equipment. Avoid sharp turns with equipment.
- Do not drive tracked or heavy equipment over mat.
- Avoid any traffic over matting if loose or wet soil conditions exist.
- Use shovels, rakes or brooms for fine grading and touch up.
- Smooth out soil filling; just exposing top netting of mat.

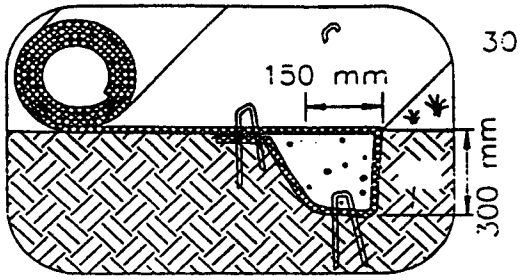
Plastic Sheeting

Plastic sheeting shall have a minimum thickness of 6 mils, and shall be firmly held in place with sandbags or other weights placed no more than 3 m (10 ft) apart. All seams shall be taped or weighted down their entire length, and there shall be at least a 300 mm (12 in) to 600 mm (24 in) overlap of all seams.

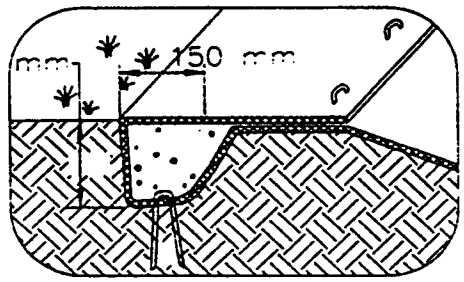
Maintenance and Inspection

- All blankets and mats shall be inspected periodically after installation.
- Installation shall be inspected after significant rain storms to check for erosion and undermining. Any failures shall be repaired immediately.
- If washout or breakages occur, re-install the material after repairing the damage to the slope or channel.

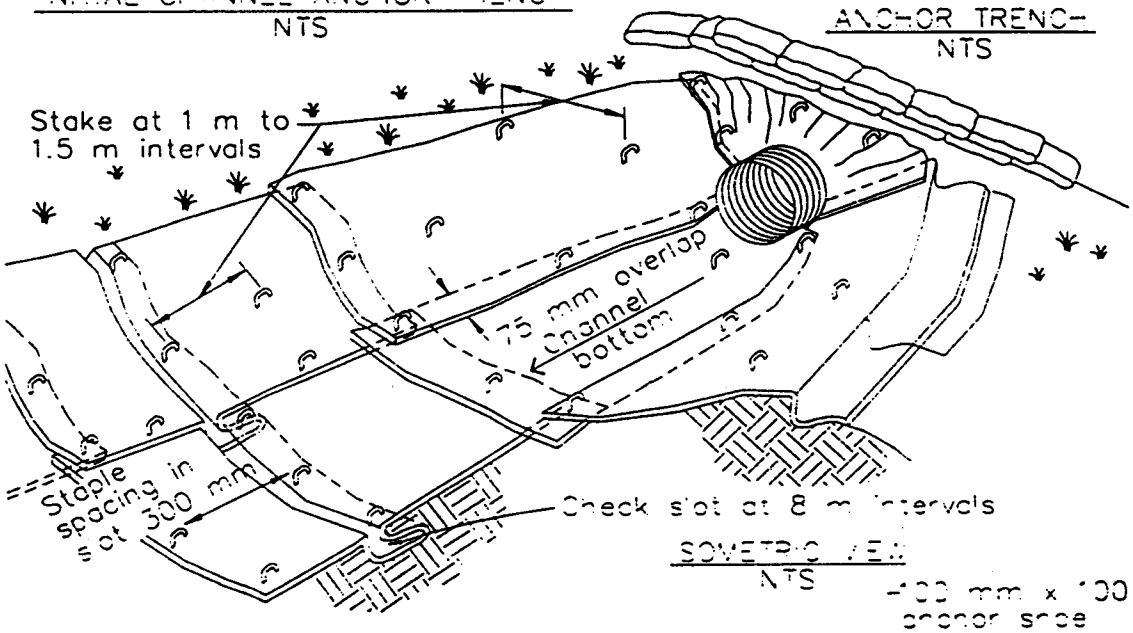
Geotextiles, Mats/Plastic Covers and Erosion Control Blankets



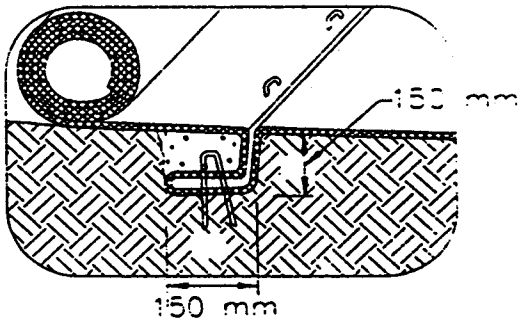
INITIAL CHANNEL ANCHOR TRENCH
NTS



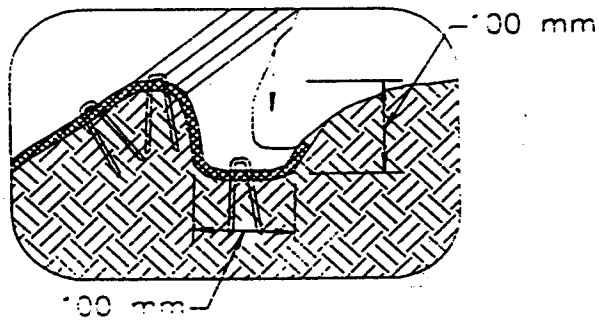
TERMINAL SLOPE AND CHANNEL ANCHOR TRENCH
NTS



ISOMETRIC VIEW
NTS



INTERMITTENT CHECK SLOT
NTS

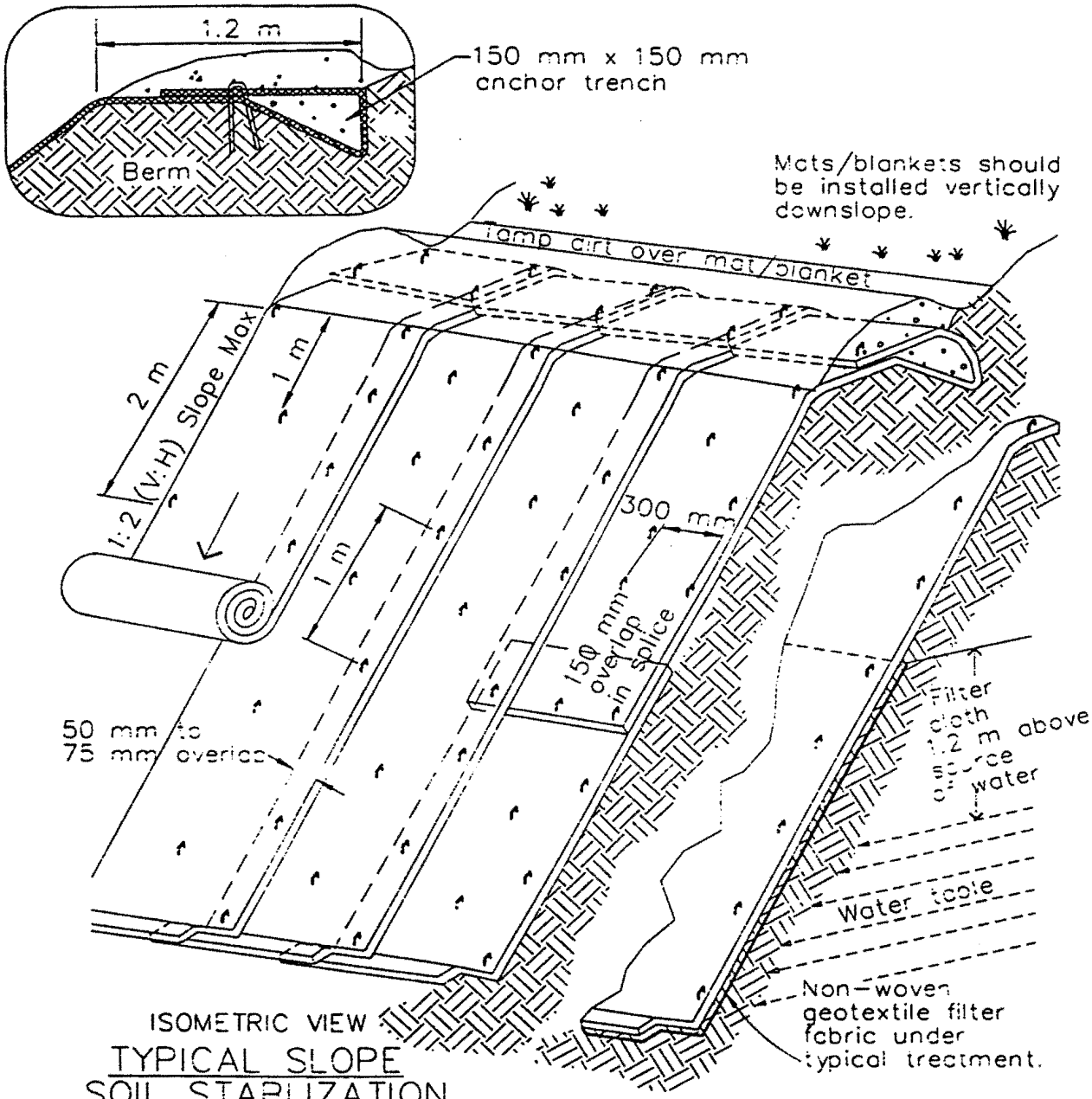


LONGITUDINAL ANCHOR TRENCH
NTS

NOTES:

1. Check slots to be constructed per manufacturers specifications.
2. Staking or stapling layout per manufacturers specifications.

Sheet 1



ISOMETRIC VIEW

TYPICAL SLOPE SOIL STABLIZATION

NTS

WET SLOPE LINING

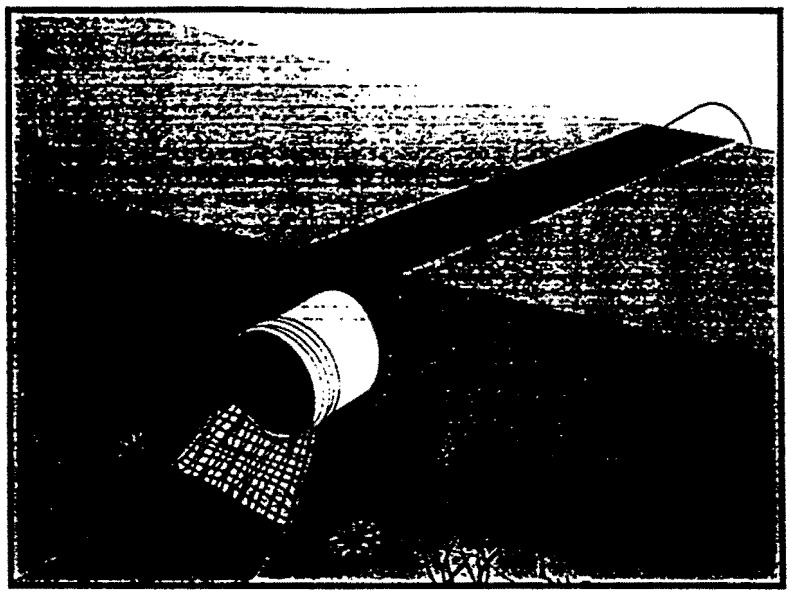
NTS

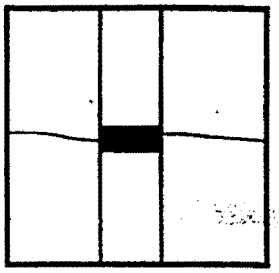
NOTES:

1. Slope surface shall be free of rocks, clods, sticks and grass. Mats/blankets shall have good soil contact.
2. Lay blankets loosely and stake or staple to maintain direct contact with the soil. Do not stretch.

Sheet 2

CD28(2)
Temporary Stream Crossing





BMP Objectives

- ● Soil Stabilization
- O Sediment Control
- O Tracking Control
- O Wind Erosion Control
- O Non-Storm Water

Definition and Purpose

Procedures and practices to reduce the discharge of pollutants to watercourses as a result of stream crossings during construction activity by establishing controlled above water and/or non-erosive crossing facilities.

Appropriate Applications

- When crossing perennial streams, ephemeral waterways, etc., which may be significantly eroded by construction traffic.
- When construction equipment or vehicles need to frequently cross the waterway.
- When alternate access routes impose significant constraints such as length, narrowness, or poor soil strength.
- Where construction activities will not last longer than one year.

Limitations

- Will usually disturb the waterway during installation and removal.
- May require U.S. Army Corps of Engineers 404 permit and approval by California Department of Fish and Game.
- Installation may require dewatering or temporary diversion of the stream. See CD7(2) - Dewatering.
- May become a constriction in the waterway, which can obstruct flood flow and cause flow backups or washouts. If improperly

designed, flow backups can increase the pollutant load through washouts and scouring.

Standards and Specifications

General Considerations

Location of the temporary stream crossing shall address:

- Site selection where erosion potential is low.
- Areas where the side slopes from highway runoff will not spill into the side slopes of the crossing.

The following types of temporary stream crossings shall be considered:

- Culverts - Used on perennial and intermittent streams.
- Fords - Appropriate during the dry season in arid areas. Used on dry washes and ephemeral streams. Avoid use on perennial streams.
- Bridges - Appropriate for streams with high flow velocities, steep gradients and/or where temporary restrictions in the channel are not allowed.

Design and installation requires knowledge of stream flows and soil strength. Designs should be prepared under direction of and approved by a registered civil and/or structural engineer. Both hydraulic and construction loading requirements shall be considered with the following:

- Comply with the requirements for culvert and bridge crossings, as contained in the Caltrans Highway Design Manual, particularly if the temporary stream crossing will remain through the rainy season.
- Provide stability in the crossing and adjacent areas to withstand the design flow. The design flow and safety factor shall be selected based on careful evaluation of the risks due to over topping, flow backups, or washout.
- Install sediment traps immediately downstream of crossings to capture sediments. See CD41(2) - Sediment Traps.
- Avoid oil or other potentially hazardous waste materials for surface treatment.

Construction Considerations:

- Stabilize construction roadways, adjacent work area and stream bottom against erosion.
- Construct during dry periods to minimize stream disturbance and reduce costs.
- Construct at or near the natural elevation of the stream bed to prevent potential flooding upstream of the crossing.

Specific Considerations:

- Culverts are relatively easy to construct and able to support heavy equipment loads.
- Fords are least expensive of the crossings with maximum load limits.
- Temporary fords are not appropriate if construction will continue through rainy season, if thunderstorms are likely, or if the stream is perennial.
- Bridges are generally more expensive to design and construct, but provides the least disturbance of the stream bed and constriction of the waterway flows.

Maintenance and Inspection

Maintenance provisions should include:

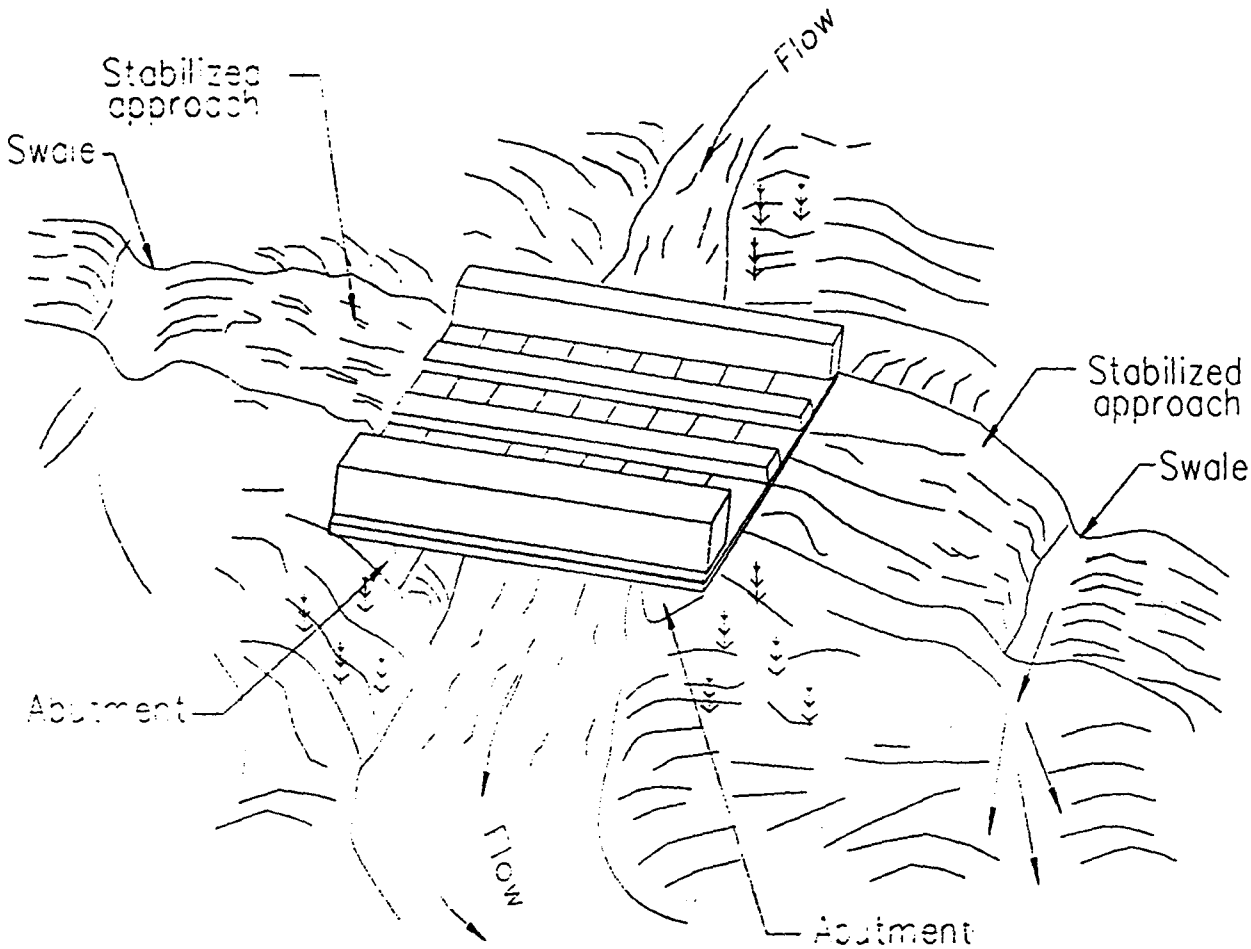
- Periodic removal of silt behind fords, in culverts, and under bridges.
- Replacement of lost aggregate from inlets and outlets of culverts.
- Removal of temporary crossing promptly when it is no longer needed.

Inspection, at a minimum, should occur weekly and after each significant rainfall, including:

- Check for blockage in the channel, sediment buildup in culverts or behind fords, or trapped debris.

- Check for erosion of abutments, channel scour, riprap displacement, or piping in the soil.
- Check for structural weakening of the temporary crossing, such as cracks, and undermining of foundations and abutments.

CD28(2)
Temporary Stream Crossing

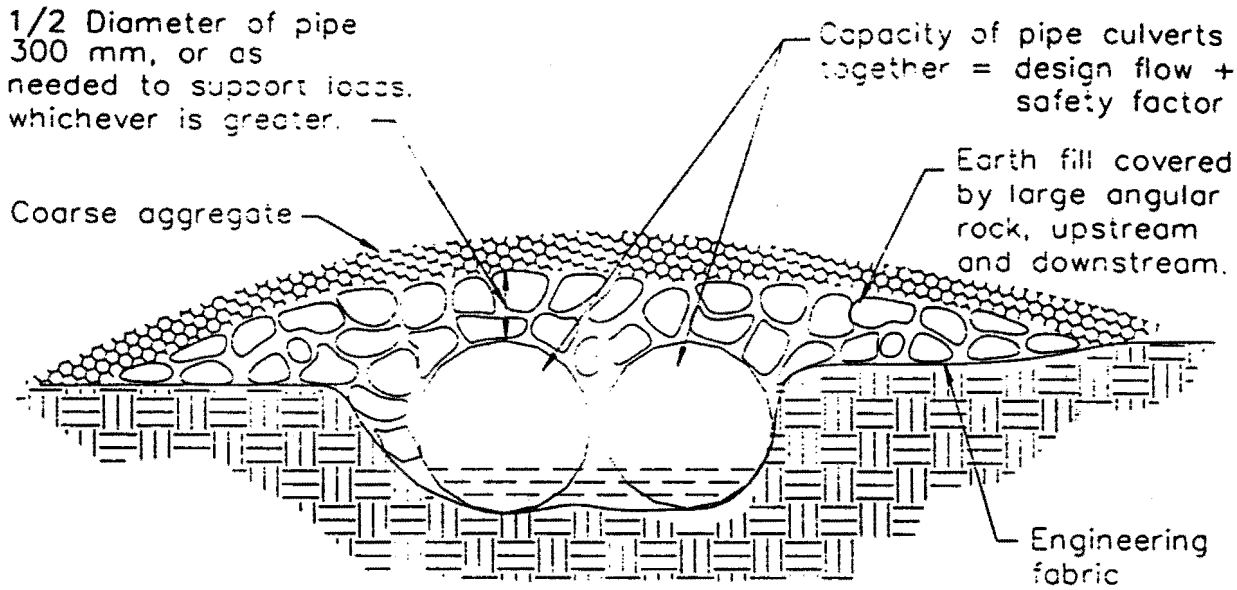


NOTE:
Surface flow of road diverted by swale and/or dike.

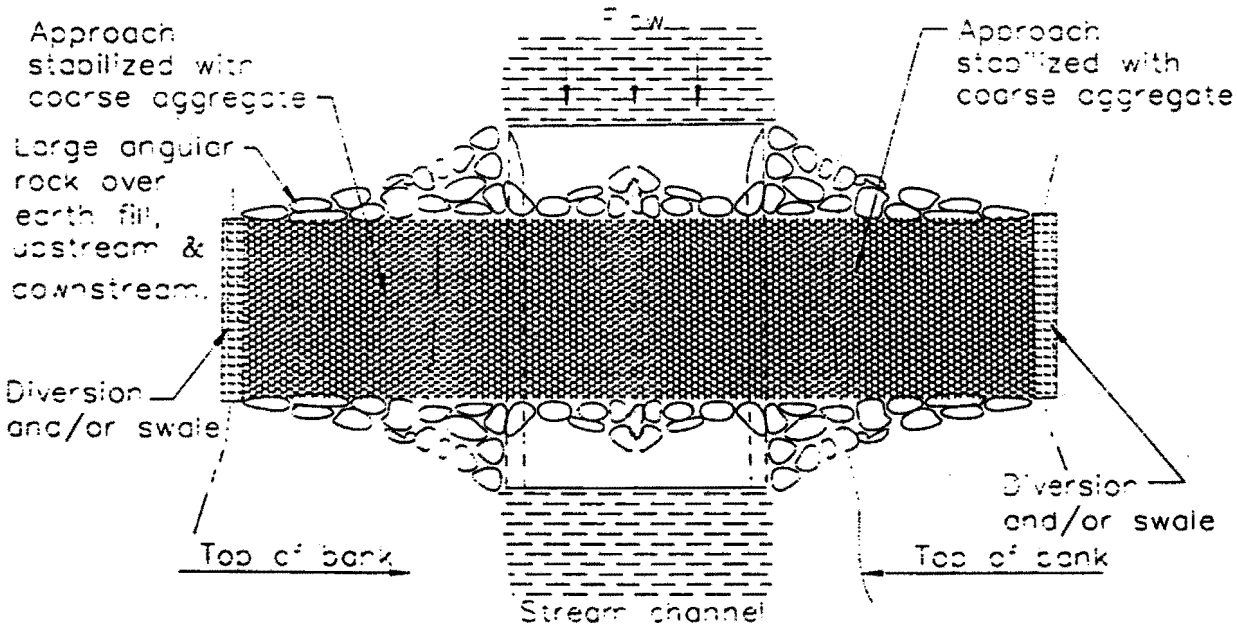
TYPICAL BRIDGE CROSSING
NOT TO SCALE

Sheet 1

Temporary Stream Crossing



ELEVATION

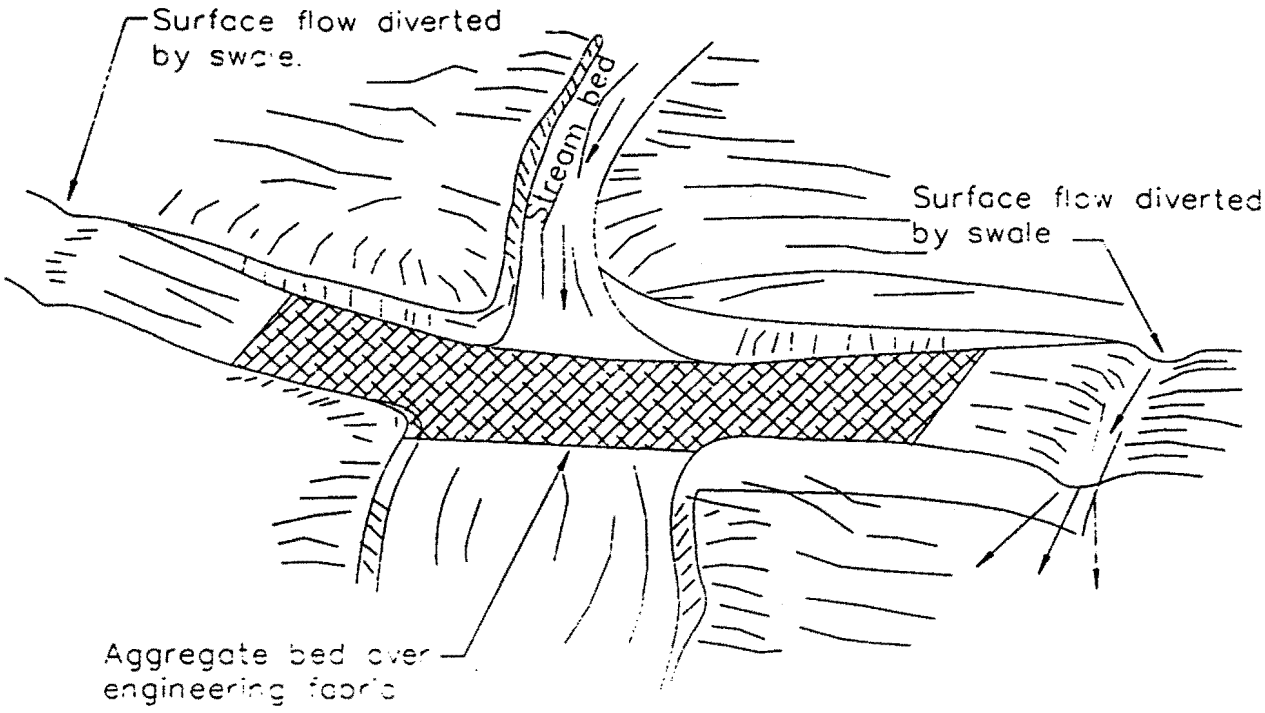


PLAN VIEW

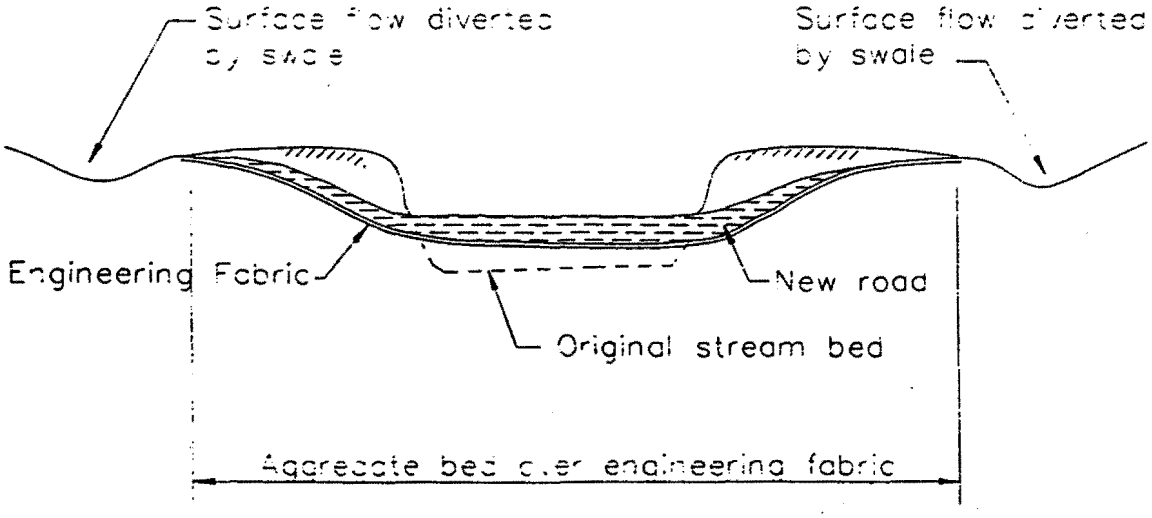
TYPICAL CULVERT CROSSING
NOT TO SCALE

Sheet 2

Temporary Stream Crossing



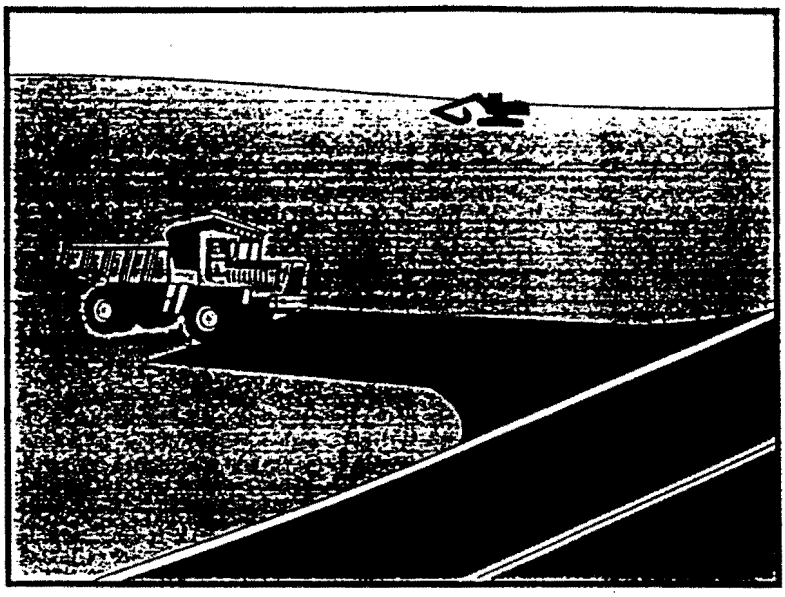
Aggregate approach
1:5 (V:H) Maximum slope on road

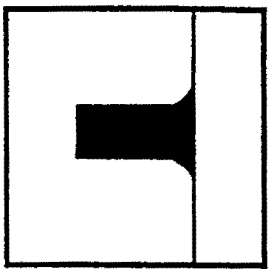


TYPICAL FORD CROSSING
NOT TO SCALE

Sheet 3

CD29A(2)
Stabilized Construction Entrance





BMP Objectives

- ● Soil Stabilization
- O Sediment Control
- ● Tracking Control
- O Wind Erosion Control
- O Non-Storm Water

Definition and Purpose

Procedures and practices to reduce the discharge of pollutants to the storm drain system or to watercourses as a result of vehicular ingress and egress to the construction site by designating and then stabilizing entrances and exits to prevent tracking of mud and dirt onto public roads.

Appropriate Applications

- On construction sites where dirt or mud tracking onto public roads by construction vehicles may occur.
- Includes combination ingress/egress paints and single purpose ingress and egress points.

Limitations

- Site conditions will dictate design and need.

Standards and Specifications

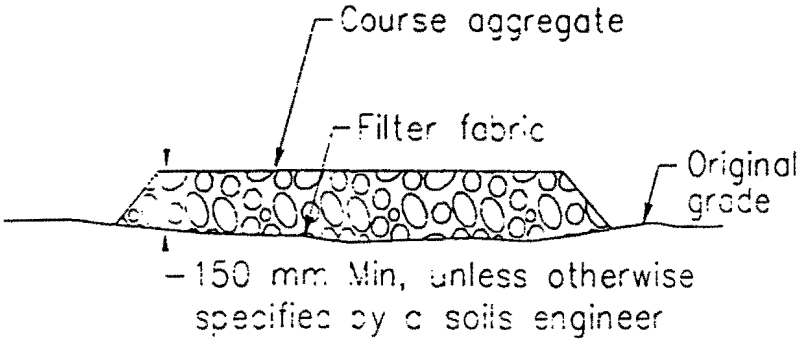
- Design stabilized entrance to support heaviest vehicles and equipment that will use it.
- Properly grade entrance to prevent runoff from leaving construction site. Route runoff from stabilized entrance through a sediment trapping device before discharge.
- Select entrance stabilization (aggregate, asphaltic concrete, concrete) based on longevity, required performance, and site conditions.

- If aggregate is selected, place a 150 mm (6 inch) course of aggregate over the geotextile fabric or a thickness of aggregate recommended by a soils engineer.
- Designate combination or single purpose entrances and exits to the construction site. Require all employees, subcontractors and others to use them.
- Require that all employees, subcontractors, and suppliers utilize the stabilized construction entrance.

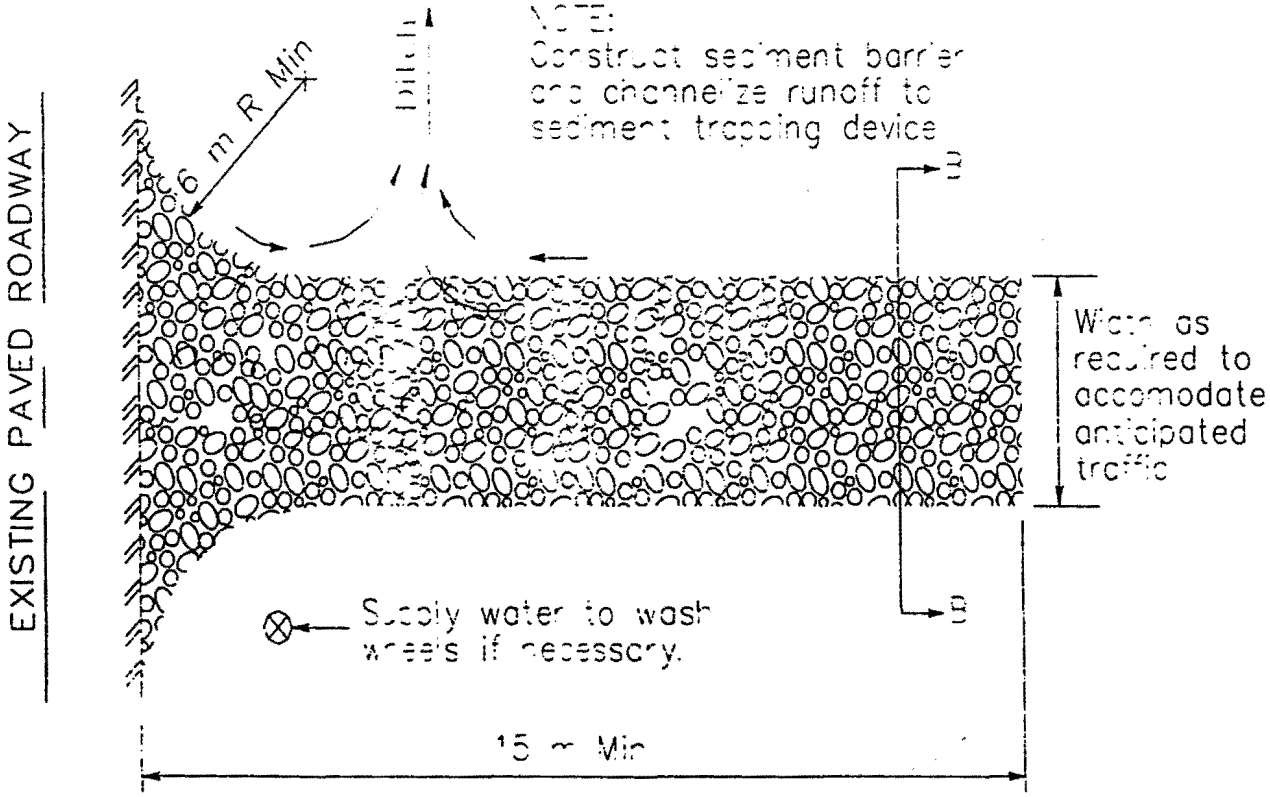
Maintenance and Inspection

- Inspect routinely for damage and repair as needed.
- Service sediment trapping devices regularly.

Stabilized Construction Entrance



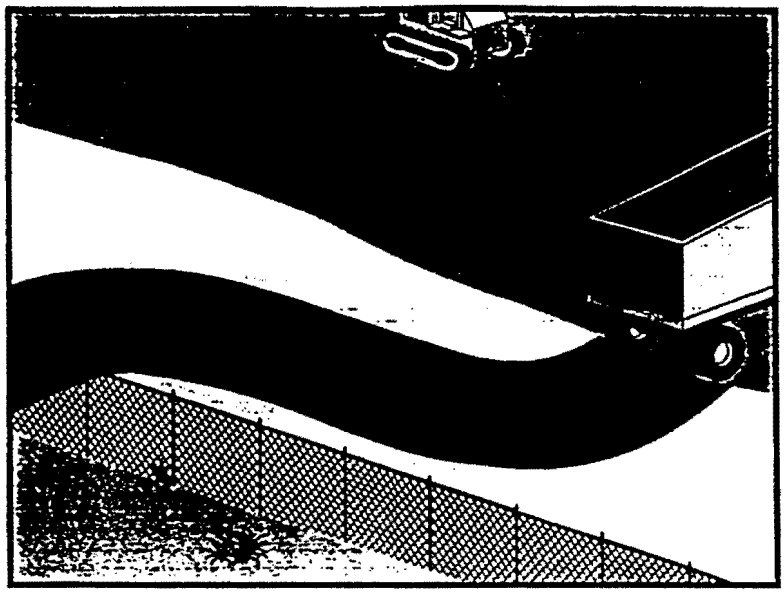
SECTION B–B
NTS

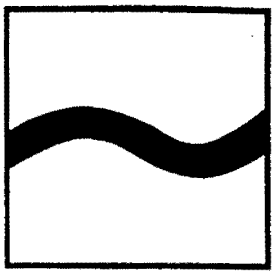


PLAN
NTS

Sheet 1

CD29B(2)
Stabilized Construction Roadway





BMP Objectives

- ● Soil Stabilization
- ○ Sediment Control
- ● Tracking Control
- ● Wind Erosion Control
- ○ Non-Storm Water

Definition and Purpose

Procedures and practices to reduce the discharge of pollutants to the storm drain system or to watercourses as a result of vehicular traffic within the construction site by designating and then stabilizing construction roadways to prevent erosion by wind and water and to control tracking of mud and dirt onto public roads.

Appropriate Applications

- On construction sites where construction traffic may result in erosion by water and/or wind and where mud or dirt may be tracked onto public roads. Generally used in conjunction with CD29A(2)-Stabilized Construction Entrance.

Limitations

- Site conditions will dictate design and need.

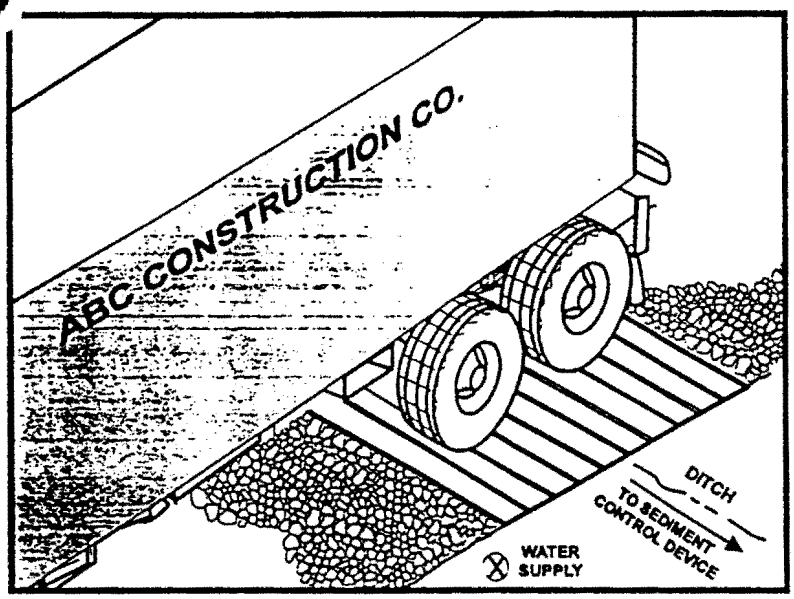
Standards and Specifications

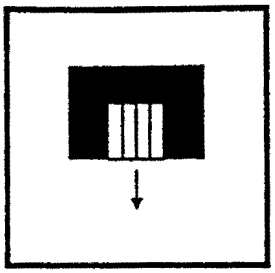
- Select construction road stabilization (aggregate, asphaltic concrete, concrete) based on longevity, required performance, and site conditions.
- If aggregate is selected, place crushed aggregate over geotextile fabric to at least 150 mm (6 in) depth or to a depth recommended by soils engineer.
- Designate stabilized construction roadways and require that employees, subcontractors, and others use them.
- Limit speed of vehicles to control dust.

Maintenance and Inspection

- Inspect routinely for damage and repair as needed.
- Keep all temporary roadway ditches clear.

CD29C(2)
Entrance/Outlet Tire Wash





BMP Objectives

- ● Soil Stabilization
- ○ Sediment Control
- ● Tracking Control
- ○ Wind Erosion Control
- ○ Non-Storm Water

Definition and Purpose

Procedures and practices to reduce the discharge of pollutants to the storm drain system or to watercourses as a result of vehicular ingress and egress to the construction site by providing facilities to remove mud and dirt from vehicle tires and undercarriages in order to prevent these materials from being deposited onto public roads.

Appropriate Applications

- On construction sites where dirt and mud tracking onto public roads by construction vehicles may occur. Generally used in conjunction with CD29A(2)-Stabilized Construction Entrance.

Limitations

- Requires a supply of wash water.
- Requires a turnout or double wide exit to avoid having entering vehicles from having to drive through the wash area.

Standards and Specifications

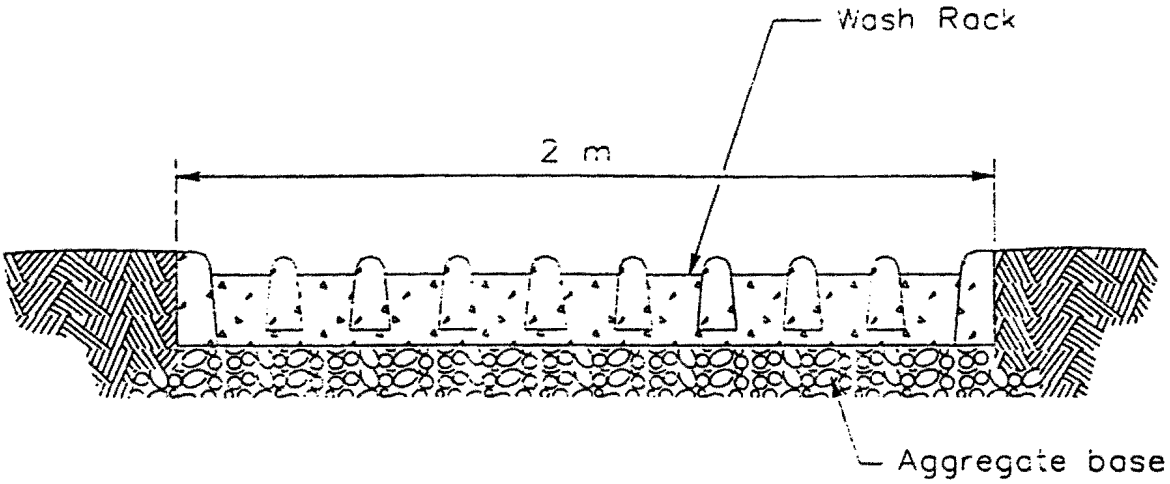
- Incorporate with a stabilized construction entrance. See CD29A(2) - Stabilized Construction Entrance.
- Construct on level ground when possible, on a pad of coarse aggregate.
- Wash rack shall be designed for anticipated traffic loads.
- Provide a drainage ditch that will convey the runoff from the wash area to a sediment trapping device.

- Ditch shall be of sufficient grade, width, and depth to carry the wash runoff.
- Require that all employees, subcontractors, and others that leave the site with mud-caked tires and/or undercarriages use the wash facility.

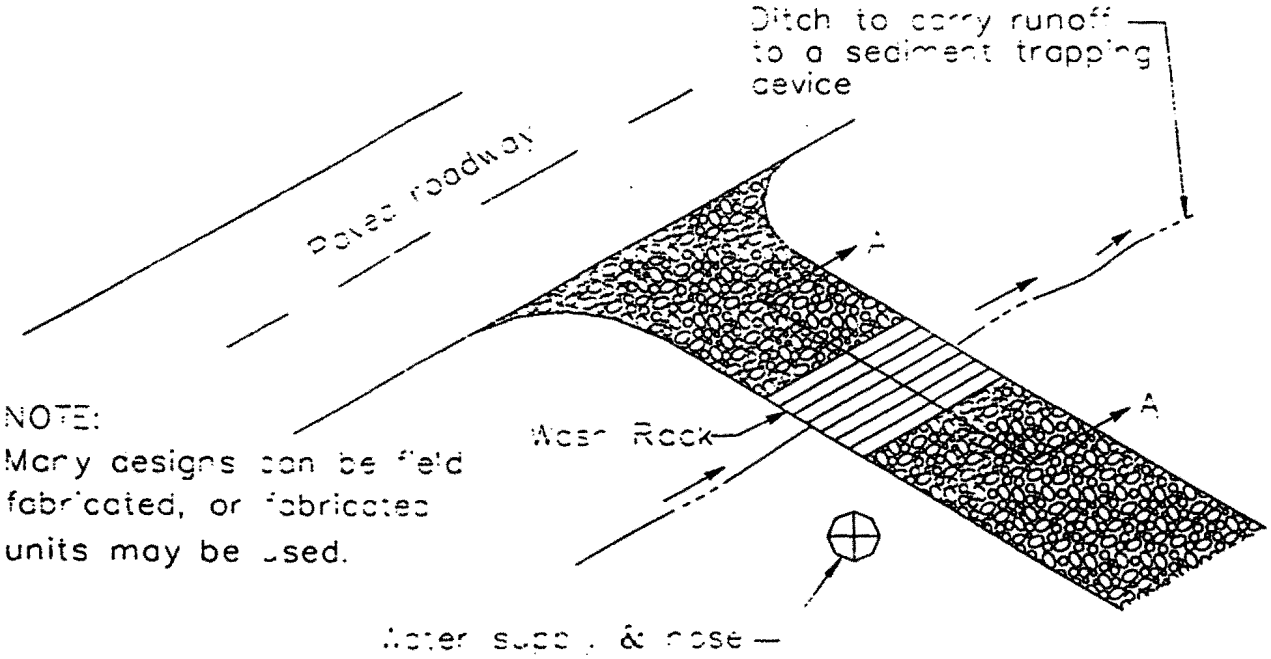
Maintenance and Inspection

- Remove accumulated sediment in wash rack and/or sediment trap to maintain system performance.
- Inspect routinely for damage and repair as needed.

CD29C(2)
Entrance/Outlet Tire Wash



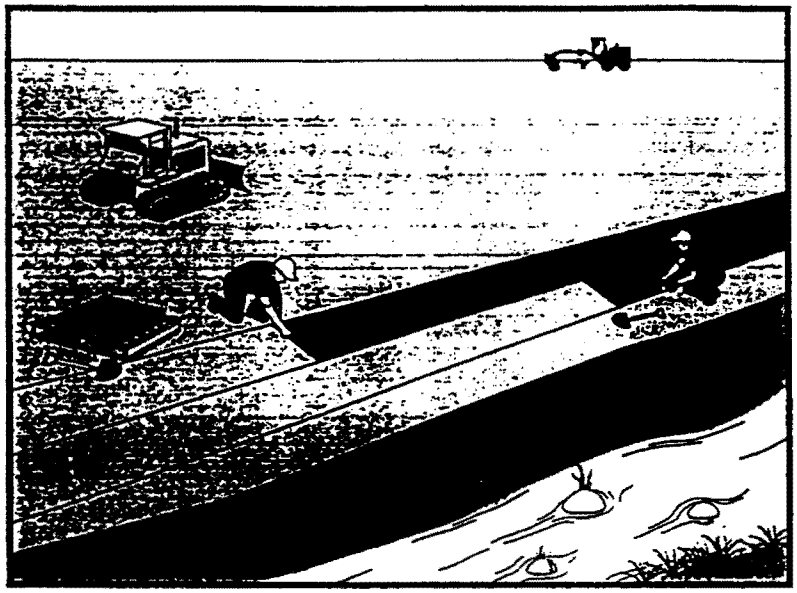
SECTION A–A
NOT TO SCALE

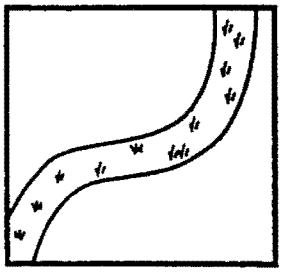


TYPICAL TIRE WASH
NOT TO SCALE

Sheet 1

CD30(2)
Sodding, Grass Plugging, and Vegetative Buffer Strips





BMP Objectives

- ● Soil Stabilization
- O Sediment Control
- O Tracking Control
- O Wind Erosion Control
- O Non-Storm Water

Definition and Purpose

Procedures and practices to reduce the discharge of pollutants to the storm drain system or to watercourses as a result of construction activity by utilizing vegetation to protect soils from erosion and to slow the velocity of runoff to allow the removal of sediment through filtering and settling.

Sodding and plugging is the placement of permanent grass cover that has been grown elsewhere and brought to the site. Sodding stabilizes an area by immediately covering the soil surface with grass, thereby protecting the soil from erosion, enhancing infiltration, filtering sediment and other pollutants, and slowing runoff velocities. Plugging stabilizes an area by planting clumps of grass material, which then grow and spread to provide complete covers. Plugging is generally used for hybrid grasses that cannot be established from seed.

A vegetative buffer strip is a vegetated strip of land that is either created with new vegetation as part of a project, or may be a strip of existing vegetation left undisturbed on a construction site. The purpose of a vegetative buffer strip is to achieve temporary or permanent water quality benefits by slowing the velocity and filtering certain pollutants from storm water runoff.

Appropriate Applications

Sodding is appropriate for areas that contained turf prior to construction, or for any graded or cleared area that might erode and where a permanent, long-lived plant cover is needed immediately.

Examples of locations where sodding may be used include buffer zones, stream banks, grassed dikes, swales, slopes, outlets, level spreaders, and filter strips.

Plugging is appropriate for the same areas as sodding, except that a longer establishment period before protection is provided as required.

Vegetative buffer strips may be used on any site that will support vegetation. Buffer strips are particularly effective on flood plains, adjacent to wetlands or other sensitive water bodies, and on steep, unstable slopes.

Limitations

The purchase and placement of sod is more expensive than growing vegetation from seed. Additionally, sod is generally more expensive to maintain than other types of vegetation because of the need for irrigation, weeding, and mowing. Sod will not survive unless properly maintained.

Plugging is more expensive than seed but less expensive than sod. Plugging requires a longer establishment period than for sod before effective control is provided.

Site conditions will dictate need and design of vegetative buffer strips. Vegetative buffer strips are most economical when there is existing vegetation that can be retained to serve as the buffer strip; otherwise, vegetation will need to be established.

Standards and Specifications

Sodding and Grass Plugging

- Sod shall be protected with tarps or other protective covers during delivery and shall not be allowed to dry out between harvesting and placement.

- All weeds and debris shall be removed before cultivation of the area to be planted and shall be disposed in accordance with Standard Specifications Section 7-1.13.

- After cultivation, installation of irrigation systems, and excavation and backfilling of plant holes are completed, areas to be planted with sod shall be fine graded and rolled. Topsoil may be needed in areas where the soil textures are inadequate. Areas to be planted with sod shall be smooth and uniform prior to placing sod. Areas to be planted with sod adjacent to sidewalks, concrete headers, header boards, and other paved borders and surface areas shall be 38 mm ± 6 mm (1.5 in ± 0.25 in) below the top grade of such

facilities after fine grading, rolling, and settlement of the soil. Sod shall be placed so that ends of adjacent strips of sod are staggered a minimum of 600 mm (24 in). All edges and ends of sod shall be placed firmly against adjacent sod and against sidewalks, concrete headers, header boards, and other paved borders and surfaced areas.

- After placement of the sod, the entire sodded area shall be lightly rolled to eliminate air pockets and to ensure close contact with the soil. After rolling, the sodded areas shall be watered so that the soil is moistened to a minimum depth of 100 mm (4 in). Sod shall not be allowed to dry out. Sod should not be planted during very hot or wet weather. Sod should not be placed on slopes that are greater than 1:3 (V:H) if they are to be mowed.

- If irregular or uneven areas appear before or during the plant establishment period, such areas shall be restored to a smooth and even appearance.

- When the sod has reached a height of 75 mm (3 in), it shall be mowed to a height of 25 mm (1 in) or as recommended by the grower of the sod. All turf edges, including edges adjacent to sidewalks, concrete headers, header boards, and other paved borders and surfaced areas, shall be trimmed to a uniform edge not extending beyond the edge of turf or such facilities

- Mowed and trimmed growth shall be removed and disposed in accordance with Standard Specifications Section 7-1.13. Trimming shall be repeated whenever the edge of the turf exceeds 25 mm (1 in).

- Sod shall be healthy, field-grown sod containing not more than 13 mm (0.5 in) thick thatch. The age of the sod shall not be less than 8 months nor more than 16 months. Sod shall be grown in accordance with California agricultural codes. The sod shall be free from disease, weeds, insects, and undesirable types of grasses and clovers. Soil upon which the sod has been grown shall contain less than 50 percent silt and clay. Sod shall be machine cut at a uniform soil thickness of 16 mm ± 6 mm (0.625 in ± 0.25 in), not including top growth and thatch.

- A Certificate of Compliance for the sod shall be furnished to the Engineer in accordance with the Standard Specifications Section 6-1.07.

Vegetative Buffer Strips

Many local storm water programs or zoning agencies have regulations that define required or allowable vegetative buffer zones, particularly near sensitive or protected areas such as wetlands. Contact the appropriate local agency for specific requirements.

If a vegetative buffer strip will be created from existing vegetation, see CD23(2) - Preservation of Existing Vegetation.

For development of a vegetative buffer strip from new vegetation, the following steps shall be followed:

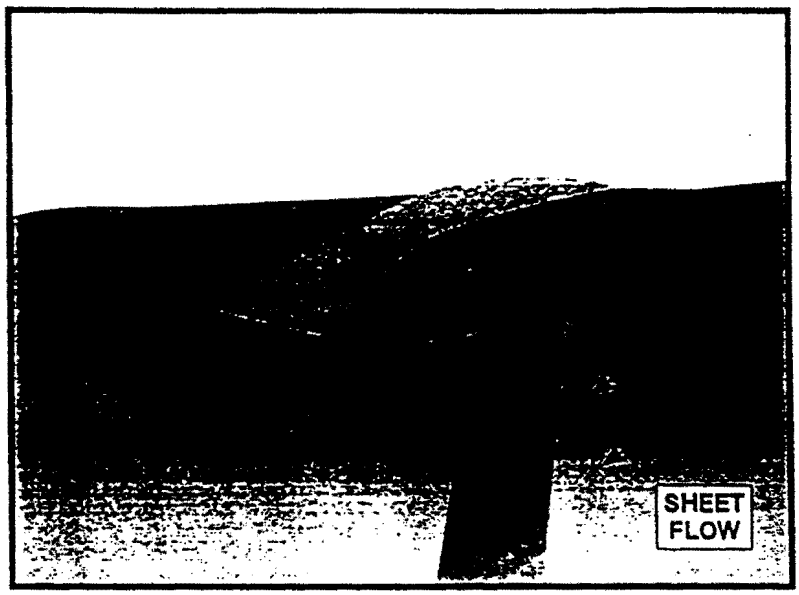
- Strip and stockpile good topsoil during construction. Use stockpiled topsoil for surface preparation prior to seeding operations.
- Prepare a good, firm seed bed by adding soil amendments such as fertilizer as needed. After seeding, apply a mulch to protect the vegetation during establishment. Select a seed mixture appropriate to the site conditions, remembering that dense grasses are the most effective in slowing flow velocities and removing pollutants such as sediment. A thick root structure is needed to control erosion
- Plant during the best time for the particular grass or vegetation selected.
- Use planting equipment and methods that provide uniform distribution and proper placement of seed.
- Water or irrigate the vegetation as needed to supplement rainfall until established.
- Fertilize in accordance with label instructions and the needs of the grass and soil as indicated by soil tests.
- Overseed, repair bare spots, or apply additional mulch as necessary.

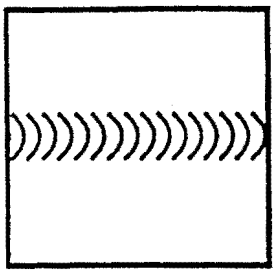
- Avoid using the buffer strip for vehicular traffic as it will damage the vegetation and reduce its effectiveness as a buffer.
- Application of fertilizer, lime, or other soil amendments shall follow California Food and Agricultural codes, county, and/or local guidelines and label instructions.

Maintenance and Inspection

- Inspect sod installations weekly and after significant storm events, until the turf is established, and routinely thereafter.
- Maintenance shall consist of mowing, weeding, and ensuring that the irrigation system is operating properly and as designed to sustain growth.
- Inspect buffer strips weekly and after significant storm events until vegetation is established, and routinely thereafter. Repair eroded or damaged areas as needed to maintain original purpose and effectiveness of the buffer strip.

CD31(2)
Earth Dikes, Drainage Swales, and Lined Ditches





BMP Objectives

- ● Soil Stabilization
- O Sediment Control
- O Tracking Control
- O Wind Erosion Control
- O Non-Storm Water

Definition and Purpose

Procedures and practices to reduce the discharge of pollutants to the storm drain system or to water courses as a result of construction activity by utilizing earth dikes, drainage swales, and line ditches to intercept, divert, and convey runoff in a manner that prevents erosion and/or prevents runoff from flowing onto areas where it might become contaminated.

Appropriate Applications

- Where needed to convey surface runoff down sloping land to avoid erosion.
- Where needed to intercept and divert runoff to avoid sheet flow over sloped surfaces.
- Where needed to direct runoff towards a stabilized watercourse, drainage pipe or channel.
- Where needed to direct runoff away from material storage areas, equipment fueling and maintenance areas, and any other area where the runoff may become contaminated.
- Below steep grades where runoff begins to concentrate.
- Along roadways and around facility improvements that are subject to flood damage.

- In conjunction with other control measures such as CD32A(1) - Slope Drains and Subsurface Drains and CD32B(2) - Top and Toe of Slope Diversion Ditches/Berms.

Limitations

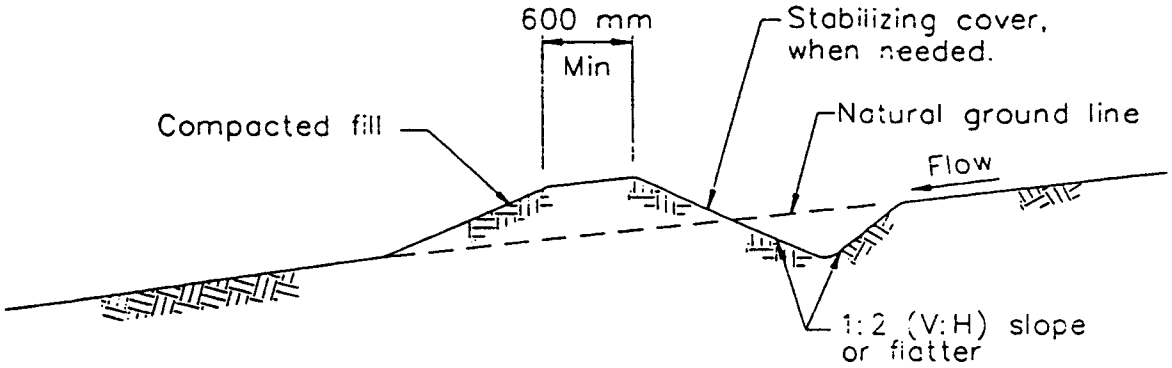
- Not suitable as sediment trapping devices.
- Conveyances must be stabilized.
- Use a lined ditch for high flow velocities.

Standards and Specifications

- Select design flow and safety factor based on careful evaluation of the risks due to erosion of the measure, over topping, flow backups, or washout.
- Compact any fills to prevent unequal settlement.
- When possible, install and utilize permanent dikes, swales, and ditches early in the construction process.
- Provide stabilized outlets. See CD33A(2)-Outlet Protection/ Velocity Dissipation Devices.

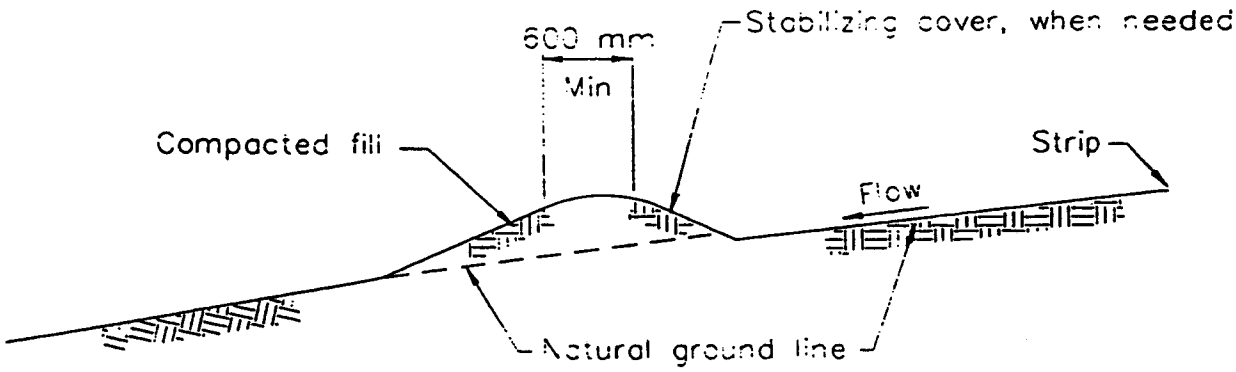
Maintenance and Inspection

- Temporary conveyances should be completely removed as soon as the surrounding drainage area has been stabilized, or at the completion of construction.
- Inspect temporary facilities before and after significant storms, and at least once per week during the rainy season.
- Inspect the channel lining, embankments, and bed for erosion and accumulating debris and sediment build up. Remove debris and repair linings and embankment as required.



TYPICAL DRAINAGE SWALE
NOT TO SCALE

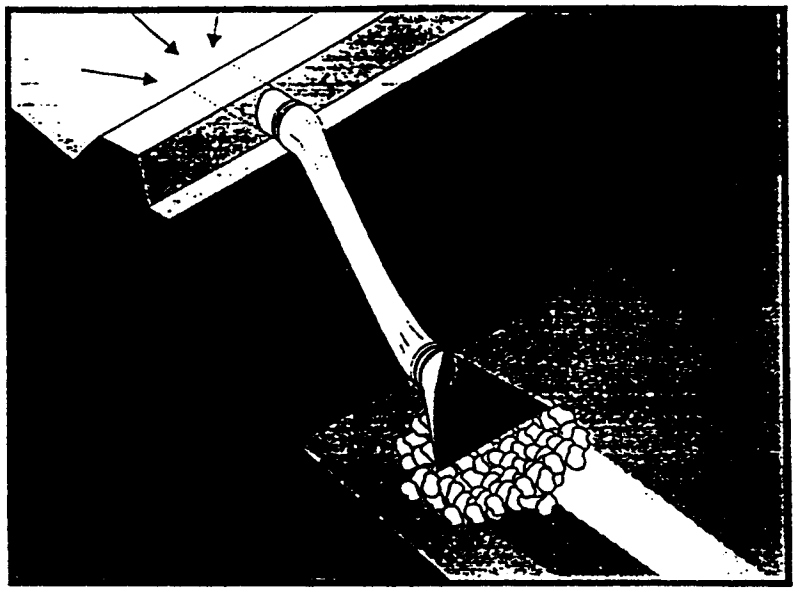
NOTES:
1. Stabilize inlet, outlets and slopes.
2. Properly compact the subgrade, in conformance with Section 19-5 of the Caltrans Standard Specifications.

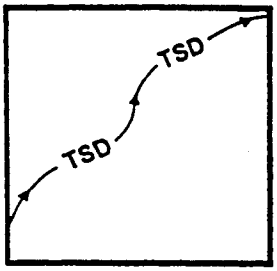


TYPICAL EARTH DIKE
NOT TO SCALE

Sheet 1

CD32A(2)
Slope Drains and Subsurface Drains





BMP Objectives

- ● Soil Stabilization
- O Sediment Control
- O Tracking Control
- O Wind Erosion Control
- O Non-Storm Water

Definition and Purpose

Procedures and practices to reduce the discharge of pollutants to the storm drain system or to watercourses as a result of construction activity by utilizing pipes to intercept and direct surface runoff down slopes in a non-erosive manner to a stabilized outlet and to intercept and direct groundwater to allow for slope drainage and stabilization in areas where slopes can become saturated.

Appropriate Applications

- Slope drains: where slopes may be eroded by concentrated surface runoff.
- Subsurface drains: where excessive water must be removed from the soil.

Limitations

- Subsurface drains may remove fine soils which can result in collapse of the slope.
- Severe erosion may result when slope drains fail by over topping, piping, or pipe separation.

Standards and Specifications

- When using slope drains, limit drainage area to 4 ha (10 ac) per pipe. For larger areas, use a rock-lined channel or a series of pipes.
- Maximum slope generally limited to 1:2 (V:H), as energy dissipation below steeper slopes is difficult.

- Direct surface runoff to slope drains with interceptor dikes. See CD31(2)-Earth Dikes, Drainage Swales, and Lined Ditches and CD32(B)- Top and Toe of Slope Diversion Ditches/Berms.

- When installing slope drains:

  - Install slope drains perpendicular to slope contours.

  - Compact soil around and under entrance, outlet, and length of pipe.

  - Securely anchor and stabilize pipe and appurtenances into soil.

  - Check to ensure that pipe connections are water tight.

  - Protect inlet and outlet of slope drains: use standard flared end section at entrance for pipe slope drains 300 mm (12 in) and larger.

- When installing subsurface drains:

  - Slightly slope subsurface drain towards outlet.

  - Check to ensure that pipe connections are water tight.

  - Install subsurface relief drains parallel to slope and drain to side of slope.

  - Install subsurface interceptor drains perpendicular to slope and divert discharge to the side of the slope.

Maintenance and Inspection

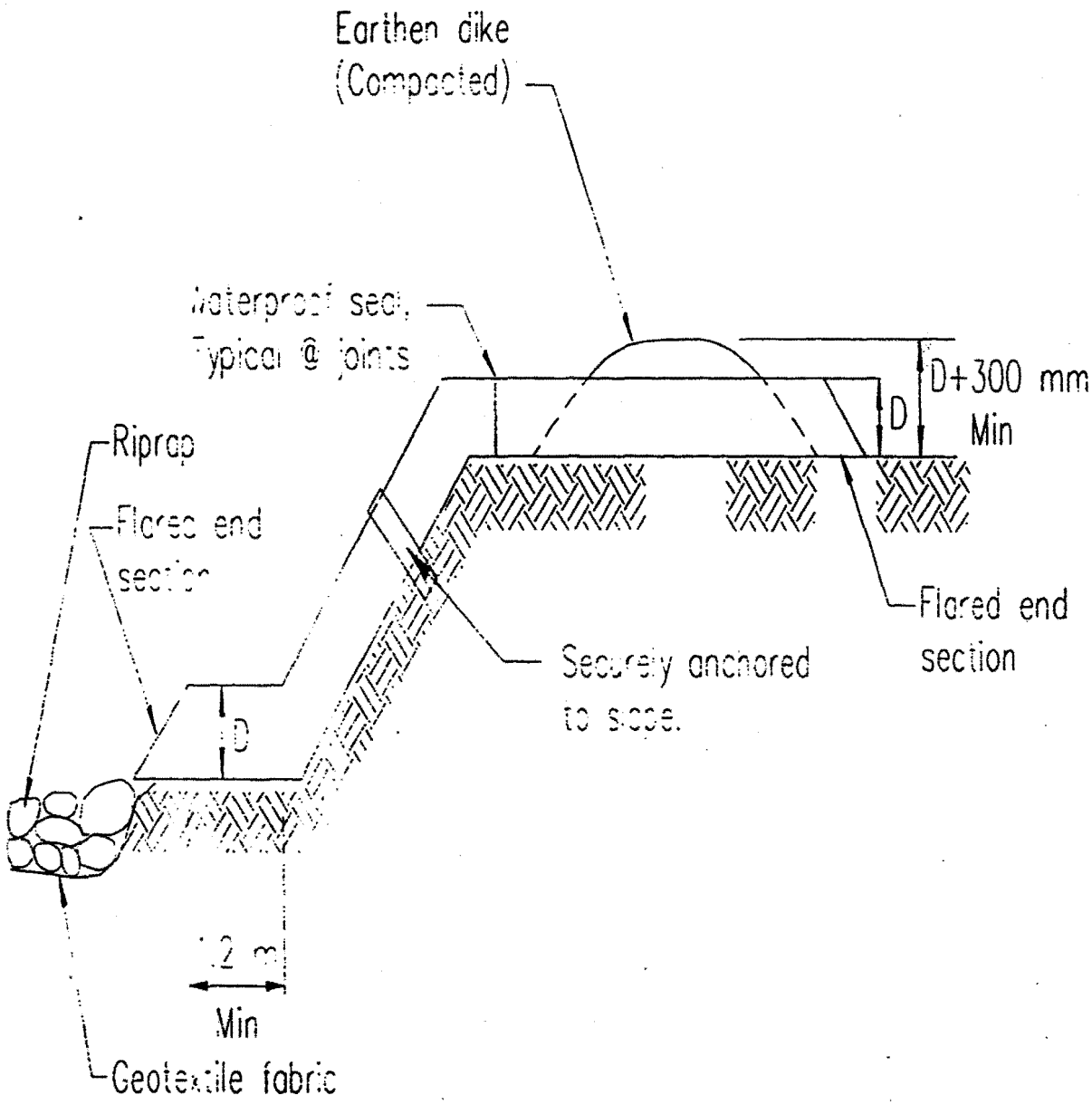
- Inspect before and after each rain storm, and twice monthly until the tributary drainage area has been stabilized. Follow routine inspection procedures for inlets thereafter.

- Inspect outlet for erosion and downstream scour. If eroded, repair damage and install additional energy dissipation measures. If downstream scour is occurring, it may be necessary to reduce flows being discharged into the channel unless other preventative measures are implemented.

- Inspect slope drainage for accumulations of debris and sediment.

- Remove built-up sediment from entrances and outlets as required. Flush drains if necessary; capture and settle out sediment from discharge.

- Make sure water is not ponding onto inappropriate areas (e.g., active traffic lanes, material storage areas, etc.).

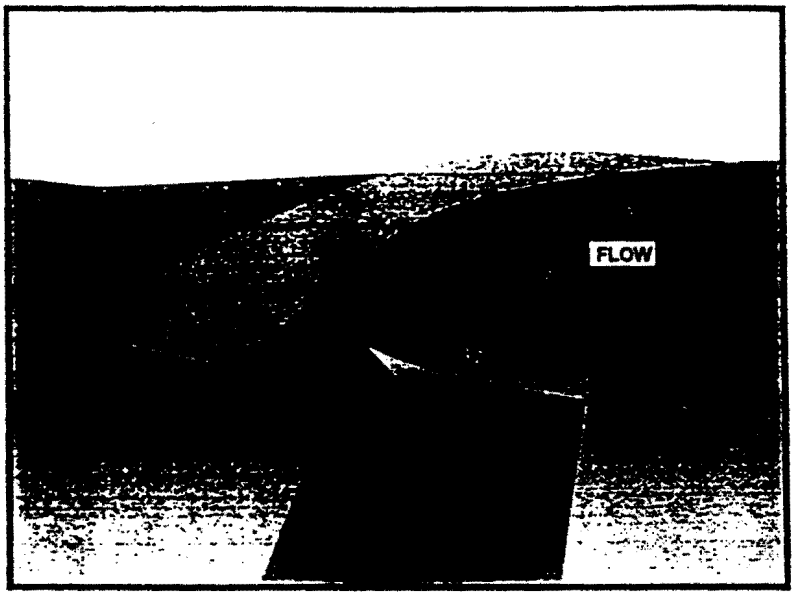


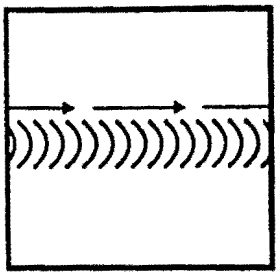
TYPICAL SLOPE DRAIN

NOT TO SCALE

Sheet 1

CD32B(2)
Top and Toe of Slope Diversion Ditches/Berms





BMP Objectives

- ● Soil Stabilization
- O Sediment Control
- O Tracking Control
- O Wind Erosion Control
- O Non-Storm Water

Definition and Purpose

Procedures and practices to reduce the discharge of pollutants to the storm drain system or to watercourses as a result of construction activity by utilizing ditches and berms above and below slopes to prevent concentrated flows from eroding the slope surface or toe.

Appropriate Applications

- Where runoff must be prevented from flowing over a slope.
- Where runoff must be intercepted at the bottom of a slope.
- Where needed to direct runoff to a stable conveyance, such as a slope drain.
- Where needed to direct runoff to a sediment trapping device.
- Where needed to intercept runon and direct it around the site.

Limitations

Ditches berms are not sediment trapping devices.

Standards and Specifications

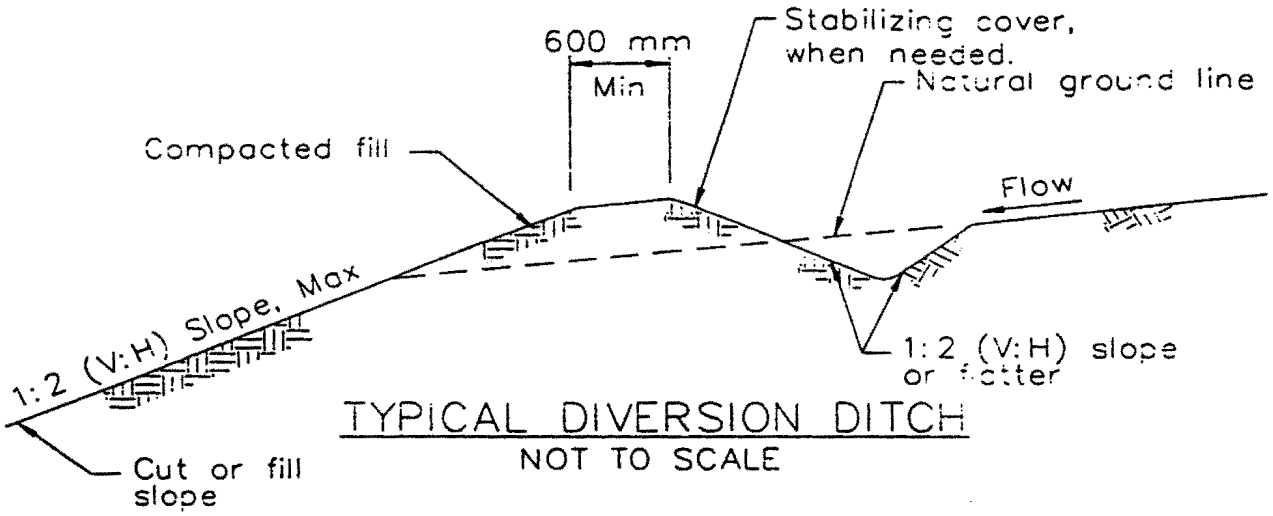
- Select design flows and safety factor based on careful evaluation of risks due to erosion of the measure, over topping, flow backups, or washout.
- High flow velocities may require the use of a lined ditch, or other methods of stabilization.

- When installing diversion ditches and berms:
  - Protect outlets from erosion.
  - Utilize planned permanent ditches/berms early in construction phase when practicable.

Maintenance and Inspection

- Inspect temporary measures prior to the rainy season, after rainfall events, and regularly (approximately once per week) during the rainy season.
- Inspect ditches and berms for washouts. Replace lost riprap, damaged linings or soil stabilizers as needed.
- Inspect ditches and berms for accumulation of debris and sediment. Remove debris and sediment as needed.
- Temporary conveyances should be completely removed as soon as the surrounding drainage area has been stabilized, or at the completion of construction.

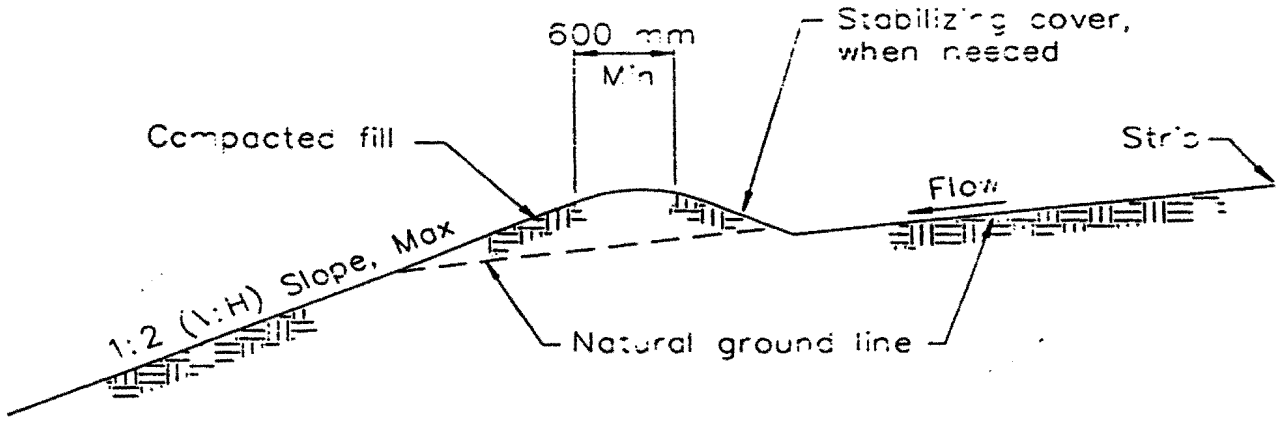
CD32B(2)
Top and Toe of Slope Diversion Ditches/Berms



TYPICAL DIVERSION DITCH
NOT TO SCALE

NOTES:

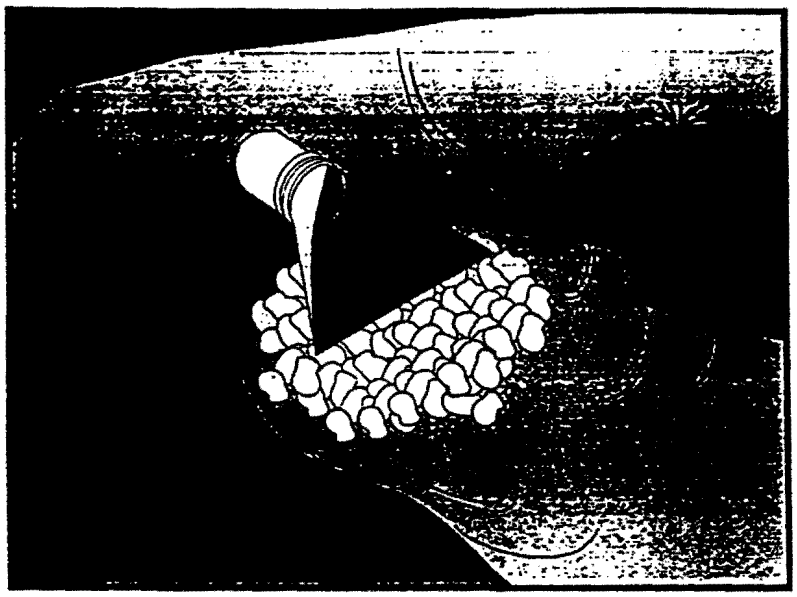
1. Stabilize inlet, outlets and slopes.
2. Properly compact the subgrade, in conformance with Section 19-5 of the Caltrans Standard Specifications.

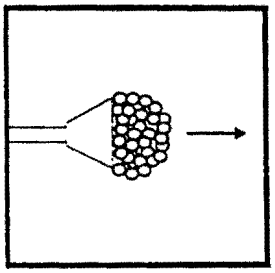


TYPICAL DIVERSION BERM
NOT TO SCALE

Sheet 1

CD33A(2)
Outlet Protection/Velocity Dissipation Devices





BMP Objectives

- ● Soil Stabilization
- O Sediment Control
- O Tracking Control
- O Wind Erosion Control
- O Non-Storm Water

Definition and Purpose

Procedures and practices to reduce the discharge of pollutants to the storm drain system or to watercourses as a result of construction activity by utilizing devices placed at outlets to pipes and channels to reduce the velocity and/or energy of exiting water as a means of controlling erosion and scour.

Appropriate Applications

- Outlets of pipes, drains, culverts, conduits or channels.
- Outlets located at the bottom of mild to steep slopes.
- Outlets of channels which carry continuous flows of water.
- Outlets subject to short, intense flows of water, such as flash floods.
- Where lined conveyances discharge to unlined conveyances.

Limitations

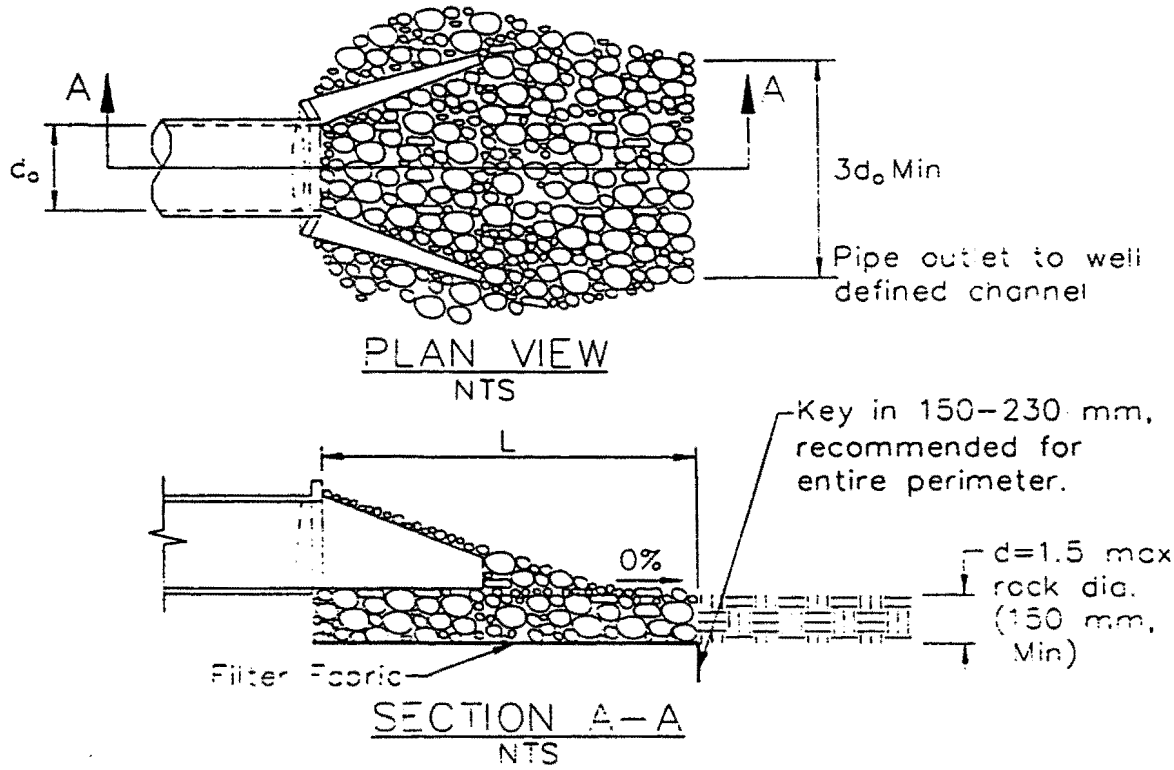
- Loose rock may have stones washed away during high flows.
- Grouted riprap may break up in areas of freeze and thaw.
- Grouted riprap may breakup from hydrostatic pressure without adequate drainage.

Standards and Specifications

- Riprap aprons are best suited for temporary use during construction.
- Carefully place riprap to avoid damaging the filter fabric.
- For proper operation of apron:
  - Construct apron at zero grade.
  - Align apron with receiving stream and keep straight throughout its length. If a curve is needed to fit site conditions, place it in upper section of apron.

Maintenance and Inspection

- Inspect temporary measures prior to the rainy season, after rainfall events, and regularly (approximately once per week) during the rainy season.
- Inspect apron for displacement of the riprap and/or damage to the underlying fabric. Repair fabric and replace riprap which has washed away.
- Inspect for scour beneath the riprap and around the outlet. Repair damage to slopes or underlying filter fabric immediately.
- Temporary devices should be completely removed as soon as the surrounding drainage area has been stabilized, or at the completion of construction.



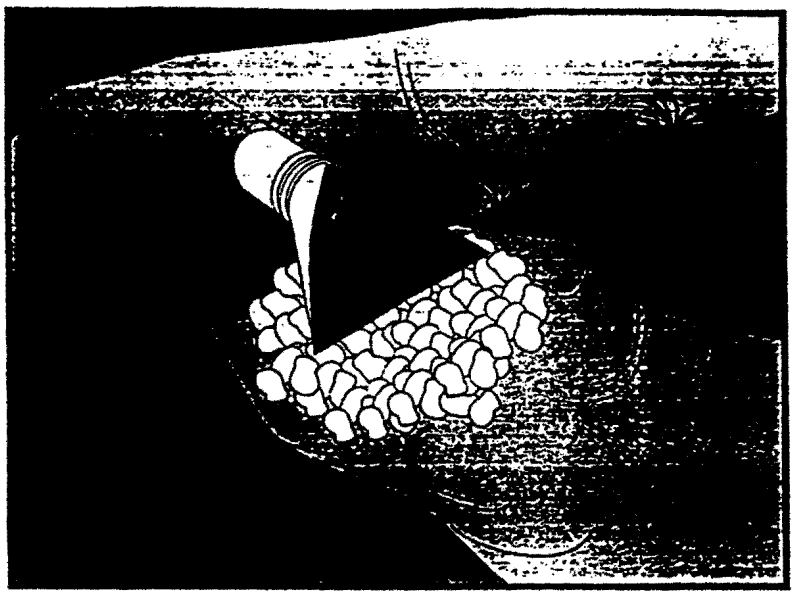
Adapted from: Virginia Erosion & Sediment Control Handbook, 1992

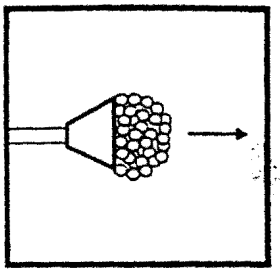
Pipe Diameter mm	Discharge m^3/s	Apron Length, L m	Rip Rap D_{50} Diameter Min mm
300	0.14	3	100
	0.28	4	150
450	0.28	3	150
	0.57	5	200
	0.85	7	300
	1.13	8	400
600	0.85	5	200
	1.13	8	200
	1.42	8	300
	1.70	9	400
For larger or higher flows, consult a registered civil engineer			

Source: USDA–SCS

Sheet 1

CD33B(2)
Flared Culvert End Sections





BMP Objectives

- ● Soil Stabilization
- O Sediment Control
- O Tracking Control
- O Wind Erosion Control
- O Non-Storm Water

Definition and Purpose

Procedures and practices to reduce the discharge of pollutants to the storm drain system or to watercourses as a result of construction activity by utilizing devices at inlets and outlets of pipes (culverts, slope drains) to improve hydraulic operation and retain the embankment near inlets and outlets to pipe conveyances, thus reducing erosion and scour.

Appropriate Applications

- Outlets of slope drains and culverts.
- Inlets of slope drains and culverts.

Limitations

- Primarily for hydraulic efficiency, with some limited erosion control benefits.

Standards and Specifications

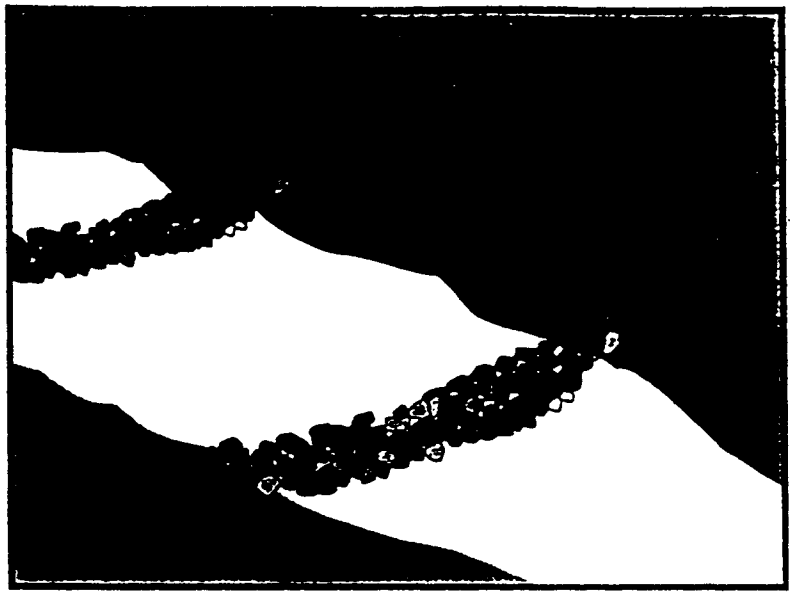
- Design and install in accordance with Caltrans Standard Plans D94A and D94B.
- Check to ensure that pipe connections are water tight.
- Construct at zero grade when possible.
- At outlets, use CD33A(2)-Outlet Protection/Velocity Dissipation Devices in conjunction with the flared culvert and section to prevent erosion and scour.

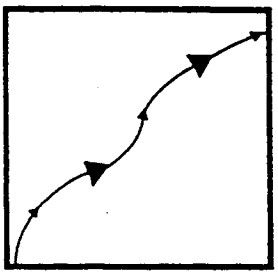
Maintenance and Inspection

- Inspect temporary measures prior to the rainy season, after rainfall events, and regularly (approximately once per week) during the rainy season.

- Inspect for debris and sediment build up. Remove debris and sediment as needed.
- Inspect for scour beneath and around flared end sections. Repair any damage as needed.

CD34(2)
Check Dams





BMP Objectives

- ● Soil Stabilization
- ● Sediment Control
- O Tracking Control
- O Wind Erosion Control
- O Non-Storm Water

Definition and Purpose

Procedures and practices to reduce the discharge of pollutants to the storm drain system or to watercourses as a result of construction activity by utilizing temporary dams of rocks, logs, or timbers placed across a channel or ditch in order to reduce erosion of the conveyance and to help slow flows so that sediment can settle and be trapped.

Appropriate Applications

- In small open channels which drain 4 ha (10 ac) or less.
- In steep channels where storm water runoff velocities must be reduced to protect against erosion.
- During the establishment of grass linings in drainage ditches or channels.
- In temporary ditches or channels where the short length of service does not allow or warrant establishment or construction of erosion-resistant linings.
- Where slowing the flow of water is required to settle suspended sediment.

Limitations

- Not to be used in live streams.
- Not appropriate in channels which drain areas greater than 4 ha (10 ac).
- Not to be placed in channels which are already grass lined unless erosion is expected, as installation may damage vegetation.

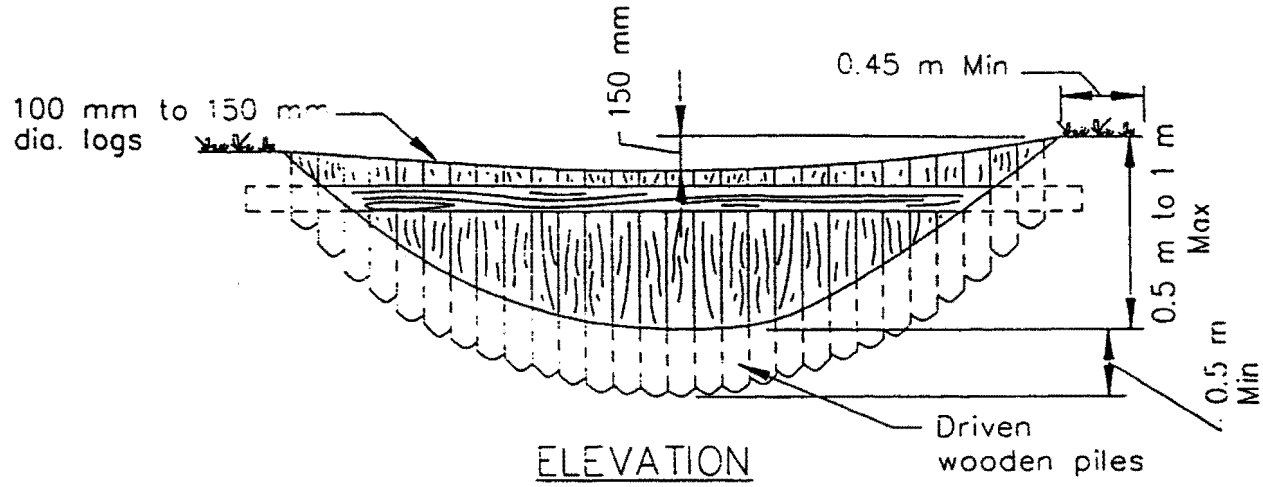
- Require extensive maintenance following high velocity flows.
- Promotes sediment trapping which can be resuspended during subsequent storms or removal of the check dam.
- Not to be constructed from straw bales or silt fences.

Standards and Specifications

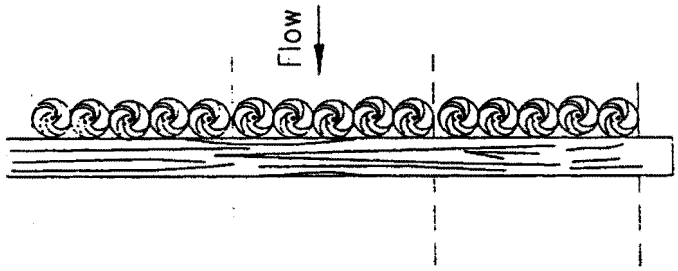
- Check dams shall be placed at a distance and height to allow small pools to form behind them.
- For multiple check dam installation, backwater from downstream check dam shall reach the toe of the upstream dam.
- High flows (typically a 2 year storm or larger) shall safely flow over the check dam without an increase in upstream flooding or damage to the check dam.
- Where grass is used to line ditches, check dams shall be removed when grass has matured sufficiently to protect the ditch or swale.
- A sump shall be provided immediately upstream of the dam for the purpose of capturing excessive sediment.
- Rock shall be placed individually by hand or by mechanical methods (no dumping of rock) to achieve complete ditch or swale coverage.

Maintenance and Inspection

- Inspect check dams after each significant rainfall event. Repair damage as needed.
- Remove sediments when depth reaches one-third of the check dam height.

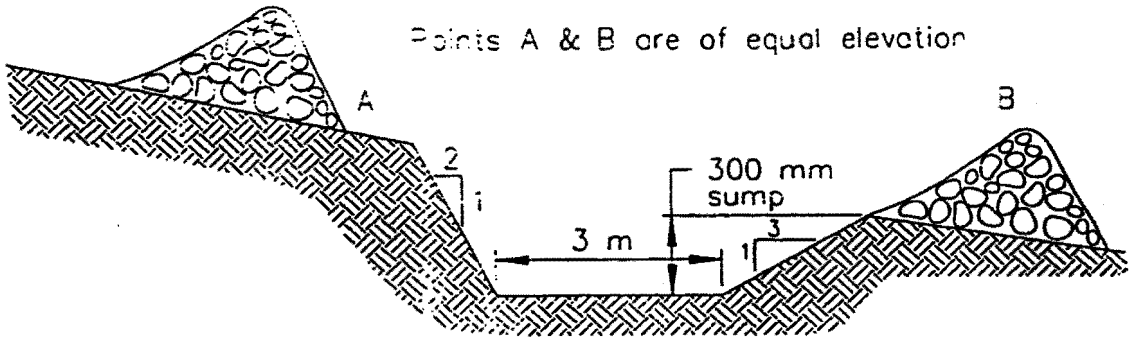


ELEVATION



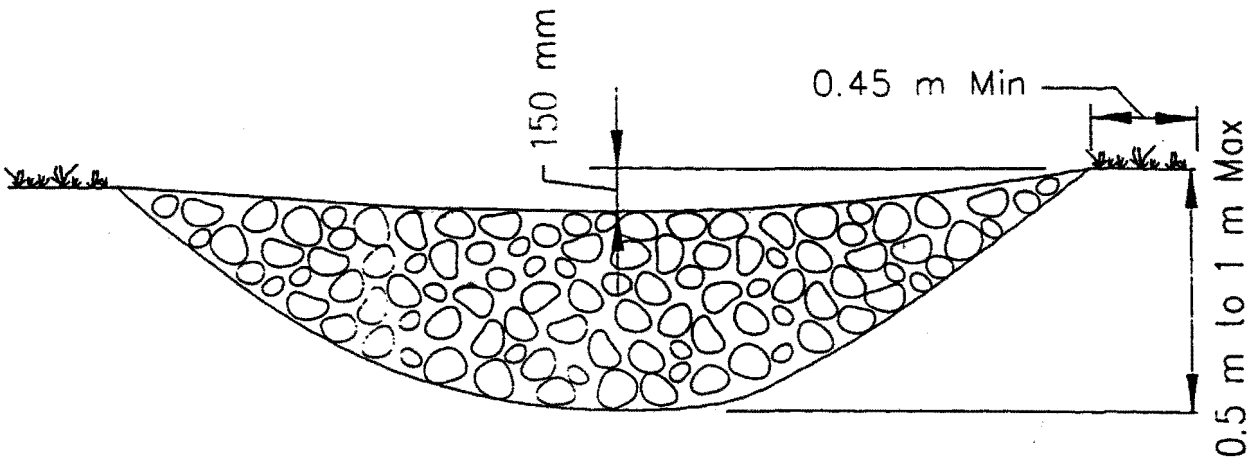
PLAN VIEW

LOG CHECK DAM
NOT TO SCALE

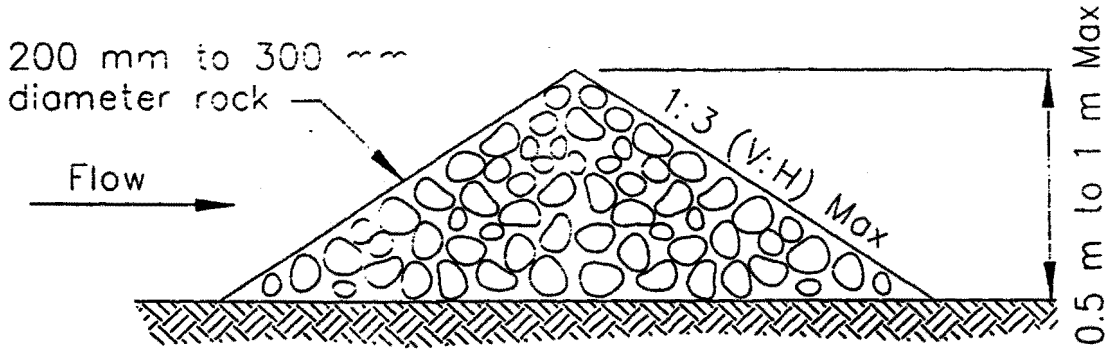


TYPICAL SPACING BETWEEN CHECK DAMS
NOT TO SCALE

Sheet 1



ELEVATION

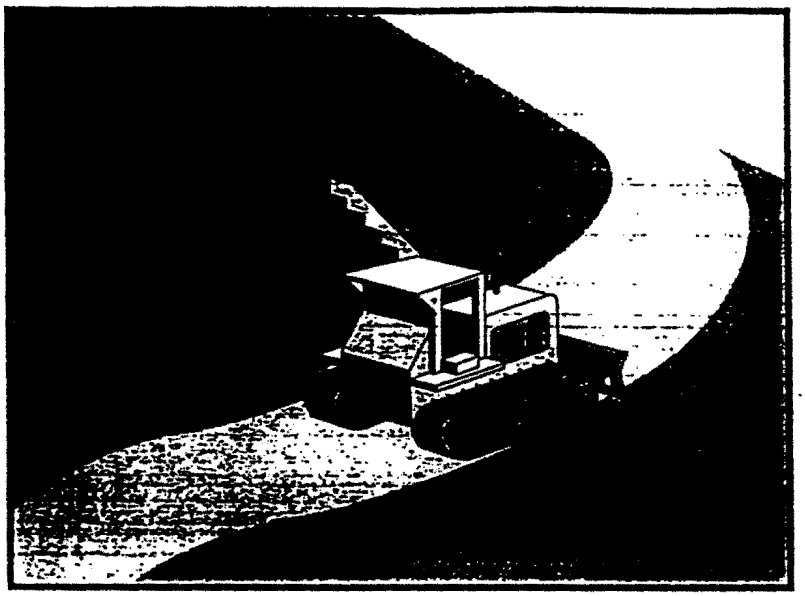


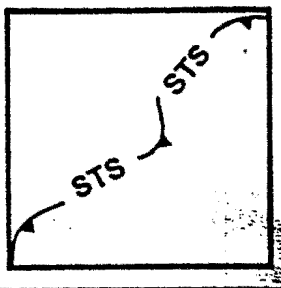
TYPICAL ROCK CHECK DAM SECTION

ROCK CHECK DAM
NOT TO SCALE

Sheet 2

CD35(2)
Slope Roughening/Terracing/Rounding





BMP Objectives

- ● Soil Stabilization
- O Sediment Control
- O Tracking Control
- O Wind Erosion Control
- O Non-Storm Water

Definition and Purpose

Procedures and practices to reduce the discharge of pollutants to the storm drain system or to watercourses as a result of construction activity by roughening, terracing, and rounding slopes to reduce erosion by decreasing runoff velocities, trapping sediment, increasing infiltration, and aiding in the establishment of vegetative cover from seed.

Appropriate Applications

- All construction slopes require surface roughening or terracing of some kind to facilitate long-term stabilization with vegetation, particularly slopes steeper than 1:3 (V:H), and greater than 1.5 m (5 ft) in height.
- Where seeding, planting, and mulching will benefit from surface roughening.
- Graded areas with smooth, hard surfaces.
- Where length of slopes needs to be shortened by terracing. Terracing is usually permanent, and should be designed under the direction of and approved by a registered professional civil engineer based on site conditions. Terraces must be designed with adequate drainage and stabilized outlets.

Limitations

- Roughening may increase grading costs and result in sloughing in certain soil types.
- Stair-step grading may not be practical for sandy, steep, or shallow soils.

- Roughening alone as a temporary erosion control measure is of limited effectiveness in intense rainfall events. If roughening effects are washed away in a heavy storm, the surface will have to be re-roughened and new seed and mulch applied.

Standards and Specifications

Cut Slope Roughening

- Stair-step grade or groove cut slopes that are steeper than 1:3 (V:H).
- Use stair-step grading on erodible material which is soft enough to be ripped by a bulldozer. Slopes consisting of soft rock with some subsoil are particularly suited to stair-step grading.
- Make the vertical cut distance less than the horizontal distance, and slightly slope the horizontal position of the "step" in towards the slope.
- Do not make individual vertical cuts more than 600 mm (24 in) high in soft materials or more than 1 m (3 ft) high in rocky materials.
- Groove the slope using machinery to create a series of ridges and depressions that run across the slope and on the contour.

Fill Slope Roughening

- Place fill slopes with a gradient steeper than 1:3 (V:H) in lifts not to exceed 200 mm (8 in), and make sure each lift is properly compacted.
- Ensure that the face of the slope consists of loose, uncompacted fill 100 mm (4 in) to 150 mm (6 in).
- Use grooving or tracking to roughen the face of the slopes, if necessary.
- Apply seed, fertilizer, and mulch and then track or crimp in the mulch. See CD24B(2) - Temporary Seeding and Planting and CD25(2) - Mulching.
- Do not blade or scrape the final slope face.

Cuts, Fills, and Graded Areas

- Slopes that will be maintained by mowing should be no steeper than 1:3 (V:H).

- To roughen these areas, create shallow grooves by normal tilling, disking, harrowing, or use a cultipacker-seeder. Make the final pass of any such tillage on the contour.
- Make grooves formed by such implements close together, less than 250 mm (10 in), and not less than 25 mm (1 in) deep.
- Excessive roughness is undesirable where mowing is planned.

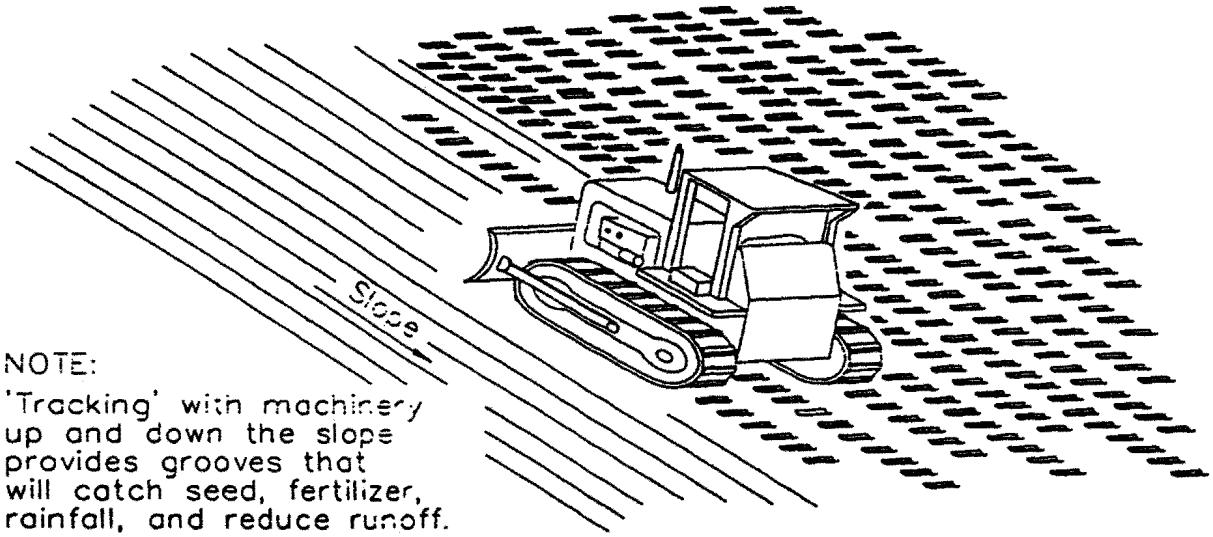
Roughening with Tracked Machinery

- Limit roughening with tracked machinery to soils with a sandy textural component to avoid undue compaction of the soil surface.
- Operate tracked machinery up and down the slope to leave horizontal depressions in the soil. Do not backblade during the final grading operation.
- Immediately seed and mulch roughened areas to obtain optimum seed germination and growth.

Maintenance and Inspection

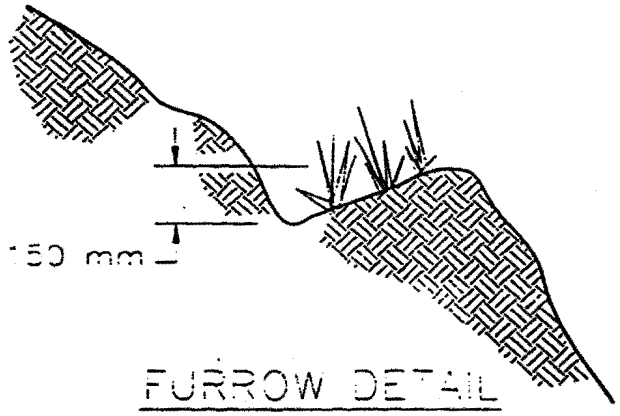
Periodically check the seeded or planted slopes for rills and washes, particularly after significant storm events greater than 12 mm (0.5 in). Fill these areas slightly above the original grade, then reseed and mulch as soon as possible.

Slope Roughening/Terracing/Rounding

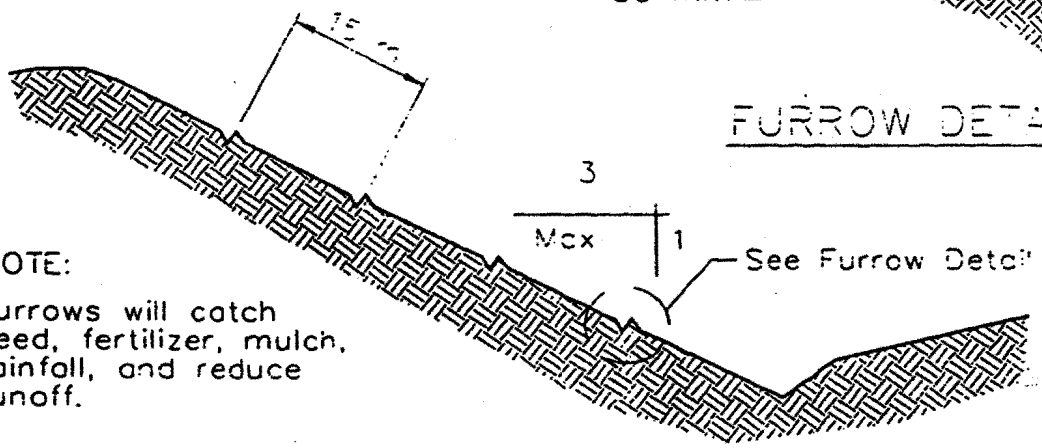


NOTE:
'Tracking' with machinery up and down the slope provides grooves that will catch seed, fertilizer, rainfall, and reduce runoff.

TRACKING
NTS



FURROW DETAIL

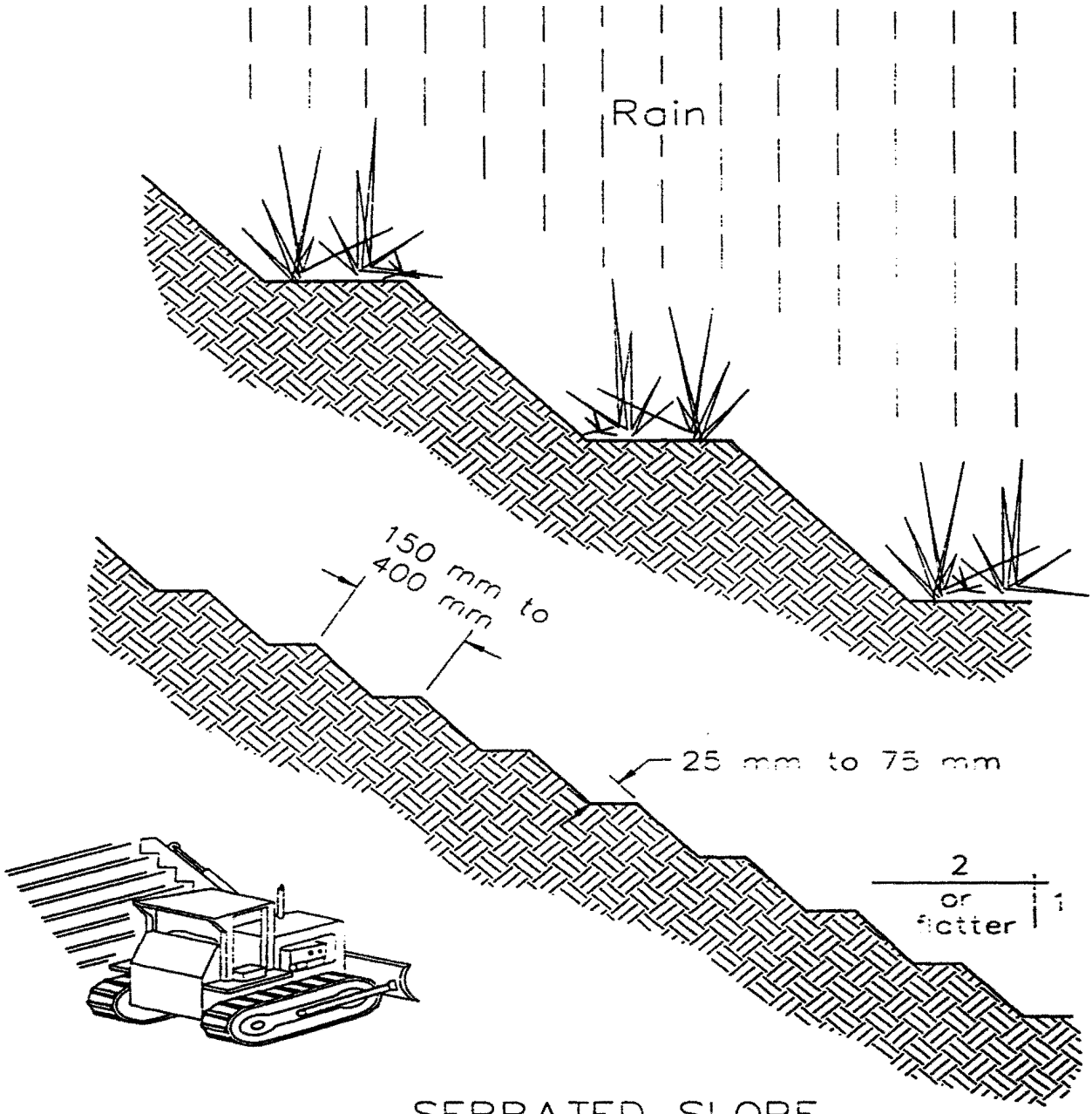


NOTE:
Furrows will catch seed, fertilizer, mulch, rainfall, and reduce runoff.

CONTOUR FURROWS
NOT TO SCALE

Sheet 1

Slope Roughening/Terracing/Rounding



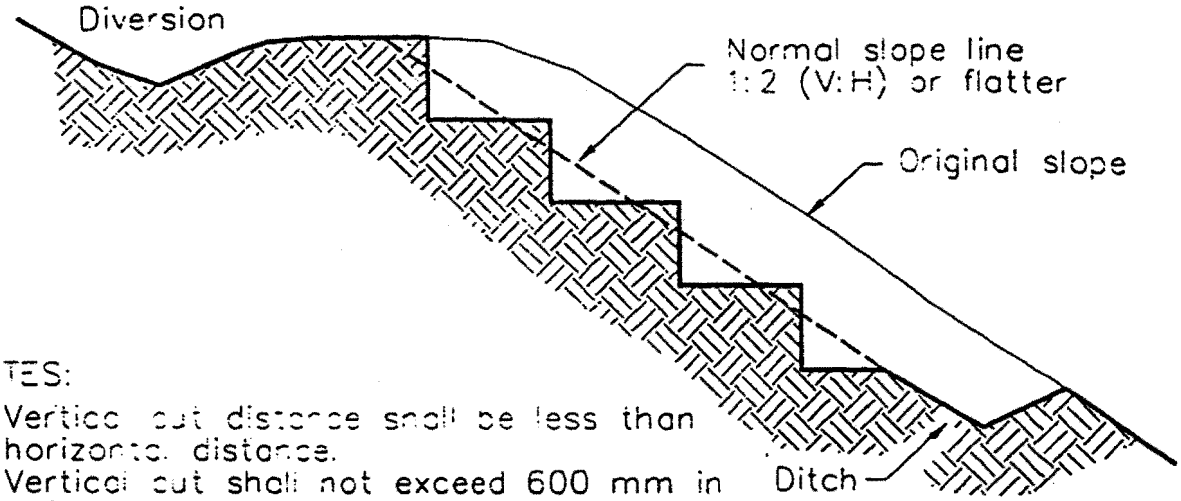
SERRATED SLOPE

NOT TO SCALE

NOTE:
Groove by cutting serrations along the contour. Irregularities in the soil surface catch rainwater, seed, mulch and fertilizer.

Sheet 2

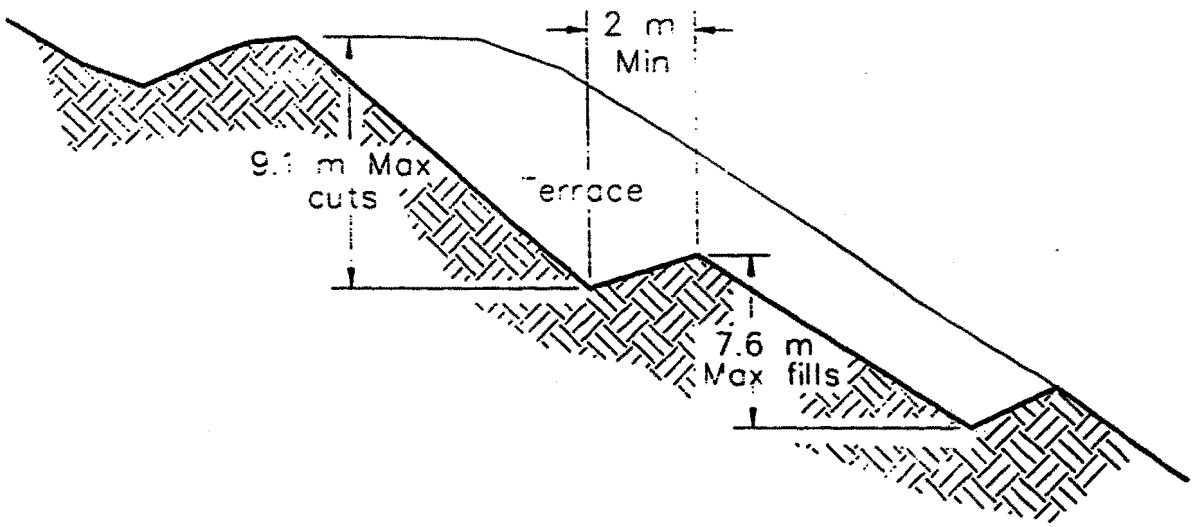
Slope Roughening/Terracing/Rounding



NOTES:

1. Vertical cut distance shall be less than horizontal distance.
2. Vertical cut shall not exceed 600 mm in soft material and 1 m in rocky material.

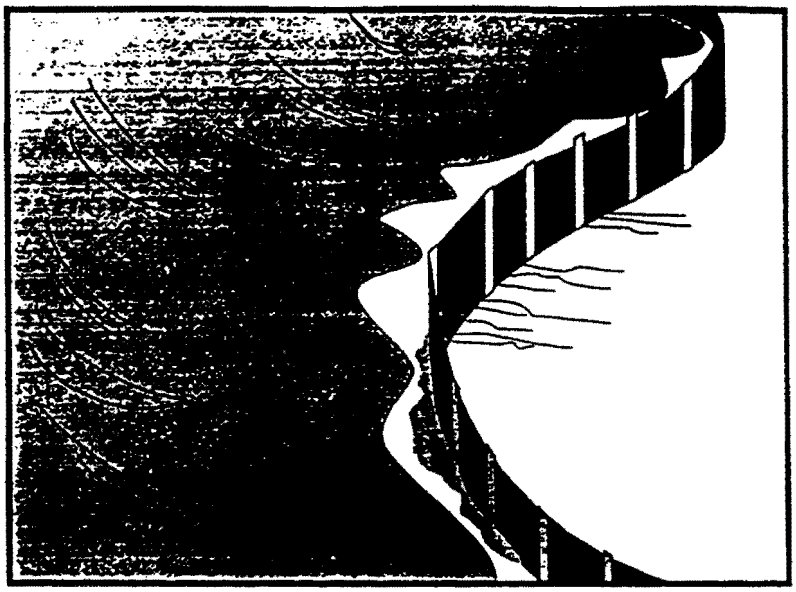
STEPPED SLOPE
NOT TO SCALE

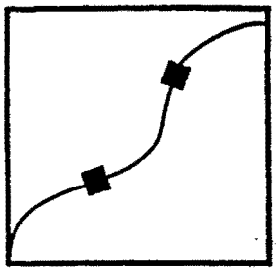


TERRACED SLOPE
NOT TO SCALE

Sheet 3

CD36(2)
Silt Fences





BMP Objectives

- ○ Soil Stabilization
- ● Sediment Control
- ○ Tracking Control
- ○ Wind Erosion Control
- ○ Non-Storm Water

Definition and Purpose

Procedures and practices to reduce the discharge of pollutants to the storm drain system or to watercourses as a result of construction activity by utilizing a barrier of permeable fabric to intercept and slow sediment laden sheet flow runoff, allowing suspended sediment to be removed from the runoff by settling and filtration, and then releasing the runoff as sheet flow.

Appropriate Applications

- Along the perimeter of a site.
- Along streams and channels.
- Below the toe of significant erodible slopes.
- Downslope of exposed soil areas.
- Around temporary soil stockpiles.

Limitations

- Limit tributary drainage area upstream of the silt fence to less than 0.3 ha/100 m (0.25 ac/100 ft) of fence.
- Limit the length of slope draining to any point along the silt fence to 30 m (100 ft) or less.
- Limit length of any single run of silt fence to 150 m (500 ft).
- Limit to locations suitable for temporary ponding or deposition of sediment.

(3) Fence fabric may be reinforced with a backing or additional support to increase fabric strength.

(4) Posts may be spaced closer together than other premanufactured silt fence types available from manufacturer.

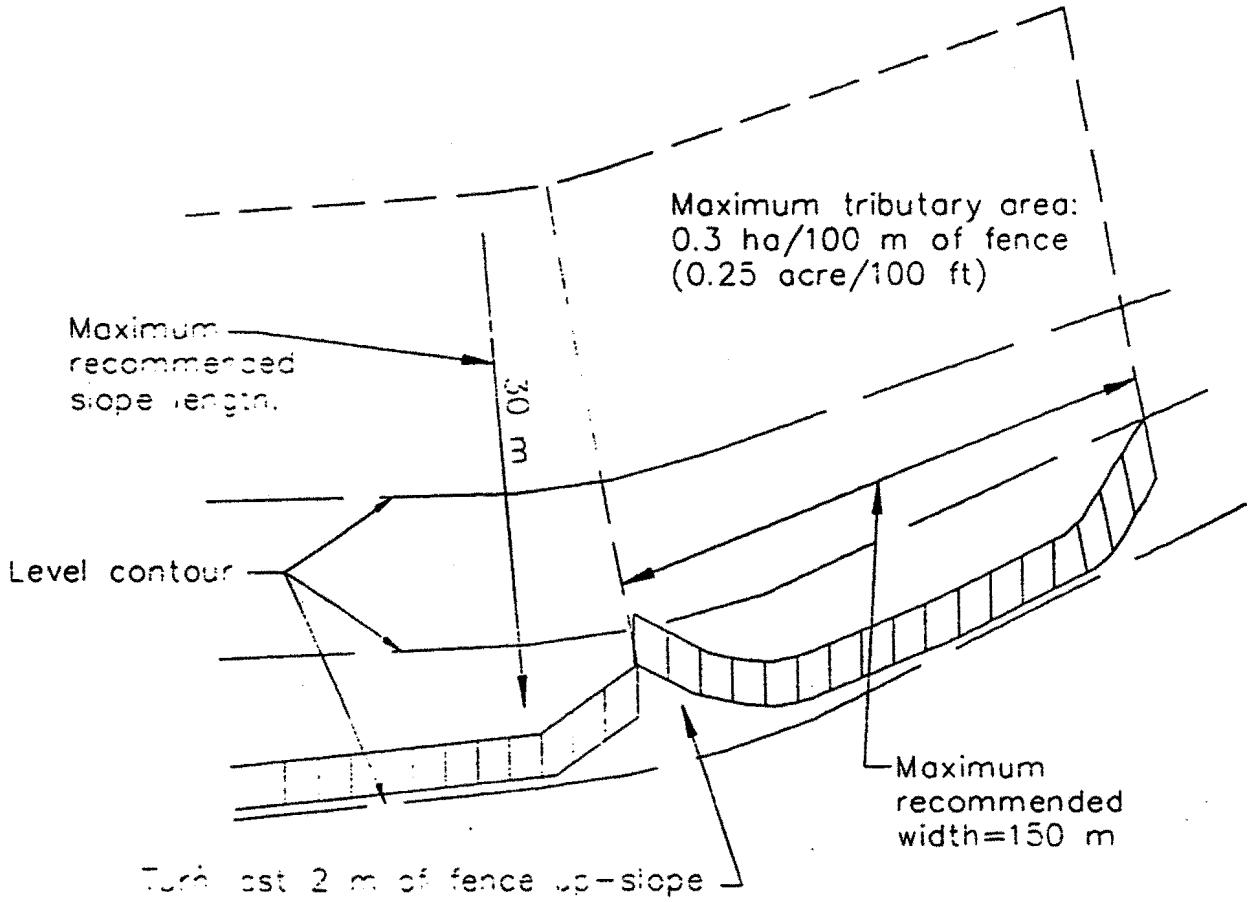
- Lay out in accordance with Sheet 1.
- Install in accordance with Sheet 2.

Installation

- Install silt fence along a level contour, with the last 2 m (6 ft) of fence turned up slope. Except for the ends, the difference in elevation between the highest and lowest point along the top of the silt fence shall not exceed one-third the fence height.
- Generally, should be used in conjunction with erosion source controls up slope to provide effective control.

Maintenance and Inspection

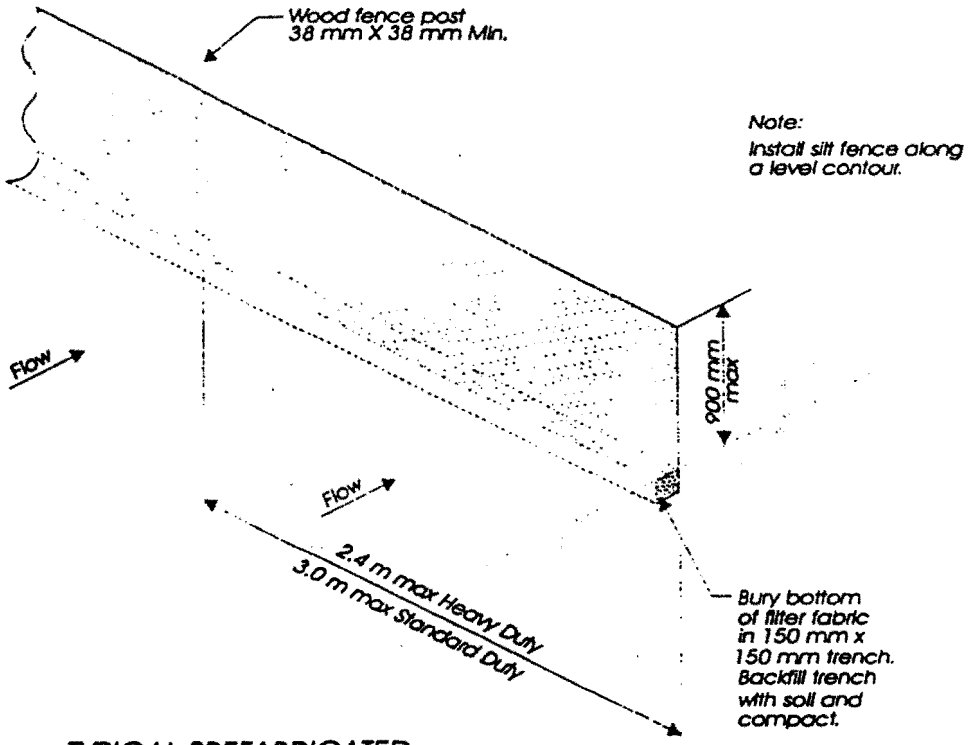
- Repair undercut silt fences.
- Repair or replace split, torn, slumping, or weathered fabric.
- Inspect silt fence when rain is forecast. Perform required maintenance.
- Inspect silt fence following rainfall events. Perform required maintenance.
- Remove sediment when accumulation reaches one-third fence height. Sediments removed shall be disposed of properly.
- Remove silt fence when no longer needed. Fill and compact post holes and anchorage trench, remove sediment accumulation, and grade fence alignment to blend with adjacent ground.



NOTE:
Locate silt fence along a level contour.

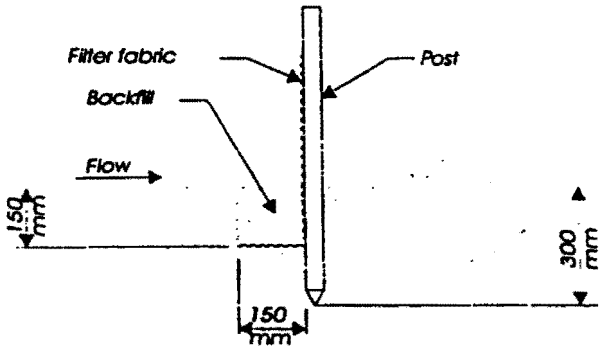
TYPICAL SILT FENCE LAYOUT
NOT TO SCALE

Sheet 1



TYPICAL PREFABRICATED SILT FENCE INSTALLATION

N.T.S.



SECTION

N.T.S.

Sheet 2

- Slopes of 2:100 (V:H)(2%) or flatter are preferred. If the slope exceeds 1:10 (V:H)(10%), the length of slope upstream of the barrier must be less than 15 m (50 ft).
- Limit length of any single row of straw bales to 150 m (500 ft).
- Limit to locations suitable for temporary ponding or deposition of sediment.
- Straw bales are maintenance intensive and often less capable than CD36(2) - Silt Fences for comparable applications.
- Don't use in areas subjected to highly concentrated flows, such as channels or live streams.
- Degraded straw bales may fall apart when removed or left in place for extended periods.

Standards and Specifications

Materials

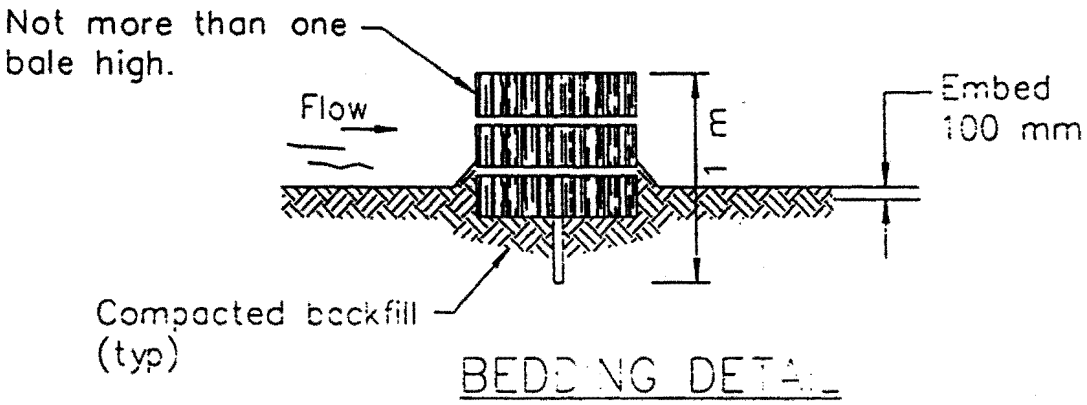
- *Straw Bales:* Each straw bale shall be a minimum of 360 mm (14 in) wide, 450 mm (18 inches) in height, 900 mm (36 in) in length and 23 kg (50 lbs) in weight. The straw bale shall be composed entirely of vegetative matter.
- *Bale Bindings:* Bales shall be bound by either wire, nylon or polypropylene string. Jute or cotton binding is unacceptable. The wire shall be a minimum of 16 gauge baling wire. The nylon or polypropylene string shall be approximately 2 mm (0.094 in) in diameter with 36 kg (80 lb) of breaking strength.
- *Stakes:* Stakes shall be at least rough or finished 50 mm x 50 mm (2 in x 2 in) wood posts. Each stake shall have a minimum length of 1 m (3 ft).

Installation

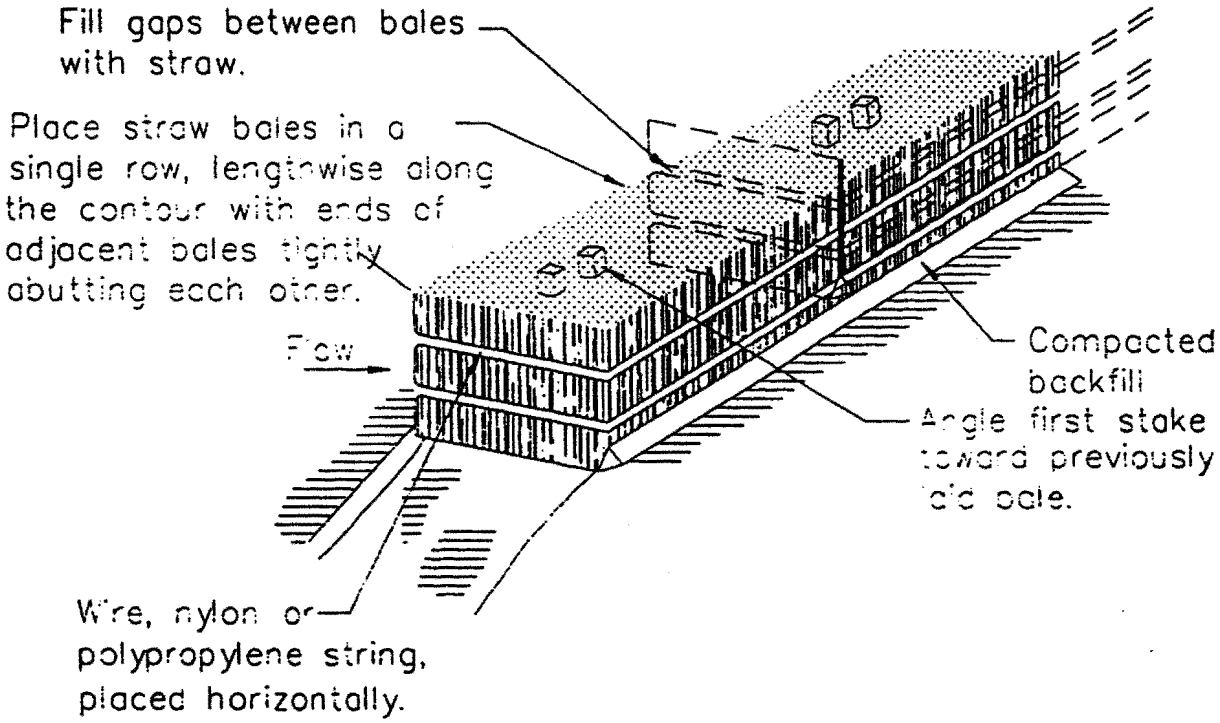
- Install straw bale barriers along a level contour, with the last 2 m (6 ft.) turned up slope.
- Straw bales should be installed in a trench, and tightly abut adjacent bales, as shown on Sheet 1.
- Generally, should be used in conjunction with soil stabilization BMPs up slope to provide effective control.

Maintenance and Inspection

- Inspect straw bale barrier immediately after each significant rainfall event and at least daily during prolonged rainfall. Repair or replace damaged bales as needed.
- Remove sediment when accumulations reach one-third the height of the barrier. Sediments removed shall be disposed of properly.
- Remove straw bale barrier when no longer needed. Regrade and stabilize the area.



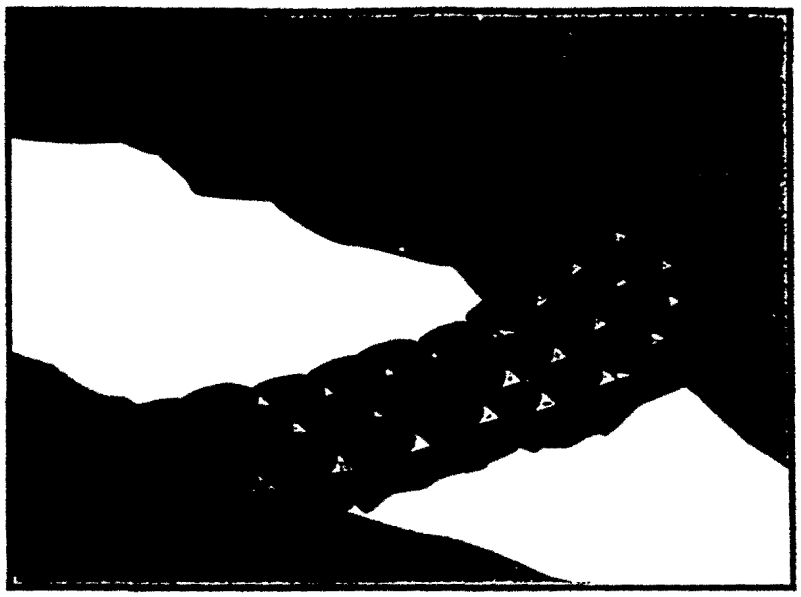
BEDDING DETAIL

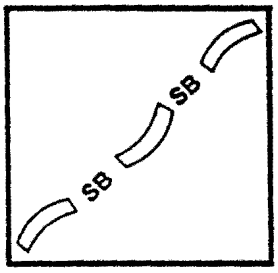


TYPICAL STRAW BALE BARRIER
NOT TO SCALE

Sheet 1

CD38(2)
Sand Bag Barrier





BMP Objectives

- ○ Soil Stabilization
- ● Sediment Control
- ○ Tracking Control
- ○ Wind Erosion Control
- ○ Non-Storm Water

Definition and Purpose

Procedures and practices to reduce the discharge of pollutants to the storm drain system or to watercourses as a result of construction activity by utilizing a barrier of sand bags to intercept and slow sediment laden runoff, allowing suspended sediment to be removed by settling, and then releasing the runoff as sheet flow. Sand bags can also be used where flows are moderately concentrated, such as ditches and swales, to divert flows. While often referred to as sand bags, they are often filled with gravel.

Appropriate Applications

- Along the perimeter of a site.
- Along streams and channels.
- Below the toe of exposed and erodible slopes.
- Down slope of exposed soil areas.
- Around temporary stockpiles.
- Across channels to serve as a barrier for utility trenches or provide a temporary channel crossing for construction equipment, to reduce stream impacts.
- Parallel to a roadway to keep sediment off paved areas.
- To divert or direct flow or create a temporary sediment basin.

S

Installation

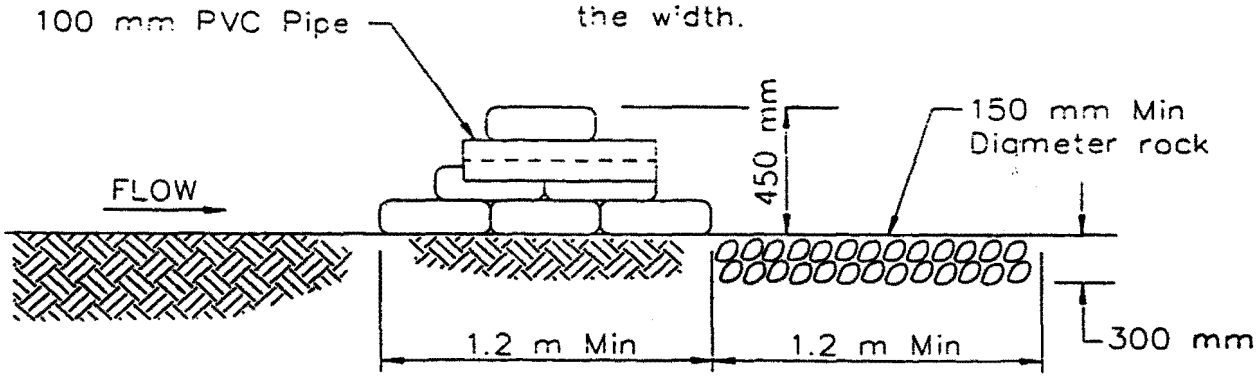
- When used as a linear control for sediment removal:
  - Install along a level contour.
  - Turn ends of sandbag row up slope to prevent flow around the ends.
  - Generally, should be used in conjunction with erosion source controls up slope to provide effective control.
- When used for concentrated flows:
  - Stack sand bags to required height using a pyramid approach as shown in Sheet 1.
  - Upper rows of sand bags should overlap joints in lower rows.

Maintenance and Inspection

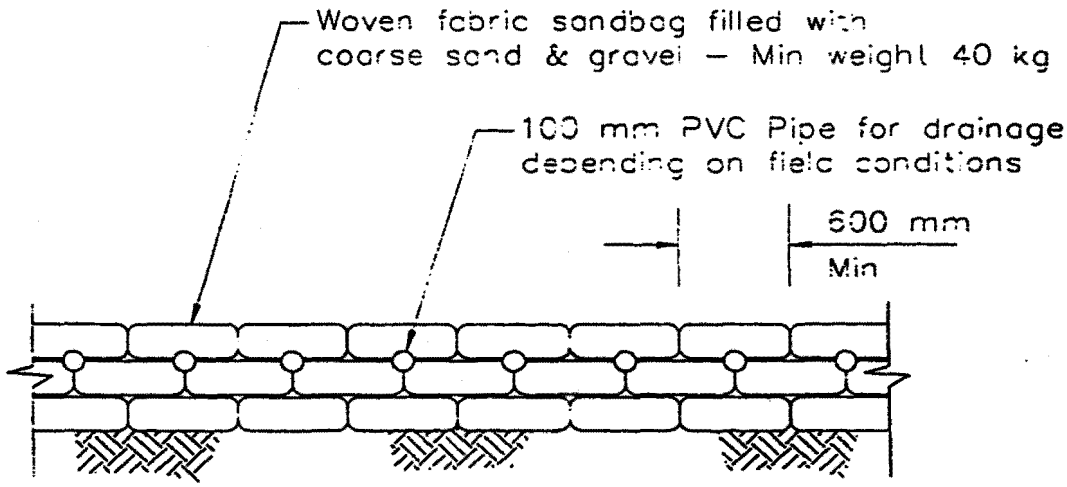
- Inspect sand bag barriers before and after each rainfall event, and weekly throughout the rainy season.
- Reshape or replace sand bags as needed.
- Repair washouts or other damages as needed.
- Inspect sand bag barriers for sediment accumulations and remove sediments when depth reaches one-third the barrier height. Sediment removed shall be disposed of properly.
- Remove sand bags when no longer needed. Remove sediment accumulation, and clean, regrade, and stabilized the area.

NOTES:

1. Stack sand bags in at least three vertical rows abutting each other and in a staggered arrangement.
2. For each additional vertical row, add an additional row to the width.



CROSS–SECTION

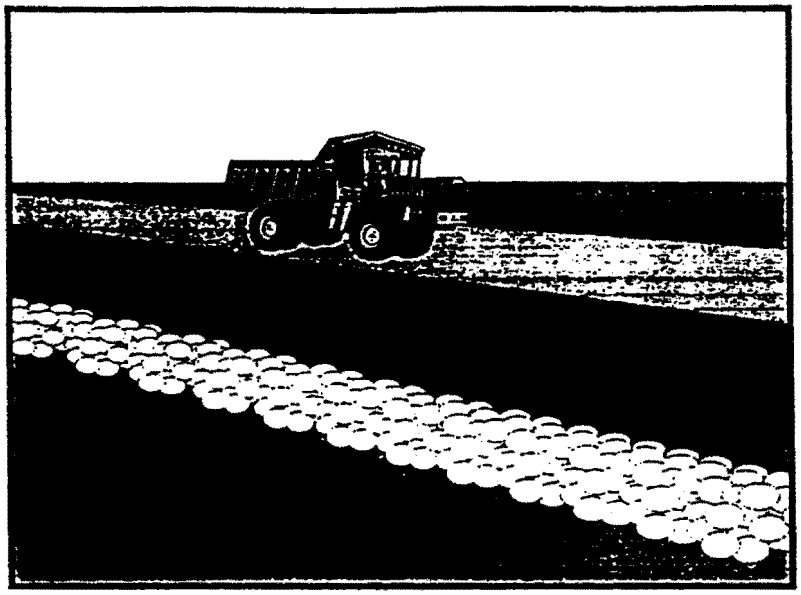


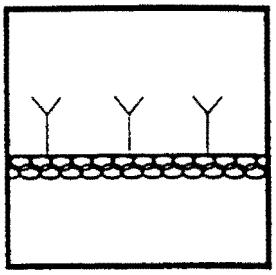
FRONT VIEW

TYPICAL SANDBAG BARRIER
NOT TO SCALE

Sheet 1

CD39(2)
Brush or Rock Filter





BMP Objectives

- ○ Soil Stabilization
- ● Sediment Control
- ○ Tracking Control
- ○ Wind Erosion Control
- ○ Non-Storm Water

Definition and Purpose

Procedures and practices to reduce the discharge of pollutants to the storm drain system or to watercourses as a result of construction activity by utilizing barriers composed of filter fabric wrapped brush or rock to intercept and slow sediment laden runoff, allowing suspended sediment to be removed from the runoff by settling and filtration, and then releasing the runoff as sheet flow.

Appropriate Applications

- Construction projects with disturbed areas during wet season.
- Where contributing drainage areas less than 2 ha (5 ac).
- Along the perimeter of disturbed areas.
- Near the toe of slopes which may be subject to sheet flow and rill erosion.
- Around temporary spoil areas.
- Along streams and channels.
- Across mildly sloped construction roads (rock filter berms, only).

Limitations

- Not appropriate for contributing drainage areas greater than 2 ha (5 ac).
- Requires sufficient space for ponded water.

- Not effective for diverting runoff since filters allow runoff to slowly seep through.
- Performance of brush filters relatively unpredictable.
- Rock filter berms are difficult to remove when construction is complete.

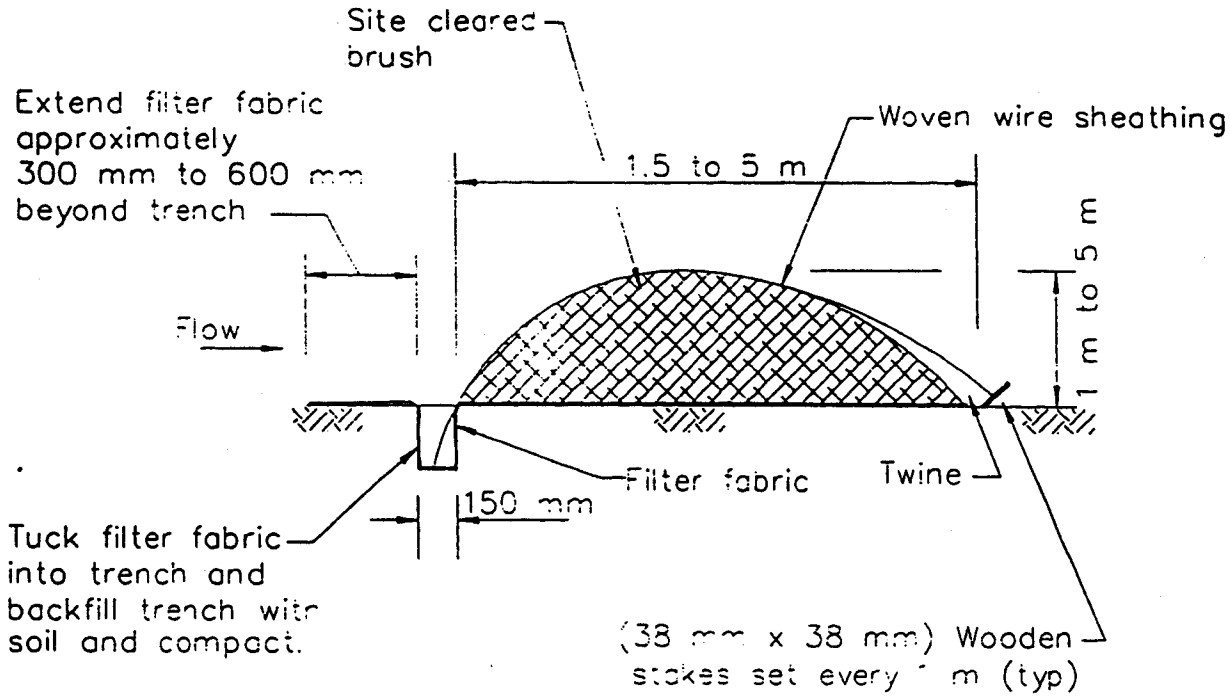
Standards and Specifications

- Brush and rock filters shall be installed on a level contour.
- Provide adequate area upstream of filter to accommodate ponding.
- Brush shall consist of site-cleared brush, or alternative material approved by the Engineer.
- Filter fabric shall conform to Caltrans Standard Specifications Section 88 - "Engineering Fabrics."
- Stakes: 38 mm x 38 mm (1.5 in x 1.5 in) wooden stake, or metal stake with equal holding capabilities.
- Rock: open-graded rock, 19 mm (0.75 in) to 75 mm (3 in) or 75 mm (3 in) to 125 mm (5 in) for concentrated flow applications.
- Woven wire sheathing: 25 mm (1 in) diameter, hexagonal mesh, galvanized 20 gauge (used with rock filters in areas of concentrated flow).
- In construction traffic areas, maximum rock berm heights shall be 300 mm (12 in). Multiple berms should be constructed every:
  - 90 m (300 ft) on slopes less than 5:100 (V:H) (5%)
  - 60 m (200 ft) on slopes between 5:100 (V:H) (5%) and 10:100 (V:H) (10%)
  - 30 m (100 ft) on slopes greater than 10:100 (V:H) (10%).

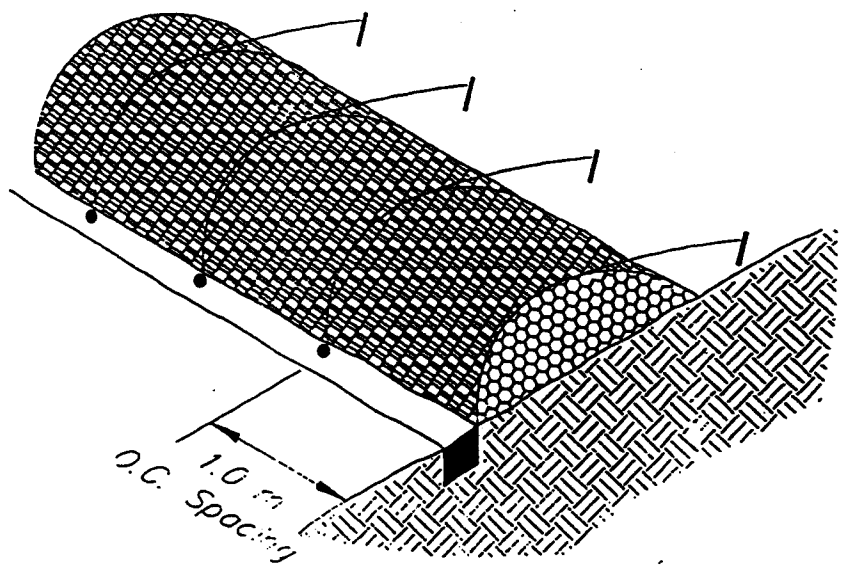
Maintenance and Inspection

- Inspect berms before and after each significant rainfall event, and weekly throughout the rainy season.
- Reshape berms as needed and replace lost or dislodged rock, brush and/or filter fabric.

- Inspect for sediment accumulation and remove sediments when depth reaches one-third of the berm height or 300 mm (12 in), whichever occurs first.
- Filter berms should be removed upon completion of construction activities.

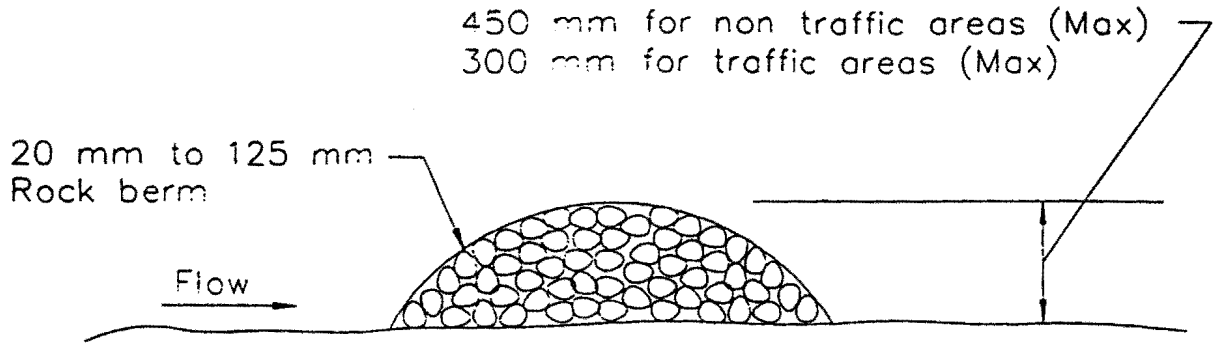


SECTION



TYPICAL BRUSH FILTER
NOT TO SCALE

Sheet 1



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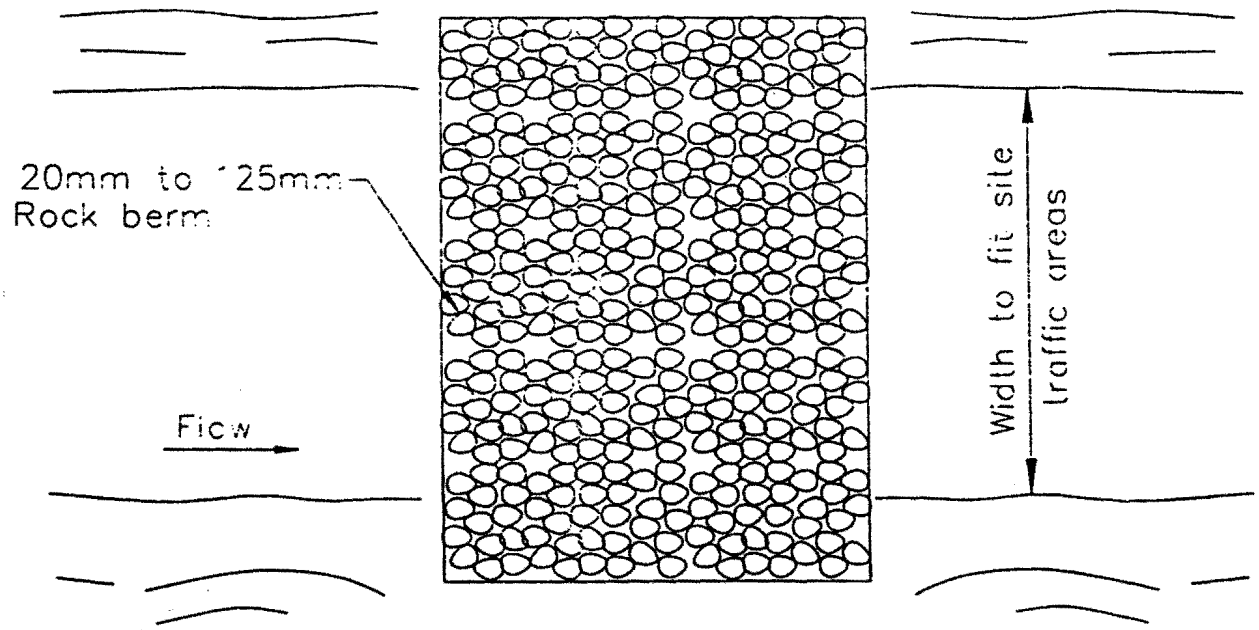


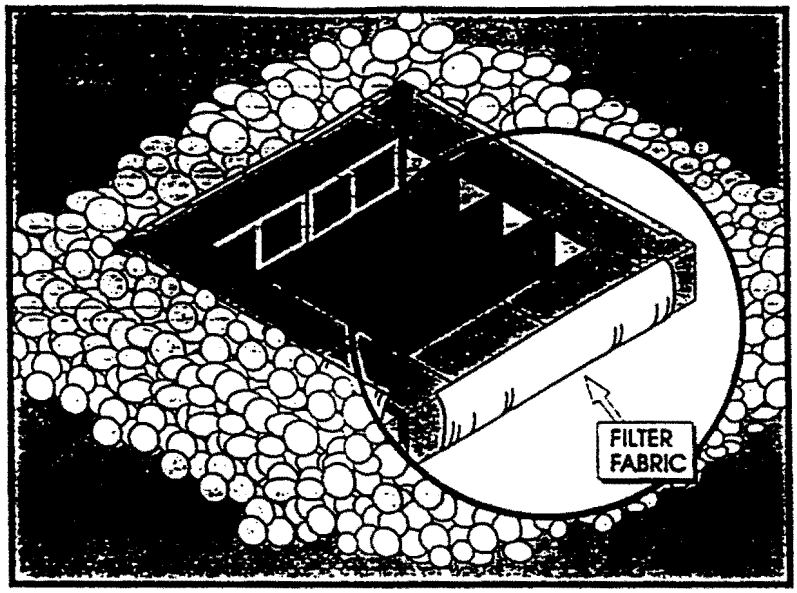
PLAN

TYPICAL ROCK FILTER

NOT TO SCALE

Sheet 2

CD40(2)
Storm Drain Inlet Protection



BMP Objectives

- ○ Soil Stabilization
- ● Sediment Control
- ○ Tracking Control
- ○ Wind Erosion Control
- ○ Non-Storm Water

Definition and Purpose

Procedures and practices to reduce the discharge of pollutants to the storm drain system or to watercourses as a result of construction activity by installing devices around storm drain inlets to intercept and slow sediment laden runoff, allowing suspended sediment to be removed from the runoff by settling and/or filtration, before releasing the runoff into the storm drain inlet.

Appropriate Applications

- Where ponding will not encroach into highway traffic.
- Where sediment laden surface runoff may enter an inlet.
- Where disturbed drainage areas have not yet been permanently stabilized.
- Where the drainage area is 0.4 ha (1 ac) or less.
- Appropriate during wet and snow-melt seasons.

Limitations

- Use only when ponding will not encroach into highway traffic or onto erodible surfaces and slopes.
- Sediment removal may be difficult in high flow conditions or if runoff is heavily sediment laden. If high flow conditions are expected, use other on-site sediment trapping techniques in conjunction with inlet protection.
- Frequent maintenance is required.

- For drainage areas larger than 0.4 ha (1ac), runoff should be routed to a sediment trapping device designed for larger flows. See CD41(2) - Sediment Traps and CD42(2) - Sediment Basin.

- Filter fabric fence inlet protection appropriate in open areas is subject to sheet flow and for flows not exceeding 0.014 m^3/s (0.5 cfs).

- Block and gravel filter and sand bag barriers for inlet protection are applicable when sheet flows or concentrated flows exceed 0.014 m^3/s (0.5 cfs), and it is necessary to allow for overtopping to prevent flooding.

- Excavated drop inlet sediment traps are appropriate where relatively heavy flows are expected and overflow capability is needed.

Standards and Specifications

Identify existing and/or planned storm drain inlets that have the potential to receive sediment laden surface runoff. Determine if storm drain inlet protection is needed, and which method to use.

Methods and Installaltion

- *Filter Fabric Fence* - The filter fabric fence is illustrated in Sheet 1. Similar to constructing a silt fence. See CD36(2) - Silt Fences. Do not place filter fabric underneath the inlet grate since the collected sediment may fall into the drain inlet when the fabric is removed or replaced.

- *Block and Gravel Filter* - The block and gravel filter is illustrated in Sheet 2. Construct using concrete blocks, 13 mm (0.5 in) to 19 mm (0.75 in) clean gravel, and geotextiles fabrics.

- *Sand Bag Barrier* - The sand bag barrier is illustrated in Sheet 3. Flow from a severe storm should not overtop the curb. In areas of high clay and silts, use filter fabric and gravel as additional filter media. Construct sand bags in accordance with CD38(2) - Sand Bag Barrier.

- *Excavated Drop Inlet Sediment Trap* - The excavated drop inlet sediment trap is illustrated in Sheet 4. Similar to constructing a silt fence, See CD36(2) - Silt Fences. Size excavated trap to provide a minimum storage capacity calculated at the rate of 130 m^3/ha (67 yd^3/ac) of drainage area.

Maintenance and Inspection

General

- Inspect all inlet protection devices before and after every rainfall event, and weekly during the rest of the rainy season. During extended rainfall events, inspect inlet protection devices at least once every 24 hours.

- Inspect the storm drain inlet after severe storms in the rainy season to check for bypassed material.

- Dispose of removed sediment properly.

- Remove all inlet protection devices within thirty days after the site is stabilized, or when the inlet protection is no longer needed.

  - Bring the disturbed area to final grade and smooth and compact it. Appropriately stabilize all bare areas around the inlet.

  - Clean around and inside the storm drain inlet as it must be free of sediment and debris at the time of final inspection.

Requirements by Method

- *Filter Fabric Fence*
  - Make sure the stakes are securely driven in the ground and are in good shape (i.e., not bent, cracked, or splintered, and are reasonably perpendicular to the ground).

  - Replace or clean the fabric when the fabric becomes clogged with sediment. Make sure the fabric does not have any holes or tears.

  - At a minimum, remove the sediment behind the fabric fence when it reaches one-third the height of the fabric fence.

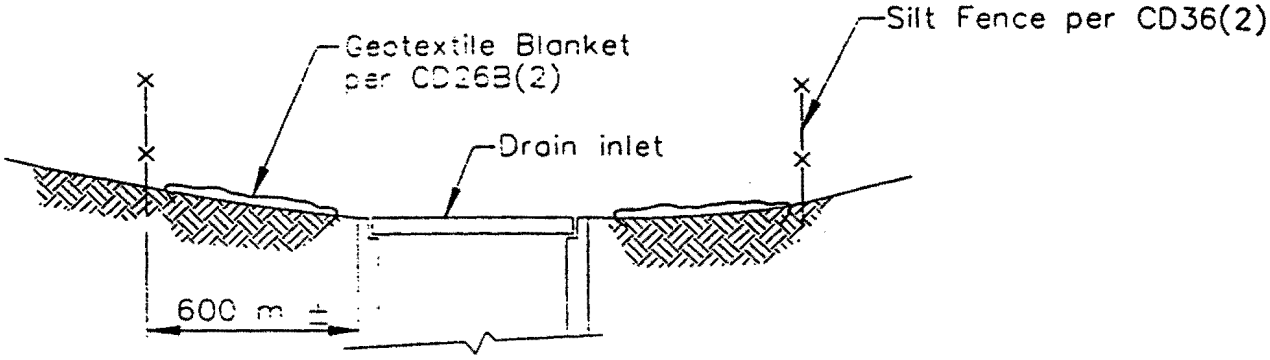
- *Block and Gravel Filter*
  - Make sure the blocks are in good shape and not displaced.

  - Check the gravel piled around the blocks to make sure gravel is not washing through the fabric and blocks.

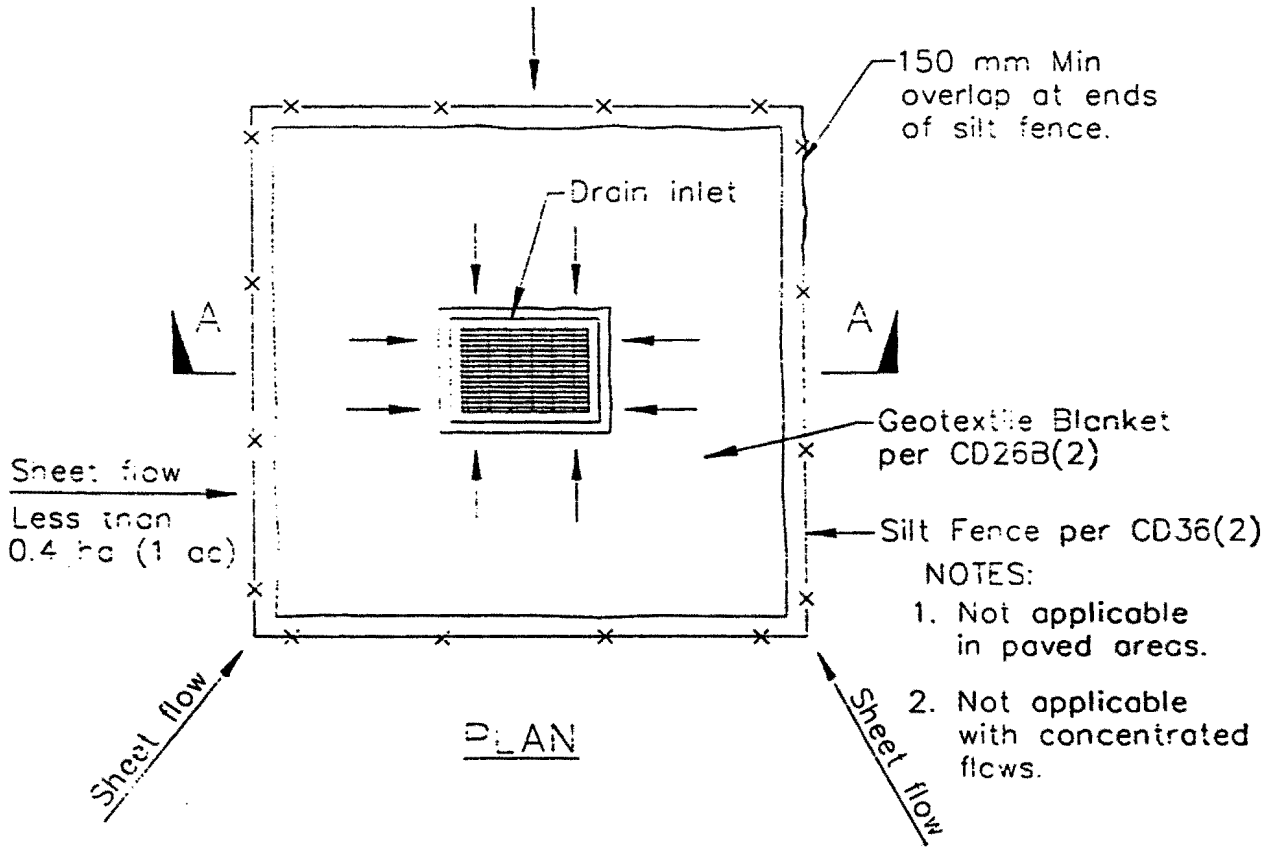
  - Do not clean gravel adjacent to any inlet or waterway.

  - Remove sediment behind the gravel pack when it reaches one-third the block height.

- *Sand Bag Barrier*
  - Inspect bags for holes, gashes, and snags.
  - Check sand bags for proper arrangement and displacement. Remove the sediment behind the barrier when it reaches one-third the height of the barrier.
- *Excavated Drop Inlet Sediment Trap*
  - Remove sediment from basin when the volume of the basin has been reduced by one-half.



SECTION A–A



NOTES:

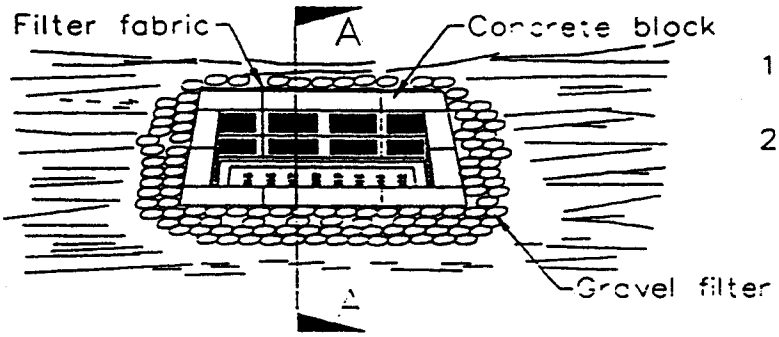
1. Not applicable in paved areas.
2. Not applicable with concentrated flows.

PLAN

TYPICAL FILTER FABRIC FENCE
NOT TO SCALE

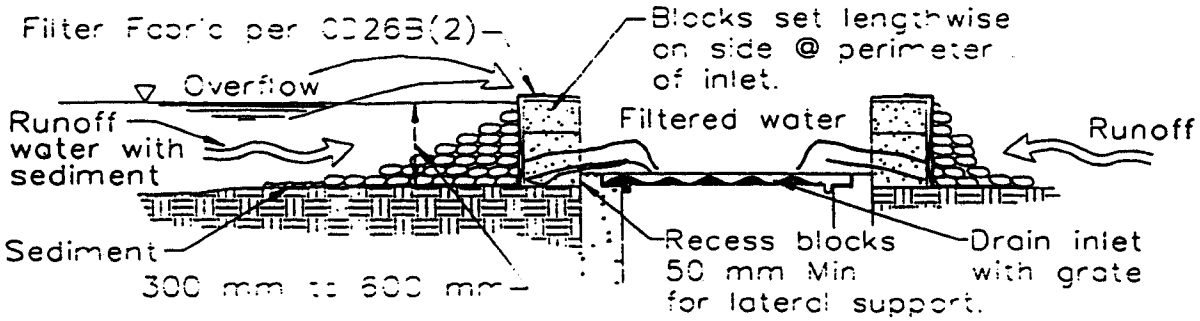
Sheet 1

Storm Drain Inlet Protection



NOTES:

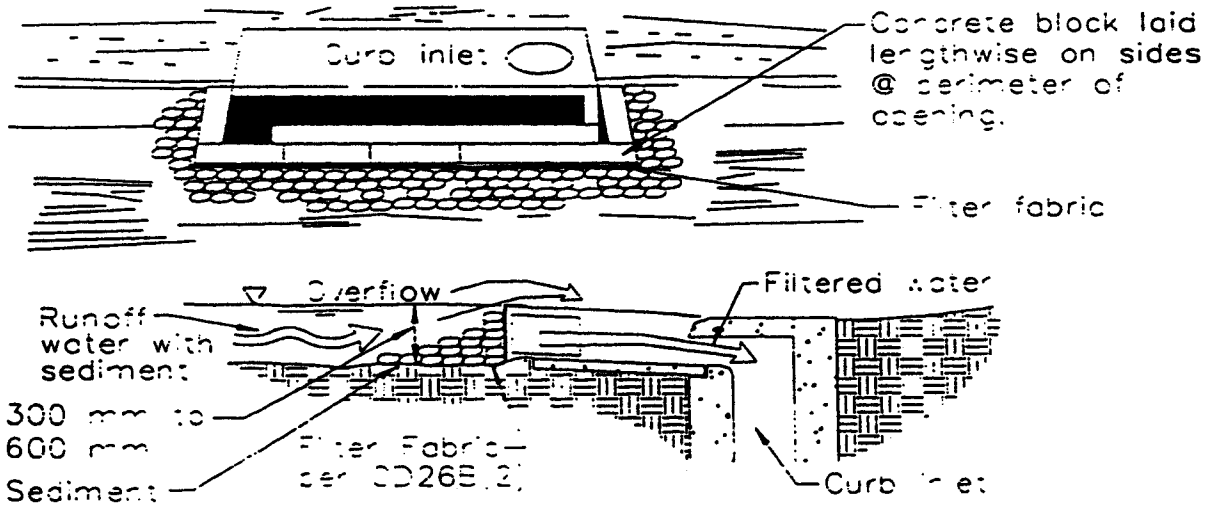
1. Use clean 19 mm gravel or approved equal.
2. Periodically change gravel with new, clean gravel. Old gravel may be used as backfill material if approved by Engineer.



SECTION A–A

TYPICAL BLOCK & GRAVEL FILTER W/O CURB

NOT TO SCALE

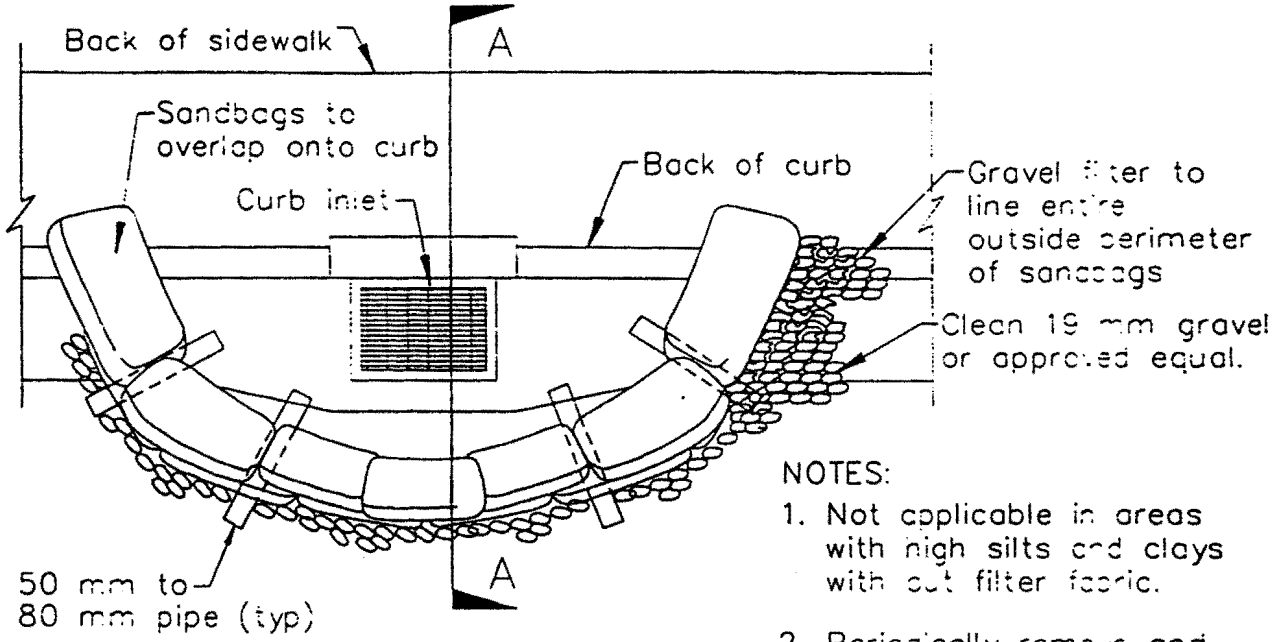


TYPICAL BLOCK & GRAVEL FILTER W/ CURB

NOT TO SCALE

Sheet 2

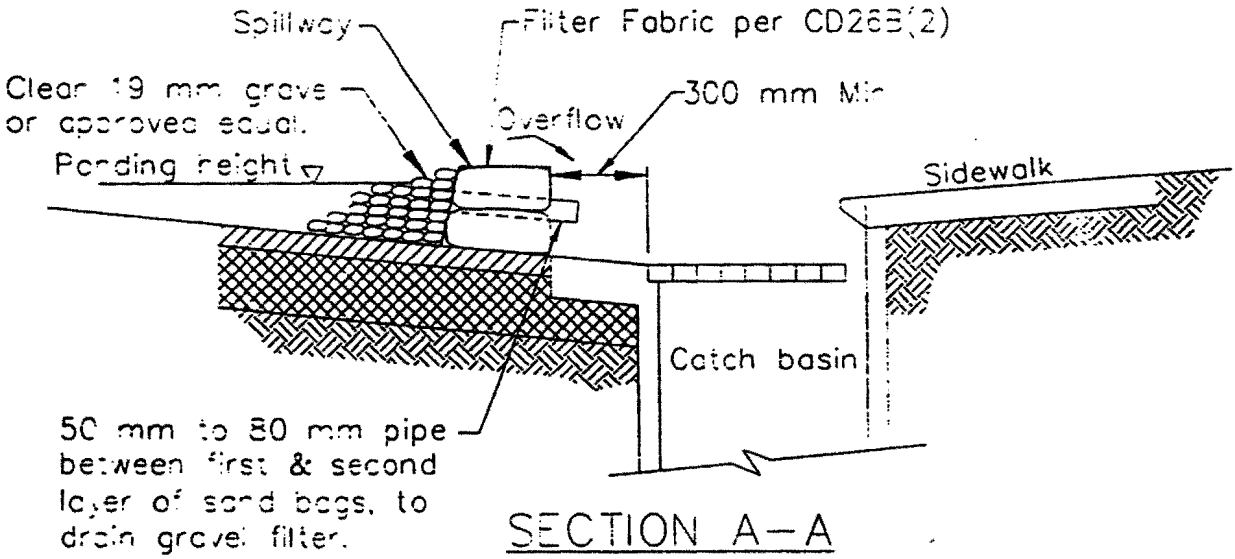
Storm Drain Inlet Protection



PLAN

NOTES:

1. Not applicable in areas with high silts and clays without filter fabric.
2. Periodically remove and replace gravel. Old gravel may be used as backfill material if approved by Engineer.



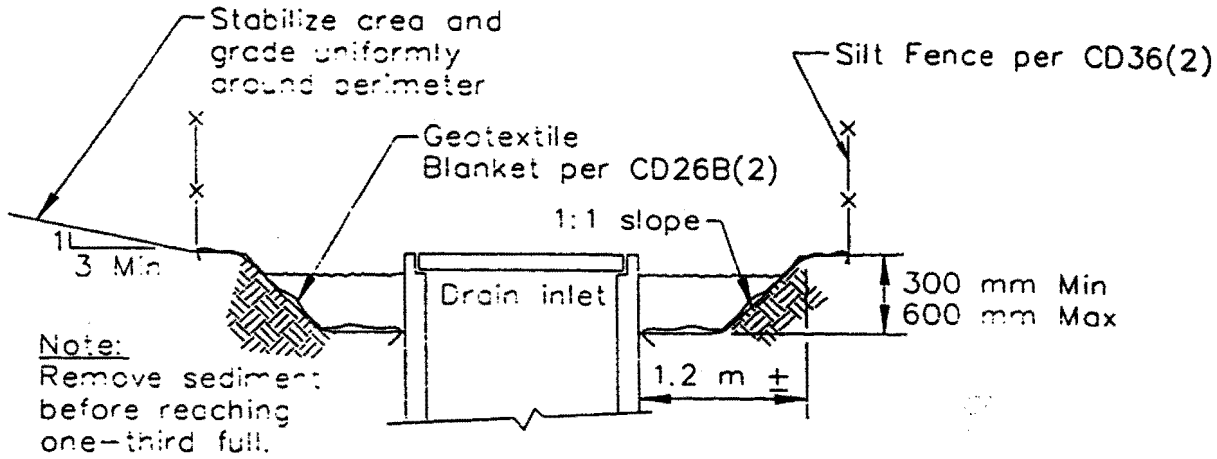
SECTION A–A

TYPICAL SAND BAG BARRIER

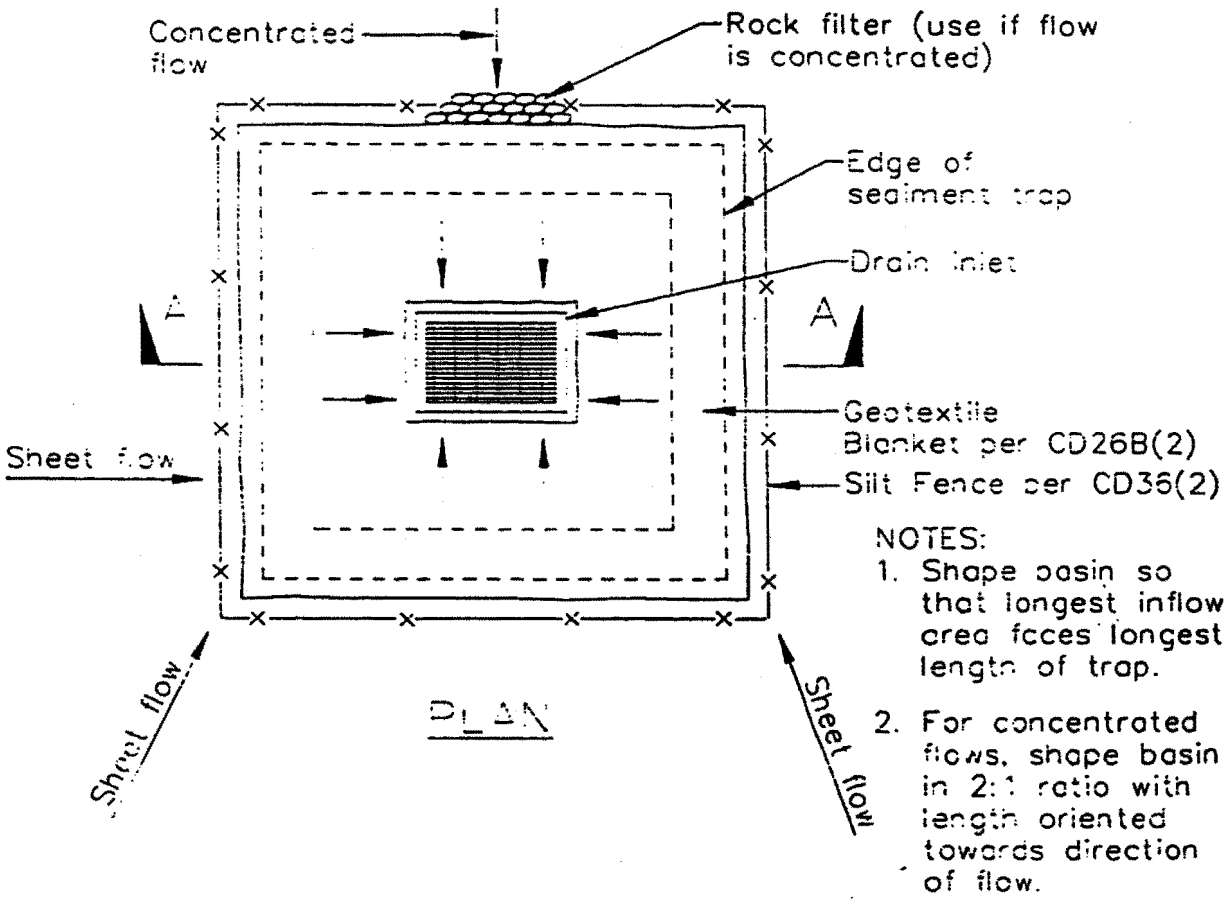
NOT TO SCALE

Sheet 3

Storm Drain Inlet Protection



SECTION A–A



PLAN

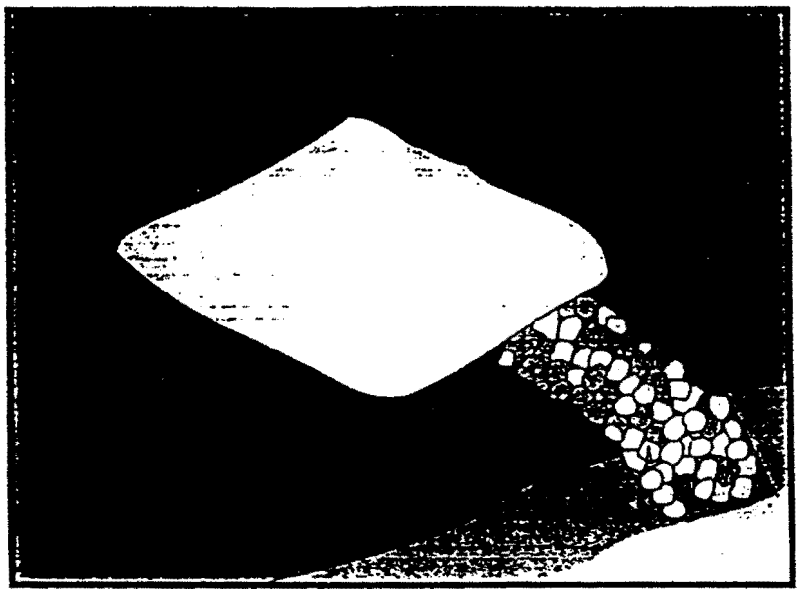
NOTES:

1. Shape basin so that longest inflow area faces longest length of trap.
2. For concentrated flows, shape basin in 2:1 ratio with length oriented towards direction of flow.

TYPICAL EXCAVATED DROP INLET SEDIMENT TRAP
NOT TO SCALE

Sheet 4

CD41(2)
Sediment Traps



BMP Objectives

- ○ Soil Stabilization
- ● Sediment Control
- ○ Tracking Control
- ○ Wind Erosion Control
- ○ Non-Storm Water

Definition and Purpose

Procedures and practices to reduce the discharge of pollutants to the storm drain system or to watercourses as a result of construction activity by utilizing traps formed by excavation and/or by constructing an embankment so that sediment laden runoff is temporarily detained under quiescent conditions, allowing sediment to settle out before the runoff is discharged.

Appropriate Applications

- Construction projects with disturbed areas during wet season.
- Where sediment laden storm water may enter the storm drain system or watercourses.
- At outlets of disturbed drainage areas less than 2 ha (5 ac).
- In place of CD42(2) - Sediment Basins, only when the contributing drainage area is divided into smaller subareas (less than 2 ha) (5 ac) contributing to each trap.
- Around and/or up slope from storm drain inlet protection measures.

Limitations

- Requires large surface areas to permit settling of sediment.
- Not appropriate for drainage areas greater than 2 ha (5 ac).
- Only removes large and medium sized particles and requires upstream erosion control.

- Attractive and dangerous to children, requiring protective fencing.
- Not to be located in live streams.

Standards and Specifications

- Construct sediment traps prior to wet season and construction activities.
- Trap shall be located: (1) by excavating a suitable area or where a low embankment can be constructed across a swale, (2) where failure would not cause loss of life or property damage, and (3) to provide access for maintenance, including sediment removal and sediment stockpiling in a protected area.
- Trap shall be sized to accommodate a settling zone and sediment storage zone with recommended minimum volumes of 130 m^3/ha (67 yd^3/ac) and 65 m^3/ha (33 yd^3/ac) of contributing drainage area, respectively, based on 12.7 mm (0.5 in) of runoff volume over a 24-hr period. Multiple traps and/or additional volume may be required to accommodate site specific rainfall and soil conditions.
- Earthwork shall be in accordance with Standard Specifications Section 19 - Earthwork. Contractor is specifically directed to Sections 19-5 and 19-6 entitled, "Compaction" and "Embankment Construction," respectively.
- Areas under embankments, structural works, and sediment traps shall be cleared and stripped of vegetation in accordance with Standard Specifications Section 16 - Clearing and Grubbing.
- Trap length to width ratio shall be greater than 3:1 (L:W) or baffles are required to prevent short circuiting of the inlet flow.
- Baffles shall be constructed of 89 mm x 89 mm (4 in x 4 in) posts and 1.2 m x 2.4 m x 12 mm thick (4 ft x 8 ft x 0.5 in) exterior plywood. Posts shall be set at least 1 m (3 ft) into the ground, no further apart than 2.5 m (8 ft) center to center, and shall reach a height of 150 mm (6 in) below the riser crest elevation.
- Trap inlets shall be located to maximize the travel distance to the trap outlet.
- Use rock or vegetation to protect the trap outlets against erosion.
- Fencing, in accordance with Standard Specifications Section 80 - Fencing, shall be provided to prevent unauthorized entry.

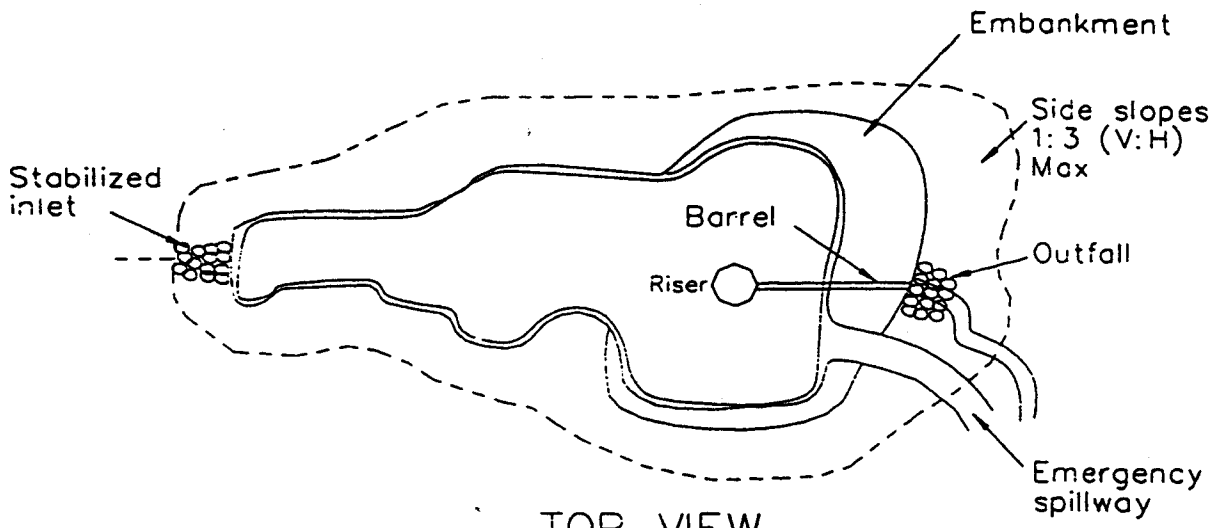
- To dewater the trap, the outlet should be constructed in one of the following two ways:

  (1) Use corrugated metal or reinforced concrete riser pipe with dewatering holes encased in gravel to prevent floating debris from flowing out of the trap or obstructing the system (See Sheet 1).
  - Pipe shall be in accordance with Standard Specifications Sections 65, 66 and 68, titled - Reinforced Concrete Pipe, Corrugated Metal Pipe, and Subsurface Drains.
  - Top two-thirds of the riser shall be perforated with 12 mm (0.5 in) diameter holes spaced 200 mm (8 in) vertically and 250 mm (10 in) to 300 mm (12 in) horizontally.
  - Structure shall be placed on a firm, smooth foundation with the base securely anchored with concrete or other means to prevent floatation.
  - Securely attach to the riser pipe (watertight connection) a horizontal pipe (barrel) which extends through the embankment to the toe of fill.

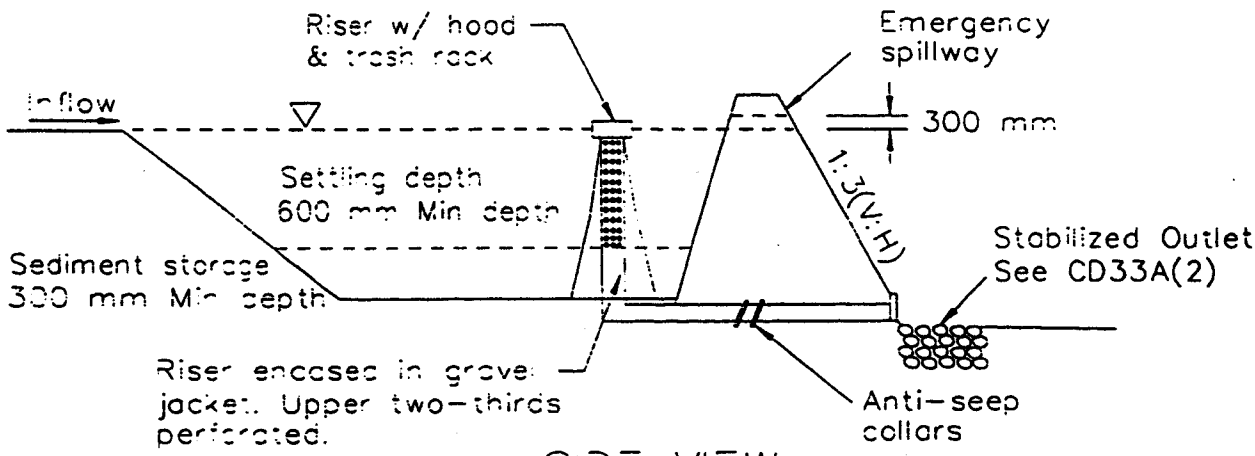
  (2) Construct a crushed stone outlet section of the embankment at the low point of the trap (See Sheet 2). The stone section serves as a nonerosive spillway outlet for flood flows and the bottom section provides a means of dewatering the trap between rainfall events.

Maintenance and Inspection

- Inspect sediment traps before and after rainfall events and weekly during the rest of the rainy season. During extended rainfall events, inspect sediment traps at least every 24 hours.
- Examine trap banks for seepage and structural soundness.
- Check outlet structure and spillway for any damage or obstructions. Repair damage and remove obstructions as needed.
- Check outlet area for erosion and stabilize, if required.
- Remove accumulated sediment when the volume has reached one-third the original trap volume.
- Properly disposed of sediment and debris removed from the trap.



TOP VIEW

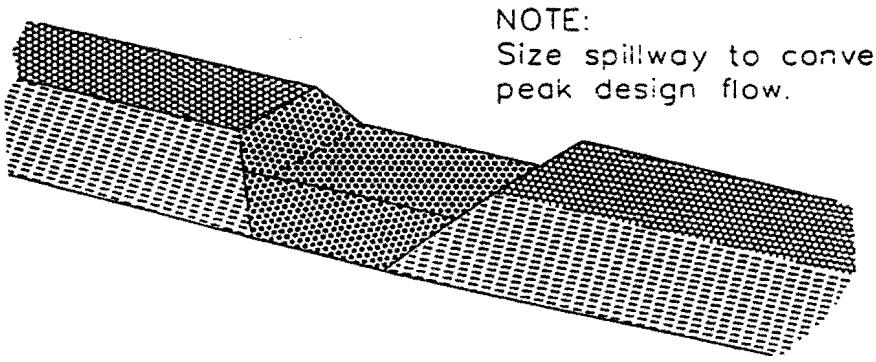


SIDE VIEW

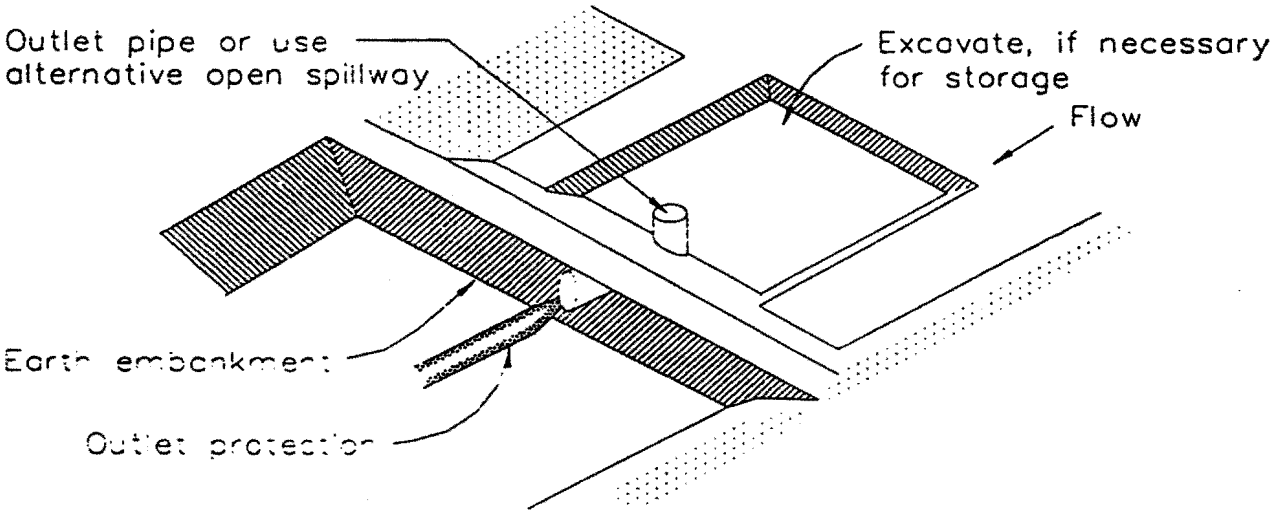
NOTES:
1. Typical trap design shown will handle 12.7 mm of of runoff over a 24 hour period.
2. Settling volume: 130 m^3 per hectare of drainage area.
3. Sediment storage volume: 65 m^3 per hectare of drainage area.

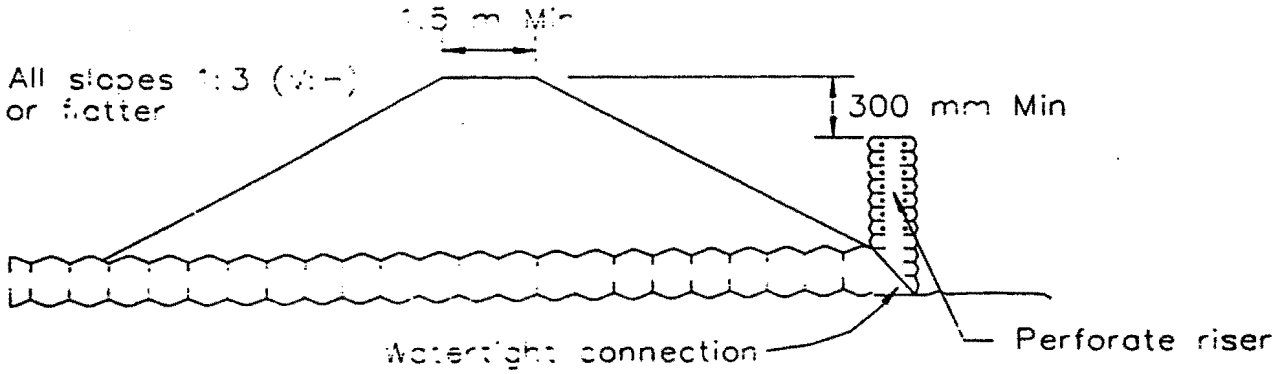
TYPICAL SEDIMENT TRAP
NOT TO SCALE

Sheet 1



TYPICAL OPEN SPILLWAY



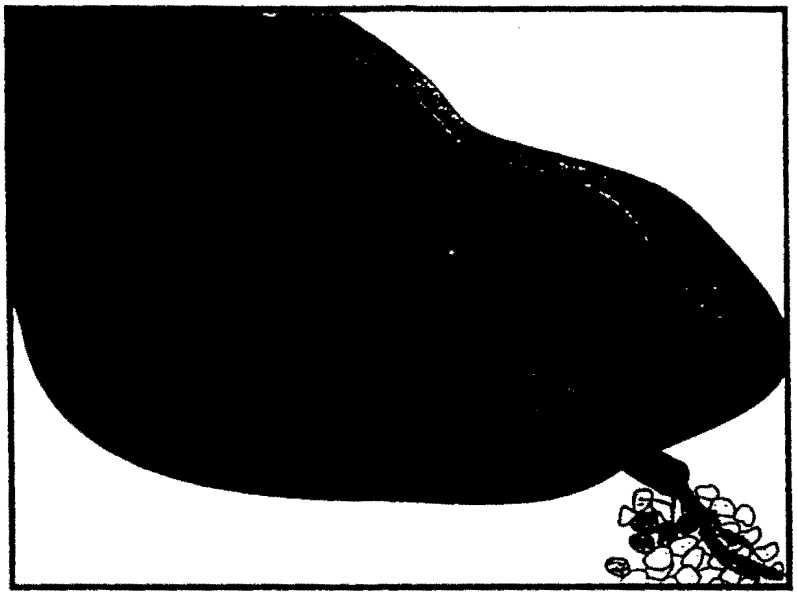


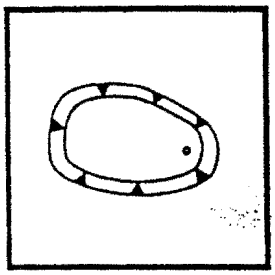
EMBANKMENT SECTION THRU RISER

TYPICAL SEDIMENT TRAP
NOT TO SCALE

Sheet 2

CD42(2)
Sediment Basin





BMP Objectives

- ○ Soil Stabilization
- ● Sediment Control
- ○ Tracking Control
- ○ Wind Erosion Control
- ○ Non-Storm Water

Definition and Purpose

Procedures and practices to reduce the discharge of pollutants to the storm drain system or to watercourses as a result of construction activity by utilizing basins formed by excavation and/or by constructing an embankment so that sediment laden runoff is temporarily detained under quiescent conditions, allowing sediment to settle out before the runoff is discharged.

Appropriate Applications

- Construction projects with disturbed areas during wet season.
- Where sediment laden storm water may enter the storm drain system or watercourses.
- At outlets of disturbed drainage areas ranging from 2 ha (5 ac) to 40 ha (100 ac).

Limitations

- Alternative BMPs must be throughly investigated for erosion control before selecting sediment basins.
- Requires large surface areas to permit settling of sediment.
- Not appropriate for drainage areas greater than 40 ha (100 ac).
- Not to be located in live streams
- Attractive and dangerous to children, requiring protective fencing.
- Shall be designed by a registered professional civil engineer with review and/or approval by the Caltrans District Hydraulics Unit.

Standards and Specifications

- Where practical, contributing drainage areas shall be subdivided into smaller areas, and multiple sediment traps shall be used in lieu of sediment basins. See CD41(2) - Sediment Traps.

- Construct sediment basins prior to the wet season and construction activities.

- Basin shall be located: (1) by excavating a suitable area or where a low embankment can be constructed across a swale, (2) where post-construction (permanent) detention basins will be constructed, (3) where failure would not cause loss of life or property damage, and (4) to provide access for maintenance, including sediment removal and sediment stockpiling in a protected area.

- Size basin to accommodate a settling zone and sediment storage zone with recommended minimum volumes of 130 m^3/ha (67 yd^3/ac) and 65 m^3/ha (33 yd^3/ac) of contributing drainage area, respectively. These recommended volumes are based upon 12.7 mm (0.5 in) of runoff over a 24 hour period. For other runoff amounts, size sediment basin to provide 12-24 hrs of detention. Larger or multiple basins may be required to accommodate the local rainfall conditions as determined by the designing engineer.

- Areas under embankments, structural works, and sediment basin must be cleared, stripped of vegetation in accordance with Standard Specifications Section 16 - Clearing and Grubbing.

- Earthwork shall be in accordance with Standard Specifications Section 19 - Earthwork. Contractor is specifically directed to Section 19-5 - Compaction and 19-6 - Embankment Construction.

- Basin length to width ratio shall be greater than 3:1 (L:W) or baffles are required to prevent short circuiting of the inlet flow.

- Baffles shall be constructed of 89 mm x 89 mm (4 in x 4 in) posts and 1.2 m x 2.4 m x 12 mm thick (4 ft x 8 ft x .0.5 in) exterior plywood. Posts shall be set at least 1 m (3 ft) into the ground, no further apart than 2.5 m (8 ft) center to center and shall reach a height of 150 mm (6 in) below the riser crest elevation.

- Basin inlets shall be located to maximize travel distance to the basin outlet.

- Rock or vegetation shall be used to protect the basin inlet and slopes against erosion.

- A forebay, constructed upstream of the basin may be provided to remove debris and larger particles.

- Principal outlet shall consist of a corrugated metal or reinforced concrete riser pipe with dewatering holes and an anti-vortex device and trash rack attached to the top of the riser, to prevent floating debris from flowing out of the basin or obstructing the system. This principal structure should be designed to accommodate the inflow design storm.

- Pipe should be in accordance with Standard Specifications Sections 65, 66 and 68, titled Reinforced Concrete Pipe, Corrugated Metal Pipe, and Subsurface Drains.

- Structure shall be placed on a firm, smooth foundation with the base securely anchored with concrete or other means to prevent floatation.

- Attach riser pipe (watertight connection) to a horizontal pipe (barrel) which extends through the embankment to toe of fill. Provide anti-seep collars on the barrel.

- Cleanout level shall be clearly marked on the riser pipe.

- One of the following dewatering configurations for the principal outlet shall be used:

  Outlet #1, See Sheet 1
  - Perforate the top one-third of the riser with 13 mm (0.5 in) diameter holes spaced 200 mm (8 in) vertically and 250 mm (10 in) - 300 mm (12 in) horizontally.
  - Wrap with well-secured filter fabric.
  - Place 19 mm (0.75 in) gravel over perforated holes to approximately 50 mm (2 in) minimum thickness to assist in prevention of clogging of dewatering holes. Gravel will naturally settle into a cone surrounding the riser pipe.

  Outlet #2, See Sheet 2
  - Perforate the lower one-half of the riser pipe with 13 mm (0.5 in) diameter holes spaced approximately 75 mm (3 in) apart, in each outside valley (CMP pipe).

  - Place 19 mm (¾ in) gravel over perforated holes to approximately 50 mm (2 in) minimum thickness to assist in prevention of clogging of dewatering holes. Gravel will naturally settle into a cone surrounding the riser pipe.

Outlet #3, See Sheet 3

- Provide two 25 mm (1 in) diameter holes above the sediment storage volume on opposites sides of the non-perforated riser pipe. This will typically provide sufficient detention time for basins to drain approximately 4 ha (10 ac).

- Construct an emergency spillway to accommodate flows not carried by the principal spillway. Spillway shall consist of an open channel (earthen or vegetated) over undisturbed material (not fill) or constructed of a non-erodible riprap.

- Spillway control section which is a level portion of the spillway channel at the highest elevation in the channel, shall be a minimum of 6 m (20 ft) in length.

- Use outlet protection at the pipe outlet. See CD33A(2) - Outlet Protection/Velocity Dissipation Devices.

- Safety fence shall be provided to prevent unauthorized entry to the basin. Fencing shall be in accordance with Standard Specifications Section 80 - Fencing.

Maintenance and Inspection

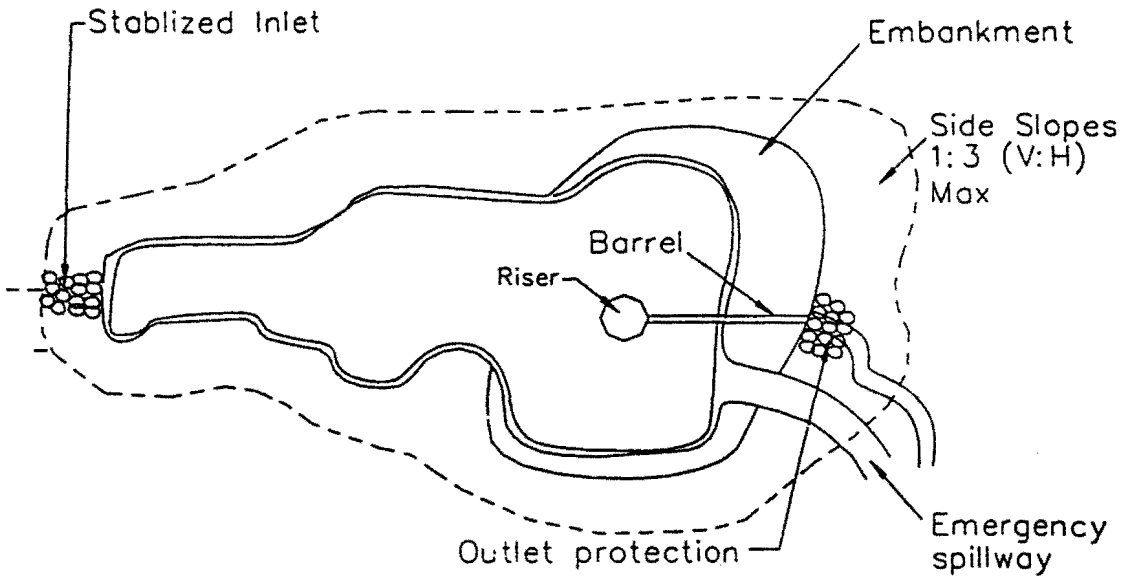
- Inspect temporary sediment basins before and after rainfall events and weekly during the rest of the rainy season. During extended rainfall events, inspect at least every 24 hours.

- Examine basin banks for seepage and structural soundness.

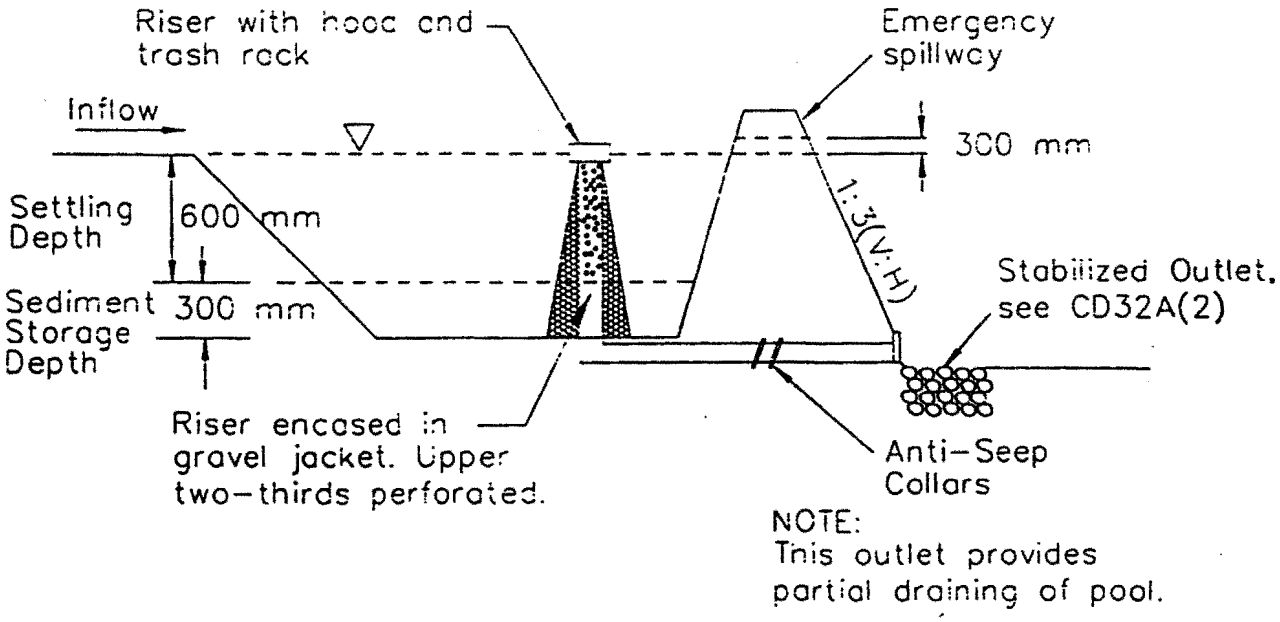
- Check outlet structure and spillway for any damage or obstructions. Repair damage and remove obstructions as needed.

- Check outlet area for erosion and stabilize, if required.

- Remove sediments when storage zone is one-third full.

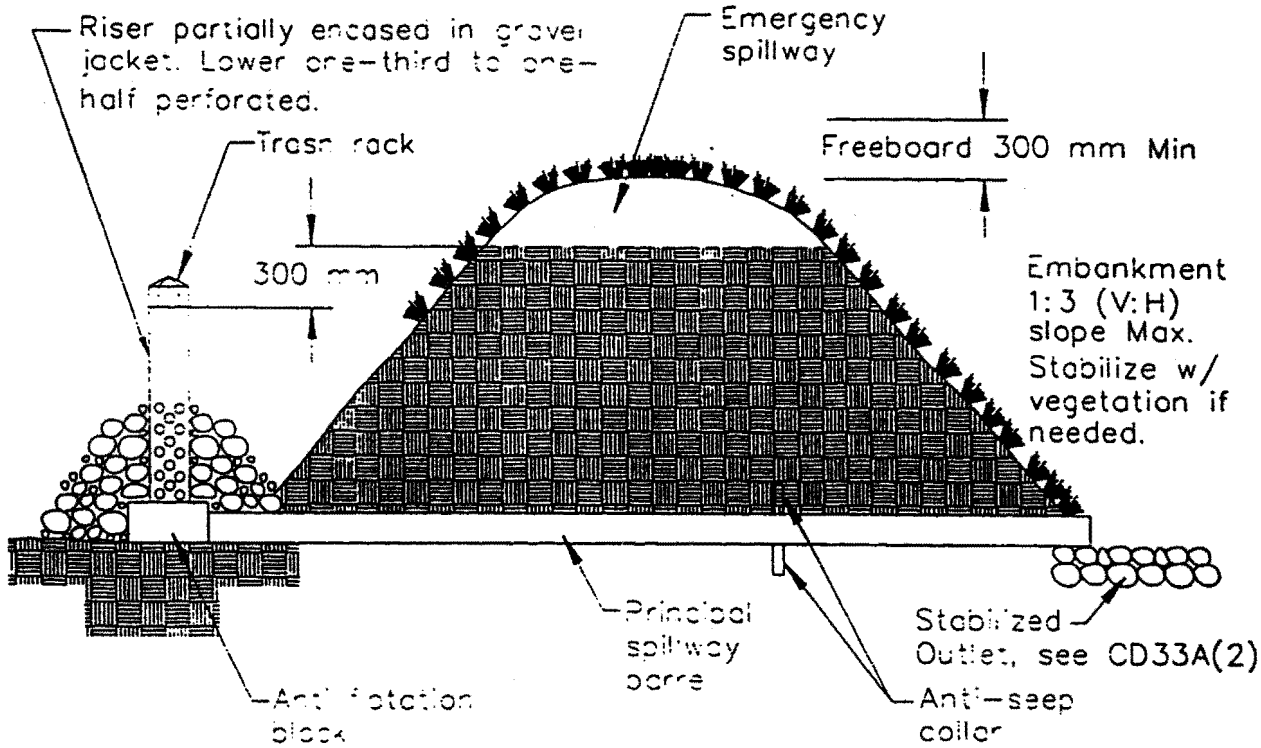


TOP VIEW



TYPICAL TEMPORARY SEDIMENT BASIN – OUTLET #1
NOT TO SCALE

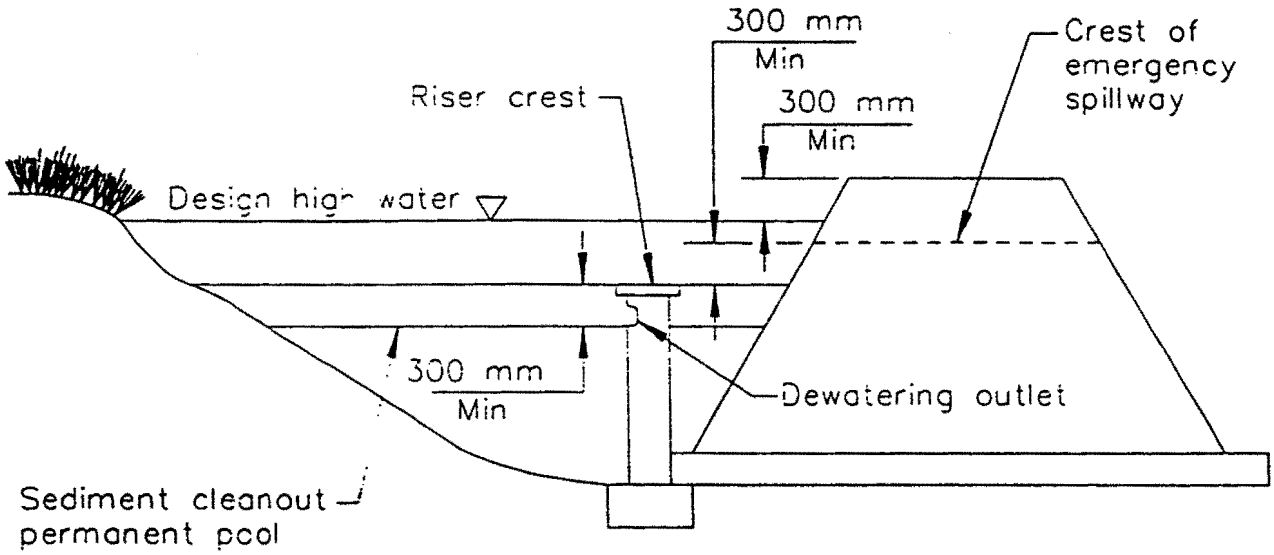
Sheet 1



NOTE:
This outlet provides complete draining of pool.

TYPICAL TEMPORARY SEDIMENT BASIN – OUTLET #2
NOT TO SCALE

Sheet 2

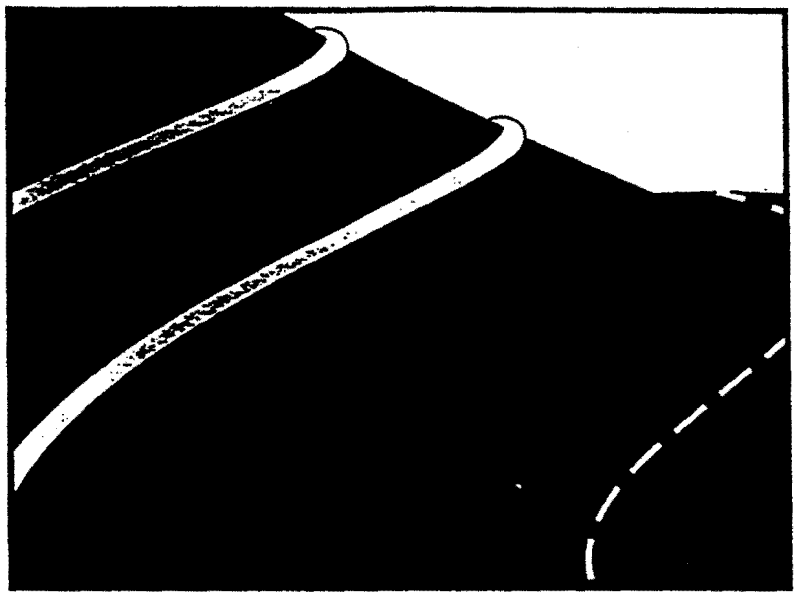


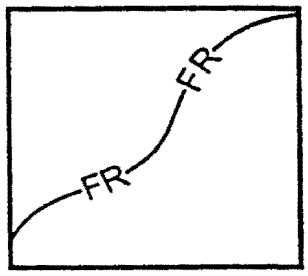
NOTE:
This outlet provides no drainage for permanent pool.

TYPICAL TEMPORARY SEDIMENT BASIN – OUTLET #3
NOT TO SCALE

Sheet 3

CD43(2)
Fiber Rolls





BMP Objectives

- ● Soil Stabilization
- ● Sediment Control
- ○ Tracking Control
- ○ Wind Erosion Control
- ○ Non-Storm Water

Definition and Purpose

Procedures and practices to reduce the discharge of pollutants to the storm drain system or to watercourses as a result of construction activity by stabilizing soil utilizing rolled and bound fiber material to intercept runoff, reduce its flow velocity, release the runoff as sheet flow, and provide some removal of sediment from runoff.

Appropriate Applications

- Along face of exposed and erodible slopes to shorten slope length.
- Along top of exposed and erodible slopes to spread runoff as sheet flow.
- At grade breaks where slope transitions to a steeper slope.

Limitations

- Primary purpose is not sediment control, though it does provide some sediment removal.
- Is a relatively new soil stabilization technology. Effectiveness and capabilities in the field are not completely known.

Standards and Specifications

- Fiber Roll Materials
  - Fiber rolls shall be either:

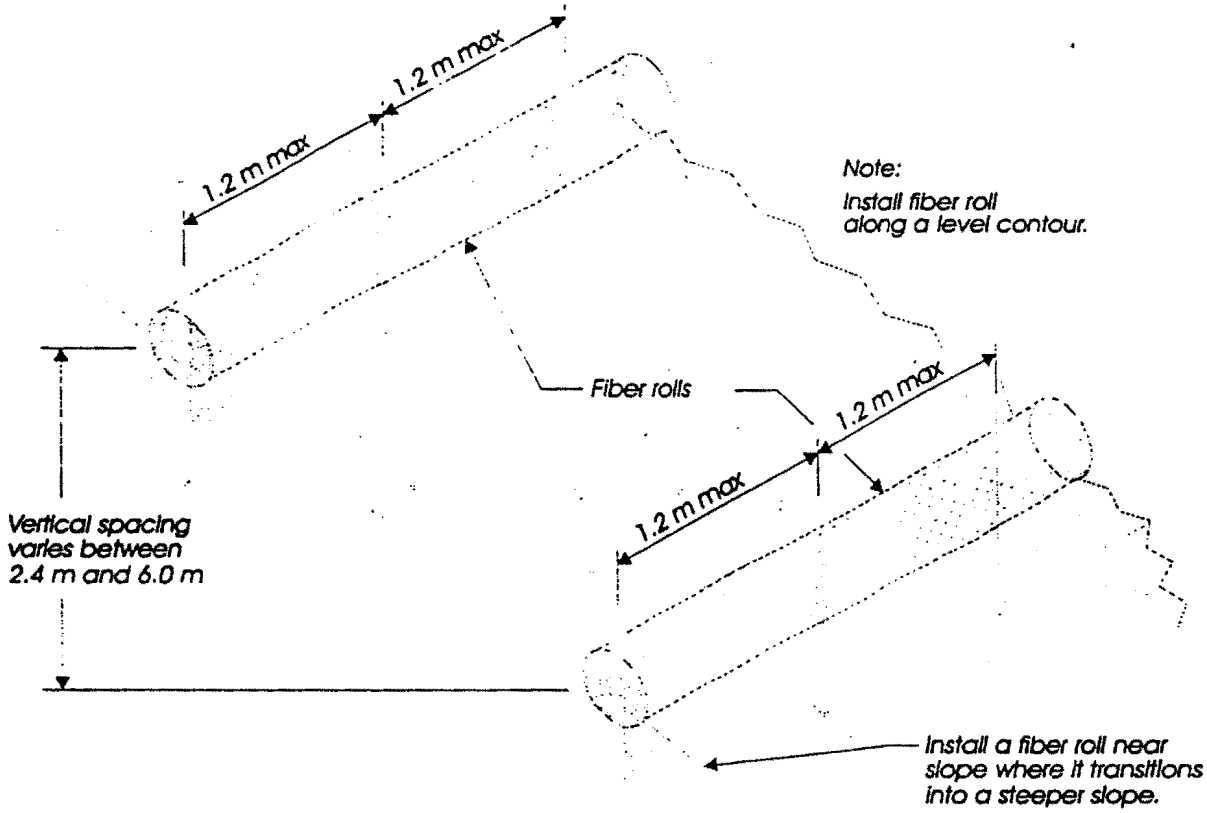
    (1) prefabricated rolls; or,

    (2) rolled tubes of erosion control blanket.

- Assembly of Field Rolled Fiber Roll
  - Roll length of erosion control blanket into a tube of minimum 200 mm (8 in) diameter.
  - Bind roll at each end and every 1.8 m (6 ft) along length of roll with jute-type twine.
- Installation
  - Locate fiber rolls on level contours spaced 2.4 to 3.0 m (8 to 10 ft) along the face of slope.
  - Stake fiber rolls into a 50 to 100 mm (2 to 4 in) trench.
  - Drive stakes at the end of each fiber roll and spaced 1.2 m (4 ft) maximum on center.
  - Use wood stakes with minimum 19 by 19 mm (3/4 by 3/4 in) cross section, and minimum length of 600mm (24 in).
  - If more than one fiber roll is placed in a row, the rolls shall be butted; not overlapped.
- Removal
  - Fiber rolls are typically left in place.
  - If fiber rolls are removed, collect and dispose of sediment accumulation, and fill and compact holes, trenches, depressions or any other ground disturbance to blend with adjacent ground.

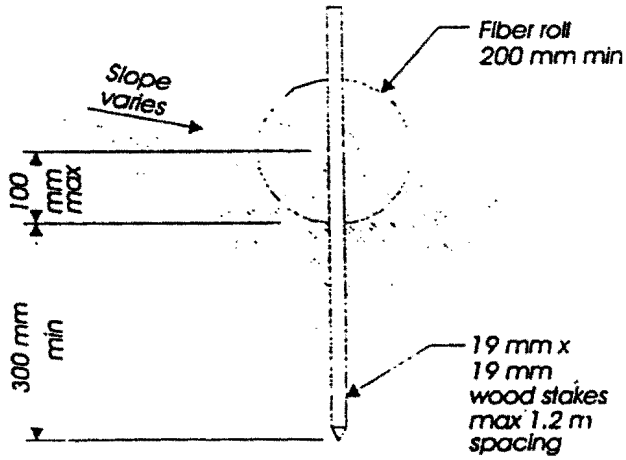
Maintenance and Inspection

- Repair or replace split, torn, unraveling, or slumping fiber rolls.
- Inspect fiber rolls when rain is forecast. Perform required maintenance.
- Inspect fiber rolls following rainfall events and a least daily during prolonged rainfall. Perform required maintenance.



TYPICAL FIBER ROLL INSTALLATION

N.T.S.

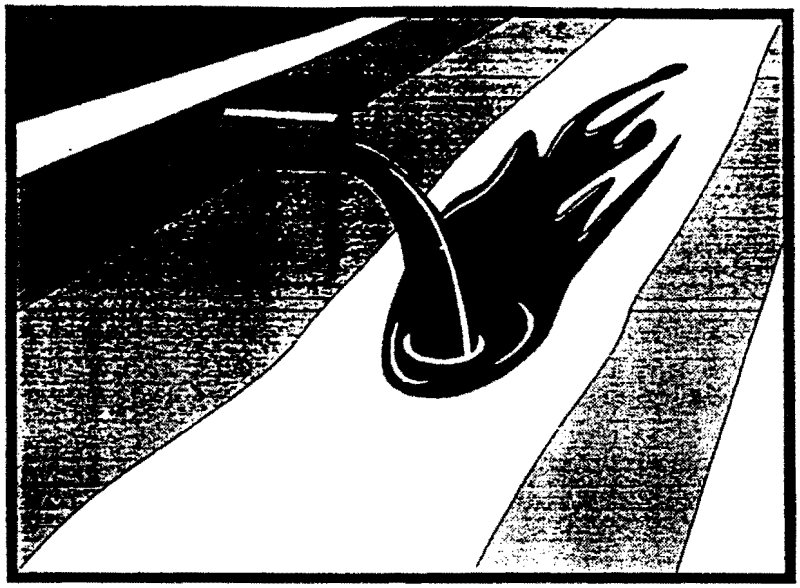


ENTRENCHMENT DETAIL

N.T.S.

Sheet 1

CD44(2)
Illicit Discharge/Illegal Dumping Reporting



BMP Objectives

- ○ Soil Stabilization
- ○ Sediment Control
- ○ Tracking Control
- ○ Wind Erosion Control
- ● Non-Storm Water

Definition and Purpose

Procedures and practices for construction contractors to recognize illicit discharges or illegally dumped material on a construction site and report incidents to the Resident Engineer.

Appropriate Applications

Illicit discharge and illegal dumping reporting is applicable anytime an illicit discharge is discovered or illegally dumped material is found on the construction site. Sites located near natural watercourses, canals, and reservoirs need to be especially aware of illicitly discharged or dumped material.

Illicit discharges covers continuous, recurring discharges from a pipe, or run-on from adjacent property. Illegal dumping covers single-incident episodes of dumping or spills.

Illicitly discharged or illegally dumped material can be solid or liquid material including, but not limited to:

- Dry weather flows
- Debris and rubbish
- Suspected hazardous material
- Unlabeled material in containers
- Motor oil and paint

Illicit Discharge/Illegal Dumping Re

Limitations

- Unlabeled or non-identifiable material shoulc s: hazardous.
- Illicit discharges and illegal dumping, for the purpc refer to discharges and dumping caused by parties contractor.
- Procedures and practices presented in this BMP are Contractor shall use extreme caution, immediately : Resident Engineer when illicit discharges or illegal discovered, and take no further action unless direct Resident Engineer.
- If pre-existing hazardous materials or wastes are kı site, the contractor's responsibility will be detailed special provisions.

Standards and Specifications

Planning

- Inspect site before beginning the job for evidence c discharges or illegal dumping.
- Inspect site regularly during project execution for discharges or illegal dumping.
- Observe site perimeter for evidence or potent of discharged or illegally dumped material which ma site.

Identification of illicit discharges and illegal dumping

- Solids - Look for debris, or rubbish piles. Solid wa often occurs on roadways with light traffic loads c easily visible from the traveled way.
- Liquids - signs of illegal liquid dumping can inclu
  - Visible signs of staining or unusual colors to t surrounding adjacent soils
  - Pungent odors coming from the drainage syst
  - Discoloration or oily substances in the water residues detained within ditches, channels or
  - Abnormal water flow during the dry weather

- Urban Areas - Evidence of illicit discharges is typically detected at storm drain outfall locations or at manholes - Signs of an illicit discharge can include:
  - Abnormal water flow during the dry weather season.
  - Unusual flows in subdrain systems used for dewatering.
  - Pungent odors coming from the drainage systems.
  - Discoloration or oily substances in the water or stains and residues detained within ditches, channels or drain boxes.
  - Excessive sediment deposits, particularly adjacent to or near active off-site construction projects.
- Rural Areas - Illicit discharges involving irrigation drainage ditches are detected by visual inspections. Signs of an illicit discharge can include:
  - Abnormal water flow during the dry weather season.
  - Non-standard junction structures.
  - Broken concrete or other disturbances at or near junction structures.

Reporting

- Notify the Resident Engineer promptly of any illicit discharges or illegal dumping incidents. The Resident Engineer shall respond in accordance with MD/CD8 Illegal Dumping Control, or MD/CD9 Illicit Connection Detection, Reporting & Removal.

Cleanup and Removal

- The contractor is not responsible for investigation and clean up of illicit discharges or illegal dumping not generated by the contractor. Caltrans may direct contractor to clean up non-hazardous dumped or discharged material on the construction site.

ENCLOSURE 7

January 20, 2000

ADDITIONAL CD-89-99 INFORMATION

Mr. Lee, listed is additional information to some of the questions posed in the California Coastal Commission Staff Recommendation on Consistency Determination CD-89-99. It is our hope that this memo will help clarify the Navy's position on these issues. The Navy's responses are in Italics for clarification.

Item (i) on Page 27 of CD89-99 states that,

> "This general permit requires the Navy to eliminate unauthorized non-storm water discharges, develop and implement a storm water pollution prevention plan (SWPPP), and perform monitoring of storm water discharges and authorized non-stormwater discharges."

Naval Air Station North Island (NASNI) completed an initial Illicit Connection study in July 1995 and a follow on study in 1998-1999. This study identified all illicit connections discharging into storm drains and the San Diego Bay. These identified connections have been either eliminated, re-routed to the sewer system, or listed on NASNI's NPDES Permit application (Originally submitted to the San Diego Regional Water Quality Control Board in 1984, revisions submitted in 1991, supplemental information submitted in 1998).

Item (i) on Page 27 of CD89-99 also states that,

> "Staff from the SDRWQCB reported to Commission staff in November 1999 that the Navy is in the process of meeting the monitoring and reporting requirements of its general permit."

NASNI has completed monitoring and reporting requirements of its general permit every year since 1994 when it submitted its first complete report. The SDRWQCB has not contacted NASNI regarding storm water monitoring or reporting issue.

Item (i) on Page 27 of CD89-99 also states that,

> "The Navy reports that the SWPPP for NASNI will be updated to address the operation on new industrial facilities constructed as part of the project."

The Navy is required under the General Industrial Storm Water Permit to revise the existing SWPPP as appropriate and within 90 days of the Annual Site Compliance Evaluation. The construction of the proposed CVN Wharf will be updated in the existing SWPPP.

Item (i) on Page 27 of CD89-99 also states that,

> "In addition, an individual storm water permit form the SDRWQCB to specifically address water quality impacts associated with potential erosion and fuel spill during grading and construction of project elements will be processed once the construction contract is awarded."

The contractor chosen for constructing the Proposed CVN wharf will be required to implement the Caltrans, Storm Water Quality Handbooks Construction Contractor's Guide and Specifications, April 1997 where and when applicable. A copy of this handbook is submitted as enclosure (6). The Best Management Practices (BMPs) listed in this handbook will be applied to the project when and where applicable. The contractor will also be required to follow Navy construction BMPs, inserted in the

Caltrans handbook, and California Coastal Commission Procedural Guidance Manual BMPs when and where applicable.

The second full paragraph on Page 28 of CD89-99 states,

> "Runoff from a CVN deck, wharf, and pier is not covered under a storm water permit. Thus the navy is not required to treat or monitor storm water flows from these facilities."

Storm water runoff from wharf and pier areas are covered under NASNI's General Industrial Storm Water Permit (NPDES Permit). Deck runoff from a CVN is covered by the Uniform National Discharge Standards (UNDS). Upon UNDS finalization, BMPs and discharge limits will be established for deck runoff from ships Nation wide.

Page 30 and 31 of the CD89-99 states that,

> "...the Commission finds that the Nay must further commit to incorporating into its project Best Management Practices (BMPs) for controlling stormwater runoff taken from the Commission's Procedural Guidance Manual; Addressing Polluted Runoff in the California Coastal Zone (2nd edition: June 1996), as follows:..."

During the December 8, 1999 CCD hearing the Navy agreed to incorporate the BMPs listed in the Commission's Procedural Guidance Manual(PGM) into NASNI's existing SWPPP and apply them where and when applicable. The BMPs listed in the PGM are almost identical to the BMPs listed in NASNI's SWPPP.

The first full paragraph of Page 31 of the CD 89-99 states,"

> "Prior to commencement of construction, the Navy should submit a polluted runoff control plan, acceptable to the Executive Director (ED), to minimize the discharge of pollutants from stormwater runoff into surface water drainage, and maintain post-development levels, by implementing structural and nonstructural Best Management Practices (BMPs). Appropriate BMPs include, but are not limited to, the following:"

The Navy is required to submit a Notice of Intent (NOI) for coverage under the Construction Storm Water Permit with the RWQCB prior to construction. This Permit requires the development of a Construction SWPPP and BMPs that will be implemented to minimize the discharge of pollutants from storm water runoff. A copy of the Construction SWPPP will be forwarded to the ED.

Page 31 of the CD 89-99 states that at a minimum the following BMPs should be included,

- "Protecting existing vegetation and natural drainage systems wherever appropriate;"

The proposed CVN wharf project would be built on a site that has no existing natural vegetation or drainage. The project involves demolition of an existing pier, removal of manmade riprap, addition of fill material, and paving·

- "Preserving, enhancing, or establishing buffers along surface water bodies and their tributaries where appropriate by creating vegetated filter strips and or grassed swales;"

The deck of the proposed CVN wharf project is sloped away from the bay towards catch basins located on the wharf. Any vegetated strips would have to be located in the middle of the wharf and be a traffic hazard. This BMP is therefore not applicable.

- "limiting or prohibiting development on steep slopes (i.e., slopes .20%) to control erosion rates and eliminate the need for costly structural BMPs"

The CVN wharf project is proposed to be built on an existing flat area and will include compacted fill that will also be flat. This BMP is therefore not applicable.

- "Incorporating silt traps, catch basins, and oil/water separators into the design of development that increases impermeable surfaces;"

Removing pollutants that are already in stormwater runoff is more difficult and costly then preventing the pollutants from contaminating stormwater to begin with. It is the Navy's policy to implement BMPs such as good house keeping, pavement sweeping, placing drip pans under leaking equipment, etc. to prevent these pollutants from contaminating storm water runoff. If these BMPs fail, the Navy will incorporate structural BMPs such as silt traps, and oil water separators into its SWPPP. The Navy currently uses catch basins and will include them into the design of the proposed CVN wharf.

- "Implementing solid waste (trash removal), and pavement sweeping and cleaning programs; and"

Trash dumpsters and recycling bins will be located on the proposed CVN wharf. These dumpsters and bins are emptied on a routine basis. Pavement sweeping and cleaning programs will be an integral part of the BMP program at the proposed CVN wharf. These BMPs remove pollutants so that they do not contaminate stormwater runoff.

- "Implementing a landscape management plan that includes herbicide/pesticide management."

NASNI has an integrated Pest Management plan that requires anyone applying pesticides to be Federally or California State licensed or working under the direct supervision of someone who is Federally or California State licensed. NASNI's Pest Management plan also requires anyone applying pesticides to maintain a daily usage log.

Page 31 of the CD89-99 states,

> "The Navy should develop and implement a detailed inspection and maintenance plan. The plan should include a quarterly inspection/maintenance schedule for all structural BMPs. The third quarter inspection/maintenance should occur prior to the onset of the storm season and no later than October 15th. The inspection/maintenance activities should be performed by a licensed maintenance contractor who should log information pertaining to quarterly inspections and maintenance (date, time, status, description of maintenance activity performed, if appropriate, photos if necessary to document need or lack thereof for cleaning/repairs, and initial). A copy of this inspection and maintenance report should be submitted to the Coastal Commission for review annually no later than June 30th."

NASNI has an environmental Compliance Team made up of Environmental Protection Specialists that inspect the Stennis CVN wharf monthly and will inspect the proposed CVN wharf monthly. These are multi-media inspections that not only look for structural but also non-structural BMP implementation and effectiveness.

NASNI also hires an environmental contractor to:

1. *quarterly inspect all outfalls for non-storm water discharges,*
2. *monthly visually observe industrial outfall discharges during rain events from October to May for contaminated runoff,*
3. *quarterly inspect all non-stormwater discharges that are authorized by the General Industrial Storm Water Permit to ensure BMPs are in place that prevent runoff contamination.*
4. *twice from October to May stormwater runoff from industrial sites are sampled for pollutants to measure BMP effectiveness (the goal is to sample the first rain event of the season) and,*
5. *annually inspect each industrial site for BMP implementation and changes in site activity that may have occurred.*

A copy of the environmental contractor's inspection results are forwarded to the SDRWQCB in an annual report by July 1 of each year. This annual report will be forwarded to the California Coastal Commission·

Page 31 of the CD89-99 states,

> "The Navy should also submit an annual Self-Monitoring Report (SMR), acceptable to the ED, signed by and stamped with the seal of a California registered geologist, a California certified engineering geologist, or a California registered civil engineer, to the Coastal Commission, documenting the implementation and effectiveness of the BMPs."

An environmental contractor develops the annual report that is submitted to the SDRWQCB and will be submitted to the Coastal Commission by July 1 of each year, for the Navy. The contractor's Annual Report team is comprised of registered civil engineers, geologists, environmental assessors and other similar professionals. The annual report is signed and certified by a Navy official with signatory authority.

Page 32 of the CD89-99 states,

> "The Navy should also develop and implement an Erosion and Sediment Control Plan (ESCP) and a Chemical Control Plan (CCP), acceptable to the ED, for the construction phase. The ESCP should provide for the implementation of structural and nonstructural BMPs including, but not limited to, the following:"

NASNI is required to develop a Construction SWPPP. The contractor in charge of construction for the proposed CVN wharf will develop this Construction SWPPP and upon approval by the Navy will implement it. This Construction SWPPP will be developed and approved by the Navy prior to the start of construction. The Construction SWPPP will incorporate the ESCP and CCP BMPs listed on page 32 of CD89-99. The only exception will be the nutrient loading BMP, which is not applicable. A copy of the Construction SWPPP will be forwarded to the ED.

In addition, NASNI also has an integrated Pest Management Plan, as described previously above, and a Spill Prevention Control and Countermeasures Plan, as required by 40 CFR 112 and Hazardous Material Business Plans, as required by CCR Title 19 and Title 22. These plans include the CCP BMPs listed on page 32 of CD89-99.

NASNI also has a Pollution Prevention Plan (P2 Plan) required by P2 Act of 1990 and SB-14. The P2 plan addresses product substitution.

NASNI also has a Navy Program, CHRIMP/HICS, that addresses supply and storage of Hazardous Substances / Materials Storage.

The Navy has also agreed to "incorporate additional BMPs as appropriate, taken from the Commission's Procedural Guidance Manual: Addressing Polluted Runoff in the California Coastal Zone. The Navy would agree to meet with CCC staff to review the BMPs by Feb 00. In the event of a disagreement between Commission staff and Navy staff as to what is appropriate, the disputed BMPs shall be brought to the Commission for a public hearing." The Navy has already met twice with the CCC staff twice in January, 2000.

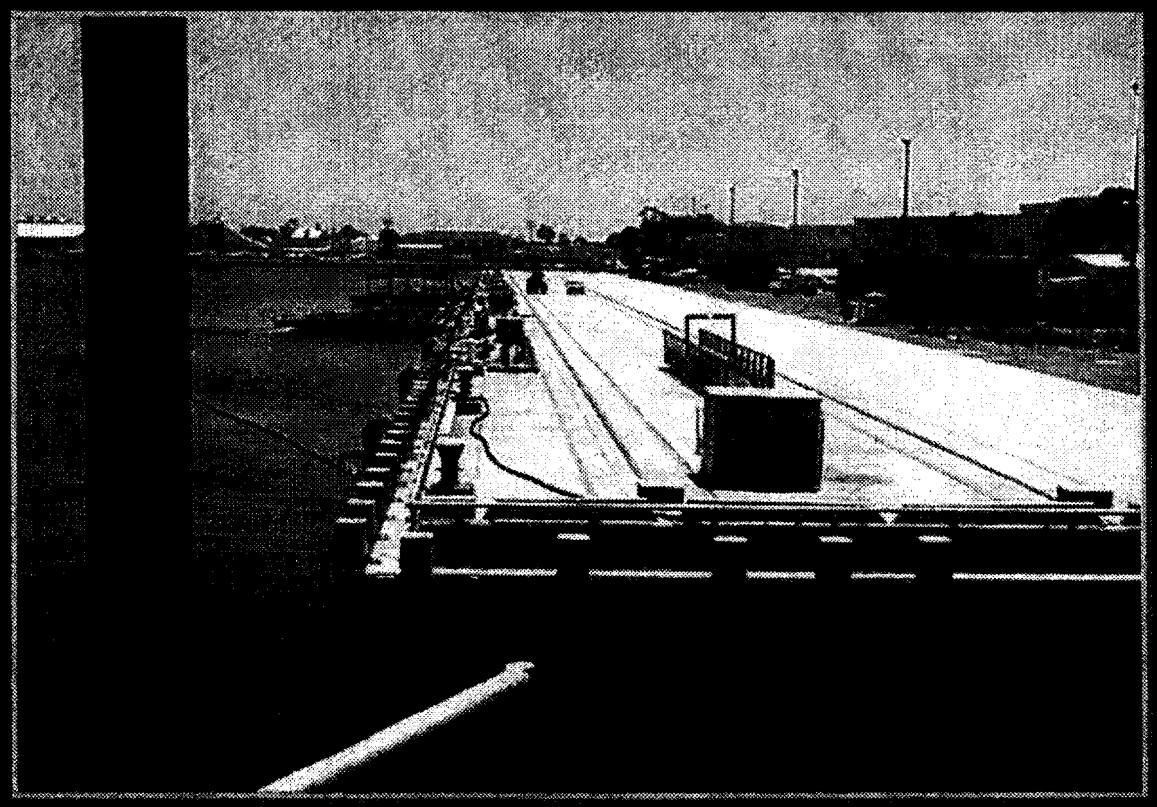
If you have any questions regarding this memorandum please contact me at (619) 524-6390.

BRIAN S. GORDON
Director, Water Program

Encl (7)

Water Quality

Best Management Practices



Water Quality Discussion

- **StormWater Best Management Practices (BMPs)**
  - Both structural and non-structural BMPs taken from the Storm Water Pollution Prevention Plan (SWPPP) are implemented at the CVN Wharf to prevent contamination of storm water runoff
  - BMPs from the CCC Procedural Guidance Manual will be incorporated into the SWPPP for the existing and future wharves
  - The CVN bay tour will include a visit to the CVN Wharf to show BMP implementation

Water Quality Discussion

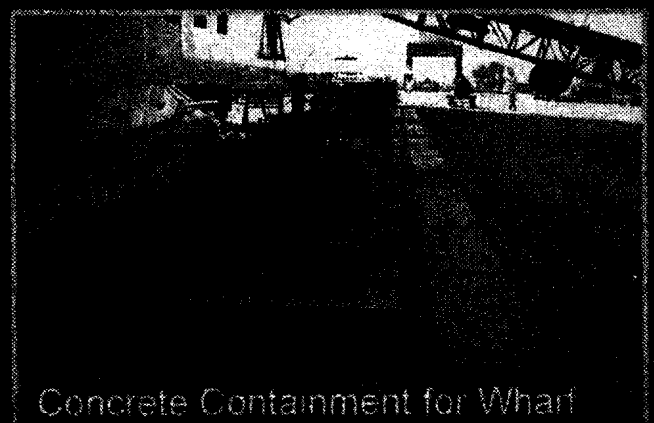
- **CVN Wharf is not an industrial shipyard**
  - » The San Diego Bay Tour will pass near NASSCO shipyard
- **Example of Navy water quality initiative**
  - » Installation of plastic pier pilings at Naval Station
- **Navy/CCC Coordination**
  - » Review BMPs with CCC and implement appropriate BMPs from Procedural Guidance Manual
  - » Provide annual storm water monitoring report to CCC
  - » Navy will continue to work closely with CCC to ensure water quality will be protected

Storm Water Best Management Practices (examples)

Containment booms at quay wall

Concrete Containment at transformers

Onsite spill response equipment



Concrete Containment for Wharf risers

IN WATER TOUR

P-700A Berthing Wharf
NAS North Island

AIRCRAFT CARRIER WHARF (P-700A)

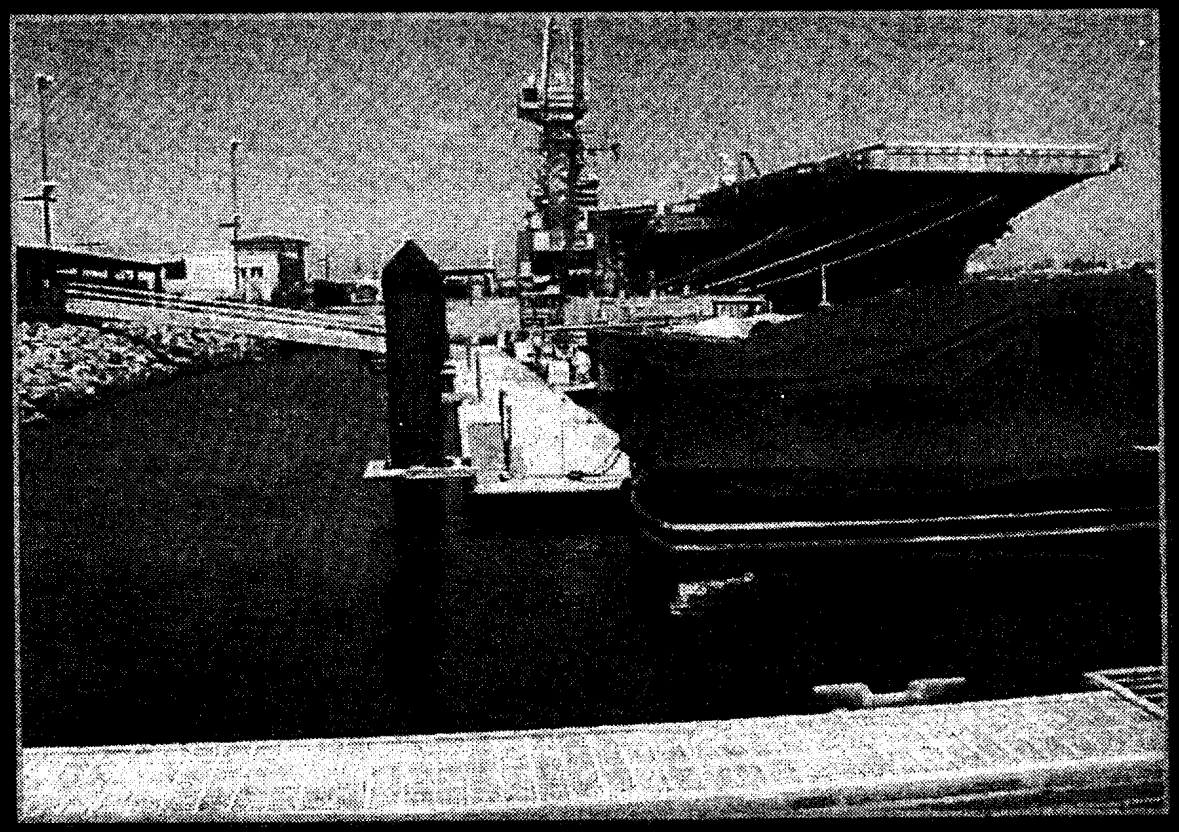
NAVAL AIR STATION NORTH ISLAND - CORONADO, CALIFORNIA

SOUTHWEST DIVISION NAVAL FACILITIES ENGINEERING COMMAND

MOFFATT, NICHOL & PARTNERS
ENGINEERS

THERMAL DISCHARGE

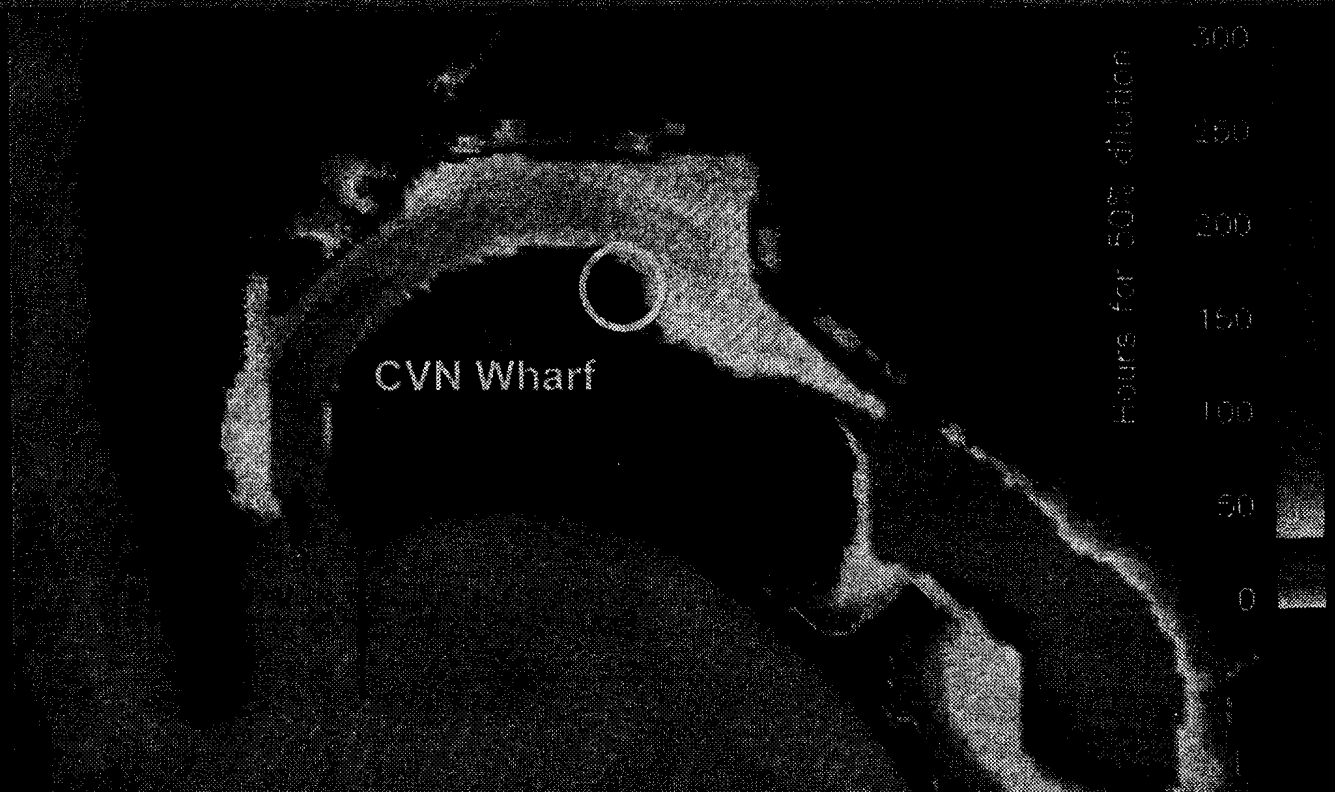
Thermal Discharge into San Diego Bay



CVN Cooling Water Effects on Marine Resources

- There are no adverse effects to marine resources as a result of thermal discharge from Carriers
  - National Marine Fisheries Service, concurs with our finding of no adverse effects
- Comparison of Cooling Water Discharge in San Diego Bay
  - 1 CVN pier side on shore power will discharge 6,259 gallons per minute (gpm) of water through multiple points at an average delta of 7.9 degrees F. into 50 feet of water
  - 3 CVN's under the same conditions will discharge 18,777 gpm at 7.9 degrees F at three separate berths
  - This is compared to the South Bay power plant that discharges 400,000 gpm at an average delta 30 degrees F. into 10 feet of water
- Distance of Discharge to Ambient Temperature
  - Within 35 meters of the source.
- The closest eelgrass bed to the existing and proposed CVN wharf is 134 meters

THERMAL DISCHARGE



San Diego Bay Dilution Rates

- NAS North Island Turning Basin – 0 to 5 Hours
- South bay Power Plant – 200 to 250 Hours

EMERGENCY PLANNING

UNIFIED SAN DIEGO COUNTY
EMERGENCY SERVICES ORGANIZATION

OPERATIONAL AREA EMERGENCY PLAN

September 1996

RECORD OF REVISIONS

Date Of Change	Section Number	Page Numbers	Entered By	Date

UNIFIED SAN DIEGO COUNTY EMERGENCY SERVICES ORGANIZATION

OPERATIONAL AREA EMERGENCY PLAN

ACKNOWLEDGEMENTS

Operational Area Plan Review Committee

John Traylor, Chairman, El Cajon Fire Department
Peter Lawrence, Oceanside Fire Department
Jim Hardiman, Chula Vista Fire Department
Neil Hobbs, Escondido Fire Department
Edd Long, Santee Fire Department
Chris Bach, City of San Diego

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Mallory Larson, Senior Clerk

Edited and Printed

Office of Disaster Preparedness

This Operational Area Emergency Plan was adopted by the Unified Disaster Council on September 19, 1996. The Unified Disaster Council has referred this Operational Area Emergency Plan to their member jurisdictions with a recommendation that each member agency adopt this plan as their jurisdictional Emergency Plan, with as few changes as possible.

09/96

UNIFIED SAN DIEGO COUNTY EMERGENCY SERVICES ORGANIZATION

OPERATIONAL AREA EMERGENCY PLAN

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OPERATIONAL AREA EMERGENCY PLAN

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J. Construction and Engineering Operations
K. Logistics
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M. Mental Health Operations
N. Damage Assessment and Recovery
O. Animal Control

FOREWORD

There is not always universal acceptance of the idea of emergency planning. This is especially true when it is a collateral duty, having little to do with one's day-to-day responsibilities. Few of us need more to do, especially when it is something that seems so remote.

However, emergency planning is important in order to establish policy, establish the emergency organization, define responsibilities, and, in general, to make as many decisions as possible before the emergency strikes. A good plan sets down an orderly, effective system of response and recovery which is not dependent on a particular individual or individuals in order to work.

In the early 1960s, all of the cities and the County got together and formed a Joint Powers Agreement which established the Unified SanDiego County Emergency Services Organization and the Unified Disaster Council which is the policy making group of the Organization. It also created the Office of Disaster Preparedness, which is staff to the Unified Organization.

The USDCESO approach to emergency planning has been comprehensive, i.e., planned for and prepared to respond to all hazards: natural disasters, man-made emergencies, and war-related emergencies, utilizing the Standardized Emergency Management System (SEMS). Recent events such as the flooding in the San Diego Operational Area in 1991 and 1993; the earthquakes in Loma Prieta in 1989 and Northridge in 1994; the bombing of the Federal Building in Oklahoma City and many, many more events throughout the world, have demonstrated the need for preparedness. The Office of Disaster Preparedness (ODP) is the agency charged with developing and maintaining the San Diego County Operational Area Emergency Plan (SDCOAEP), which should be considered a preparedness document - intended to be read and understood before an emergency. It is designed to include the San Diego County Operational Area as a part of the statewide emergency management system.

This document was created by representatives of all of the jurisdictions in the Operational Area and all of the agencies with any responsibilities in the plan. It is intended to be adopted by all of the jurisdictions in the Operational Area with minor modifications. The goal is to have emergency plans which are as similar as possible throughout the Operational Area. That way if any one of the members need assistance from any of the other jurisdictions, everyone will be familiar with the Emergency Plan. With representation from all agencies and jurisdictions, it assures that the commitments that have been made in the plan are realistic.

BASIC PLAN

I. PURPOSE, OBJECTIVES AND PLAN ORGANIZATION

A. Overview

No single jurisdiction or agency has the capability and resources to address all disasters or major emergency situations. The Unified San Diego County Emergency Services Organization was established for the purpose of providing and addressing disaster related problems collectively. This "Operational Area Emergency Plan" has been developed to provide guidance for the San Diego County Operational Area.

The Operational Area Emergency Plan (OAEP) defines responsibilities, establishes an emergency organization, defines lines of communications, and is designed to be part of the statewide Standardized Emergency Management System.

The "Operational Area" consists of the county and each of its political subdivisions including Special Districts. The"Operational Area Coordinator" (OAC) is elected by the Unified Disaster Council, and is currently the County's Chief Administrative Officer.

During multi-jurisdictional emergencies, each jurisdiction and Special District is responsible for conducting and managing emergencies within its boundaries. The Operational Area Coordinator serves as the primary focal point for coordination of mutual aid, assistance, and information between jurisdictions and Special Districts.

The Operational Area Emergency Operations Center (5555 Overland Avenue in Kearny Mesa) will normally serve as the Operational Area Coordinator's point of contact. In some cases, Area Coordinators for specific disciplines may operate from other locations, or may be designated representatives of the Coordinator . When this is the case, all agencies will be advised of the point of contact.

B. Purpose

The San Diego County Operational Area Emergency Plan describes a comprehensive emergency management system which provides for a planned response to disaster situations associated with natural disasters, technological incidents, and nuclear-related incidents. It delineates operational concepts relating to various emergency situations, identifies components of the Emergency Management Organization, and describes the overall responsibilities for protecting life and property and assuring the overall well-being of the population. The plan also identifies the sources of outside support which might be provided (through mutual aid and specific statutory authorities) by other jurisdictions, state and federal agencies and the private sector.

Every jurisdiction and Special District shall have an individual Emergency Plan. The "Operational Area Emergency Plan" will support or supplement the plan for each local government.

C. Objectives

1. Provide a system for the effective management of emergency situations.

2. Identify lines of authority and relationships.

3. Assign tasks and responsibilities.

4. Ensure adequate maintenance of facilities, services, and resources.

5. Provide a framework for adequate resources for recovery operations.

D. Plan Organization

The plan is complete with 15 annexes/operations plans. These are:

Annex A	-Emergency Management
Annex B	-Fire and Rescue Mutual Aid Operations
Annex C	-Law Enforcement Mutual Aid Operations
Annex D	-Multi-Casualty Operations
Annex E	-Public Health Operations
Annex F	-Medical Examiner Operations
Annex G	-Care and Shelter Operations
Annex H	-Environmental Health Operations
Annex I	-Communications
Annex J	-Construction and Engineering Operations
Annex K	-Logistics
Annex L	-Emergency Public Information
Annex M	-Mental Health Operations
Annex N	-Damage Assessment and Recovery
Annex O	-Animal Control

In addition, there are four stand-alone emergency plans that are referenced within some of the above annexes. These plans are: 1) San Diego County Nuclear Power Station Emergency Response Plan; 2) San Diego County Operational Area Oil Spill Contingency Element of the Area Hazardous Materials Plan; 3) San Diego County Operational Area Emergency Water Contingencies Plan; and 4) Unified San Diego County Emergency Services Organization Operational Area Energy Shortage Response Plan. They are, by reference, a part of this plan.

II. AUTHORITIES AND REFERENCES

A. Unified San Diego County Emergency Services Organization, Fourth Amended Emergency Services Agreement, 1992.

B. County of San Diego Emergency Services Ordinance No. 8183, dated December 15, 1992.

C. County of San Diego Resolution adopting the California Master Mutual Agreement, dated December 11, 1950.

D. California Emergency Services Act, Chapter 7 of Division 1 of Title 2 of the Government Code.

E. California Emergency Plan (October, 1989) and sub-plans.

F. California Emergency Resources Management Plan (January 9, 1968) and sub-plans.

G. Governor's Orders and Regulations for a War Emergency, 1971.

H. Article 9, Emergency Services, Section 8605 of the Government Code, Operational Areas.

I. Petris (SEMS) SB 1841 Chapter 1069 - Amendments to the Government Code, Article 7, California Emergency Services Act

J. California Master Mutual Aid Agreement

K. California Fire and Rescue Emergency Plan

L. Incident Command System, Field Operations Guide, ICS 420-1

M. San Diego County Mutual Aid Agreement for Fire Departments

N. San Diego County Animal Control Mutual Aid Agreement

O. California Law Enforcement Mutual Aid Plan

P. California Coroners Mutual Aid Plan

Q. Public Works Mutual Aid Plan

All Authorities and References listed apply to the Basic Plan and all it's annexes. They are on file at the Office of Disaster Preparedness. Also on file are other agreements with voluntary organizations and other governmental and private organizations.

III. SITUATION AND PREPAREDNESS

A. Description of Jurisdiction

San Diego County Operational Area - located between Orange and Riverside Counties on the north and Mexico on the south, and between Imperial County to the east and the Pacific Ocean on the west, occupies the extreme southwest corner of both California and the United States.

The Operational Area is approximately 4,261 square miles in area, and varies in terrain from coastal to mountainous to desert. The 1996 population figure for the Operational Area was 2,690,255

San Diego's climate is Mediterranean in type - mild, sunny winters with occasional rainy periods of short duration, and warm, rainless summers. A mountain barrier crosses north to south through the eastern half of the Operational Area, separating desert to the east and semi-arid coastal plains to the west. The highlands on the coastal side of the barrier are a significant source of water, feeding the streams which descend their seaward slopes.

B. Hazard Identification

The San Diego County Operational Area is exposed to many hazards, all of which have the potential for disrupting communities, causing damage, and creating casualties. Possible natural hazards include earthquakes, floods, tsunamis, wildland fires, landslides, droughts, hurricanes, tropical storms and freezes. There is also the threat of a war-related incident such as a nuclear, biochemical, or conventional attack. Other disaster situations could develop from a hazardous materials incident, conflagration, water or air pollution, major transportation accident, water gas or energy shortage, nuclear power plant accident, terrorism or civil disorder.

In an effort to begin the process of hazard analysis for the Operational Area, and to supply emergency managers with a basic understanding of these hazards, hazard summaries have been included. (See Attachment A)

C. Preparedness Elements

In view of the Operational Area's susceptibility and vulnerability to natural disasters and technological incidents, continuing emphasis will be placed on: emergency planning; training of full-time, auxiliary and reserve personnel; public awareness and education; and assuring the adequacy and availability of sufficient resources to cope with such emergencies. Emphasis will also be placed on mitigation measures to reduce losses from disasters, including the development and enforcement of appropriate land use, design and construction regulations.

D. Hazard Mitigation

The Cities' Planning Departments and the County Department of Planning and Land Use have enforced earthquake building code standards for several years. Additionally, all projects requesting subdivisions are typically required to include an environmental assessment initial report, which provides site-specific information on existing natural hazards and other environmental concerns. Upon intake of all building permits and development projects, land

use planners review the project site's topographic location (i.e., slope analysis), and proximity to a floodplain.

The Land Use Elements of the Cities' and County's General Plans are the primary policy bases which direct the physical development of the incorporated and unincorporated areas of the San Diego County Operational Area. They designate coastal beach, bluff areas, and floodplain as environmentally constrained areas, thus requiring a thorough environmental review and implementation of appropriate measures to mitigate any adverse impacts. Additionally, the "rural" back country is subject to limitations of 4-8-20 acre parcel sizes in order to minimize degradation of watersheds, natural slopes, groundwater supplies, wildland fire safety and floodplain.

The Operational Area's member jurisdictions Zoning Ordinances and the Uniform Building Code supports mitigation efforts through the enforcement of fire codes, earthquake standards and requirements for water conservation devices. County subdivision regulations reduce the risk of fire, in that these regulations are a means of securing water systems of adequate size and pressure for fire fighting, and insure adequate roadway widths for emergency vehicle access, including maneuverability of fire trucks.

In addition to the structural and non-structural mitigation techniques mentioned above, the Unified Organization's Office of Disaster Preparedness and member jurisdictions are involved in ongoing Public Awareness Programs. The programs focus on the need of individuals to be knowledgeable about the nature of disasters and proper responses to those disasters.

IV. CONCEPT OF OPERATIONS

A. Organizational Concepts

It is the responsibility of government to undertake an ongoing comprehensive approach to emergency management in order to mitigate the effects of hazardous events. Local government has the primary responsibility for preparedness and response activities. When an emergency exceeds the local government's capability to respond, assistance is requested from other local jurisdictions, and State and Federal governments. In any case, the responsibility for and command of the incident remains with the local jurisdiction.

All jurisdictions within the San Diego Operational Area operate under the Standardized Emergency Management System (SEMS) which was developed as a result of legislation introduced by Senator Petris, a California State Senator. SEMS mandated the State Office of Emergency Services to develop a system which would be adopted by all state agencies and offered to all local jurisdictions within the state, to provide a universal structure for Emergency Management.

SEMS is based on the Incident Command System (ICS) which is a management system designed to provide a structure for response to any emergency, large or small, and MACS, the Multiple Agency Coordination System. ICS is used nationally by many emergency service organizations, and has been in operation for about 20 years.

The Operational Area Plan is based on SEMS and the concept that the emergency function of an agency will generally parallel its normal function. Those day-to-day activities which do not contribute directly to the emergency operation may need to be suspended for the duration of the emergency.

Specific operational concepts, to include the emergency response actions of the various agencies are reflected in the Annexes to this plan.

B. Statewide System

Fully activated, the Standardized Emergency Management System consists of the Emergency Management Staffs of all local jurisdictions (including Special Districts), Operational Areas (county wide), OES Mutual Aid Regions (two or more counties) and State Government. Local jurisdictions would be responsible for directing and/or coordinating emergency operations, with the other levels being responsible for coordinating with and/or providing support to the local jurisdictions.

The State of California Emergency Plan identifies three levels of emergencies which they will use to categorize the response. These same levels are used by the Operational Area and are common to all functional Annexes:

LEVEL I

A minor to moderate incident wherein local resources are adequate and available. A **LOCAL EMERGENCY** may or may not be proclaimed.

LEVEL II

A moderate to severe emergency wherein local resources are not adequate and mutual aid may be required on a regional or even statewide basis. **A LOCAL EMERGENCY** will be proclaimed and a **STATE OF EMERGENCY** might be proclaimed.

LEVEL III

A major disaster wherein resources in or near the impacted area are overwhelmed and extensive state and/or federal resources are required. **A LOCAL EMERGENCY** and a **STATE OF EMERGENCY** will be proclaimed and a **PRESIDENTIAL DECLARATION OF EMERGENCY** or **MAJOR DISASTER** will be requested.

V. OPERATIONAL AREA EMERGENCY MANAGEMENT SYSTEM

The County of San Diego staff have the overall responsibility to provide an effective emergency response in the unincorporated areas of the County. The County of San Diego Operational Area uses SEMS. This emergency management system provides not only for the local on-scene management of an incident, but also for the coordination of response activities between the jurisdictions.

A. Governmental Structure

1. General Principles

   The structure of the emergency organization is based on the following principles:

   a. Compatibility with the structure of governmental and private organizations.

   b. Clear lines of authority and channels of communication.

   c. Simplified functional structure.

   d. Incorporation into the emergency organization of all available personnel resources having disaster capabilities.

   e. Formation of special-purpose units to perform those activities peculiar to major emergencies.

2. A major emergency can change the working relationships between government and industry and among government agencies. For example:

   a. Consolidation of several departments under a single chief, even though such departments normally work independently.

   b. Formation of special-purpose units (Situation Intelligence, Emergency Information, Management, and Radiological Defense) to perform functions not normally required. Personnel assigned to such units may be detached from their regular employment when the units are activated.

   c. Formation of multiple agency or multiple jurisdiction commands to facilitate the response to an emergency.

3. Changes in the emergency organization as designed may be required to meet specific situations.

B. Unified San Diego County Emergency Services Organization

1. The Unified San Diego County Emergency Services Organization consists of the County and the cities within the Operational Area. It was established in 1961 by signed agreement. The Agreement basically provides for "preparing mutual plans for the preservation of life and property and making provision for the execution of these plans in the event of a local emergency, state of emergency, and to provide for mutual assistance in the event of such emergencies". It also calls upon the County to provide such services as health, medical, traffic control, public information, and radiological safety, in addition to services provided by the Office of the County Medical Examiner.

2. The Unified Disaster Council is the policy making body of the Organization and is "empowered to review and approve emergency mutual aid plans and agreements, disaster preparedness plans, and such ordinances, resolutions, rules and regulations as are necessary to implement" them. The Office of Disaster Preparedness (ODP) serves as staff to the Council and its members.

3. The Board of Supervisors is the governing body of the County and, as such, sets policy regarding disaster-related matters within the unincorporated areas of the County. The Chair of the Board also serves as Chair of the Disaster Council.

4. The County Chief Administrative Officer (CAO) has two roles in an emergency situation if elected:

   a. Director of Emergency Services in a situation involving only the unincorporated area of the Operational Area.

   b. Coordinator of Emergency Services in a situation involving the unincorporated area and one or more cities, or one involving any two or more cities.

5. The Office of Disaster Preparedness (ODP) is the lead agency in the Operational Area's emergency response effort and serves as staff to the Coordinator of Emergency Services, as well as to the Unified Disaster Council.

6. Other City and County departments and agencies have emergency responsibilities, as identified in Section VI, Emergency Functions, Staffing and Tasks. These agencies and departments are also responsible for developing and maintaining Standard Operating Procedures (SOPs) and designating alternate sites from which to operate.

7. There are some City and County personnel who do not have specific task assignments. They are automatically designated by State Law as Disaster Service Workers during a disaster, and serve in the response effort.

   a. "All public employees and all registered volunteers of a jurisdiction having an accredited disaster council are Disaster Service Workers", per the Government Code, Title I, Division 4, Chapter 8, and Labor Code, Part I, Division 4, Chapters 1 and 10.

   b. The term public employees includes all persons employed by the State, or any County, City or public district.

   c. Other personnel including volunteers can be quickly registered by ODP as Disaster Service Workers, which provides Workers Compensation and liability coverage.

8. The Office of Disaster Preparedness maintains a list of pre-registered volunteers affiliated with volunteer organizations who have been signed up as Disaster Service Workers.

C. Under the Standardized Emergency Management System (SEMS), Special Districts are considered local governments. As such, they are included in the emergency planning efforts throughout the Operational Area.

D. The Operational Area emergency organization, in accordance with SEMS, supports and is supported by:

1. Cities within the Operational Area
2. The County of San Diego
3. Special Districts
4. Other counties
5. The State of California
6. The Federal Government

E. **Mutual Aid**

1. Mutual aid, including personnel, supplies, and equipment, is provided in accordance with the California Master Mutual Aid Agreement, and other local Mutual Aid Agreements.
2. More information about mutual aid is contained in individual annexes, appendices and attachments within this Plan.

VI. EMERGENCY FUNCTIONS, STAFFING, AND TASKS

In this plan, local emergency operations are divided into the emergency functions indicated below. Specific details on functional, organizational and operational concepts, responsibilities for providing support to or accomplishing a given function, and applicable policies and procedures are provided in the Annexes specified in parenthesis. The Annexes also provide hazard-specific responses to be accomplished by the Emergency Management Staff and field forces.

A matrix on the following three pages (see Figure 1) identifies the local agencies and private organizations responsible to the Operational Area for the functions listed below. Detailed responsibilities of all agencies and private organizations are provided in Annexes to this plan.

A. **Emergency Management**
(Refer to Annex A, Emergency Management)

1. **Board of Supervisors, City Councils, Boards of Directors**

Governing Boards establish policies which govern their County's, City's or Special District's emergency organization and, during an emergency, have the following responsibilities:

FUNCTIONAL RESPONSIBILITIES OF AGENCIES WITHIN SAN DIEGO COUNTY

FUNCTIONS/RESPONSIBILITIES	Emergency Proclamations	Management of Emergency	Situation Analysis/Intelligence	Damage Assessment	EOC Management	Radiological Protection	Alert/Warning	Public Information	Fire	Law Enforcement	Communications	Medical Multi-Casualty	Public Health	Medical Examiner/Coroner	Care and Shelter	Evacuation	Rescue	Construction and Engineering	Public Facilities	Resources/Support	Personnel/Staffing	Volunteer Coordination	Emergency Facilities/Housing	Food/Water	Disposition of Animals	Recovery	Transportation
DEPTS./AGENCIES																											
Board of Supervisors	P																									S	
Chief Administrative Officer *	S	P																								P	
Disaster Preparedness Office*	S	S	P	P	P	P	P	S								S				S						S	
PIO/Media Team							S	P																			
Fire Representatives *		S	S			S			P			S		S		S	P										
Sheriff *		S	S				S		S	P	P	S		S		P	S										S
Health Services *		S	S									P	P		S		S							P			
Medical Examiner *		S	S											P													
Public Works *		S	S						S	S							S	P	S	S			S			S	S
Information Services											P																S
Agriculture			S			S														S				P			
Air Pollution Control Dist.			S																	S							
Animal Control			S							S															P		
Assessor				S																						S	
Auditor and Controller																				S			S	S			

Figure 1

(09/96)

FUNCTIONAL RESPONSIBILITIES OF AGENCIES WITHIN SAN DIEGO COUNTY(cont.)

FUNCTIONS/RESPONSIBILITIES	Emergency Proclamations	Management of Emergency	Situation Analysis/Intelligence	Damage Assessment	EOC Management	Radiological Protection	Alert/Warning	Public Information	Fire	Law Enforcement	Communications	Medical Multi-Casualty	Public Health	Medical Examiner/Coroner	Care and Shelter	Evacuation	Rescue	Construction and Engineering	Public Facilities	Resources/Support	Personnel/Staffing	Volunteer Coordination	Emergency Facilities/Housing	Food/Water	Disposition of Animals	Recovery	Transportation
DEPTS./AGENCIES																											
District Attorney										S																	
Education			S							S					S												S
Environmental Health			S	S																			P				S
Human Resources																			S		P						
General Services			S								S								P	S			S			S	P
Housing & Comm. Develop.																				S			S			S	
Marshal										S																	
Parks and Recreation			S							S		S			S								S				
Planning and Land Use			S	S																			S			S	
Probation										S																	S
Public Administrator														S													
Purchasing																				P				S			
Registrar of Voters																					S						
Social Services															P					S	S	P					
"Unassigned" Public Employees																					S						

Figure 1(cont.)

(09/96)

FUNCTIONAL RESPONSIBILITIES OF AGENCIES WITHIN SAN DIEGO COUNTY(cont.)

FUNCTIONS/RESPONSIBILITIES	Emergency Proclamations	Management of Emergency	Situation Analysis/Intelligence	Damage Assessment	EOC Management	Radiological Protection	Alert/Warning	Public Information	Fire	Law Enforcement	Communications	Medical Multi-Casualty	Public Health	Medical Examiner/Coroner	Care and Shelter	Evacuation	Rescue	Construction and Engineering	Public Facilities	Resources/Support	Personnel/Staffing	Volunteer Coordination	Emergency Facilities/Housing	Food/Water	Disposition of Animals	Recovery	Transportation
DEPTS./AGENCIES																											
Veterinarian																								S			
OTHER AGENCIES:																											
Ambulance Companies			S									S															S
Area Fire Coordinator			S						S								S										
Calif. Highway Patrol			S							S		S															
Hospitals			S									S															
Humane Society																								S			
American Red Cross			S	S		S						S			S					S		S					
Salvation Army															S									S			
Utility Representatives			S																	S				S			
Military Representative			S	S							S	S					S	S		S							S
Civil Air Patrol			S	S													S										S
R.A.C.E.S.			S	S			S				S						S										
E.V.A.C.			S	S							S																S

* = Core Management Group

Figure 1 (cont.)

(09/96)

a. Proclaiming a local emergency or ratifying a proclamation made by the Chief Administrative Officer or City Manager (Board of Supervisors will proclaim at the request of Governing Board for a Special District).

b. Requesting the Governor to declare a State of Emergency, in accordance with the provisions of the California Emergency Services Act (Board of Supervisors/City Councils).

c. Governing the County, City or Special District and maintaining necessary levels of operations.

d. Being available to assist constituents; and

e. Initiating immediate and long term recovery procedures to restore the community and mitigate hazards.

2. **Management Section**

Management (Management Section) consists of the senior executive of the jurisdiction or special district. For the County this would be the Chief Administrative Officer (CAO). For incorporated cities this position would be filled by the City Manager. Special Districts would fill this position with their senior executive. These senior executives fill the role of the jurisdiction's Director of Emergency Services. The Management Section also includes the jurisdiction's emergency services coordinator. For the Operational Area this is the Director of the Office of Disaster Preparedness (ODP). The Management Section also contains those representatives whom the senior executive believes are required for the particular situation or emergency. (Refer to Annex A, Emergency Management).

a. **Director of Emergency Services**

Tasks: Direct and Control the Emergency Services Organization and Emergency Management Program.

Make executive decisions.

Issue policies, priorities, and operations schedules.

Issue rules, regulations, orders

Send intelligence summaries to the State Office of Emergency Services (OES) via the Operational Area..

Request that the Board of Supervisors or City Council make **Proclamations of Local Emergency** or issue the proclamations if the Board is not in session. (NOTE: The Board of Supervisors will normally proclaim a local emergency if requested to by a resolution from a special district's governing board.)

Request a Gubernatorial Proclamation of Emergency and/or request the Governor to request the President to issue a Presidential Declaration of Emergency. (Board of Supervisors for the Operational Area)

b. **Management Section Responsibilities:**

Tasks: Make policy, operational and organizational.

Identify major operational problems and set priorities.

Assist the CAO, City Manager or Senior Executive.

Analyze the situation, based on intelligence reports, and develop a plan of action for the duration of the emergency.

Develop strategies.

Prepare intelligence summaries for their respective governing boards.

Ensure documentation of expenditures and resources.

c. **Emergency Services Coordinator Staff**

Tasks: Serve as staff to the CAO, City Manager or Senior Executive, manage the Emergency Operations Center (EOC); as part of the Management Group, fulfill or supervise the following:

1) Planning and Intelligence Section (including situation display)

   a) Manage the information collecting and reporting system.

   b) Display situation and operational information.

   c) Evaluate and disseminate information.

2) Damage Assessment

   a) Coordinate damage assessment.

   b) Collect and evaluate information about damage.

   c) Provide information to the Operational Area for forwarding to the State and Federal governments.

   d) Keep records of damage information.

3) Emergency Operations Center (EOC)

a) Manage internal communications system, including the message center.

b) Receive, send, and record EOC messages.

c) Set up and manage the EOC operation.

4) Radiological Protection

a) Coordinate the jurisdiction's monitoring system.

b) Evaluate and disseminate Radiological Protection information.

c) Provide technical guidance.

5) Warning

a) Maintain the Emergency Alert System (EAS) and the Life Saving Information for Emergencies (LIFE) system. (ODP for the Operational Area)

b) Receive and disseminate warning information.

c) Initiate alerting procedures.

6) Public Information and Education

d. **County Counsel/City Attorney/Special Districts' Legal Counsel**

Task: Serve as legal counsel to the CAO, City Manager, Senior Executive.

e. **Public Information Officer and Media Team**
(Refer to Annex L)

Tasks: Gather, prepare, coordinate, and disseminate emergency information to the news media.

Provide instructions to the public.

Operate the media center.

Rumor Control

B. Fire and Rescue Operations

All Fire Departments, Fire Protection Districts and other agencies with fire responsibilities. California Department of Forestry (CDF) is the Area Fire Coordinator. (Refer to Annex B, Fire and Rescue Mutual Aid Operations)

Tasks: Suppress fires and develop a fire defense. Locate persons in need of assistance, provide austere medical treatment, and remove to a safe place.

Coordinate rescue operations.

Provide search and rescue.

Provide adequate medical treatment

Assist in medical response.

Assist with evacuation.

Assist with hazardous materials incidents.

Provide decontamination as necessary if requested.

Assist with contamination control as necessary if requested.

Support Staff: Mutual aid support through the Area Fire Coordinator.

USAR and other rescue teams, including dog teams

Law Enforcement agencies

Medical agencies

NOTE: During a disaster, the Area Fire Coordinator will appoint at least one liaison representative from the fire community to the Operational Area EOC.

C. Law Enforcement Mutual Aid Operations

Operational Area Law Enforcement Agencies. The Sheriff is the Area Law Enforcement Coordinator. (Refer to Annex C, Law Enforcement Mutual Aid Operations)

Tasks: Enforce laws, rules, regulations.

Conduct evacuations.

Coordinate the movement of persons from threatened areas to safer areas.

Provide security for evacuated areas.

Establish evacuation routes.

Provide transportation for evacuees when necessary.

Provide security for facilities and resources.

Enforce vehicular traffic laws and regulations.

Establish alternate routes.

Provide aerial surveillance and intelligence.

Assist in light rescue.

Assist with medical response.

Manage communications systems.

Support Staff: Other law enforcement agencies through mutual aid.

Marshal's Office

Probation Department

California Highway Patrol

District Attorney's Office

Department of Parks and Recreation

D. Multi-Casualty Operations

Department of Health Services, Emergency Medical Services, Fire and Law Enforcement Agencies. (Refer to Annex D, Medical Multi-Casualty Plan)

Tasks: Coordinate medical response and resources within the jurisdiction.

Coordinate medical mutual aid.

Coordinate medical registration and records.

Support Staff: Hospitals, community and private medical personnel.

Ambulances

Public safety agencies

Military medical personnel

Red Cross

E. Public Health Operations

Department of Health Services, Public Health Services. Because this function is provided by Public Health Services for all jurisdictions and special districts within the Operational Area, this function will be accomplished from the Operational Area EOC. (Refer to Annex E, Public Health Operations)

Tasks: Coordinate public health response and resources.

Determine and identify public health hazards, including hazardous materials, and provide response.

Establish standards for control of health hazards, provide technical guidance, and supervise control activities.

Advise the public about health hazards.

Provide Public Health Nurses as needed

F. Medical Examiner Operations

Medical Examiner. Because this function is provided by the Medical Examiner for all jurisdictions and special districts within the Operational Area, this function will be accomplished from the Operational Area EOC. (Refer to Annex F, Medical Examiner Operations)

Tasks: Recover, identify, and coordinate disposition of the dead.

Register deaths.

Notify next of kin.

Prepare and coordinate lists of the dead.

Maintain necessary records.

Inform law enforcement, health, public agencies, and media.

Collect and preserve decedent property and act as ex-officio Public Administrator.

Support Staff: Former Medical Examiner employees

Public Administrator

Mutual aid assistance

Morticians

Public safety agencies

G. Care and Shelter Operations

Red Cross provides mass care service by agreement for all jurisdictions and special districts within the Operational Area. This function will be accomplished from the Operational Area EOC. (Refer to Annex G, Care and Shelter Operations)

Tasks: Manage and operate reception and mass care centers.

Provide assistance to victims.

Provide registration and locator services.

Register displaced persons.

Support Staff: Department of Social Services (DSS)

H. Environmental Health

Department of Environmental Health. This function is accomplished by the Department of Environmental Health throughout the Operational Area. Accordingly, the coordination of environmental health activities will be accomplished from the Operational Area EOC. (Refer to Annex H, Environmental Health Operations)

Tasks: Coordinate the inspections for purity and usability of consumables.

Develop and supervise methods and procedures for vector and rodent control.

Conduct environmental surveys to determine risks and hazards and identify hazardous materials released.

Determine risks and hazards for the disposal of sewage.

I. Communications

Jurisdictional and Regional Communications System Staff. (Refer to Annex I, Communications)

(Annex I is a descriptive annex versus a functional annex, therefore, there are no specified tasks.)

J. Construction and Engineering Operations

1. Departments of Public Works, Department of Environmental Health, Building Division (Refer to Annex J, Construction and Engineering Operations).

   Tasks: Provide supervision for the repair, modification, and/or construction of emergency facilities and housing.

   Inspect and post damaged structures.

   Perform field damage assessment.

   Assist with damage assessment.

   Restore, maintain and operate essential services, such as roads, sewers, drainage.

   Provide for construction of emergency facilities, such as bridges.

   Assist in search and rescue.

   Assist in providing for repair, modification, and/or construction of emergency facilities and housing.

   Support Staff: County Department of General Services

   Construction Industry

   Parks and Recreation Departments

   City Planning Departments, County Department of Planning and Land Use (DPLU)

   Construction Industry

2. City Planning Departments, Department of Planning and Land Use

   Tasks: Provide supervision for the repair, modification, and/or construction of emergency facilities and housing.

   Support the Department of Public Works.

   Support the Management Group.

   Inspect and post damaged structures.

   Perform field damage assessment.

Assist with damage assessment.

Support Staff: Public Works

General Services

Construction Industry

K. Logistics

(Refer to Annex K, Logistics)

1. Purchasing Departments (Example: County Purchasing and Contracting Division of the Auditor and Controller).

Tasks: Coordinate the Resources Group.

Maintain an inventory of sources and provide for procurement and allocation of transportation resources.

Assist with coordination of Operational Area transportation.

Provide a system which gives authorized staff emergency buying power.

Procure needed supplies, equipment and services from public and/or private sources.

Support Staff: Jurisdictional Auditor and Controller

Agriculture, Weights and Measures

Air Pollution Control District (APCD)

Transportation Industry

2. Departments of General Services

Tasks: Secure, restore, maintain, and/or operate jurisdictional facilities.

Assist Purchasing with petroleum supply.

Manage and operate petroleum supply facilities.

Assist with transportation.

Maintain an inventory of sources and provide for the procurement and allocation of petroleum stocks.

Assist with housing (Real Property Divisions).

Support Staff: Planning Departments

3. Information Services Departments as appropriate

Task: Maintain jurisdictional telecommunications including telephone, radio and data communications.

4. Departments of Public Works

Task: Distribute and service essential material including utilities and potable water, logistical communications, fuels, transportation and conveyance equipment and expendable supplies.

5. Department of Social Services

Tasks: Coordinate volunteers.

Provide staff to Disaster Assistance Centers and to Mass Care Centers per Annex G.

6. Human Resources Departments

Tasks: Maintain a personnel inventory and provide for the recruitment and assignment of staff.

Establish a pool of unassigned personnel.

Coordinate with the State Employment Development Department via the Operational Area..

Support General Services in inspecting jurisdictional buildings.

Oversee employee safety.

8. Department of Agriculture, Weights and Measures

These tasks are accomplished for all jurisdictions and special districts throughout the Operational Area from the Operational Area EOC.

Tasks: Maintain an inventory of sources and assist the State with the conservation, allocation, and distribution of food stocks.

Maintain an inventory of sources and provide for the procurement and

allocation of petroleum stocks.

Provide technical advice about contaminated food products and agricultural lands.

Serve as liaison to the petroleum industry.

Support Staff: Department of Health Services (DHS)

Auditor and Controller

Purchasing Department

9. Housing and Community Development

Tasks: Identify, apply for and administer available Department of Housing and Urban Development (HUD) grant funds.

Establish the need and arrange for expedient housing.

Support Staff: Department of General Services

10. Auditor and Controller

Task: Provide authorization and approval of emergency procurement and funds.

11. Assessor

These tasks are accomplished for all jurisdictions and special districts throughout the Operational Area from the Operational Area EOC.

Tasks: Provide property tax adjustments.

Assist with damage assessment.

12. Unassigned Jurisdictional Employees

Task: Function as Disaster Service Workers per the instructions of the Department of Human Resources.

L. Emergency Public Information

Departments of Public Affairs (Refer to Annex L - Emergency Public Information)

Tasks: Schedule regular briefings for news media.

Write and distribute press releases.

Coordinate media interviews with local officials.

Maintain liaison with the Operational Area Public Information staff.

Operational Area Media Team will maintain liaison with State and Federal Public Information Officers (PIOs) and/or any other public information operations that are activated.

Operational Area Media Team will write and release local EAS messages.

M. Mental Health Operations

Department of Health Services, Mental Health Services

These tasks are accomplished for all jurisdictions and special districts throughout the Operational Area from the Operational Area EOC. (Refer to Annex M, Mental Health Operations)

Tasks: Provide emergency mental health intervention services.

Provide mental health counseling support to shelters, and Disaster Assistance Centers (DACs) and EOCs.

N. Damage Assessment and Recovery

Local Government Emergency Management Staff (Refer to Annex N, Damage Assessment and Recovery)

Tasks: Develop, maintain, and test damage assessment plans.

Environmental Health will coordinate the Operational Area Damage Assessment Team.

Report situation and damage to the Operational Area EOC.

The Operational Area ODP will report situation and damage to the State.

Coordinate and maintain files of all field survey reports.

Coordinate and maintain all records during the recovery phase along with Auditor & Controller Offices.

O. Animal Control

Departments of Animal Control (Annex O, Animal Control Operations)

Tasks: Evacuate endangered animals.

Round up animals.

Establish temporary holding facilities.

Coordinate animals' return to owners.

Dispose of unclaimed, infirm, or dead animals.

Coordinate support functions of area humane activities and organizations County Department of Animal Control).

Provide liaison with wildlife, ecological, and conservation groups.

Coordinate the provision of care for injured animals

Support Staff: County Veterinarian

Humane Society

R.A.C.E.S.

VII. CONTINUITY OF GOVERNMENT

All levels of government are required to provide for the continuity of government in the event that current officials are unable to carry out their responsibilities. The Unified San Diego County Emergency Services Organization has provided for a line of succession to the Coordinator of Emergency Services position on the Unified Disaster Council in the event of a major emergency.

A. Coordinator of Emergency Services

The Coordinator of Emergency Services (Coordinator) for the Unified San Diego County Emergency Services Organization (Organization)also functions as the Vice-Chairperson of the Organization. The Coordinator is elected by the members of the Organization from among the County CAO, City Managers, or Chief Administrator of any participating agency.

Two additional persons may be selected from the staff of the Coordinator, or from the above group, to act as First and Second Alternates in the absence or inability of the Coordinator to serve, in which event such Alternates shall have all the powers and authorities of the Coordinator. The Second Alternate shall only be empowered to exercise the powers and authorities of the Coordinator if the Coordinator and First Alternate are absent or otherwise unable to serve.

B. Seat of Government

It is incumbent upon all levels of government to designate temporary seats of government in the event the normal location is not available. For example, the normal seat of government for the County of San Diego is located at the County Administration Center (CAC), 1600 Pacific Highway, San Diego, California. In the event this location is not available, the temporary seat

of government will be located at:

County Operations Center ..... First Alternate
El Cajon Regional Center ..... Second Alternate
South Bay Regional Center ..... Third Alternate
Vista Regional Center ..... Fourth Alternate

C. Preservation of Records

It is imperative that local government maintain duplicate records of all information necessary for restoration of normal operations. This process involves offsite storage of vital computerized and paper-based data that can be readily accessible.

Vital records of the Unified Organization are routinely stored in records storage rooms at the Office of Disaster Preparedness in printed hard copy form, on floppy disk and on computer. Computer records are routinely backed up and stored separately from the hard drives. All ODP personnel records are stored by the County Department of Human Resources at several locations throughout the Operational Area.

VIII. TRAINING, TESTS, AND EXERCISES

The objective of any Emergency Management Organization is efficient and timely response during emergencies. The Operational Area Emergency Plan is the first step toward that objective. However, planning alone will not accomplish preparedness. Training and exercising are essential at all levels of government to make emergency operations personnel operationally ready.

The best method of training staff to manage emergency operations is through exercising. Exercises allow personnel to become thoroughly familiar with the procedures, facilities and systems which will actually be used in emergency situations.

Exercises can be accomplished in several ways. Tabletop exercises provide a convenient and low cost method of introducing officials to problem situations for discussion and problem solving. Such exercises are a good way to see if adequate emergency policies and procedures exist and they are held periodically within the Operational Area.

Functional exercises simulate actual emergencies. They typically involve complete emergency management staffs and are designed not only to exercise procedures, but to also test the readiness of personnel, communications, and facilities. Such exercises are normally conducted annually in the EOC, or as field exercises.

In that training is a critical element to insuring the success of this plan, this training must include both classroom training as well as the "hands-on" experience provided by drills and exercises. Recognizing this, the signatories to this plan agree to participate in scheduled exercises. The date and type of exercise will be identified in the annual workplan of the Unified San Diego County Emergency Services Organization.

IX. GLOSSARY AND DEFINITIONS

- Abbreviations, Acronyms, and Definitions -

Note: These abbreviations and definitions will assist in the understanding of terms used in this plan, as well as the overall functions of Disaster Preparedness.

ACRONYMS

A

AFRCC	-Air Force Rescue Coordination Center
AGCA	-Associated General Contractors of America, Inc.
ALS	-Advanced Life Support
APCD	-Air Pollution Control District
AFC	-Area Fire Coordinator
AID	-Agency for International Development
ARC	-American Red Cross
ARES	-Amateur Radio Emergency Service
ARRL	-American Radio Relay League
ASTREA	-Aerial Support to Regional Enforcement Agencies *(Sheriff's Helicopters)*

B

BCA	-Building Contractors Association
BLS	-Basic Life Support

C

CAC	-County Administration Center
CALTRANS	-California Department of Transportation
CAO	-Chief Administrative Officer
CAP	-Civil Air Patrol
CANG	-California Air National Guard
CB	-Citizen's Band Radio
CCC	-California Conservation Corps
CCP	-Casualty Collection Point
CCW	-Clean Coastal Waters
CD	-Civil Defense
CDF	-California Department of Forestry
CDMG	-California Division of Mines and Geology
CFS	-Cubic Feet (per) Second
CHEMTREC	-Chemical Transportation Emergency Center
CHP	-California Highway Patrol
CIF	-Construction Industry Federation
CLEMARS	-California Law Enforcement Mutual Aid Radio System
CLETS	-California Law Enforcement Telecommunications System
CNG	-California National Guard
CNPSERP	-County Nuclear Power Station Emergency Response Plan
COC	-County Operations Center
COE	-U.S. Army Corps of Engineers

COMNAVBASE	-Commander, Naval Base San Diego
COMSUBPACREP,	-Commander, Submarines, Pacific Representative West Coast
CPG	-Civil Preparedness Guide
CSTI	-California Specialized Training Institute
CWA	-County Water Authority

D

DAC	-Dept. of Animal Control (County) - See Annex O
DAC	-Disaster Application Center
D&C	-Direction and Control - Management
DAT	-Disaster Action Teams
DIS	-Department of Information Services
DFG	-Department of Fish & Game
DFO	-Disaster Field Office
DHR	-Department of Human Resources
DHS	-Department of Health Services (County)
DDA	-Detailed Damage Assessment
DOC	-Department Operations Center
DOC	-Department of Commerce
DOD	-Department of Defense
DOE	-U.S. Department of Energy
DOEd	-Department of Education
DHHS	-Department of Health and Human Services
DHUD	-Department of Housing and Urban Development
DOI	-U.S. Department of Interior
DOJ	-Department of Justice
DOL	-Department of Labor
DOSs	-Department of State
DOT	-Department of Transportation
DPLU	-Department of Planning and Land Use (County)
DPW	-Department of Public Works
DSA	-Disaster Support Area
DSR	-Damage Survey Report
DSS	-Department of Social Services
DSW	-Disaster Service Worker
DWI	-Disaster Welfare Inquiry
DWR	-Department of Water Resources (State)

E

EAS	-Emergency Alert System
EBS	-Emergency Broadcast System
ECC	-Emergency Communications Center
EDD	-Employment Development Department
EIC	-Emergency Information Center
EIZ	-Emergency Information Zone (SONGS)
EMA	-Emergency Management Assistance

EMMA	-Emergency Managers Mutual Aid
EMI	-Emergency Management Institute
EMS	-Emergency Medical Services
EMT	-Emergency Medical Technician
ENC	-Emergency News Center (SONGS)
EOC	-Emergency Operations Center
EOF	-Emergency Operating Facility (SONGS)
EOP	-Emergency Operations Plan
EPA	-U.S. Environmental Protection Agency
EPI	-Emergency Public Information
EPIC	-Emergency Public Information Center
EPZ	-Emergency Planning Zone (SONGS)
ERT	-Emergency Response Team
ERT	-Environmental Response Team
EVAC	-Emergency Volunteer Air Corps

F

FAA	-Federal Aviation Administration
FAS	-First Aid Station
FAST	-Federal Agency Support Teams
FBI	-Federal Bureau of Investigation
FCC	-Federal Communications Commission
FCO	-Federal Coordinating Officer
FD	-Fire Department
FEMA	-Federal Emergency Management Agency
FHWA	-Federal Highway Administration
FIA	-Federal Insurance Administration
FIRMARS	-Fire Incident Response Mutual Aid Radio System
FPD	-Fire Protection District
FWS	-U.S. Fish & Wildlife Service

GH

GAR	-Governor's Authorized Representative
GSA	-General Services Administration
HAZMAT	-Hazardous Materials
H/CD	-Housing and Community Development (County)
HIRT	-HAZMAT Incident Response Team
HMMD	-Hazardous Materials Management Division
HST	-Health Services Team
HUD	-Department of Housing and Urban Development

I

IC	-Incident Commander
ICBO	-International Conference of Building Officials
ICC	-Interstate Commerce Commission

ICP	-Incident Command Post
ICS	-Incident Command System
IFG	-Individual and Family Grants
IMA	-Individual Mobilization Augmentee
IPC	-Interjurisdictional Planning Committee (SONGS)
IPZ	-Ingestion Pathway Zone (SONGS)
IRS	-Internal Revenue Service

JK

JIC	-Joint Information Center
JNACC	-Joint Nuclear Accident Coordinating Committee
JEOC	-Joint Emergency Operating Center
KI	-Potassium Iodide

L

LIFE	-Lifesaving Information for Emergencies Alerting System

M

MASA	-Mutual Aid Staging Area
MACS	-Multi-Agency Command System
MCAS	-Marine Corps Air Station
MCC	-Mass Care Center
MEDMARS	-Medical Mutual Aid Radio System
MHFP	-Multihazard Functional Plan
MOBDES	-Mobilization Designees (now called IMAs)
MSA	-Multipurpose Staging Area
MSL	-Mean Sea Level
MWD	-Metropolitan Water District of Southern California

N

NAS	-Naval Air Station
NASA	-National Aeronautics and Space Administration
NASAR	-National Association of Search and Rescue
NAWAS	-National Warning System
NCS	-National Communications Systems
NDMS	-National Disaster Medical System
NOAA	-National Oceanic and Atmospheric Administration
NOSC	-Naval Ocean Systems Center
NRAD	-Naval Research and Development
NRC	-Nuclear Regulatory Commission
NWS	-National Weather Service
NUREG	-Nuclear Regulatory Commission Publication

O

OA	-Operational Area
OASIS	-Operational Area Satellite Information System
ODAC	-Off-site Dose Assessment Center (SONGS)
ODP	-Office of Disaster Preparedness (Operational Area)
OES	-Office of Emergency Services (State)
OPM	-Office of Personnel Management
OSC	-On-Scene Coordinator

P

PAG	-Protection Action Guides
PCE	-Principle Civil Engineer
PD	-Police Department
PDA	-Preliminary Damage Assessment
PIO	-Public Information Officer
PL 920	-Public Law 920, 81st Congress, Federal Civil Defense Act of 1950
PL 93-288	-Public Law 288, 93rd Congress, Disaster Relief Act of 1974
PPP	-Population Protection Planning
PSA	-Public Service Announcement
PSI	-Pounds Per Square Inch
PST	-Pacific Strike Team

OR

RACES	-Radio Amateur Civil Emergency Service
RADEF	-Radiological Defense
RADMON	-Radiological Monitoring
RAT	-Radiological Assistance Team
RATCF	-Radar Air Traffic Control Facility (Miramar)
RCS	-Road Crew Supervisor
RCS	-Regional Communications System
RDMHC	-Regional Disaster Medical Health Coordinator
RDO	-Radiological Defense Officer
REACT	-Radio Emergency Associated Citizen Teams
REOC	-Regional Emergency Operations Center
REM	-Radiation Equivalent in Man
RHB	-State Department of Health Services, Radiologic Health Branch
RIMS	-Response Information Management System
RMO	-Radiological Monitor Operator
RO	-Radiological Officer
RRT	-Regional Response Team
RUIS	-Regional Urban Information System
RWQCB	-Regional Water Quality Control Board

S

SAC	-State Agency Coordinator

SAR	-Search and Rescue
SAROC	-Search and Rescue of the Californias (Baja California)
SBA	-Small Business Administration
SCE	-Southern California Edison
SCO	-State Coordinating Officer
SDGE	-San Diego Gas and Electric
SDO	-Staff Duty Officer
SEMS	-Standardized Emergency Management System
SO	-Sheriff's Office
SOA	-State Operating Authority
SOC	-State Operations Center
SOCALEDISON	-Southern California Edison
SONGS	-San Onofre Nuclear Generating Station
SOP	-Standard Operating Procedure
SM	-Scene Manager
SWRCB	-State Water Resources Control Board

T

TCP	-Traffic Control Points
TEP	-Temporary Evacuation Point
TSDF	-Treatment, Storage and Disposal Facilities
TREAS	-Department of the Treasury
TVA	-Tennessee Valley Authority

U

UDC	-Unified Disaster Council
URC	-Unified Radio Council
USA	-United States Army
USAF	-United States Air Force
USAR	-Urban Search And Rescue
USCG	-United States Coast Guard
USDA	-United States Department of Agriculture
USDCESO	-Unified San Diego County Emergency Services Organization
USGS	-United States Geological Survey
USMC	-United States Marine Corps
USN	-United States Navy
USPS	-United States Postal Service

VWXYZ

VA	-Department of Veterans Affairs
VSC	-Volunteer Services Coordinator

DEFINITIONS

AB

AERIAL RECONNAISSANCE

An aerial assessment of the damaged area which includes gathering information on the level and extent of damage and identifying potential hazardous areas for on-site inspections.

AMATEUR RADIO EMERGENCY SERVICES

A group of Amateur Radio Relay League (ARRL) members who provide health and welfare communications in times of emergency. Affiliated locally with the American Red Cross, all area hospitals and the Emergency Medical Services Division of the County Health Department.

C

CASUALTY COLLECTION POINT (CCP)

Predesignated locations within the Operational Area to which the "walking wounded" are transported, via bus, from the scene. CCPs are coordinated by County Emergency Medical Services.

CIVIL DEFENSE (CD) (See Emergency Management)

All activities and measures designed or undertaken (1) to minimize the effects upon the civilian population and Government caused, or which would be caused by natural disaster, technological incidents, manmade disaster or an attack upon the United States, (2) to deal with the immediate emergency conditions which would be created by such events, and (3) to effectuate emergency repairs to, or the emergency restoration of vital utilities and facilities destroyed or damaged by such events. Was expanded to include Natural Disasters in the 1970s, the term is not used much anymore.

CUBIC FEET PER SECOND - C.F.S.

Used to describe the amount of flow passing a given point in a stream channel. One cubic foot per second is equivalent to approximately 7.5 gallons per second.

D

DAMAGE ASSESSMENT

The appraisal or determination of the actual damage resulting from a disaster.

DECONTAMINATION/CONTAMINATION CONTROL

Radioactive Materials

The reduction (normally by removal) of contaminating radioactive material from a structure, area, person, or object. Decontamination may be accomplished by treating (e.g., washing down or sweeping) the surface so as to remove the contamination. Contamination control is accomplished by isolating the area or object and letting the material stand so that the radioactivity is decreased as a result of natural decay. Contaminated material may be covered to prevent redistribution and/or to provide shielding.

Other Hazardous Materials

Decontamination consists of physically removing contaminants and/or altering thin chemical properties to render them less toxic. How extensive decontamination must be depends on a number of factors, the most important being the type of contaminants involved. The more toxic or dangerous contaminants require more thorough decontamination procedures. Combining decontamination, the correct method of doffing personnel protective equipment, and the use of site work zones minimizes cross-contamination from protective clothing to wearer, equipment to personnel, and one area to another. Only general guidance can be given on methods and techniques for decontamination. The exact procedure to use must be determined after evaluating a number of factors specific to the incident.

DISASTER

An occurrence threatening the health, safety, or property of a community or larger area, generally beyond the capability of a single jurisdiction to handle. Types of disasters include man-made, natural, or war-related; such as nuclear attack, earthquakes, tidal waves, floods, hurricanes, and dam failures.

DISASTER ACTION TEAMS

Established in small unincorporated communities as a focal point for emergency services in coordination with the American Red Cross (ARC) and the Office of Emergency Services (OES) and utilizes all volunteers.

DISASTER APPLICATION CENTER (DAC)

A facility jointly established by the Federal and State Coordinating Officers within or adjacent to a disaster impacted area to provide disaster victims a "one-stop" service in meeting their emergency and/or rehabilitation needs. It will usually be staffed by representatives of local, state, and federal governmental agencies, private service organizations and certain representatives of the private sector.

DISASTER FIELD OFFICE (DFO)

A central facility established by the Federal Coordinating Officer within or immediately adjacent to disaster impacted areas to be utilized as a point of coordination and control for state and federal governmental efforts to support disaster relief and recovery operations.

DISASTER SERVICE WORKER

Includes public employees and any registere person impressed into service during a State of War Emergency, a State of Emergency, or a Local Emergency by a person having authority to command the aid of citizens in the execution of his duties. It does not include any member registered as an active firefighting member of any regularly organized volunteer fire department, having official recognition, and full or partial support of the county, city, town or district in which such fire department is located.

DISASTER SUPPORT AREA (DSA)

A special facility established on the periphery of a disaster area where disaster relief resources (personnel and material) can be received, stockpiled, allocated and dispatched into the disaster area. A segregated portion of the area may be used for the receipt and emergency treatment of casualty evacuees arriving via short-range modes (air and ground) of transportation and for the subsequent movement of a select number by heavy, long-range aircraft, to adequate medical care facilities. Therefore, such facilities will normally be located at, or in close proximity to, operable airports with runways capable of accommodating heavy aircraft and offering adequate space for supplies, equipment, portable medical facilities and other essential resources. Naval Air Station (NAS) Miramar and Brown Field on Otay Mesa have been designated DSAs in this region.

DISASTER WELFARE INQUIRY (DWI)

A service that provides health and welfare reports about relatives and certain other individuals believed to be in a disaster area and when the disaster caused dislocation or disruption of normal communications facilities precludes normal communications. This is a function of the American Red Cross.

DOSIMETER

An instrument for measuring and registering total accumulated exposure to ionizing radiations.

E

ECONOMIC STABILIZATION

The intended result of governmental use of direct and indirect controls to maintain and stabilize the nation's economy during emergency conditions. Direct controls include such actions as the setting or freezing of wages, prices, and rents or the direct rationing of goods. Indirect controls can be put into effect by government through use of monetary, credit, tax, or other policy measures.

ELECTROMAGNETIC PULSE (EMP)

A large amount of energy is released by the detonation of a high altitude nuclear weapon. A small proportion of this energy appears in the form of a high intensity, short duration, electromagnetic pulse (EMP), somewhat similar to that generated by lightning. EMP can cause damage or malfunction in unprotected electrical or electronic systems. When nuclear weapons are detonated at high altitudes, EMP damage can occur essentially instantaneously over very large areas. All unprotected communications equipment is susceptible to damage or destruction by EMP, including broadcast stations, radios, televisions, car radios, and battery-operated

portable transistor radios.

EMERGENCY (STATE DEFINITION - ALSO SEE LOCAL EMERGENCY AND STATE OF EMERGENCY)

A disaster situation or condition of extreme peril to life and/or property, resulting from other than war or labor controversy, which is or is likely to be beyond local capability to control without assistance from other political entities.

EMERGENCY (FEDERAL DEFINITION)

Any hurricane, tornado, storm, flood, high-water, wind-driven water, tidal wave, tsunami, earthquake, volcanic eruption, landslide, mudslide, snowstorm, drought, fire, explosion, or other catastrophe in any part of the United States which requires federal emergency assistance to supplement state and local efforts to save lives and protect public health and safety or to avert or lessen the threat of a major disaster.

EMERGENCY ALERT SYSTEM (EAS)

This system will replace the Emergency Broadcast System. It is a modern system designed to alert the public of impending disaster or emergency conditions. It will be used for all hazards and will utilize many different media to notify the public, including; Cable TV, AM and FM radio, Satellite and the Weather Service Radio System.

EMERGENCY BROADCAST SYSTEM (EBS)

A system that enables the President and federal, state, and local governments to communicate with the general public through commercial broadcast stations in the event of a war-caused emergency, or, in some cases, large natural disaster. EBS uses the facilities and personnel of the broadcast industry on a voluntary organized basis. It is operated by the industry under rules and regulations of the Federal Communications Commission.

EMERGENCY COMMUNICATIONS CENTER (ECC)

That facility designated by a political entity as a focal point for receiving and transmitting emergency communications.

EMERGENCY MANAGEMENT (Command and Management)

The provision of overall operational control and/or coordination of emergency operations at each level of the Emergency Organization, whether it be the actual direction of field forces or the coordination of joint efforts of governmental and private agencies in supporting such operations.

EMERGENCY OPERATIONS

Comprises all actions that are taken during the emergency period to protect life and property, to care for affected people, and to temporarily restore essential community services.

EMERGENCY OPERATIONS CENTER

A facility used for the centralized direction and/or coordination of emergency operations. An effective **Emergency Operations Center (EOC)** must provide adequate working space and be properly equipped to accommodate its staff, have a capability to communicate with field units and other EOCs, and provide protection commensurate with the projected risk at its location.

EMERGENCY ORGANIZATION

Civil government augmented or reinforced during an emergency by elements of the private sector, auxiliaries, volunteers, and persons impressed into service.

EMERGENCY PLANS

Those official and approved documents which describe principles, policies, concepts of operations, methods and procedures to be applied in carrying out emergency operations or rendering mutual aid during emergencies. These plans include such elements as continuity of government, emergency functions of governmental agencies, mobilization and application of resources, mutual aid, and public information.

EMERGENCY PUBLIC INFORMATION (EPI)

Information disseminated to the public by official sources during an emergency, using broadcast and print media. EPI includes: (1) instructions on survival and health preservation actions to take (what to do, what not to do, evacuation procedures, etc.), (2) status information on the disaster situation (number of deaths, injuries, property damage, etc.), and (3) other useful information (state/federal assistance available).

EMERGENCY PUBLIC INFORMATION CENTER (EPIC)

A facility located within, or immediately adjacent to, an Emergency Operations Center and/or Disaster Field Office, established and utilized as a central point for preparation and release of coordinated emergency public information.

EMMA

Emergency Management Mutual Aid - A formalized system of providing emergency management assistance to emergency managers in jurisdictions which have been impacted by a disaster. It is based on the recognition of the fact that we often don't have the manpower required in an individual jurisdiction to provide continuous 24 hour a day management during a disaster. This is coordinated through State OES and assistance is brought in only to assist, not to direct and control.

EPICENTER

The geographical location of the point on the surface of the earth that is vertically above the earthquake focus. It is near the area of highest intensity shaking.

ESSENTIAL FACILITIES

Facilities that are essential for maintaining the health, safety, and overall well-being of the public following a disaster (e.g., hospitals, police and fire department buildings, utility facilities, etc.). May also include buildings that have been designated for use as mass care facilities (e.g., schools, churches, etc.). These facilities should be constructed to Seismic Zone 4 requirements or be Base-Isolated as well as being in an area that is as "safe" as possible.

EVACUATION

Organized, timed, and supervised dispersal of civilians from dangerous and potentially dangerous areas, their reception and care in safer areas, and their return to their own home communities.

F

FALLOUT SHELTER

A habitable structure, or space therein, used to protect its occupants from radioactive fallout. Criteria (National Shelter Survey requirements) include a protection factor of 40 or greater, a minimum of 10 square feet of floor space per person, and at least 65 cubic feet of space per person. In unventilated underground space, 500 cubic feet of space per person is required. These facilities exist in San Diego County and are listed on some old surveys that were done several years ago. They are no longer maintained or stocked with supplies.

FEDERAL COORDINATING OFFICER (FCO) (FEDERAL DEFINITION)

The person appointed by the President to coordinate federal assistance following an emergency or major disaster declaration.

FEDERAL DISASTER ASSISTANCE

Provides in-kind and monetary assistance to disaster victims, state, or local government by federal agencies under the provision of the Federal Disaster Relief Act and other statutory authorities of federal agencies.

FEDERAL DISASTER RELIEF ACT

Public Law 93-288, as amended, gives the President broad powers to supplement the efforts and available resources of State and local governments in carrying out their responsibilities to alleviate suffering and damage resulting from major (peacetime) disasters.

FIRST AID STATION

A location where first aid may be administered to disaster victims.

FLASH FLOOD

A flood that reaches its peak flow in a short length of time (hours or minutes) after the storm or other event causing it. Often characterized by high velocity flows.

FLOOD OR FLOODING

Temporary inundation of normally dry land areas from the overflow of inland and/or tidal waters, and/or from the usual and rapid accumulation or runoff of surface waters from any source.

FLOOD FREQUENCY

A statistical expression of the average time period between flood equaling or exceeding a given magnitude. For example, a 100-year flood has a magnitude expected to be equaled or exceeded on the average of once every hundred years; such a flood has a one-percent chance of being equaled or exceeded in any given year. Often used interchangeably with "recurrence interval".

FLOOD FRINGE

The portion of the floodplain outside of the floodway or coastal high hazard area but still subject to flooding. Sometimes referred to as "floodway fringe". Also used to refer to areas subject to flooding by water with little or no velocity.

FLOODPLAIN

Is commonly divided into a floodway: which carries flood waters and average flow and a flood-fringe: the land outside the floodway which is inundated by a 100-year flood.

FLOOD WARNING

The issuance and issemination of information about an imminent or current flood.

FLOODWAY

The channel of a watercourse and those portions of the adjoining floodplain required to provide for the passage of the selected flood (normally the 100-year flood) with an insignificant increase in the flood levels above that of natural conditions.

GH

HAZARD ANALYSIS

The analysis of situations or natural events having the potential for doing damage to life, property, resources, or the environment.

HAZARDOUS MATERIAL

Any substance or material in a quantity or form which may be harmful or injurious to humans, domestic animals, wildlife, economic crops or property when released into the environment. Hazardous materials are classified in this plan as chemical, biological, radiological or explosive.

> Chemical - Toxic, corrosive, or injurious substance because of inherent chemical properties and includes but is not limited to such items as petroleum products, paints, plastics, acids, caustics, industrial chemicals, poisons, drugs, mineral fibers (asbestos).
>
> Biological - Microorganisms or associated products which may cause disease in humans, animals or economic crops and includes pathogenic wastes from medical institutions, slaughterhouses, poultry processing plants, and imported unprocessed wood fibers.
>
> Radiological - Any radioactive substance emitting ionizing radiation at a level to produce a health hazard.
>
> Explosive - Material capable of releasing energy with blast effect in a split second upon activation; the released energy usually damages or destroys objects in close proximity to the blast.

I

INCIDENT COMMAND SYSTEM (ICS)

A system designed for the management of emergencies resulting from fires and other natural or man-caused emergencies. ICS can be used during serious multi disciplinary (fire, law, medical) emergencies or for operations involving a single jurisdiction with single or multi agency involvement, or multi jurisdiction/multiagency involvement.

INTELLIGENCE

The process of obtaining information to understand existing conditions, to foresee problems, and to make effective decisions.

INTENSITY (ACTUAL EFFECTS)

A number describing the effects of an earthquake on man, on man-made objects, and on the earth's surface. It is a noninstrumented rating of the degree of shaking at a specified place as determined by experienced investigators working in the field. While an earthquake can have only one magnitude, it can have several intensities. Modified Mercalli Intensity Scale is most commonly used today in the United States. Grades of intensity are indicated by roman numerals I through XII.

J

JOINT EMERGENCY OPERATING CENTER (JEOC)

A facility established on the periphery of a disaster area to coordinate and control multi jurisdictional emergency operations within the disaster area. The JEOC will be staffed by representatives of select local, state and federal agencies and private organizations, and will have the capability of providing a communications link between any Mobile Emergency Operating Centers established in the disaster area and the State Operations Center in Sacramento.

JOINT INFORMATION CENTER

A location which houses the personnel of the State Office of Emergency Services and the Federal Emergency Management Agency, the purpose of which is to disseminate information by all media relating to the disaster.

KL

L.I.F.E. SYSTEM

A disaster warning and emergency public information system unique to the San Diego County. L.I.F.E., which is an acronym for Lifesaving Information for Emergencies, provides updates, advice and educational information to schools, key officials, response agencies and the public via broadcasting and other news media stations.

LIFELINES

Includes the infrastructure for (storage, treatment, and distribution) fuel, communication, and water and sewage systems.

LIQUEFACTION

The phenomena by which the soil loses its ability to support buidings or other heavy objects. It is caused by the vibration of the earthquake loosening up sandy particles which allows underground water to rise towards the surface creating a type of quicksand.

LOCAL EMERGENCY (State Definition)

The duly proclaimed existence of conditions of disaster or of extreme peril to the safety of persons and property within the territorial limits of a county, city or county, or city, caused by such conditions as air pollution, fire, flood, storm, epidemic, riot, or earthquake or other conditions which are or are likely to be beyond the control of the services, personnel, equipment, and facilities of that political subdivision and require the combined forces of political subdivisions to combat.

M

MAJOR DISASTER (Federal Definition)

Any hurricane, tornado, storm, flood, high-water, wind-driven water, tidal wave, tsunami, earthquake, volcanic eruption, landslide, mudslide, snowstorm, drought, fire, explosions, or other catastrophe in any part of the United States which, in the determination of the President, causes damage of sufficient severity and magnitude to warrant major disaster assistance under the Federal Disaster Relief Act, above and beyond emergency services by the Federal Government, to supplement the efforts and available resources of States, local governments, and disaster relief organizations in alleviating the damage, loss, hardship, or suffering caused thereby.

MASS CARE FACILITY

A location such as a school at which temporary lodging, feeding, clothing, registration, welfare inquiry, first aid, and essential social services can be provided to disaster victims during the immediate/sustained emergency period. In San Diego Operational Area, may be used interchangeably with Mass Care Center (MCC) or congregate lodging facility.

MASTER MUTUAL AID AGREEMENT (State Definition)

The California Disaster and Civil Defense Master Mutual Aid Agreement made and entered into by and between the State of California, its various departments and agencies, and the various political subdivisions of the state.

MITIGATION

Action taken which eliminates or reduces the affects of or the probability of the occurrence of a disaster.

MODIFIED MERCALLI SCALE

An observed measurement indicating the shaking intensity or damage caused by an earthquake. Scale has 12 intensity grades which express degree of earth movement. (See Earthquake Intensity)

MULTIPURPOSE STAGING AREA (MSA)

A predesignated location such as a County/District Fairgrounds having large parking areas and shelter for equipment and operators, which provides a base for coordinated localized emergency operations, a rally point for mutual aid coming into an area, and a site for post-disaster population support and recovery activities.

MUTUAL AID AGREEMENT

An agreement in which two or more parties agree to furnish resources and facilities and to render services to each and every other party of the agreement to prevent and respond to any type of disaster or emergency.

MUTUAL AID REGION (State Definition)

A subdivision of the State emergency services organization, established to facilitate coordination of mutual aid and other emergency operations within an area of the state consisting of two or more ~~counties~~ operational areas.

MUTUAL AID STAGING AREA

A temporary facility established by the State Office of Emergency Services within, or adjacent to, affected areas. It may be supported by mobile communications and personnel provided by field or headquarters staff from state agencies, as well as personnel from local jurisdictions throughout the state.

N

NATIONAL WARNING SYSTEM (NAWAS)

The Federal portion of the Civil Defense Warning System, used for the dissemination of warning and other emergency information from the Warning Centers or Regions to Warning Points in each State.

O

OPERATIONAL AREA (State Definition)

An intermediate level of the state emergency services organization, consisting of a county and all political subdivisions within the county area.

PQ

PLATE TECTONICS

The study of the origin, development and movement of the broad structural plates of the earth. The movement of the plates accounts for the earthquake, volcanic and tsunami activity experienced around the world.

R

RACES

Radio Amateur Civil Emergency Service, a radio-communication service carried on by licensed non-commercial radio stations while operating on specifically designated segments of the regularly allocated amateur frequency bands under the direction of authorized local, regional, Federal civil defense officials pursuant to an approved civil defense communications plan.

RADIOACTIVE FALLOUT

The process or phenomenon of the gravity-caused fallback to the earth's surface of particles contaminated with radioactive materials from a cloud of this matter formed by a nuclear detonation. The term is also applied in a collective sense to the contaminated particulate matter itself. The early (or local) fallout is defined, somewhat arbitrarily, as those particles which reach the earth within 24 hours after a nuclear explosion. Delayed (worldwide) fallout consists of the smaller particles which ascend into the upper troposphere and into the stratosphere and are carried by the winds to all parts of the earth. Delayed fallout is brought to earth mainly by rain or snow, over extended periods ranging from months to years with relatively little associated hazard.

RADIOLOGICAL PROTECTION

The organized effort, through warning, detection, and preventive and remedial measures, to minimize the effect of nuclear radiation on people and resources.

RADIOLOGICAL MONITOR

An individual trained to measure, record, and report radiation exposure and exposure rates; provide limited field guidance on radiation hazards associated with operations to which he/she is assigned; and perform operator's checks and maintenance on radiological instruments.

REOC

The Regional Emergency Operations Center, located in Los Alamitos and staffed by the State Office of Emergency Services. It serves as a coordination point for resource requests from Operational Areas.

S

SHELTER AREA

An area, inside existing structures, which by reason of location, may be expected to provide some degree of safety for people, records, and equipment.

STANDARD OPERATING PROCEDURES (SOPs)

A set of instructions having the force of a directive, covering those features of operations which lend themselves to a definite or standardized procedure without loss of effectiveness.

STATE COORDINATING OFFICER (SCO) (Federal Definition)

A person appointed by the Governor to act for the State in cooperation with the Federal Coordinating Officer.

STATE EMERGENCY ORGANIZATION

The agencies, boards, and commissions of the executive branch of state government and affiliated private sector organizations. In California, the Governor's Office of Emergency Services.

STATE OF EMERGENCY (State Definition)

A duly proclaimed existence of conditions of disaster or of extreme peril to the safety of persons and property within the state caused by such conditions as air pollution, fire, flood, storm, epidemic, riot, or earthquake or other conditions, other than conditions resulting from a labor controversy, or conditions causing a "state of war emergency", which conditions, by reason of their magnitude, are or are likely to be beyond the control of the services, personnel, equipment, and facilities of any single county, city and county, or city and require the combined forces of a mutual aid region or regions to combat.

STATE OF WAR EMERGENCY (State Definition)

The condition which exists immediately, with or without a proclamation thereof by the Governor, whenever the state or nation is directly attacked by an enemy of the United States, or upon the receipt by the state of a warning from the federal government that such an enemy attack is probable or imminent.

STATE OPERATIONS CENTER (SOC)

A facility established by the State Office of Emergency Services Headquarters for the purpose of coordinating and supporting operations within a disaster area, and controlling the response efforts of state and federal agencies in supporting local governmental operations. The SOC will be staffed by representatives of state and federal agencies and private organizations, and will have the capability of providing a communications link to a Joint Emergency Operating Center established on the periphery of a disaster area and to any Mobile Emergency Operating Centers established in the disaster area.

STORM SURGE

A rise above normal water level on the open coast due only to the action of wind stress on the water surface. A storm surge resulting from a hurricane or other intense storm also includes the rise in level due to atmospheric pressure reduction as well as that due to wind stress. A storm surge is more severe when it occurs in conjunction with a high tide.

TUVWXZY

TEMPORARY EVACUATION POINTS

Large generally open areas such as parking lots where people to be evacuated will gather until transportation arrives or a shelter location is announced. Little if any services will be provided.

TRAFFIC CONTROL POINTS (TCP)

Places along movement routes that are manned by emergency personnel to direct and control the flow of traffic.

TORNADO

Relatively short-lived local storms. They are composed of violently rotating columns of air that descend in the familiar funnel shape from thunderstorm cloud systems. Tornadoes usually travel from west to east.

TSUNAMI

One or a series of long-period great sea waves generated by earth movement or volcanic eruption under the sea. Often incorrectly called tidal waves, "tsunami" is a Japanese word which means "waves that come into harbors".

UNIFIED RADIO COUNCIL (URC)

A coalition of radio groups in San Diego Operational Area who have banded together to coordinate emergency communications resources. Composed of ARES, RACES, REACT and other radio groups.

SPECIFIC HAZARDS

I. Major Earthquake

A major earthquake occurring in the San Diego County Operational Area could cause a great many casualties, extensive property damage, fires, flooding, and other ensuing hazards. The effects could be aggravated by aftershocks and by the secondary effects of fire, landslides, and dam failure. The time of day and season of the year would also have a profound effect on the number of dead and injured and the amount of damage sustained. Such an earthquake could be catastrophic in its effect on the population and could exceed the response capability of the Operational Area. Damage control and disaster relief support would be required from all local governments and private organizations as well as the state and federal governments.

Extensive search and rescue operations would be required to assist trapped or injured persons. Emergency medical care, food and temporary shelter would be needed by injured or displaced persons. Identification and burial of the dead would pose difficult problems; and public health would be a major concern. Mass evacuation could be essential to save lives, particularly in areas below dams. Many families would be separated, particularly if the earthquake should occur during working hours, and a personal inquiry or locator system would be imperative to maintain family support systems. Emergency operations could be seriously hampered by the loss of communications; damage to transportation routes; and by the disruption of public utilities and services.

Extensive local, state and federal assistance would be immediately required and could continue over an extended period. These recovery efforts would require activities such as: removal of debris and clearing roadways, demolishing unsafe structures, assisting in reestablishing public services and utilities, and providing continuing care and welfare for the affected population, including temporary housing for displaced persons.

A. History

Historical records reveal damaging earthquakes in the San Diego region during 1800, 1812, 1862 and 1986. Although it is impossible to accurately identify many of the faults associated with the earlier quakes, it is known that the 1986 quake occurred on the Coronado Bank Fault and that the other quakes occurred as a result of one of the faults along the coastal region including the Rose Canyon Fault, or the Coronado Bank Fault. The earliest recorded damaging earthquake in the San Diego area was the November 22, 1800 earthquake of an estimated 6.5 magnitude, which damaged both the San Diego and San Juan Capistrano Missions. In 1890 and 1899 the San Jacinto Fault produced quakes stronger than 6.0 magnitude. In 1910, the Elsinore Fault produced a 6.0 magnitude quake, the largest to date on the fault. The San Clemente Fault was responsible for a 5.9 magnitude quake in 1951. In 1968, the San Jacinto Fault was responsible for a 6.8 magnitude earthquake near Ocotillo Wells. (See Figure 1, Major Fault Lines.)

B. Local Faults

1. San Andreas Fault

According to the theory of plate tectonics, the earth's crust is fractured into a series of "plates" that have been moving very slowly over the Earth's surface for millions of years. Two of these moving plates meet in western California; the boundary between them is the San Andreas Fault. The Pacific Plate (on the west) moves northwestward relative to the North American Plate (on the east), causing earthquakes along the fault. The San Andreas is the major fault on an intricate fault network that cuts through the California coastal region. The entire San Andreas fault system is more than 800 miles long and extends to depths of at least 10 miles within the Earth. Many smaller faults branch from and join the San Andreas Fault System. Most scientists agree that a "great" earthquake, one stronger than 7.5 magnitude on the Richter scale, is inevitable somewhere along the San Andreas. On October 17, 1989, a 7.1 magnitude earthquake occurred in the southern Santa Cruz Mountains. It is presumed that the earthquake, which was responsible for at least 63 deaths, over 3,500 injuries and approximately five and one half billion dollars worth of damage, occurred along the northern portion of the San Andreas fault zone. The Loma Prieta earthquake (as it is commonly referred to) is the largest earthquake to strike the San Francisco Bay area since the 1906 San Francisco earthquake (estimated 8.3 magnitude).

The Northridge earthquake which occurred on January 17, 1994 was also significant from the standpoint that it caused similar death and destruction and was the first earthquake to be identified as occurring on a vertically thrusting fault. The 6.8 magnitude Northridge earthquake was responsible for 57 deaths, over 9,000 injuries and at least 20 billion dollars worth of damage.

The mounting concern about the future results from the lack of recent faulting activity along the southernmost section of the San Andreas, running from the Grapevine southeast to the Salton Sea. This section has had no major ruptures for about 200 years. Geological evidence suggests there has not been a great earthquake there for at least 560 years. This segment of the fault is considered to be "locked" and waiting to release hundreds of years worth of stored up energy. A U.S. Geological Survey study projects that there is a 60% chance of a magnitude 7 or greater on the southern portion of the San Andreas within the next 25-30 years.

2. Elsinore Fault

The Elsinore Fault is a branch of the San Andreas Fault System. Although it originates near downtown Los Angeles, it enters the San Diego County Operational Area in north county through the communities of Rainbow and Pala; it then travels in a southeasterly direction through Lake Henshaw, Santa Ysabel, Julian; then down into Anza-Borrego Desert State Park at Agua Caliente Springs, ending at Ocotillo. The Elsinore Fault is approximately 40 miles east of downtown. It is estimated that a maximum probable

event on this fault is on the order of a magnitude 6.9 to 7.0 on the Richter scale with an approximate 100-year recurrence interval. The maximum credible event for this fault is considered to be a magnitude 7.6 earthquake. Of primary concern are the two aqueducts within the Operational Area that cross over the fault. Depending upon the magnitude of an earthquake on this fault, the potential is high for a severe disruption of the Operational Area water supply.

3. **San Jacinto Fault**

The San Jacinto Fault is also a branch of the San Andreas Fault System. The fault branches off from the major fault as it passes through the San Bernardino Mountains. Traveling southeasterly, the fault passes through Clark Valley, Borrego Springs, Ocotillo Wells, and then east toward El Centro in Imperial County. The San Jacinto Fault is the most active large fault within San Diego Operational Area. It is estimated that a maximum probable event on this fault is on the order of a magnitude 7.5 to 7.8. This type of event would cause severe damage in the town of Borrego Springs and Ocotillo Wells, with moderate damage in the coastal area. This fault was responsible for a magnitude 6.5 quake near Ocotillo Wells that occurred in 1968.

4. **Rose Canyon Fault**

The Rose Canyon Fault may be a link between the Newport-Inglewood fault, which originates to the north in Los Angeles, and the Vallecitos and San Miguel Fault Systems to the south in Baja California. The Newport-Inglewood fault was the source of the 6.3 magnitude 1933 Long Beach earthquake. The San Miguel Fault was the site of two 1956 earthquakes of magnitude greater than 6.0, and one in 1949 greater than 5.7. All were within 65 km of San Diego. The Rose Canyon Fault extends inland from La Jolla Cove, south through Rose Canyon, along the east side of Mission Bay, and out into San Diego Bay. The Rose Canyon Fault is considered to be the greatest potential threat to San Diego as a region, due to its proximity to areas of high population. The fault is considered to be active with a maximum probable event of magnitude 6.9. If, in fact, this fault is a link between the two major fault systems, the magnitude of the maximum probable quake is increased substantially, since activity along the fault in recent history has been almost nonexistent. Some geologists think that the Rose Canyon Fault may be "locked" and that to release the building strain, 25 3.5 magnitude earthquakes would need to occur each year.

5. **Coronado Bank Fault**

The Coronado Bank Fault extends in a northwest-southeast direction, about 10 miles offshore. The Coronado Bank Fault was responsible for the June 29, 1983 quake measuring a magnitude 4.6, with an epicenter about 10 miles west of the International Border. It is estimated that a maximum credible event on this fault is on the order of a magnitude 7.2.

6. **San Clemente Fault**

The San Clemente Fault which lies about 40 miles off La Jolla is the largest offshore fault. It is 110 miles or more in length and was the cause of a magnitude 5.9 earthquake offshore in 1951. It is estimated that a maximum probable event on this fault would be a magnitude 7.7.

C. Damage Scenarios

In the last several years much attention has been given to the probability of major earthquakes occurring within or near San Diego Operational Area. Several preliminary studies have indicated that San Diego could suffer significant damage from a major earthquake along the Rose Canyon, Elsinore, San Jacinto or San Andreas (southern segment) faults. The following is a threat summary based on some of the hypotheses that geologists have put forth. For the purposes of this discussion, we will limit our focus on a postulated maximum credible magnitude 6.9 earthquake on the Rose Canyon fault.

1. Intensity

The postulated maximum credible magnitude 6.9 Rose Canyon Fault earthquake would produce a relatively small onshore intensity IX area, including Mission Valley east of Highway 163, Mission Bay, Pacific Beach, coastal La Jolla, Sorrento Valley and coastal north county communities from Del Mar to Cardiff-by-the-Sea.

The rest of coastal metropolitan San Diego plus El Cajon, Santee, Poway, Escondido, and San Marcos would experience intensity VIII. Areas of firmer ground and/or areas which lie further inland will generally be subjected to intensity VII or less. (See Figure 2, Modified Mercalli Intensity Scale/Richter Magnitude Scale)

2. Structure Damage

a. Older residential construction is predominant on the mesa south of Mission Valley (Mission Hills, Hillcrest, North Park, Kensington), Old Town, and parts of Point Loma, La Jolla, Ocean Beach, Pacific Beach, Coronado, and National City. Some of these are within the forecasted intensity IX zone. It has been observed that nearly 750 unreinforced masonry buildings exist in this high risk area.

b. Older light industrial and commercial buildings are primarily in the Downtown area. Since much of the commercial growth of San Diego occurred during and since World War II, a large concentration of pre-1940 industrial construction does not exist, as it does in other cities. Redevelopment in downtown areas such as Horton Plaza and the Gaslamp Quarter has eliminated many older buildings. An intensity of VIII could result in considerable damage to older, unreinforced masonry buildings as well as older inadequately reinforced structures.

c. Modern high-rise buildings in Downtown San Diego, Coronado, Loma Portal, Mission Valley and Mission Bay may experience significant damage resulting from ground failure. This will strongly depend on the nature of the individual building foundations.

3. Lifeline Damage Assessment

For the purpose of this overview, lifelines will be defined as those systems which transport or distribute goods, people, energy, information, and waste.

The effect on lifeline components depends critically on event location and size. Surface rupture clearly poses the greatest threat to lifelines. In the case of the postulated Rose Canyon Fault earthquake, less than one-half of the impacted fault is onshore. It is estimated that in a magnitude 6.9 event the surface displacement could be as much as 80cm (31.5 inches). Obviously this amount of movement would cause severe damage of lifelines crossing the fault zone.

4. Highways and Roads

The Rose Canyon Fault crosses and runs closely parallel to several main roads and highways. One can assume that Torrey Pines Road near La Jolla Shores, and Ardath Road as well as Interstate 5 (and roads crossing it) from about La Jolla Village Drive to Old Town will all be subject to closure following the postulated earthquake. Although total collapse is not expected, it is possible that vertical displacement will occur, prohibiting normal use. It is also possible that shaking may induce failure of the built-up approaches to these roads and highways, even though the structures themselves may survive intact. The closure of these roads will seriously impair access to emergency workers trying to assist the affected areas, particularly the beach areas.

5. Gas and Electric

Gas feeder lines running through Mission Valley cross the fault between Mission Bay and Old Town. It is expected that fault displacement will be small in this area, however, the possibility of a gas line rupture and potential explosion would remain. Although no long-term damage to overhead transmission lines is anticipated by San Diego Gas and Electric (SDG&E), it is very probable that transmission of a significant portion of the power to affected communities will be interrupted. SDG&E engineers estimate that their Rose Canyon Substation will be only 25% functional immediately following the earthquake and 50% functional after a few days. This decrease in electrical power may cause widespread shortages/outages throughout the beach area.

6. Water and Sewer

The damage to water and sewer lines will be immediate. Primary water lines that feed Pacific Beach cross the fault near Balboa Avenue. A 30-inch line that provides water

to La Jolla crosses the fault near La Jolla Shores. Chances are slim that emergency workers will be able to rely on utility water in a widespread area from Point Loma to La Jolla Shores.

The effects of sewer line ruptures along the fault line will cause even greater problems. Twenty-four inch and 42-inch sewer lines run south from Ardath Road, paralleling Interstate 5 and West Mission Bay Drive. These lines are within the fault zone and extend to Mission Valley. At Friars Road a main east-west sewer line enters the fault zone and adds to the variety of problems in emergency response.

Road flooding caused by breaks in either the water or sewer system and by overloading the sewer system may hamper ground transportation. The health aspects of sewage spills may not pose an immediate danger, but require prompt attention to avoid a longer term hazard.

7. Other Damages and Effects

A review of the potential effects of this postulated magnitude 6.9 earthquake should include analysis of the following areas: airports, essential facilities, communications, military, railroads, marine facilities (particularly Mission Bay), petroleum fuels, and nearby water reservoirs, tsunamis, landslides, disruption of water supply, and liquefaction.

The major air facilities (public, private, and military) are expected to have runways sufficiently intact to be capable of landing disaster relief military C-130 and C-141 cargo aircraft.

Figure 1
MAJOR SOUTHERN CALIFORNIA FAULTS

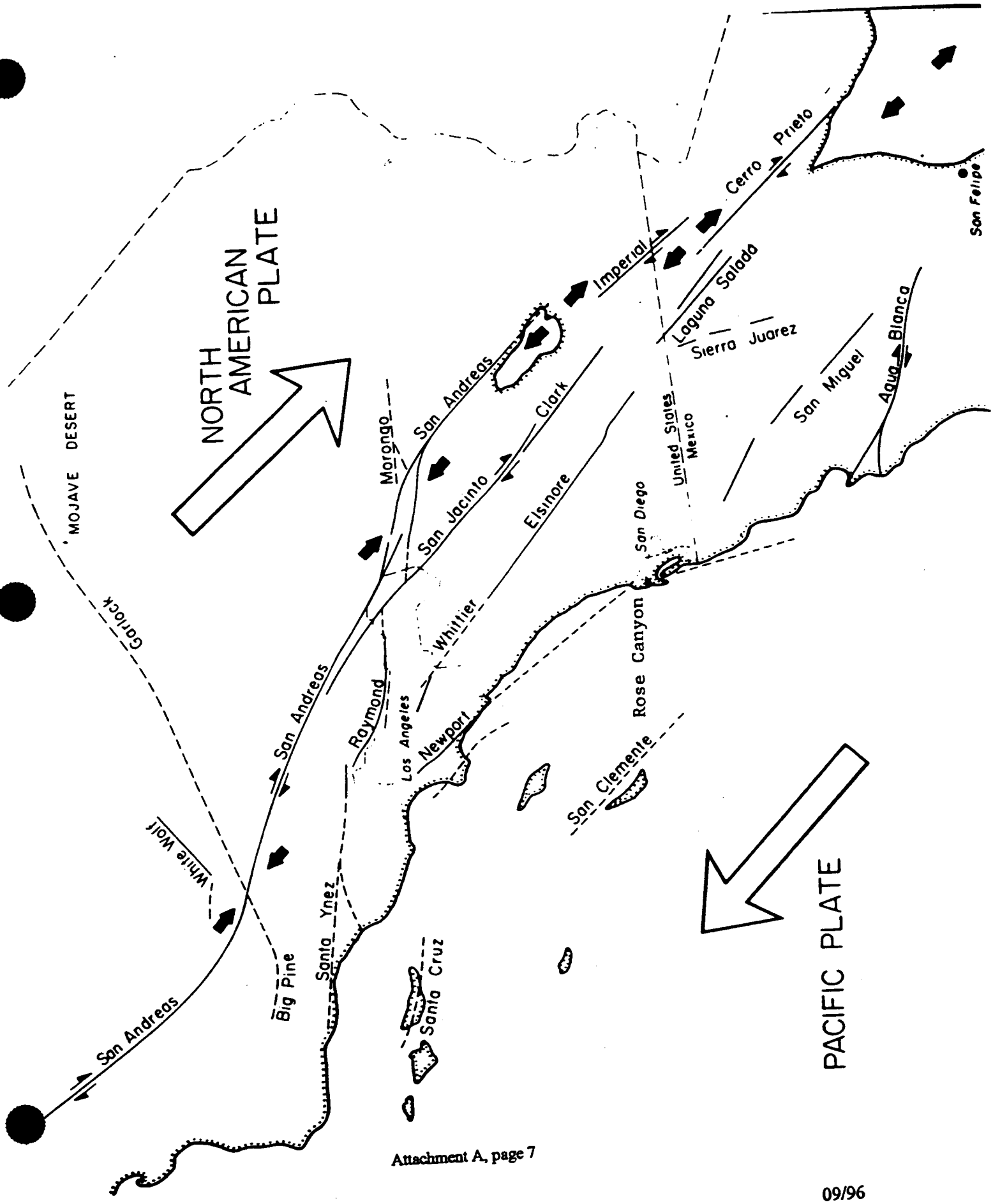


Figure 2

MODIFIED MERCALLI INTENSITY SCALE

I. Not felt except by very few under especially favorable conditions.

II. Felt only by a few persons at rest, especially on upper floors of buildings. Delicately suspended object may swing.

III. Felt quite noticeably indoors, especially on upper floors of buildings, but many people do not recognize it as an earthquake. Standing motor cars may rock slightly. Vibration like passing of truck. Duration estimated.

IV. During the day felt indoors by many, outdoors by few. At night some awakened. Dishes, windows, doors disturbed; walls make creaking sound. Sensation like heavy truck striking building. Standing motor cars rock noticeably.

V. Felt by nearly everyone; many awakened. Some dishes, windows, etc., broken; a few instances of fallen plaster or damaged chimneys. Damage slight.

VI. Felt by all; many frightened and run outdoors. Some heavy furniture moved; a few instances of fallen plaster or damaged chimneys. Damage slight.

VII. Everybody runs outdoors. Damage negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable in poorly built or badly designed structures; some chimneys broken; noticed by persons driving motor cars.

VIII. Damage slight in specially designed structures; considerable in ordinary substantial buildings with partial collapse; great in poorly built structures. Panel walls thrown out of frame structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned. Sand and mud ejected in small amounts. Changes in well water. Persons driving motor cars disturbed.

IX. Damage considerable in specially designed structures; well designed frame structures thrown out of plumb; great in substantial buildings, with partial collapse. Buildings shifted off foundations. Ground cracked conspicuously. Underground pipes broken.

X. Some well-built structures destroyed; most masonry and frame structures destroyed with foundations; ground badly cracked. Rails bent. Landslides considerable from river banks and steep slopes. Shifted sand and mud. Water splashed (slopped) over banks.

XI. Few, if any, (masonry) structures remain standing. Bridges destroyed. Broad fissures in ground. Underground pipelines completely out of service. Earth slumps and land slips in soft ground. Rails bent greatly.

XII. Damage total. Practically all works of construction are damaged greatly or destroyed. Waves seen on ground surface. Lines of sight and level are distorted. Objects are thrown upward into the air.

II. HAZARDOUS SUBSTANCE EMERGENCIES

A. Background

The San Diego Operational Area covers approximately 4,200 square miles, and houses a large and diverse industry base. A wide variety of hazardous substances are used or generated throughout the Operational Area. Emergencies involving the release of these substances occur daily. Although these incidents may potentially occur anywhere in the Operational Area, the majority occur in areas of highest population density. For example, as many as 85% of the incidents that the HAZMAT Incident Response Team (HIRT) responds to are contained within the I-5 - 805 corridor.

In the present context, the term "hazardous substance" is understood to include both hazardous materials and hazardous wastes. A hazardous material is defined as "any substance or mixture of substances which is toxic, corrosive, flammable, or reactive, if such a substance or mixture of substances may cause substantial injury, serious illness or harm to humans, domestic livestock or wildlife." These substances are commonly used in industry, agriculture, medicine and research. Hazardous wastes are a subcategory of hazardous materials, and include the chemical by-products of industrial processes that utilize hazardous materials.

Emergencies involving hazardous substances are often generically termed "hazardous materials incidents" or "hazardous materials spills." Included are any releases of hazardous substances into the water, ground, or air which pose a real or potential threat to the public health or the environment.

B. Types of Hazardous Substance Emergencies

1. Illegal Drug Manufacturing

   Illegal methamphetamine manufacturing occurs in all parts of the San Diego County Operational Area. Meth labs have been found in cars, vans, trucks, rental housing, private residences, mini-storage warehouses, and motels. Wastes from the manufacture of illegal drugs have been found in remote as well as populated areas, on private and public property, in parks, school yards and play areas.

2. Transportation

   A great number of hazardous materials incidents in the San Diego Operational Area involve transportation accidents on streets and roadways. Because a number of factors make rail shipment impractical, hazardous materials are transported primarily by truck within the Operational Area. Since the Operational Area's freeways and many of its surface streets are often congested, this increases the possibility that a hazardous materials transporter may be involved in an accident.

3. Fixed Facilities

a. Hazardous Materials Handlers and Hazardous Waste Generators

Many facilities in the San Diego Operational Area store and use large numbers of hazardous materials, and generate numerous hazardous wastes. Of particular concern are the following facilities:

- The Fallbrook Naval Weapons Station
- North Island and Miramar Naval Air Stations
- The Submarine Base
- Naval Research and Development (NRAD)
- The 32nd Street Naval Base
- Camp Pendelton
- The Naval Amphibious Base
- Southern California Edison
- SDG&E

Academic institutions and allied industries, particularly their research components, handle many hazardous substances. These include UCSD, the UCSD Medical School and Biological Research facilities, and pharmaceutical and genetic engineering facilities. Most of these facilities are concentrated in the La Jolla/Torrey Pines area.

Several aerospace and electronics industries in the San Diego Operational Area also store and use large quantities of hazardous substances. These include General Dynamics, Rohr Industries, Hughes Aircraft, TRW, Teledyne Ryan, and Martin Marietta.

Agriculturally-based establishments are also of concern because they store large amounts of pesticides.

b. Treatment, Storage, and Disposal Facilities (TSDFs)

Although efforts to solve hazardous waste problems currently emphasize waste reduction, many types of facilities are necessary to effectively manage the Operational Area's hazardous waste stream. There are six main groups of hazardous waste facilities:

- Transfer and Storage Facilities
- Aqueous Treatment Facilities
- Organics Recycling Facilities
- Solidification or Stabilization Facilities
- Incinerators
- Residuals repositories

Not all of these facility types are currently found in the San Diego County Operational Area. Each facility presents special concerns with respect to hazardous substance emergencies. This includes issues such as the proximity of the facility to sensitive populations, the types of wastes treated, and the nature of the treatment processes used.

4. Releases to Surface Waters

Hazardous substance emergencies involving releases to surface waters may include bays, estuaries, streams, or lakes. There are many possible sources of releases to surface waters. These include releases of sewage both from overflows and breaks of lines, spills from commercial and recreational vessels, intentional and unintentional spills through storm drains, and releases from businesses and industries adjacent to bodies of water.

5. Abandoned Wastes/Illegal Disposal

Abandoned wastes typically include substances left behind by facilities and businesses vacating premises.

Illegal disposal of hazardous waste includes activities such as night dumping along roadsides and in open areas, and underground burial. Since the early 1980s, the implementation of strict laws and regulations, such as the Resource Conservation and Recovery Act (RCRA), has made these practices more difficult than in the past. However, a number of factors ensure that such activities may continue to occur. These include the following:

a. As of August 8, 1990 the land disposal of all untreated hazardous waste is prohibited under the Hazardous and Solid Waste Amendments of RCRA.

b. The costs of proper disposal are high and continue to increase.

c. The San Diego Operational Area's current treatment and disposal capabilities are inadequate to handle the hazardous waste generated within the Operational Area.

d. Treatment and disposal facilities for hazardous wastes must be carefully selected, operated, and monitored to ensure the safety of human lives and the environment.

Because of these issues, and because industrial processes will continue to generate hazardous waste, unauthorized disposal of these materials will continue to be an issue of concern. Therefore, emergency responses will continue to be required for events resulting from such activities for some time to come.

III. IMMINENT/ACTUAL FLOODING

Floods are a natural component of the hydrological cycle. The hydrological cycle is the evaporation of water from the sea into the air, back onto the land as precipitation, returning eventually to the sea. Sometimes rain falls in such abundance that the ground becomes saturated and streams, rivers and lakes exceed their natural capacities as the water attempts to find its way to the sea.

Floods strike in a variety of forms including: sea surges driven by strong storms; tsunamis resulting from seismic activity; inland riverine flooding resulting from excess rain, reservoir failure, melting snow, a waterway blockage from landslide, or the inappropriate placement of structures along a floodplain. A flood is any relatively high streamflow which overtops the natural or artificial banks in any reach of a stream. Floods are compared on the basis of their recurrence over a period of years (i.e., the average number of times a flood of a given magnitude is likely to occur). The 100-year flood is a flood which has the probability of being equaled or exceeded once every 100 years. It is also expressed as a 1% probability of being equaled or exceeded in any given year.

Floods can generally be classified as slow-rise or flash floods. Slow-rise floods are often preceded by a gradual increase in water level, and with it, an increased concern for preparedness. Traffic control, news releases, sandbagging, and evacuation are all tools that can be used in combating the slow-rise flood. Conversely, flash floods can happen anywhere and often occur without much warning. They are most common in mountain canyons, dry creek beds, and high deserts. A sudden thunderstorm or heavy rain, dam failure or sudden spill can cause a flash flood. There are no slow-rise floods in San Diego County. The watersheds are all small enough that reaction time is relatively short. The National Weather Services's definition of a flash flood is a flood occurring in a watershed where the time of travel of the peak of flow from one end of the watershed to the other is less than six hours. There are no watersheds in San Diego County that have a longer response time, hence the need for immediate response when heavy rain occurs. Flash floods in this county range from the stereotypical wall of water to a gradually-rising stream.

Once flooding begins, personnel will be needed to assist in rescuing persons trapped by flood water, securing utilities, cordoning off flooded areas and controlling traffic. These actions often overtax local agencies, requiring outside resources.

A. Local Situation

The San Diego Operational Area is normally a land of little rainfall and dry rivers. Geologic conditions have produced streams which run across deep beds of alluvial sand and gravel for most of their courses, so that normal low-flow drainage takes place underground. In spite of these hydrological conditions, severe floods have occurred in the Operational Area.

One unusual characteristic of the hydrology of the San Diego Operational Area should be kept in mind when considering the possibility of flooding. The southern California-western Arizona area has the greatest variability of runoff in the United States. The western watershed of the San Diego Operational Area extends about 80 miles north from the Mexican border and some 45 miles east from the Pacific Ocean. From west to east, there are about 10 miles of rolling, broken

coastal plain; 10 to 15 miles of foothill ranges with elevations of 600 to 1,700 feet; and approximately 20 miles of mountain country where elevations range from 3,000 to 6,000 feet. This western watershed constitutes about 75% of the Operational Area, with the remaining 25% mainly desert country.

Within the Operational Area there are over 3,600 miles of rivers and streams which threaten residents and over 200,000 acres of flood-prone property. Seven principle streams originate or traverse through the unincorporated area. From north to south they are the Santa Margarita, San Luis Rey, San Dieguito, San Diego, Sweetwater, Otay, and Tijuana Rivers.

In recent years, flood damage in the Operational Area has resulted mainly from intense pockets of rainfall striking areas 5 to 20 miles in diameter. This localization is due to two general effects; (1) during widespread winter storms, isolated rain cells or squalls can enter from the ocean and become locally intense as lifting occurs in the hills and (2) in summer, localized thermal updrafts can generate extremely severe precipitation, particularly when global weather conditions bring moist upper air to California from the Gulf of Mexico. Some of the county's largest flash floods have occurred in the deserts in east county. The most dramatic flooding occurs when a tropical storm affects the desert area directly. Summer thunderstorms in the desert foothills frequently send small flash floods rushing across roads.

B. Reservoirs

Approximately 40 reservoirs have been built in the Operational Area for water conservation, 12 of which are major reservoirs. The reservoirs on the upper reaches can reduce the levels of the flood peaks in the lower basins. The reservoir's effectiveness, as a means of flood control, is highly dependent upon the water level in the reservoir at the time of the storm. However, these facilities are designed and operated for water conservation and storage, and are not expected to eliminate the major part of the flood hazard on any of the streams in the region. With the exclusion of Barrett Lake, which has a small reserve storage capability after the reservoir is full to the spillway, no reservoir in San Diego County has any designed flood control capability. (See Figure 3, Rivers and Reservoirs.)

C. ALERT Flood Warning System

Following the 1980 floods, which caused approximately $120 million in damage, a joint project between the County of San Diego, the City of San Diego, and the National Weather Service was funded in order to devise the ALERT rainfall/runoff data collection system. In 1982, the ALERT System was completed, becoming the first countywide real-time flood warning system in the nation.

The system currently consists of 47 stations that report real-time data by radio to receiving base stations located at the County Flood Control office in Kearny Mesa, the National Weather Service office in Rancho Bernardo, and the National Weather Service office in Oxnard. Near-real-time data is reported to the River Forecast Center in Sacramento by means of telephone

transfer. Rainfall is reported by 46 of these stations, streamflow is reported by 6 stations, lake level is reported by 10 stations, and standard weather station data is reported by 10 stations (Figure 4).

Because of the system, it is now possible to stay well informed on the present status of a storm or a particular river through the combined efforts of prediction from the National Weather Service and the field data produced by the ALERT System.

D. Drainage Basins

A drainage basin is comprised of all the land that drains into a given stream. Drainage basins are generally named after the principal stream flowing into the ocean or bay. The principal drainage basins in the Operational Area are as follows, from north to south:

1. San Mateo Creek

   Area: 218 square miles -- 25% in Riverside County -- 10% in Orange County
   Tributaries: San Onofre, Las Pulgas and Aliso Creeks
   Dams: None
   Land Use: Military reservation, National Forest
   Flood Damage: Roads, communications

2. Santa Margarita River

   Area: 750 square miles -- 75% in Riverside County
   Tributaries: Del Luz, Temecula and Murrieta Creeks
   Dams: Vail Dam in Riverside County
   Land Use: Military reservation
   Flood Damage: Roads, cropland, communications

3. San Luis Rey River

   Area: 565 square miles
   Tributaries: Fallbrook, Moosa Canyon and Pauma Creeks
   Dams: Lake Henshaw
   Land Use: Rural, some urban development in Bonsall, San Luis Rey, and Oceanside
   Flood Damage: Roads, crops, homes, utilities

4. Escondido Creek

   Area: 211 square miles, including Buena Vista, San Marcos and Agua Hedionda Creeks
   Tributaries: Reidy Creek
   Dams: Lake Wohlford, Dixon
   Land Use: Rural, urban development throughout Escondido with flood control systems
   Flood Damage: Homes, crops, utilities, lagoon-marsh area

5. San Dieguito River

Area: 350 square miles
Tributaries: Santa Ysabel, Santa Maria, and Del Mar Creeks
Dams: Sutherland, Lake Hodges, Poway, Ramona, San Dieguito Reservoir
Land Use: Rural, urban development in Del Mar
including race track/fairgrounds

6. Los Penasquitos Creek

Area: 166 square miles, including Rose and San Clemente Canyons
Tributaries: Sorrento Creek, Carroll Canyon, Poway Creek
Dams: Miramar
Land Use: Rural, urban development in Poway and Sorrento Valley
Flood Damage: Extensive flooding in Poway, Sorrento Valley

7. San Diego River

Area: 483 square miles
Tributaries: Boulder, San Vicente, Alvarado, Los Coches and Forester Creeks; Sycamore, Murphy Canyons
Dams: Cuyamaca, El Capitan, San Vicente, Murray, Padre
Land Use: Rural in uplands: extensive development
in Lakeside, Santee and Mission Valley areas

8. Sweetwater River

Area: 242 square miles, including Chollas, Toyon Creeks
Tributaries: Peterson, Harbison, Spring Valley and Paradise Creeks
Dams: Loveland, Sweetwater
Land Use: Rural in uplands; extensive development in lower reaches; crops
Flood Damage: Extensive residential/ commercial development in Chula Vista, National City, and Bonita; roads, utilities, golf courses; industrial, and marine docks

9. Otay River

Area: 124 square miles
Tributaries: Jamul, Dulzura and Poggi Canyon Creeks
Dams: Otay (lower and upper)
Land Use: Rural, crops, urban development
Flood Damage: Roads, crops, utilities, salt ponds at San Diego Bay

10. Tijuana River

Area: 465 square miles in United States, approximately 1,860 square miles in Mexico
Tributaries: Pine Valley, Cottonwood, Campo and La Posta Creeks
Dams: Morena, Barrett, Rodriguez, El Carrizo

Land Use: Rural, crops, extensive development in Tijuana, urban development in Imperial Beach
Flood Damage: Roads, crops, utilities, lagoon area, extensive commercial and residential development in Mexico

E. Emergency Response

The Office of Disaster Preparedness plays a vital role in weather-related emergencies. It serves as the notification link between the National Weather Service and the outside world. All weather watches and warnings are called in to ODP by the National Weather Service. The extent of response and notification is dependent upon the nature and circumstances of the weather alert or forecast.

In the event flooding should occur, the County Department of Public Works, Hydrology Division of the Flood Control Section, maintains the ALERT Flood Warning System. During the winter season, ODP receives daily information on the status of reservoirs, rivers, and stream levels from Hydrology. Level data is also available from the River Forecast Center in Sacramento. In combination with the 100-year floodplain maps and streamflow models, it is possible to "anticipate" the areas of concern well in advance of an actual occurrence. The procedures, notification lists, and flood and weather related definitions are contained in the SOP for Flood and Weather Alerts.

RIVERS AND RESERVOIRS

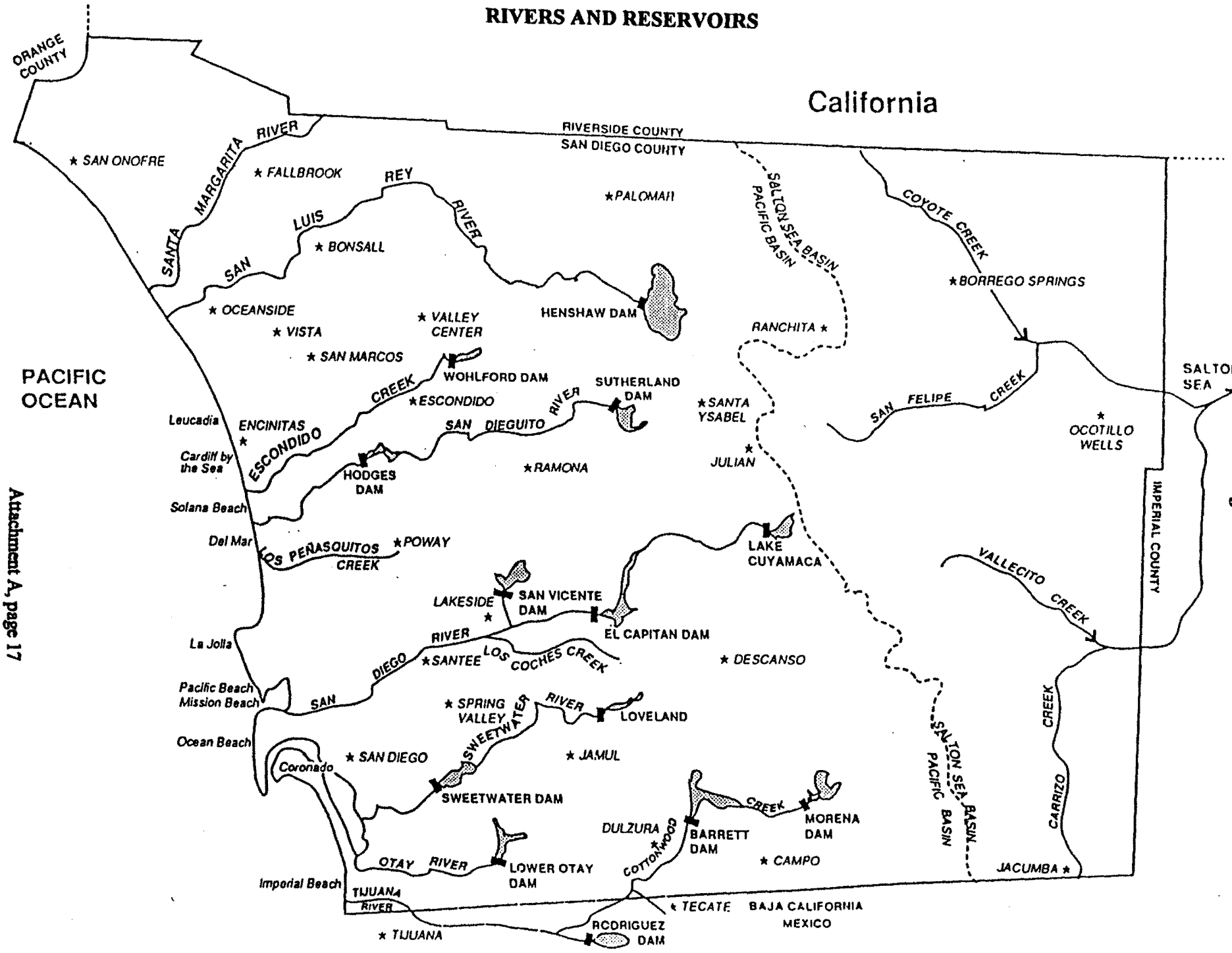


Figure 3

IV. IMMINENT/ACTUAL DAM FAILURE

For centuries, dams have provided mankind with essential benefits such as water supply, flood control, recreation, hydropower, and irrigation. They are an integral part of society's infrastructure. In today's technical world, dam failures are rated as one of the major "low-probability, high-loss" events. The large number of dams 30 or more years old is a matter of great concern. Many of the older dams are characterized by increased hazard potential due to downstream development and increased risk due to structural deterioration in inadequate spillway capacity.

Although various types of dams have been built to control the flow of rivers since the early days of civilization, today there are three principal types of dams in use around the world, earth, rock, and concrete. The type of dam chosen for a particular river depends on the geology, topography and climate of the region.

A. Types of Dams

1. Earth and Rock-fill Dam

Approximately 60% of all dams built in the United States are earth dams. With broad bases that distribute weight over a wide area, they are the only dams that can be built on a soft, unstable riverbed. Where rock is plentiful, rockfill dams are equally effective, but their heavier weight requires a solid foundation. Historically, 38% of the earth-rockfill dam failures have resulted from piping and seepage, with 35% of the failures blamed on overtopping. Sand, gravel and other loose materials in joints and cracks are vulnerable to the phenomenon known as piping, which occurs when the pressure of water from seepage simply washes the soil particles away, leaving conduits that enlarge themselves and gradually undermine the dam. Similarly, a dam may collapse because of the large cavities that are left when sedimentary rocks, such as limestone, are dissolved by percolating water. Overtopping is particularly dangerous for earth dams since the strength of the dam is at its base. The principal cause of overtopping is inadequate spillway capacity, which results in a concentration of water flow over the center of the dam. Seventy-four percent of all dam failures have involved earth-rockfill dams.

2. Concrete Gravity Dams

Nearly 30% of the dams in the United States are concrete gravity dams. A gravity dam is made of giant concrete blocks or stones sealed with grout or liquid cement. These dams use their great bulk and weight to resist water pressure. Nearly 60% of gravity dam failures are attributed to defective foundations. Ten percent of all dam failures have involved concrete gravity dams.

3. Concrete Arch or Hydraulic Fill Dam

About 10% of the dams in the United States are this type. The arch dam has a face that curves upstream from bank to bank. The comprehensive strength of the arch transmits water pressure to the side abutments and foundation, bonding the dam to the canyon. Five percent of all dam failures have involved concrete arch dams, with the majority of the failure resulting from defective foundations. During a flood, a small break in an arch dam can swiftly lead to total failure.

B. History

In the early 1900s, homes and ranch buildings were built on high ground overlooking valley floors. But, as population increased, valley floors were used for agricultural purposes and people settled close to their cultivated fields for convenience, thus encroaching on the flood plains. This was the situation in January 1916. Two separate storms in the month of January caused two separate floods. The first storm had been preceded by three or four days of light rain and the reservoirs were already approaching capacity. Both storms fell on a saturated watershed which rapidly carried the flow to the rivers. When the storm hit, the streams were converted from normally dry creek beds to torrents that soon overran their banks, causing widespread damage from the Santa Clara River to the Mexican border and from the mountain divide to the Pacific Ocean.

The flood damage from the second storm was even greater than from the first. Sweetwater Dam was topped at 2:20 a.m. on January 27, and by 4:30 a.m. the flow over the dam was 3.5 feet deep. At that time, 50 feet of an earth-fill dike north of the dam was topped and the dike washed away. The water then broke the concrete-core wall and cut a bypass around the dam through the bedrock foundation. The flood flow then inundated the valley from the dam to San Diego Bay.

On the same day, water in the Lower Otay Reservoir rose rapidly and the outlet gate was ordered open. However, the inflow into the reservoir was greater than the outlet gate was capable of discharging, so men were dispatched to warn the valley inhabitants that the dam would fail during the night. At 4:45 p.m. water reached the top of the dam and by 4:50 p.m. was running down its downstream face. At 5:05 p.m. the tension was so great that the steel diaphragm tore from the top at the center, and the dam opened outward "like a pair of gates". The dam destruction was very rapid, with the reservoir emptying itself of 13 billion gallons of water in approximately 2.5 hours. During this time a huge wave, estimated at between 6 and 20 feet in height, rushed 10 miles down the Otay Valley and out to sea in a matter of 48 minutes. Areas of the valley which had been heavily wooded with brush were stripped to bedrock by the force of the water; damage throughout the valley was extremely high.

C. Large Dams

Approximately 40 dams have been built in the San Diego Operational Area for the purpose of water conservation. These facilities are designed and operated for water conservation and

storage, and are not expected to eliminate the major part of the flood hazard on any of the streams or rivers of the Operational Area. The local water storage capacity of these reservoirs is 723,000 acre feet. With only 30,000 acre feet being captured from local runoff it is easy to see that San Diego is very dependent upon imported water and the ability of local reservoirs to store it. Figure 4 shows the general locations of the San Diego Operational Area's rivers and dams.

It is important to know what type of dam you are dealing with when preparing emergency dam plans. A percentage comparison of the San Diego Operational Area's dams reveals the following: 45% Hydraulic, 30% Earth-rockfill, and 25% Gravity. Table 1 is a listing of the major dams, dam type, year completed, and maximum capacities.

D. Dam Failure

Dam failures cause loss of life, damage to property, and other ensuing hazards, as well as the displacement of persons residing in the inundation path. Damage to electric generating facilities and transmission lines could also impact life support systems in communities outside the immediate hazard areas. A catastrophic dam failure, depending on size of the dam and the population downstream, could easily exceed the response capability of the local community. Damage control and disaster relief support would be required from other local governments and private organizations, and from the state and federal governments. Mass evacuation of the inundation areas would be essential to save lives. Extensive search and rescue operations could be required to assist trapped or injured persons. Emergency medical care, food, and temporary shelter would be required for injured or displaced persons. Identification and burial of many dead persons would pose difficult problems and public health would be a major concern. Many families would be separated, particularly if the failure should occur during working hours, and a personal inquiry or locator system would be essential. These and other emergency operations could be seriously hampered by the possible loss of communications, damage to transportation routes, and the disruption of public utilities and other essential services.

The Office of Disaster Preparedness maintains the Dam Evacuation Plans for the entire Operational Area. The plans contain information about the physical situation, affected jurisdictions, types of inundation zones, evacuation routes, facilities resources, and event responses. Each plan also contains: a master phone list; inundation maps showing direction of flow; inundation area boundaries; wave height; minimum wave time; hospitals; multipurpose staging areas; command posts/sites; disaster assistance centers/sites; and mass care and shelter facilities/sites.

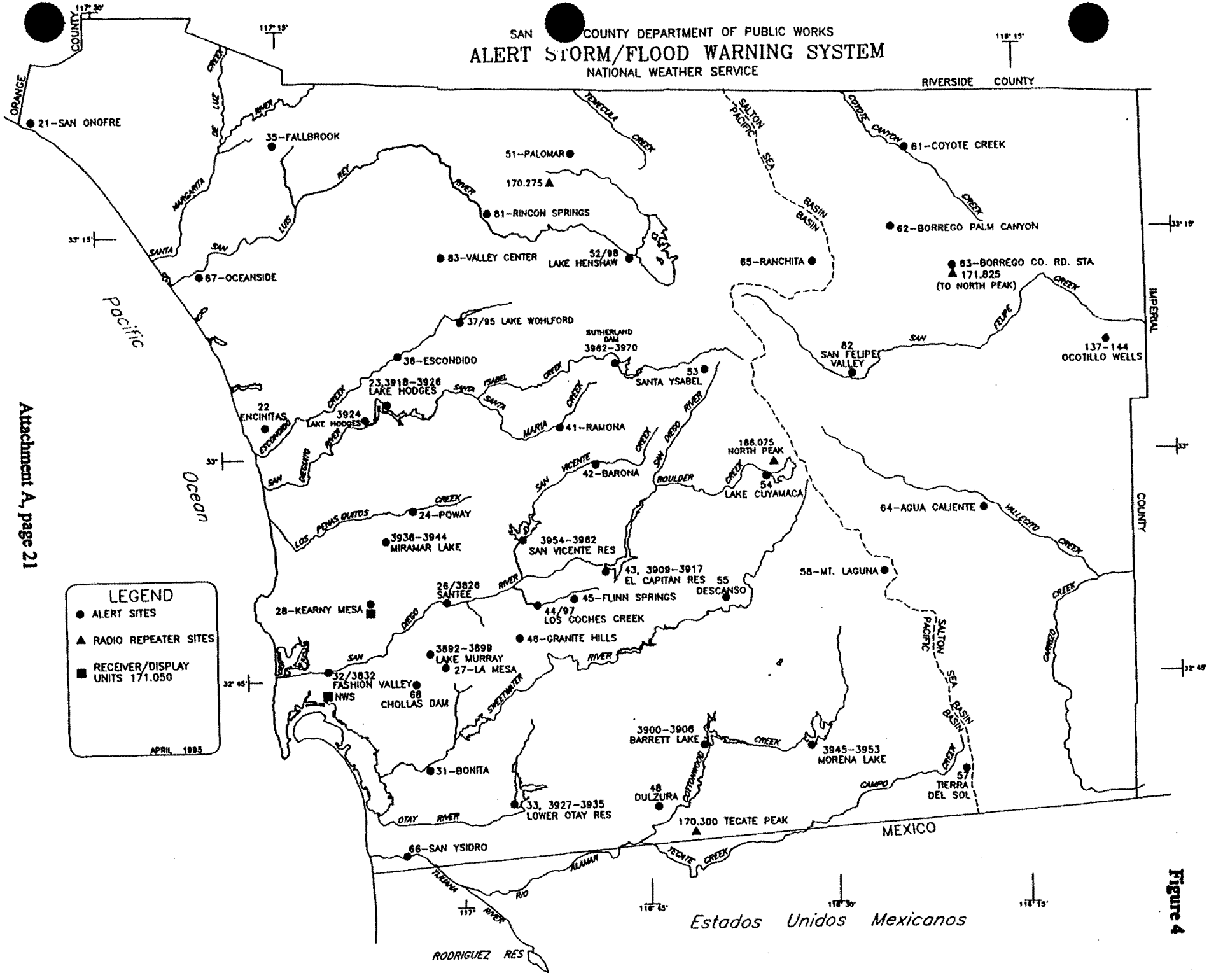

SAN DIEGO COUNTY DEPARTMENT OF PUBLIC WORKS
ALERT STORM/FLOOD WARNING SYSTEM
NATIONAL WEATHER SERVICE
RIVERSIDE COUNTY
IMPERIAL COUNTY
ORANGE COUNTY
Pacific Ocean
MEXICO
Estados Unidos Mexicanos
21-SAN ONOFRE
35-FALLBROOK
51-PALOMAR
170.275
81-RINCON SPRINGS
83-VALLEY CENTER
52/98 LAKE HENSHAW
67-OCEANSIDE
61-COYOTE CREEK
62-BORREGO PALM CANYON
65-RANCHITA
63-BORREGO CO. RD. STA.
171.825
(TO NORTH PEAK)
37/95 LAKE WOHLFORD
SUTHERLAND DAM
3962-3970
36-ESCONDIDO
23,3918-3926
LAKE HODGES
3924
LAKE HODGES
22
ENCINITAS
53
SANTA YSABEL
41-RAMONA
82
SAN FELIPE VALLEY
137-144
OCOTILLO WELLS
186.075
NORTH PEAK
54
LAKE CUYAMACA
42-BARONA
24-POWAY
3936-3944
MIRAMAR LAKE
3954-3962
SAN VICENTE RES
43, 3909-3917
EL CAPITAN RES
55
DESCANSO
64-AGUA CALIENTE
58-MT. LAGUNA
28/3826
SANTEE
45-FLINN SPRINGS
44/97
LOS COCHES CREEK
28-KEARNY MESA
46-GRANITE HILLS
3892-3899
LAKE MURRAY
27-LA MESA
32/3832
FASHION VALLEY
NWS
68
CHOLLAS DAM
3900-3906
BARRETT LAKE
3945-3953
MORENA LAKE
57
TIERRA DEL SOL
31-BONITA
48
DULZURA
33, 3927-3935
LOWER OTAY RES
170.300 TECATE PEAK
66-SAN YSIDRO
RODRIGUEZ RES
LEGEND
ALERT SITES
RADIO REPEATER SITES
RECEIVER/DISPLAY UNITS 171.050
APRIL 1995

Figure 4

TABLE 1

LARGE DAMS IN SAN DIEGO COUNTY

RESERVOIR	DAM TYPE	YEAR COMPLETED	MAXIMUM CAPACITY (acre/feet)
Barrett*	Gravity	1922	44,860
Chet Harritt	Earth	1962	10,500
Cuyamaca*	Earth	1887	11,700
Dixon	Earth-rock	1970	2,500
El Capitan*	Hydraulic	1934	116,450
Henshaw*	Hydraulic	1923	**203,580
Lake Hodges*	Multiple arch	1918	33,550
Lake Loveland	Arch	1945	27,700
Lower Otay*	Gravity	1919	56,300
Miramar*	Earth	1960	7,200
Morena*	Rock	1895	50,200
Murray*	Multiple arch	1918	6,080
Poway	Earth	1971	3,300
Rodriguez	Multiple arch	1936	111,000
San Dieguito	Multiple arch	1918	1,130
San Vicente*	Gravity	1943	90,200
Sutherland*	Multiple arch	1954	29,000
Sweetwater	Gravity	1888	27,680
Wohlford	Hydraulic	1924	7,500

NOTE: Rodriguez Dam is located in Tijuana, Mexico, controlling portions of the flow of the Tijuana River which traverses through Otay, San Ysidro, and Imperial Beach on its way to the Pacific Ocean. Barrett Dam and Morena Dam control the flow of middle/upper Cottonwood Creek. The flow of Campo Creek and lower Cottonwood Creek to the Tijuana River is uncontrolled.

* These reservoirs are equipped with reservoir level gages as part of the ALERT Flood Warning System.

** Lake Henshaw is kept at a maximum capacity of 55,000 acre/feet

Attachment A, page 22

V. FIRE

San Diego County's topography, consisting of a semi-arid coastal plain and rolling highlands, when fueled by shrub overgrowth, occasional Santa Ana winds and high temperatures, creates an ever present threat of wildland fire. Extreme weather conditions such as high temperature, low humidity, and/or winds of extraordinary force may cause an ordinary fire to expand into one of massive proportions. The nature of the construction and ever increasing proximity of structures to watershed cover is conducive to fast moving fires. Major earthquakes can cause uncontrolled fires, break water mains, sever major communications, and damage utilities. Private, commercial, and military air traffic is constantly increasing, presenting the problem of falling aircraft or emergency landings which often result in major fires.

San Diego County's worst brush fire in history, known as the Laguna Fire, destroyed thousands of acres in the back country in September of 1970. The fire resulted in the loss or destruction of 383 homes and 1,200 other structures ($5.7 million); 225,000 acres of trees and other watershed ($30 million); small dams ($3 million); and bridges and roads ($600,000). The total dollar cost of the Laguna Fire was approximately $40 million.

VI. LANDSLIDE

Landslides are characterized by the downslope movement of rock, soil, or other debris. Frequently they accompany other natural hazards such as floods, earthquakes, and volcanic eruptions. Although landslides sometimes occur during earthquake activity, rarely are earthquakes their primary cause. Rather, earthquake shocks function as a trigger mechanism in releasing earth materials which already have been prepared for rapid downslope movement by other processes.

Increased housing development on marginal lands and in coastal areas which are desirable, but generally unstable, has increased the threat from landslides throughout the San Diego Operational Area.

A. Slope Oversteepening

The most common cause of an increase in the downslope gravitational stress applied to slope materials is slope oversteepening, which may be produced either by natural processes or by man's activities. Undercutting of a valley wall by stream erosion, or of a sea cliff by wave erosion are ways in which slopes may be naturally oversteeped.

B. Slope Wash

Another type of soil failure is slope wash, the erosion of slopes by surface-water runoff. The intensity of slope wash is dependent on the discharge and velocity of surface runoff and on the resistance of surface materials to erosion. Surface runoff also is greatly increased in urban and suburban areas due to the presence of surfaces such as roads, parking lots, and buildings, which have zero infiltration capacities.

C. Mudflows

Mudflows are defined as flows or rivers of liquid mud down a hillside. They occur when water accumulates under the ground, usually following long and heavy rainfalls. If there is no brush, tree, or ground cover to hold the soil, mud will form and flow down the slope.

VII. TSUNAMI/COASTAL STORM

A. Tsunami

A tsunami, commonly but inaccurately called a tidal wave, is a series of long-period sea waves produced by a submarine earthquake or volcanic eruption. The waves may travel unnoticed across the ocean for thousands of miles from their point of origin building up to great heights over typically shallow water. Tsunamis are called seismic sea-waves because they originate in some sudden rapid movement of the earth's crust. (Most commonly this would consist of seismic or volcanic disturbances of the ocean floor to include an underwater landslide or avalanche, or long period earthquake waves that set the adjacent water in motion.)

To date, tsunami damage in San Diego has been limited to its harbors. A catastrophic earthquake in Chile during 1960 resulted from a major marine underwater fault. That faulting generated one of the greatest tsunamis of modern times, causing loss of property and life across the Pacific. Los Angeles and San Diego harbors experienced $1 million in damage to piers and small boats.

B. Coastal Storm

Another spontaneous phenomenon that can be disastrous to coastal areas is the storm surge, occurring during bad weather and resulting from a combination of factors. High tides in combination with large storms can raise the level of the sea surface. These large storms are characterized by regions of low atmospheric pressure, which actually causes a bulge in the sea surface. California's coastal region experienced such circumstances in January and February 1983, causing millions of dollars in beach and coastal damage. The San Diego Operational Area was hit hard in Imperial Beach, Ocean Beach, Del Mar and Oceanside with total damages set at $3.5 million.

VIII. DROUGHT

The year 1976 is remembered as one of the exceptionally dry years in California history. Early in November 1975, a high-pressure ridge established itself over the ocean between Hawaii and California, persisting all winter long. Throughout an east/west swath across central California, seasonal precipitation amounted to only 30-50 percent of normal. During this time San Diego maintained its average rainfall, however, our heavy dependence on imported water raised local concerns about the drought's eventual impact on this region.

With a 90% dependence on imported water, San Diego is faced with the ever-present threat of drought or water shortage. If San Diego had to rely exclusively on locally produced water, a population of only about 300,000 could be sustained.

During an average rainfall year, the existing water reservoirs are far from full. In the event that additional local reservoirs were constructed, they would provide for additional short term storage, but would have little impact on satisfying the water needs of this Operational Area.

Over the next 20-30 years, Arizona is expected to take more of its entitlement to Colorado River supplies, decreasing the amount of surplus water available to the Metropolitan Water District of Southern California (MWD). MWD's other supply source, the State Water Project (SWP), has yet to construct the facilities necessary to deliver the total amount of water for which MWD contracted in the 1960s. Therefore, there is some uncertainty over future imported water supplies for the Southern California region.

Efforts are being made to secure more water from both the Colorado River and the SWP. MWD is attempting to increase its firm Colorado River supplies by financing conservation programs on the river and using the conserved water. MWD is also seeking to store an increased amount of water in Lake Mead, and to gain water through improvements in reservoir operations and management. The San Diego County Water Authority (SDCWA) is also seeking additional Colorado River supplies, through a transfer proposal with the Imperial Irrigation District. For the SWP, a consortium of state and federal agencies (CAL-FED) is addressing water resources issues affecting supplies available to all of its contractors, including MWD. Recommendations are expected to be made in 1997 for a plan that would improve the amount and reliability of SWP supplies.

These efforts are expected to greatly improve the reliability of regional water supplies. MWD has a goal of meeting all of its member agency water demands, even during dry years. The San Diego County Water Authority's current reliability goal is to meet 100 percent of its member agency demand 90 percent of the time, 90 percent of the demand 98 percent of the time, and never deliver less than 80 percent of demand.

Water conservation is now considered to be a cost effective means of obtaining "new" water supplies. In addition, pricing adjustments and, if necessary, mandatory restrictions on water use are further measures which can be used to manage limited water supplies in times of emergencies.

IX. SAN ONOFRE NUCLEAR GENERATING STATION

A. Location and Description

The San Onofre Nuclear Generating Station (SONGS) site is located on the coast of Southern California in San Diego County, approximately 50-60 miles equidistant from the cities of Los Angeles and San Diego. The 83.63 acre site is entirely contained within the 125,000 acre Camp Pendleton Marine Corps Base military reservation.

Interstate Highway 5 and the Santa Fe Railroad both pass within 1,000 feet of the plant site and run alongside the coast. In the Oceanside area, Highways 76 and 78 run inland and cross I-15 which travels in a north-south direction, about 25 miles east of the plant site.

San Onofre is a pressurized water reactor type generating station using lightly enriched uranium dioxide (UO_2) as fuel. A full fuel load is approximately 72 tons of UO_2 in pellet form. This fuel poses no problem or concern in its unirradiated state, since it is of very low radioactivity. Highly radioactive by-products would be the main offsite hazard in a nuclear generating station incident.

It is assumed that whenever a nuclear generating station is, or has been generating power, a nuclear incident is possible. The principal deterrent to an incident is prevention, through correct design, construction, and operation, to assure that the integrity of the reactor system is maintained. Protective systems are automatically activated to counteract the effects of any part of the reactor system failing.

B. Topography

The topography of the local area is typical of the region. A rather narrow, gently sloping coastal plain, extending seaward from the uplands, is terminated abruptly at the shoreline by high seacliffs straightened over long distances by marine erosion. Seacliffs in the immediate vicinity of the plant site reach a height of 60 to 80 feet above sea level and are separated from the ocean by a narrow band of beach sand. In some places, ephemeral (intermittent) streams are actively eroding gullies into the uncemented materials underlying the seaward portions of the coastal plain. Several deeply-incised barrancas have been formed.

There is no apparent ground water storage in the vicinity of the plant site, except at the lower reach of San Onofre Creek, about 1.5 miles to the northwest. Several water wells which were used for domestic purposes are located within a few miles of the site. However, the water wells in the San Onofre Basin have been abandoned by the Marine Corps because of potential seawater encroachment caused by overpumping. There are no significant waterways or reservoirs which would impact on water contamination pathways, within the immediate vicinity (10 miles) of the plant site.

The major part of the shoreline in the vicinity of the plant site is used for military purposes. The nearest recreation beach is a 0.5 mile beach, about 0.4 miles northwest, licensed to the San Onofre Surfing Club. Contiguous to the northern boundary of the Surfing Club beach is 0.8 miles of beach used by the San Onofre Enlisted Men's Club.

C. Demography and Land Use

About half of the sites within a 50-mile radius of the plant site falls on land, the balance being in the Pacific Ocean. The land area includes the northwestern corner of San Diego County.

The nearest sizeable community is San Clemente, with an estimated (1993) population of 46,700. The next nearest population center is the coastal city of Oceanside, located about 17 miles to the southeast. The City of San Diego is located about 51 miles southeast of the SONGS site.

In addition to the resident population, there is a seasonal influx of vacation and weekend visitors, especially during the summer months. Most of the coastline between Long Beach and San Diego is beach with public access. The population density at the coast is thus significantly higher on weekends compared to the weekly resident population and accessible beach recreation produces daytime peaks in population.

D. Threat

The uncontrolled release of radioactive material is considered the main hazard resulting from an incident at SONGS. The radioactive inventory of the facility arises from several sources which can be generally classified into two groups--fission products, and activation products. Fission products are radioactive by-products of the nuclear fission process. The fission products can be further classified as particulates, radioiodine, and radioactive noble gases. These fission products are insulted from the environment by a minimum of three physical barriers. Activation products are created by the activation of reactor structural materials and impurities in the reactor coolant. As with fission products, these activation products are isolated from the environment by physical barriers. During normal operations, activation products are removed from the core and processed as radioactive waste. Physical barriers and administrative controls minimize releases of fission and activation products to the environment.

In an accident, physical barriers may be damaged and/or control of the radioactive material may be lost or reduced, potentially resulting in uncontrolled releases of radioactive material. Uncontrolled releases would most likely be to the atmosphere, although surface releases of radioactive liquid are possible. Atmospheric releases are dispersed by winds. Surface liquid releases either enter the earth or run off into the ocean. The passage of the atmospheric release (plume) results in direct radiation exposure to people in its path, and can result in contamination of environmental surfaces by fallout. Radioactive material could enter the food chain (by contamination of pasture, livestock, water supplies, or agricultural products) and result in additional exposure to people in the affected area.

Further information can be found in the San Diego Operational Area Nuclear Power Station Emergency Response Plan.

X. TERRORISM

While this has always been a potential problem, until recently there had been no verified occurrences in the continental United States. The first incident occurred in San Diego a few years ago when a military

officer's family vehicle was destroyed. Since then, there have been incidents at the World Trade Center in New York, at a federal building in Oklahoma City and at the Olympics in Atlanta.

With the military bases, bio-medical firms and high tech research facilities spread throughout San Diego County, the San Diego County Operational Area could become a target for future terrorist attacks. There are three primary concerns that are also addressed in the Environmental Health Annex (Annex H):

1. **Bombs, Either Conventional or Nuclear**- an individual or a group could put together a small bomb, a small nuclear weapon or a conventional bomb with spent uranium or other material to make a so called "Dirty Bomb". This could obviously affect a relatively large number of people and depending on the type of bomb, could have some very long lasting effects, and widespread damage.

2. **Biological** - the use of bacteria and/or viruses introduced into the air or the food and/or water supply to make a large number of people ill and create panic. This is not as easy to accomplish as might be thought, at least in terms of the air or water supply. Bacteria and viruses need to be kept virulent in order to be effective, and in order to affect a large number of people at once, a large amount of it would have to be released. It is quite probable that anything that could be used effectively would be difficult to control and would probably do a great deal of damage to the people using it.

3. **Chemical** - The use of chemical agents to produce death or illness. These agents could be things like Sarin, a type of nerve gas which was used in the subway in Japan, Mustard Gas, Chlorine Gas, pesticides or other less exotic but just as lethal chemicals.

Terrorism is not confined to foreign countries anymore, and while many of the incidents that have occurred throughout the world have been attributed to specific, known terrorist groups, there is no reason that an act of terrorism can't be accomplished by an individual acting on his/her own.

XI. NATIONAL DEFENSE

While the changes in the former Soviet Union have eased some of the tensions of the Cold War, there is still a potential threat that shouldn't be totally ignored. In the San Diego County Operational Area we had about 23 primary targets ranging from the coast to 20-30 miles inland. The idea of evacuating everyone out of San Diego if an attack was imminent was ludicrous and probably could not be done if we had a week to do it. Additionally, no city that has a relatively small population is going to be able to support a sudden influx of 2.7 million people.

There are no blast shelters available to the public in the San Diego County Operational Area, and although almost any building with a basement could be a fallout shelter, there is no money available to stock them with the supplies necessary to support the population.

Attachment B

HAZARD MITIGATION IMPLEMENTATION
(from State OES Guidance)

1. Purpose

This Attachment establishes actions, policies and procedures for implementing Section 406 (Minimum Standards for Public and Private Structures) of the Federal Disaster Relief Act of 1974 (Public Law 93-288) following a presidentially declared emergency or major disaster. It also assigns hazard mitigation responsibilities to various elements of federal, state, and local governments in California.

2. General

Section 406 of Public Law 93-288 requires, as a condition to receiving federal disaster aid, that repairs and reconstruction be done in accordance with applicable codes, specifications, and standards. It also requires that the state or local government recipient of federal aid evaluate the natural hazards of the area in which the aid is to be used, and take action to mitigate them, including safe land use and construction practices.

To be effective, hazard mitigation actions must be taken in advance of a disaster. Whenever possible, both planning and action should take place in advance. After disaster strikes, mitigation opportunities exist only for the next disaster, and even those opportunities are often needlessly limited by the absence of advance planning. Nevertheless, the immediate post-disaster period does present special opportunities for mitigation.

Section 406 deals with the opportunities presented in a current Emergency or Major Disaster response effort to mitigate potential hardship and loss resulting from future disasters. Thus, involvement with natural hazard mitigation under Section 406 is triggered in post-disaster situations. Hazard mitigation includes such activities as:

- Minimizing the impact of future disasters on communities.
- Improvement of structures and facilities at risk.
- Identification of hazard-prone areas and development of standards for prohibited or restricted use.
- Loss recovery and relief (including insurance).
- Hazard warning and population protection.

3. Implementation

3.a. Federal/State Agreement

Following each Presidentially declared Emergency or Major Disaster, the Regional Director of the Federal Emergency Management Agency (FEMA) and the Governor's Authorized Representative execute a document called the Federal/State Agreement. This Agreement includes provisions for hazard mitigation. Under the "typical paragraph" set out to serve this purpose, the State agrees to:

- Evaluate or have the applicant evaluate the natural hazards in the disaster area, and make appropriate recommendations to mitigate them.
- Follow up with applicants to ensure that the appropriate hazard mitigation actions are taken.
- Follow up with applicants to ensure that the appropriate hazard mitigation plan or plans are developed and submitted to the FEMA Regional Director for concurrence.
- Review and update as necessary disaster mitigation portions of emergency plans.

3.b Joint Federal/State/Local Hazard Mitigation Team

The FEMA Regional Director and the Governor's Representative each appoint a Federal and State Hazard Mitigation Coordinator and the local applicant designates a local coordinator. These individuals constitute the Hazard Mitigation Team which:

- Identifies significant hazards in the affected areas, giving priority to disaster-related hazards.
- Evaluates impacts of these hazards and actions which will mitigate their impacts.
- Recommends hazard mitigation measures.

The Hazard Mitigation Team uses information from Damage Survey Reports, and from visits to selected sites where significant damage has occurred. The State and local representatives on the Hazard Mitigation Team are responsible for ensuring that there is adequate coordination among interested federal, state, and local parties.

3.c Hazard Mitigation Plans

The Hazard Mitigation Team also prepares a Hazard Mitigation Plan which is submitted to the FEMA Regional Director through the Governor's Representative within 180 days after a Presidential declaration. The objectives of the Plan are to:

- Recommend hazard mitigation measures for local, state, and federal agencies.
- Establish short and long-term planning frameworks for implementation of hazard mitigation efforts.

4. Concept of Operations

4.a Objectives

The identification of hazards following an emergency or major disaster and accomplishment of appropriate hazard mitigation measures are required by the Federal/State Agreement. The FEMA Regional Director and the Governor's Representative ensure compliance with these objectives as a condition for federal loans or grants.

4.b Surveys

Each applicant for a loan or grant is expected to use its resources and capabilities to perform emergency work, such as debris removal or emergency measures to save lives, or to protect public health and safety, or to protect property, before requesting assistance from state or federal government.

Local, state, and federal preliminary damage assessments may identify major hazards and opportunities for hazard mitigation activities prior to a declaration of Major Disaster or Emergency.

Damage Survey Reports (DSR) include identification of hazards and recommend mitigation measures to be incorporated into the repair work.

The Federal/State Hazard Mitigation Team reviews applicable land use regulations, construction standards, and other appropriate hazard mitigation measures. Utilizing information from preliminary damage assessments, DSRs, and all other readily available information, the Team visits the sites of significant damage and evaluates all hazards at those sites. For each identified significant hazard, the Team includes recommendations of hazard mitigation measures in its final report.

4.c Plans

For each hazard-prone area, the Federal/State Hazard Mitigation Team reviews and evaluates existing local and/or state emergency plans for hazard mitigation. In cases where no plans for hazard mitigation exist, or they are inadequate, the Team makes recommendations to develop, improve, and maintain hazard mitigation plans.

Existing local and state hazard mitigation plans are updated and new ones developed as deemed necessary by the FEMA Regional Director in consultation with the Governor's Representative.

In determining whether to impose such a requirement on a local jurisdiction, consideration is given to the opportunities for effective hazard mitigation, size and composition of the local jurisdiction, local government's authority to regulate land use and constructive practices, and the local government's exercise of such authority.

The Governor's Representative and/or the FEMA Regional Director may provide technical advice and assistance to state agencies or to local governments in developing or updating plans to mitigate hazards identified as the result of the major disaster or emergency within affected areas.

4.d Mapping

The Federal/State Hazard Mitigation Team verifies the impact of the disaster on disaster frequencies computed prior to the disaster and considers the advisability of redefining boundaries of high-hazard areas as a result of their findings. The Team makes recommendations to the FEMA Regional Director and the Governor's Representative regarding needs for new mapping or remapping of high hazard areas.

5. Responsibilities

5.a Federal

(1) Federal Emergency Management Agency

The FEMA Regional Director is responsible for hazard mitigation actions under the terms of the Federal/State Agreement. The Director, in coordination with the Governor's Representative, shall:

- Provide for a Joint Federal/State/Local Hazard Mitigation Team to survey the disaster affected area as soon as possible following a Major Disaster or Emergency declaration by the President and to accomplish hazard mitigation planning in accordance with Federal/State Agreement.

- Appoint a Hazard Mitigation Coordinator to:

  - Serve on the Federal/State Hazard Mitigation Team;

  - Confer with local, state and federal officials concerning the hazards and hazard mitigation measures; and

  - Coordinate with the State Hazard Mitigation Coordinator and others doing the planning required.

- Provide overall leadership with respect to the general administration of Section 406.

- Ensure that the ultimate benefits of hazard mitigation programs are gained.
- Provide technical advice and assistance.
- Encourage state and local governments to adopt safe land use practices and construction standards.
- Ensure that FEMA and other federal efforts are supplemental to local and state efforts.
- Encourage initiative by state and local governments.
- Take actions required by FEMA Floodplain Management Regulations (as applicable for flood disasters).

(2) Other Federal Agencies (as Appropriate)

5.b State

(1) Office of Emergency Services

A representative of the Office of Emergency Services (OES) will be appointed by the Governor to act as the Governor's Authorized Representative, and will be responsible for state performance of hazard mitigation activities under the Federal/State Agreement. The Governor's Representative, in coordination with the FEMA Regional Director, shall:

- Appoint a State Hazard Mitigation Coordinator to serve on the Federal/State Hazard Mitigation Team.
- Arrange for state and local participation in Federal/State survey and hazard mitigation planning in disaster affected areas.

(2) State Hazard Mitigation Coordinator/Planner

The State Coordinator in coordination with the Governor's Representative, shall:

- Arrange for consultations on the findings and recommendations from the joint survey and follow up to ensure that timely and adequate local and state hazard mitigation actions are taken.
- Provide funding or technical assistance to eligible applicants to accomplish state-approved hazard mitigation actions.
- Arrange for state inspection or audit to verify compliance with approved hazard mitigation measures.

- Upon completion of approved hazard mitigation activities in accordance with the Federal/State Agreement, submit a final report of compliance with hazard mitigation requirements by state and local governments to the FEMA Regional Director for review and acceptance.

- Accomplish hazard mitigation planning in accordance with the Federal/State Agreement.

5.c Local

(1) Applicant (Local Jurisdiction)

The Applicant's Authorized Representative is responsible for local performance of hazard mitigation measures under the terms of the Federal/State Agreement. The Applicant's Representative, in coordination with the Governor's Representative shall:

- Appoint a Local Hazard Mitigation Coordinator to work with the Federal/State Hazard Mitigation Team.

- For any project application, submit adequate assurance that required hazard mitigation measures have been taken or will be completed.

- To the extent of legal authority, implement and enforce land use regulations and safe construction practices which are agreed upon as conditions for FEMA grants or loans.

- Provide evidence of compliance with conditions for any approved FEMA grants or loans as required by the Governor's Representative.

(2) Local Hazard Mitigation Coordinator

Working with the Federal/State Hazard Mitigation Team, the Local Coordinator shall:

- Assess disaster damage within the local jurisdiction.

- Arrange for local participation in consultation with the Federal/State Hazard Mitigation Team about hazard mitigation actions.

- Inform local officials and citizens about significant team activities, and collect any local comments on these matters and report them to the State Coordinator.

- Work with the Federal/State Hazard Mitigation Team in reviewing and updating existing hazard mitigation plans, or in developing new hazard mitigation plans requested by the FEMA Regional Director.

(3) Other Local Departments and Agencies (as Necessary)

6. Hazard Mitigation Measures

6.a Avoidance

For each hazard identified following a major disaster or emergency, the Federal/State Hazard Mitigation Team assesses the feasibility of avoiding high hazard areas in cases where new construction, alteration, or major repairs are involved in restoration of damaged or destroyed facilities. The team also makes specific recommendations concerning land use regulations and rezoning, to achieve avoidance whenever appropriate.

6.b Reduction

Reduction of the effects of hazards identified following a major disaster or emergency may be achieved by reducing the area or level of the hazard itself or by reducing the impact of the hazard on individual facilities. The Federal/State Hazard Mitigation Team makes specific recommendations concerning hazard reduction measures to achieve the objectives of reduction whenever appropriate.

6.c Land Use Regulations

(1) Local Zoning

Regulations of land use within its jurisdiction is a function of local government. State, federal or private interests may propose model zoning regulations, but adoption and enforcement of such regulations remain with the responsible local government. Specific state or federal restrictions may be locally adopted and enforced by mutual agreement, or as a condition for certain types of financial assistance.

- The Federal/State Hazard Mitigation Team makes specific recommendations concerning land use regulations, based on field observations and evaluation of hazards within the affected areas.
- Consultations with the applicant, Federal Coordinator and State Coordinator may be necessary to identify the applicant's options for decision-making.
- The Federal and/or State Coordinator encourages adoption and enforcement of land use regulations.
- The Federal/State Hazard Mitigation Team follows up contracts with the state or local government as appropriate.

(2) State Land Use Regulations

- Land use regulations for state-owned properties outside the jurisdiction of local governments are adopted and enforced by the responsible state agency.

- The Federal/State Hazard Mitigation Team may make recommendations concerning new revisions of existing state land use regulations for state lands and provide technical advice and assistance to the state for developing such regulations.

- The state may require local adoption of statewide land use regulations as a condition for state aid, such as grants, loans, or technical assistance.

(3) Federal Land Use Regulations

- Land use regulations for federally-owned properties outside the jurisdiction of local or state governments are adopted and enforced by the responsible federal agency. In some cases, these federal land use regulations may serve as model regulations for state or local governments.

- The Federal/State Hazard Mitigation Team may encourage federal agencies to adopt land-use regulations currently used locally as being applicable to federal properties.

- A federal agency may require local or state governments to adopt and enforce certain hazard mitigation regulations as a condition for federal assistance or participation in federally-assisted programs.

- Following a major disaster or emergency declaration, the Federal/State Hazard Mitigation Team makes findings and recommendations as appropriate for development or updating of model hazard-mitigation regulations by various federal agencies for mitigation of identified hazards.

- The team may arrange for federal technical advice and assistance to local or state governments in modifying model land-use regulations to satisfy local requirements.

(4) Construction Practices

Local Standards

- Following a major disaster or emergency declaration, the Federal/State Hazard Mitigation Team inventories and evaluates the applicant's existing standards for the types of repairs, reconstruction, or restorative work for which federal loan or grant assistance is being requested.

- The Federal/State Hazard Mitigation Team may make available, for consideration by applicants, model state or federal standards. Such standards for new construction may be different from those for repairs or alterations to existing facilities or structures.

- The Federal/State Hazard Mitigation Team may develop recommendations for the applicant regarding upgrading existing construction standards, or for adopting new standards.

- Following a major disaster or emergency declaration, each applicant has the responsibility for adopting or updating construction standards and for enforcing them. Applicants may request state or federal technical advice or assistance in taking these actions.

State Standards

Construction standards for state-owned buildings, structures, or facilities outside the jurisdiction of local governments are adopted and enforced by the responsible state agency.

- The Governor's Representative may recommend to the FEMA Regional Director that the Associate Director prescribe certain construction standards for FEMA-assisted projects, for hazard mitigation purposes, as a condition for state approval of loan or grant assistance.

- The State Coordinator may provide technical advice and assistance on hazard mitigation measures to applicants, private organizations, and individuals.

Federal Standards

Construction standards for federally-owned structures, buildings, or facilities outside the jurisdiction of local or state governments are adopted and enforced by the responsible federal agency.

- The National Flood Insurance Program prescribes certain federal standards for repairs, alterations, and new construction within flood plains as a condition of acceptance for a flood-prone community within that program.

- For other types of disasters, similar standards for hazard mitigation may be available and appropriate for local, state, and federal use.

- The Federal/State Hazard Mitigation Team recommends construction standards for consideration as hazard mitigation measures related to the major disaster or emergency.

FEMA Standards

- Working with the state and applicants, through the Federal/State Hazard Mitigation Team, the FEMA Regional Director encourages local adoption and enforcement of hazard mitigation standards on all projects, including non-federally-assisted projects.

- The FEMA Regional Director may suspend or refuse to approve any project application until he/she is satisfied that the approved work will result in a facility or structure safe and usable for the predisaster function, or for alternate functions proposed as flexible funding by the applicant in accordance with those regulations.

Attachment C

CONTINUITY OF GOVERNMENT
(from State OES Guidance)

1. Introduction

A major disaster or a nuclear attack could result in great loss of life and property, including the death or injury of key government officials, the partial or complete destruction of established seats of government, and the destruction of public and private records essential to continued operations of government and industry.

In the aftermath of a nuclear attack, during the reconstruction period, law and order must be preserved and, so far as possible, government services must be maintained. This can best be done by civil government. To this end, it is particularly essential that the local units of government continue to function.

Applicable portions of the California Government Code and the State Constitution (listed in Paragraph 6) provide authority for the continuity and preservation of State and local government.

2. Responsibilities

Government at all levels is responsible for providing continuity of effective leadership and authority, direction of emergency operations, and management of recovery.

3. Preservation of Local Governments

3.a Succession of Local Officials

Sections 8635 through 8643 of the Government Code:

(1) Furnish a means by which the continued functioning of political subdivisions can be assured by providing for the preservation and continuation of (city and county) government in the event of an enemy attack, or in the event a State of Emergency or Local Emergency is a matter of statewide concern.

(2) Authorize political subdivisions to provide for the succession of officers (department heads) having duties related to law and order and/or health and safety.

(3) Authorize governing bodies to designate and appoint three standby officers for each member of the governing body and for the Chief Executive, if not a member of the governing body. Standby officers may be residents or officers of a political subdivision other than that to which they are appointed. Standby officers take the same oath as regular officers and are designated Nos. 1, 2, and 3 as the case may be.

(4) Authorize standby officers to report ready for duty in the event of a State of War Emergency, State of Emergency, or Local Emergency at the place previously designated.

(5) Authorize local governing bodies to convene as soon as possible whenever a State of War Emergency, State of Emergency, or Local Emergency exists, and at a place not within the political subdivision. Authorize that, should all members, including all standbys, be unavailable, temporary officers shall be appointed as follows:

- By the Chairman of the Board of the county in which the political subdivision is located, or
- By the Chairman of the Board of any other county within 150 miles (nearest and most populated down to farthest and least populated), or
- By the mayor of any city within 150 miles (nearest and most populated down to farthest and least populated).

3.b Temporary County Seats

Section 23600 of the Government Code provides that:

(1) Board of Supervisors shall designate alternative temporary county seats which may be outside the county boundaries.

(2) They cannot purchase real property for this purpose.

(3) Their resolution is to be filed with the Secretary of State.

(4) Different sites can be designated subsequently if circumstances require.

3.c Suspensions and Appointments

Section 8621 of the Government Code:

Specifies that during a State of War Emergency, in the event that any officer of a political subdivision or employee of a state agency refuses or willfully neglects to obey an order or emergency regulation, the Governor may suspend that person and designate a replacement.

4. Preservation of State Government

4.a Continuity of State Government

In the event of war or enemy-caused disaster, under the authority of Article IV, Section 21 of the State Constitution, the Legislature may provide for:

(1) Filling the membership of either house should at least one-fifth be killed, missing or disabled.

(2) Filling the Office of the Governor should the Governor be killed, missing or disabled.

(3) Selecting a temporary seat of state or county government.

4.b Succession to the Office of Governor

Article V, Section 10 of the State Constitution stipulates that:

(1) The Lt. Governor shall become Governor under specified conditions.

(2) The Legislature shall provide an order of precedence after the Lt. Governor.

Section 12058 of the Government Code provides that:

(3) Following the Governor and the Lt. Governor, the line of succession is President Pro Tempore of the Senate, Speaker of the Assembly, Secretary of State, Attorney General, Treasurer, and Controller.

(4) Or, if none of the above is available as a result of a war or enemy-caused disaster, then such other person as provided by law.

Section 12060 of the Government Code provides that:

(5) The Governor shall appoint and designate by filing with the Secretary of State, the names of at least four and not more than seven citizens who will succeed in the order specified to the Office of the Governor.

(6) Consideration be given to appointments from various parts of the state so there will be the greatest probability of survival.

(7) The persons appointed be confirmed by the Senate.

(8) The appointed person take the oath of office and is thereupon designated as a Disaster Acting Governor.

(9) In the event that the Office of Governor is not filled within 24 hours after the enemy-caused disaster, one of the Disaster Acting Governors in the order specified shall fill the office.

(10) Each Disaster Acting Governor shall, while filling the office, have the powers and perform all the duties of the office.

4.c Succession to Constitutional Offices

Section 12700 of the Government Code provides that:

The Lt. Governor, Attorney General, Secretary of State, Treasurer, and Controller shall appoint and designate at least three and not more than seven alternates who will serve as acting officer in a manner like that provided for the Governor.

4.d Temporary Seat of State Government

Section 450 of the Government Code provides that:

(1) The Governor shall designate an alternative temporary seat of government for use in the event of war or enemy-caused disaster or the imminence thereof.

(2) A different location may subsequently be designated as circumstances require.

(3) The Director of the Department of General Services shall arrange for the use of the designated facilities.

4.e Sessions of the Legislature

Section 9035 of the Government Code provides that:

(1) The Legislature will convene in a war or enemy-caused disaster at Sacramento or in the designated temporary seat of state government.

(2) In such special session, the Legislature may fill any vacancies in its membership and may consider and act on any subject of legislation designed to relieve or alleviate the consequences of the disaster or to restore or continue state and local government activities and operations.

5. Preservation of Essential Records

Each level of government should protect its essential records. The determination of the records to be preserved rests with each agency service chief or with the custodian of the records.

Record depositories should be located well away from potential danger zones and housed in facilities designed to withstand blast, fire, water, and other destructive forces. Such action will ensure that:

(1) The rights and interests of individuals, corporations, other entities, and governments are preserved.

(2) Records will be available during emergency operations and later, for reestablishing normal governmental activities.

Three types of records considered essential are those required to:

(1) Protect the rights and interests of individuals. These include vital statistics, land and tax records, license registers, and articles of incorporation.

(2) Conduct emergency operations. These would include utility systems maps, locations of emergency supplies and equipment, emergency operations plans and procedures, lines of succession, and lists of regular and auxiliary personnel.

(3) Reestablish normal governmental functions and protect the rights and interests of government. Constitutions and charters, statutes and ordinances, court records, official proceedings, and financial records would be included here.

6. References

Continuity of Government in California (Article IV, Section 21 of the State Constitution).

Preservation of Local Government (Article 15 of the California Emergency Services Act).

Temporary Seat of State Government (Section 450, Title 1, Division 3, Chapter 1 of the Government Code).

Temporary County Seats (Section 23600, Title 3, Division 1, Chapter 4, Article 1 of the Government Code).

Member of the Legislature (Section 9004, Title 2, Division 2, Part 1, Chapter 1.5, Article 1 of the Government Code).

Legislative Session after War or Enemy-Caused Disaster (Sections 9035-9038, Title 2, Division 2, Part 1, Chapter 1.5, Article 2.5 of the Government Code).

Succession to the Office of Governor (Article V, Section 10 of the State Constitution).

Succession to the Office of Governor (Sections 12058-12063, Title 2, Division 3, Part 2, Chapter 1, Articles 5.5 and 6 of the Government Code).

Succession to Constitutional Offices (Sections 12700-12704, Title 2, Division 3, Part 2, Chapter 7 of the Government Code).

Preservation of State Records (Sections 14745-14750, Title 2, Division 3, Part 5.5, Chapter 5, Articles 2 and 3 of the Government Code).

Attachment D

MUTUAL AID
(from State OES Guidance)

1. Introduction

The foundation of California's emergency planning and response is a statewide Standardized Emergency Management System (SEMS) mutual aid system which is designed to ensure that adequate resources, facilities, and other support is provided to jurisdictions whenever their own resources prove to be inadequate to cope with a given situation(s). The basis for the system is Senate Bill 1841 (Petris, 1993) and the California Disaster and Civil Defense Master Mutual Aid Agreement, as provided for in the California Emergency Services Act. The Civil Defense Master Mutual Aid Agreement was developed in 1950 and adopted by California's incorporated cities and by all 58 counties. It created a formal structure within which each jurisdiction retains control of its own personnel and facilities, but can give and receive help whenever it is needed. State government, on the other hand, is obligated to provide available resources to assist local jurisdictions in emergencies.

To facilitate the coordination and flow of mutual aid, the state has been divided into six Office of Emergency Services (OES) Mutual Aid Regions (see map - page 5 of Attachment D). Through this mutual aid system, State OES can receive a constant flow of information from every geographic and organizational area of the state. This includes direct notification from a state agency or department or from a local government official that a disaster exists or is imminent. In some cases, it also includes information that makes it possible to anticipate an emergency and mitigate its effects by accelerated preparations, or perhaps prevent a situation from developing to disaster proportions.

To further facilitate the mutual aid process, particularly during day-to-day emergencies involving public safety agencies, Fire and Rescue, and Law Enforcement Coordinators have been selected and function at the Operational Area (countywide), Mutual Aid Region (two or more counties), and at the state (OES) level. It is expected that during a catastrophic event, such as an earthquake, Coordinators will be assigned at all levels for other essential services (e.g., Medical, Care and Shelter, Rescue).

2. Responsibilities

2.a Local Jurisdictions

Local jurisdictions are responsible for:

- Developing and maintaining current Emergency Plans which are compatible with the California Master Mutual Aid Agreement, and are designed to apply local resources in meeting the emergency requirements of the immediate community or its neighbors, and coordinate such plans with those of neighboring jurisdictions to ensure mutual compatibility.

- Maintaining liaison with the appropriate OES Mutual Aid Region Office and neighboring jurisdictions.

- Identifying Multipurpose Staging Areas (MSA) to provide rally points for incoming mutual aid and/or a staging area for support and recovery activities.

- Responding to requests for mutual aid.

- Dispatching situation reports to the appropriate Operational Area Coordinator and/or OES Mutual Aid Region as the emergency situation develops and as changes in the emergency situation dictate.

- Requesting assistance from neighboring jurisdictions, and/or the Operational Area, as necessary and feasible.

- Receiving and employing resources as may be provided by neighboring jurisdictions and state, federal, and private agencies.

- Carrying out emergency regulations issued by the Governor.

2.b Operational Area

Coordinators at the Operational Area level are responsible for:

- Coordinating intra-county mutual aid.

- Maintaining liaison with the appropriate OES Mutual Aid Region Coordinator, the local jurisdictions within the county, and neighboring jurisdictions.

- Identifying Multipurpose Staging Areas (MSA) to provide rally points for incoming mutual aid and/or staging areas for support and recovery activities.

- Channeling local mutual aid requests which cannot be satisfied from within the county to the appropriate OES Mutual Aid Region Coordinator.

- Dispatching reports to the appropriate OES Mutual Aid Region Coordinator as the emergency situation develops and as changes in the emergency situation dictate.

- Receiving and employing resources provided by other counties, and state, federal, and private agencies.

- Carrying out emergency regulations issued by the Governor.

2.c OES Mutual Aid Region

Coordinators at the OES Mutual Aid Region level are responsible for:

- Coordinating inter-county mutual aid.
- Maintaining liaison with appropriate state, federal, and local emergency response agencies located within the Region.
- Providing planning guidance and assistance to local jurisdictions.
- Responding to mutual aid requests submitted by jurisdictions and/or Operational Area Coordinators.
- Receiving, evaluating, and disseminating information on emergency operations.
- Providing the State Director, OES, with situation reports and, as appropriate, recommending courses of action.

2.d State

State Office of Emergency Services

- Performs executive functions assigned by the Governor.
- Coordinates the extraordinary emergency activities of all state agencies.
- Receives, evaluates, and disseminates information on emergency operations.
- Prepares emergency proclamations and orders for the Governor and disseminates to all concerned.
- Receives, processes, evaluates, and acts on requests for mutual aid.
- Coordinates the application of state mutual aid resources and services.
- Receives, processes, and transmits requests for federal assistance.
- Directs the receipt, allocation, and integration of resources supplied by federal agencies and/or other states.
- Maintains liaison with appropriate state, federal, and private agencies.
- Coordinates emergency operations with bordering states.

Other State Agencies

Provides mutual aid assistance to local jurisdictions commensurate with capabilities and available resources.

3. Policies and Procedures

- Mutual aid resources will be provided and utilized in accordance with the California Master Mutual Aid Agreement and supporting separate agreements.

- During a proclaimed emergency, interjurisdictional mutual aid will be coordinated at the appropriate Operational Area or Mutual Aid Regional level whenever the available resources are:

  - Subject to state or federal control.
  - Subject to military control.
  - Located outside the requesting jurisdiction.
  - Allocated on a priority basis.

- Due to the incompatibility of radio communications equipment between most agencies, local agencies should, where possible, provide incoming mutual aid forces with portable radios using local frequencies.

- Requests for and coordination of mutual aid support will normally be accomplished through established channels (cities to Operational Areas, to Mutual Aid Regions, to State). Requests should include, as applicable:

  - Number of personnel needed.
  - Type and amount of equipment.
  - Reporting time and location.
  - Authority to whom they are to report.
  - Access routes.
  - Estimated duration of operations.

4. References

Mutual aid assistance may be provided under one or more of the following authorities:

- California Fire and Rescue Emergency Plan.

- California Law Enforcement Mutual Aid Plan.

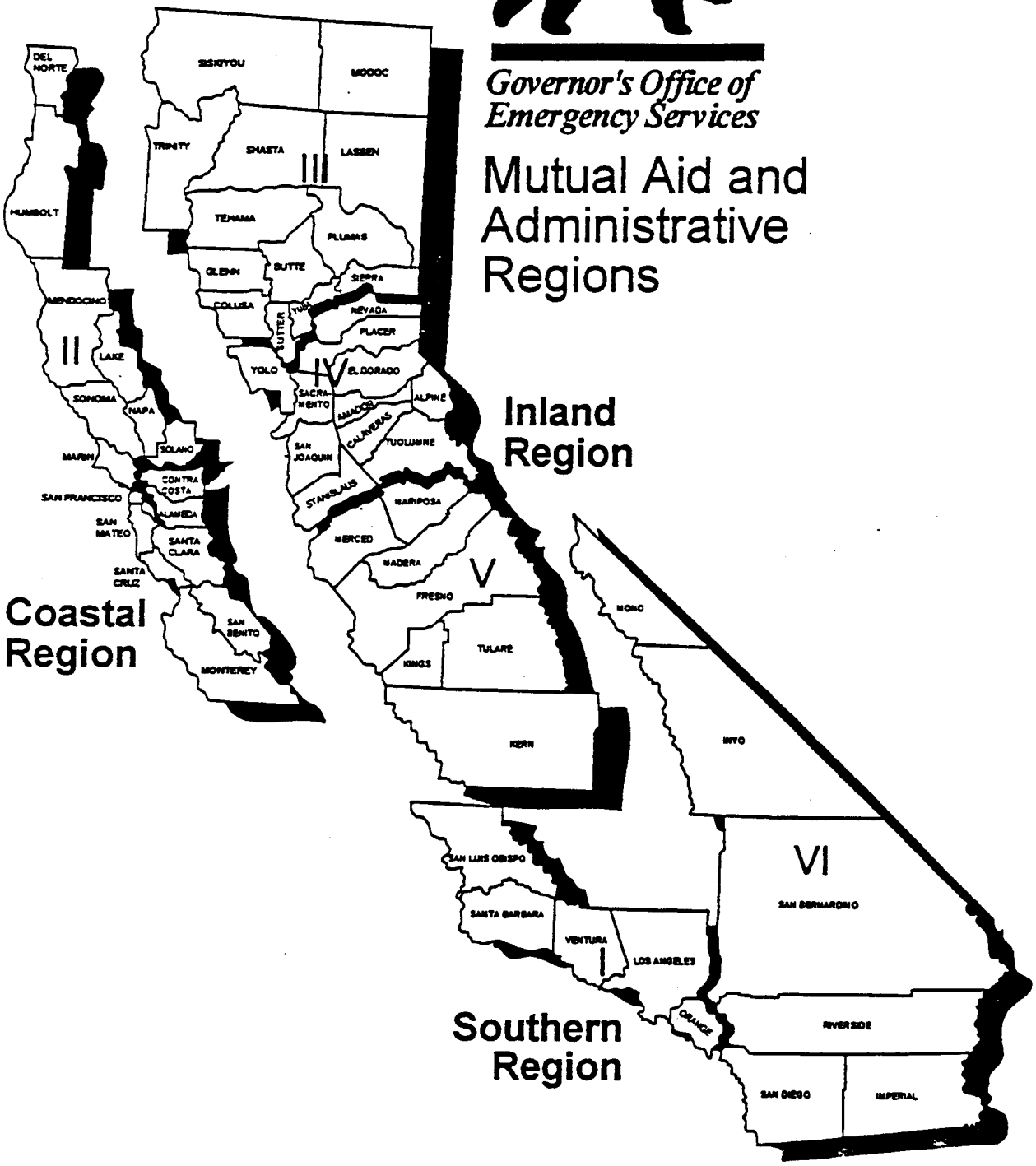
- Local Mutual Aid Agreement

- Federal Disaster Relief Act of 1974. (Public Law 93-288.) (Provides federal support to state and local disaster activities.)

OES
CALIFORNIA

Governor's Office of Emergency Services

Mutual Aid and Administrative Regions



Attachment E

FUNCTIONAL RESPONSIBILITIES OF STATE AGENCIES

	Annex/Function																					
	A									B	C	D	E	F	G	H	I	J	K		L	M	R
	Management	Alerting and Warning	Communications	Situation Analysis	Recovery	Fire and Rescue	Law Enforcement	Medical	Public Health	Coroner	Care and Shelter	Movement	Rescue	Const & Engineering	Resources - gen	Personnel	Transportation	Utilities	Public Information	Technological Svcs.	Radiological Protection
Aging											S											
Air Resources Board									S											S		
Alcoholic Beverage Control							S															
Banking					S																	
Boating					S								S				S					
Coastal Commission																				S		
Conservation															S					S		
CA Conservation Corps					S	S		S			S		S	S	S					S		
Consumer Affairs					S						S											
Corrections						S	S	S	S		S					S						
Education											S				S	S						
E.M.S.A.																				S	S	
Employment Dev.					S								S			L						
Energy			S												L			S				
Finance					S					S					S							
Fire Marshall						S														S		
Fish&Game						S	S						S		S					L	S	
Food & Agriculture									S		S				L					S	S	
Forestry		S				S	S	S			S					S				S	S	
Franchise Tax Board			S		S																	
General Services	S		S				S					S		S	L		S			S		
Health			S			S		S	L	S					S					S	S	
Highway Patrol		S		S		S	S					S	S	S			S			L	S	
Housing & Community Dev.					S						S				L							
Industrial Relations						S									S							
Insurance					S																	
Justice					S		S			S					S					S		
Maritime Academy					S	S					S		S				S					
Mental Health											S											
Military			S	S		S	S	S		S	S	S		S	S	S	S					
Motor Vehicles					S												S					
Off. of Emergency Svcs.	L	L	L	L	L	L	L			L		L	L	L	L			L	L	L	L	
Parks and Recreation											S									S		
Personnel Administration																S						
Personnel Board																S						
Public Utilities Comm.												S		S			S	S			S	
Real Estate					S								S									
Rehabilitation					S																	
Social Services					S			S			L				S							
State Lands																				S		
Transportation					S	S	S					S		S	S		L			S	S	
Veterans Affairs					S			S	S			S										
Waste Mgmt. Board										S												
Water Resources					S	S							S	S			S		S			
Water Resources Cont. Board											S									S		
Youth Authority						S				S			S			S						

*L - Denotes lead agency/organization
*S - Denotes supporting agency/organization

Attachment E

FUNCTIONAL RESPONSIBILITIES OF FEDERAL AGENCIES

#	1	2	3	4	5	6	7	8	9	10	11	12
ESF / ORG	TRANSPORATION	COMMUNICATIONS	PUBLIC WORKS AND ENGINEERING	FIREFIGHTING	INFORMATION AND PLANNING	MASS CARE	RESOURCE SUPPORT	HEALTH AND MEDICAL SERVICES	URBAN SEARCH AND RESCUE	HAZARDOUS MATERIALS	FOOD	ENERGY
USDA	S	S	S	P	S	S	S	S	S	S	P	S
DOC		S	S	S	S	S	S			S		
DOD	S	S	P	S	S	S	S	S	P	S	S	S
DOEd					S							
DOE	S		S		S		S			S		P
DHHS			S		S	S	S	P	S	S	S	
DHUD						S						
DOI		S	S	S	S					S		
DOJ					S			S		S		
DOL			S				S		S	S		
DOS	S									S		S
DOT	P	S	S		S	S	S	S	S	S	S	S
TREAS					S							
VA			S			S	S	S				
AID								S	S			
ARC					S	P		S			S	
EPA			S	S	S			S	S	P	S	
FCC		S										
FEMA		S		S	P	S	S	S	S	S	S	
GSA	S	S	S		S	S	P	S	S	S		S
ICC	S											
NASA					S							
NCS		P			S		S	S				S
NRC					S					S		S
OPM							S					
TVA	S		S									S
USPS	S					S		S				

P - Primary Agency: Responsible for Management of the ESF
S - Support Agency: Responsible for Supporting the Primary Agency

Attachment F

EMERGENCY OPERATIONS CENTER (EOC)

1. **General** (Refer to Annex A for further information)

An effective functional EOC is the key to successful emergency response and recovery operations.

Local government employees conduct their daily business from offices that are widely dispersed; however, when a major emergency or disaster occurs, centralized Management is needed to enable coordinated response by the decision makers, other emergency service personnel, and representatives from any other organizations that have emergency responsibilities. Management is accomplished under emergency conditions by providing a single site from which key officials and staff operate.

With the decision makers located together, staff and other resources can be most effectively utilized and activities can be coordinated so that duplication of effort is avoided. The EOC provides a central location of authority and information and allows for face-to-face coordination among those persons who direct disaster response.

The following functions are performed in the EOC:

1. Receipt and dissemination of warning.
2. Management of emergency operations.
3. Collection and analysis of damage information.
4. Provision of emergency information and instructions to the public, and
5. Maintenance of communication with support EOCs, neighboring jurisdictions, and other levels of government.

The EOC is activated as the size or severity of the emergency dictates.

2. **Facilities**

Local jurisdictions and Special Districts should designate specific primary and alternate locations that serve as Emergency Operations Centers. In the case of the County of San Diego, their primary and alternate EOC locations are as follows:

1. Primary EOC: County Operations Center, 5555 Overland Avenue, San Diego.
2. Alternate EOC: Office of Disaster Preparedness, 5201 Ruffin Rd., Ste. Q, San Diego.

UNIFIED SAN DIEGO COUNTY
EMERGENCY SERVICES ORGANIZATION
OPERATIONAL AREA EMERGENCY PLAN

ANNEX A

EMERGENCY MANAGEMENT
(INCLUDING MANAGEMENT
AND EOC OPERATIONS)

September 1996

UNIFIED SAN DIEGO COUNTY EMERGENCY SERVICES ORGANIZATION

ANNEX A

EMERGENCY MANAGEMENT

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UNIFIED SAN DIEGO COUNTY EMERGENCY SERVICES ORGANIZATION

ANNEX A

EMERGENCY MANAGEMENT

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ANNEX A

EMERGENCY MANAGEMENT

I. GENERAL

A. Purpose

1. To describe the function and operation of Management, as a part of the emergency management process.

2. To describe the organization and operation of Emergency Operations Centers (EOCs).

B. Objectives

1. To provide a basis for centralized control, coordination, and direction of emergency operations.

2. To describe the organization and operation of Emergency Operations Centers (EOCs).

C. Plan Activation and Termination

This Annex is automatically activated when a jurisdictional/Operational Area Emergency Plan is activated and terminated when one of the above Emergency Plans is terminated.

II. EMERGENCY OPERATIONS

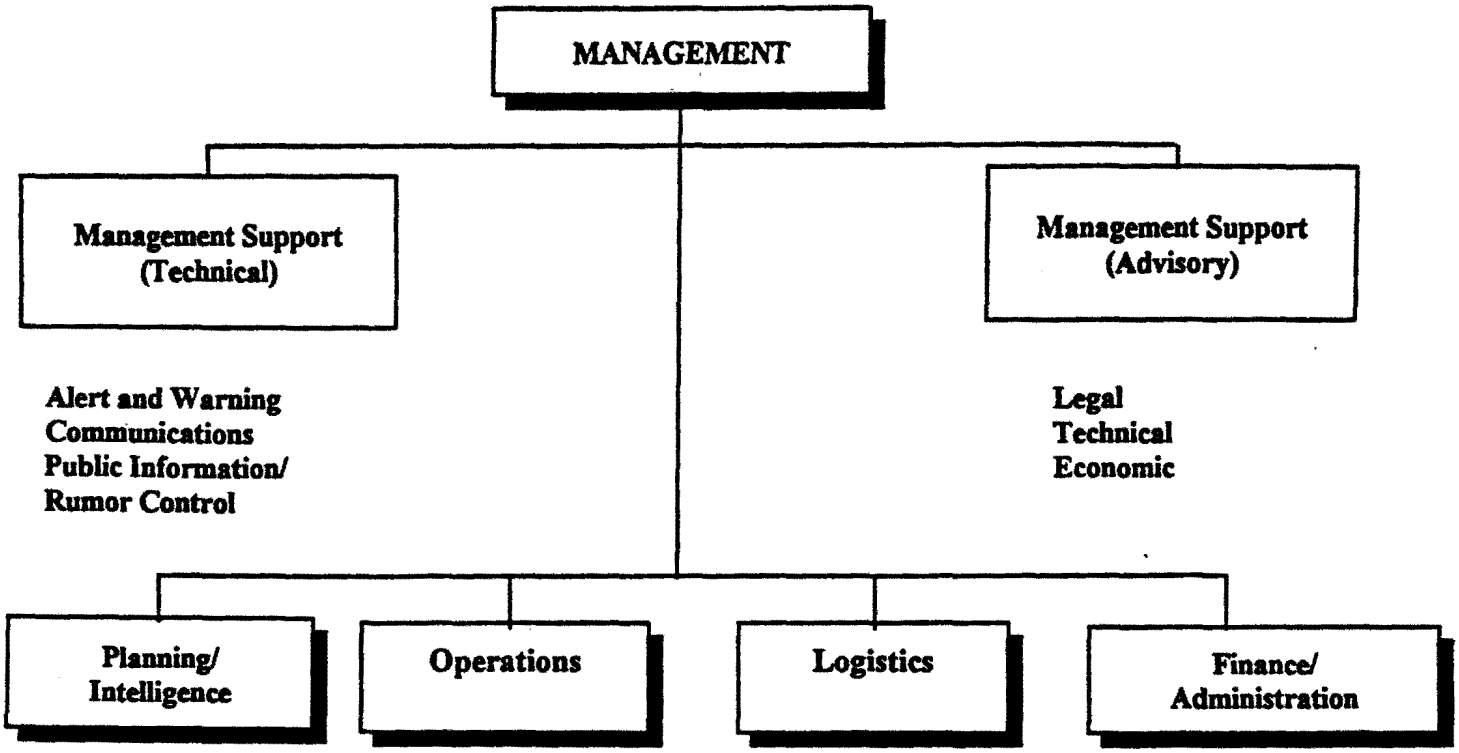
A. Coordination

Coordination within the Management group in the EOC is one of the keys to successful response operations. When decision makers are together in one location, staff and resources can be utilized in the most effective manner. This section includes directors or representatives of County Departments, selected and led by the Director/Coordinator of Emergency Services (Chief Administrative Officer) or his/her designeé, or directors or representatives of City departments, led by the City Director of Emergency Services (City Manager) or their designeé and Directors of Special Districts affected by the disaster.

When a disaster occurs, communication and coordination with Operational Area/County/City Departments, Special Districts, other cities, news media, state and federal agencies, and all others "outside" of the EOC, must be accurate and consistent with the Management guidelines and directives.

The San Diego County Operational Area Emergency Plan has been designed to follow the Standardized Emergency Management System (SEMS).

FIGURE 1
FUNCTIONAL CHART



Management Support (Technical)

Alert and Warning
Communications
Public Information/
Rumor Control

Management Support (Advisory)

Legal
Technical
Economic

Planning/ Intelligence

Situation Intelligence
Damage Assessment
Recovery

Operations

Fire/Rescue
Law Enforcement
Care and Shelter
Medical
Public Health
Environmental Health
Mental Health
Evacuation
Construction/Engineering
Medical Examiner
Animal Control

Logistics

Utilities
Personnel
Equipment
Supplies/Food
Transportation
Facilities
Purchasing
Procurement
Communications Equip.

Finance/ Administration

Accounting
Costs
Records
Audit Trail
Obligations

B. Priorities

The following are priorities when conducting and coordinating disaster operations:

1. Meeting the immediate needs of people (rescue, medical care, food, shelter, clothing).

2. Restoration of facilities, whether public or privately owned, that are essential to the health, safety and welfare of citizens (sanitation, water, electricity, road, street, and highway repair).

3. Meeting the rehabilitation needs of people (temporary housing, food stamps, employment, etc.).

4. Providing for the recovery of the community to, at least, its pre-disaster state.

C. Emergency Operations Center

The EOC is one of the most important elements in the coordination of successful response and recovery operations. With centralized decision making, personnel and other resources can be utilized more effectively. Coordination of activities ensures that all tasks are accomplished with little or no duplication of effort, and with the highest probability of success.

Day-to-day operations are conducted from departments and agencies that are widely dispersed throughout the Operational Area. When a major emergency or disaster occurs, centralized Management is needed to facilitate a coordinated response by the Chief Administrative Officer (CAO)as Coordinator of Emergency Services for the Operational Area (if elected to that position by the Unified Disaster Council), as Director of Emergency Services for the County, City Managers, emergency services personnel, and representatives from special districts and private sector organizations with assigned emergency responsibilities. The EOC provides a central location of authority and information, and allows for face-to-face coordination among the personnel who direct local services in response to a disaster.

The following activities are performed in the EOC:

1. Receipt and dissemination of warning.

2. Collection and analysis of situational information (see Attachment B, Event/Major Incident Report).

3. Management and coordination of emergency operations.

4. Collection, analysis, and reporting of damage data.

5. Provision of emergency information and instructions to the public.

6. Maintenance of liaison with support agencies, other jurisdictions, and other levels of government.

7. Coordinate: a) the analysis of radioactive fallout and other hazards and b) the recommendation of countermeasures.

D. Declarations of Emergency

1. Local Emergency Proclamation

a. In the event of a disaster or condition of extreme peril to persons and property within a jurisdiction which is beyond the capability of local responders to manage, the Board of Supervisors fills the role of ordering up and making a Proclamation of Local Emergency for the entire Operational Area. The CAO, City Councils or City Managers may also proclaim a Local Emergency. If made by the CAO or a City Manager, the Proclamation must be ratified by the Board or City Council within seven days. In either case, the Proclamation must be made within ten days of the occurrence to qualify the County or City for State assistance. In the case of Special Districts, they would request that the Operational Area make the proclamation for them. See Attachment A for sample proclamations.

b. A Local Emergency may be proclaimed due to such events as flood, fire, severe storm, earthquake, epidemic, drought, sudden and severe energy shortage, or hazardous materials incident.

c. The Proclamation accomplishes the following:

(1) Provides public employees, the Board of Supervisors and City Councils with legal immunities for emergency actions taken.

(2) Enables the Board of Supervisors to act as a Board of Equalization, to reassess damaged property and provide property tax relief.

(3) Allows the CAO (or other authorized official designated by County Ordinance 8183) to:

(a) Establish Curfews

(b) Take any preventive measures necessary to protect and preserve the public health and safety

(c) Exercise other authorities as established by Ordinance 8183 (i.e. to issue new rules and regulations, expend funds, or to obtain vital supplies and equipment).

d. The Board or City Council must review the need for continuing the local emergency proclamation <u>at least every 14 days</u>, and should proclaim the termination at the earliest possible date.

2. State of Emergency

a. After or as part of the Proclamation of a Local Emergency, the Board, or City Council may request (by resolution) that the Governor proclaim a State of Emergency. A copy of the request for a Governor's Proclamation, with the following supporting data, must be forwarded to the Director, State of California Office of Emergency Services (OES), through the Operational Area:

(1) Copy of the Local Emergency Proclamation,

(2) Damage Assessment Summary information (See Annex N).

b. The Governor's State of Emergency allows for the following:

(1) Mandatory mutual aid may be exercised.

(2) The Governor has the authority to commit State resources, for example, National Guard, California Conservation Corps (CCC crews).

(3) The Governor may request the President to declare an Emergency or Major Disaster.

3. Presidential Declaration

After or as part of Proclamation of a State of Emergency, the Governor may request that the President declare an Emergency or Major Disaster. The Presidential Declaration allows for Federal disaster assistance and resources.

III. EOC ORGANIZATION (See Figure 1)

During emergency operations, the EOC, in accordance with the Standardized Emergency Management System, is organized into five major functional areas. They are: (a) Management, (b) Operations, (c) Planning/Intelligence, (d) Logistics, and (e) Finance/Administration.

There are a number of procedural responsibilities common to all of the sections. They are: gathering information and verification; making decisions; coordinating; briefing; advising; following procedures; providing, notifying and scheduling staff; and keeping comprehensive records.

A. Management

The Management Section consists of those responsible for the overall management of the emergency. This group includes the Director of Emergency Services (CAO or City Manager) and the directors or representatives from the County/City departments and/or Special Districts affected by the emergency.

The responsibilities of this Section are:

1. Manage EOC functions and coordinate the overall response/recovery effort, including

prioritizing, decision making, coordination, tasking, and conflict resolution within the EOC.

2. Report to the Board of Supervisors or City Council.

3. Report to State OES through the Operational Area.

4. Interjurisdictional coordination.

5. Activation, including notification and recall, and deactivation of the EOC.

Management Support - Technical and Advisory

Management Support is intended to provide technical expertise and advice to the EOC Manager and the management group. Key positions include: the Communications Officer, Public Information Officer, Legal Counsel and other advisors as appropriate. Some key responsibilities are:

1. Communications, including the Communications Center, equipment repair, and alternate systems.

2. Alert and warning.

3. Emergency public information.

4. Rumor control.

The advisors participate in the EOC at the request of the CAO/City Manager.

B. Planning/Intelligence

The Planning Section is responsible for gathering, analyzing, evaluating, and disseminating technical information and making recommendations to the EOC Manager. While Operations is concerned with immediate strategic response to the disaster, Planning is looking and planning ahead. Planning's function is to maintain information on the overall response effort and to develop the EOC Action Plan for the next operational period.

The major responsibilities of this Section are:

1. Situation Intelligence, including information gathering, verification, status reporting, and maintaining maps and displays.

2. Damage Assessment, including information gathering, verification, and reporting.

3. Message control.

4. Record keeping.

5. Briefing EOC staff.

6. Scheduling.

7. Radiological protection

C. Operations

The Operations Section includes all activities which are directed toward the reduction of the immediate hazard, establishing control, and restoration of County/City/Special District operations. This Section consists of those departments or agencies that are responsible for public safety and carrying out response activities. The individual agencies receive and evaluate requests for assistance and resources, establish priorities, and relay operational status and information to the Management Section. In larger emergencies some may also have coordinating roles such as the Area Fire Coordinator or Area Law Enforcement Coordinator (Sheriff). The County Health Officer also has an area-wide coordinating role in some types of emergencies.

Among those usually represented in the Section are Fire, Rescue, Law Enforcement, Public Works, Emergency Medical Services, Environmental Health, American Red Cross (Care and Shelter), Department of Social Services and the Medical Examiner.

The overall responsibility of this Section is to coordinate with field operations.

D. Logistics

The Logistics Section consists of those departments with responsibilities for the procurement and payment of personnel and equipment necessary for the management of and recovery from the emergency. The Logistics Section coordinates the procurement and provision of emergency resources and support for the response and recovery operations being conducted in the field. The Operational Area EOC Logistics Section coordinates the procurement and provision of emergency resources and support for the entire Operational Area.

In the Operational Area EOC this Section includes such County departments as Purchasing, Auditor, General Services, Public Works, Housing and Community Development, Social Services, and Agriculture; as well as specialists such as water or utility company representatives.

E. Finance/Administration

The Finance/Administration Section is responsible for all finance, emergency funding and cost accountability functions for EOC operations and for supervising branch functions providing financial and contracting services for EOC operations within its jurisdiction. Some of these functions may include:

1. Financial expenditure and funding briefings.

2. Interagency financial coordination.

3. Finance and contract fact-finding.

4. Fiscal and emergency finance estimating.

5. Operating procedure development and financial planning.

6. Labor expense and accounting.

7. Cost analysis, cost accounting and financial auditing.

8. Disbursement and receivables management.

9. Necessary funding transfers.

10. Special drafts, exchanges and lending controls.

11. Payroll administration.

12. Emergency currency, script and rationing control.

IV. EOC FUNCTIONAL RESPONSIBILITIES

The following lists the functional responsibilities for local Emergency Operations Centers (EOCs). Individual jurisdictions may have different names for some of the departments or personnel within their jurisdictions, but the responsibilities will be similar.

A. Management (see Annex A, Emergency Management)

1. Purpose

   To provide leadership in the EOC, determine policies and priorities, and manage the overall response within the jurisdiction's boundaries.

2. Personnel

   Local government and Special District department heads serve in the Management Section at the discretion of the jurisdiction's Emergency Services Director and /or EOC Manager. The following list provides a probable staffing for a major event:

   a. Chief Administrative Officer (CAO)/City Manager, Director

   b. Emergency Services Coordinator (Director of ODP or the city's Emergency Services Coordinator)

   c. Sheriff/Law Enforcement

   d. Area Fire Coordinator liaison representative

e. Medical Examiner representative (if required)

f. Director, Department of Public Works/Community Services

g. Department of Health Services representative (if required)

h. Director, Department of General Services

3. Responsibilities

a. Ensure long-range, logistical, and recovery planning.

b. Maintain active liaison with other jurisdictions and the Operational Area.

c. Ensure emergency proclamations are made.

d. Keep the Board of Supervisors/City Council informed.

B. Fire and Rescue Operations (see Annex B, Fire and Rescue Mutual Aid Operations)

Fire

1. Purpose

To coordinate fire, rescue and emergency medical services response within the jurisdiciton. To establish liaison between the Emergency Operations Center and field operations, as well as to facilitate prioritization of fire resource needs during emergency operations.

2. Personnel

Designated liaison from the appropriate fire agency.

3. Responsibilities

The Fire Chief will assign a liaison to the Emergency Operations Center, who will:

a. Establish communications between the Fire Dispatch Center and the EOC.

b. Keep the Operations Section informed of critical activities and pending needs of the fire agency(ies) responding to the emergency.

c. Coordinate with other functional groups, such as Law Enforcement, Evacuation, Care and Shelter, etc., as required.

Rescue

1. Purpose

   To coordinate the efforts to search for trapped and injured persons and extricate them safely and quickly.

2. Personnel

   a. Fire Chief, or designee, in Management.

   b. Fire representative, as Rescue Coordinator, in Operations.

   c. Law Enforcement personnel.

   d. Other agency representatives as needed, from both the public and private sectors.

3. Responsibilities include support for field operations which include:

   a. Search for victims.

   b. Extricate and evacuate victims.

   c. Stabilize buildings and sites, using debris tunneling, shoring, and other methods.

   d. Provide field medicine and life-support.

   e. Transport non-ambulatory victims.

C. **Law Enforcement** (see Annex C, Law Enforcement Mutual Aid Operations)

1. Purpose

   To coordinate the law enforcement response during a disaster. To coordinate the evacuation, dispersal or relocation of persons from threatened or hazardous areas to less threatened or safe areas.

2. Personnel

   a. The Sheriff/Chief of Police or a designated representative in Management.

   b. A Sheriff/Police representative in law enforcement operations in the Operations Section.

   c. Other personnel, as needed.

3. Responsibilities

a. Coordinate law enforcement response within the jurisdiction.

b. Coordinate and liaison with appropriate agencies for traffic control and route recovery.

c. Coordinate movement of persons from hazardous areas, including evacuation and traffic control.

d. Ensure transportation for disabled persons, the elderly, and persons without vehicles.

e. Ensure access control measures to prevent unauthorized persons from entering vacated, or partially vacated, areas.

f. Provide for the procurement, allocation and use of transportation resources and law enforcement resources, by means of mutual aid or other agreements.

D. Medical (see Annex D, Multi-Casualty Plan)

1. Purpose

To coordinate disaster medical operations within the Operational Area through the procurement and allocation of public and private medical resources; the activation and operations of Casualty Collection Points (CCPs); the transportation of casualties and medical resources; and the relocation of patients from damaged or untenable health facilities. This function will be coordinated at the Operational Area EOC. All personnel and functions detailed below will be present at the Operational Area EOC.

2. Personnel

a. Management - Medical Director, Emergency Medical Services (EMS)

b. Operations

(1) Chief, EMS

(2) Disaster Medical Coordinator

(3) EMS Staff as needed

3. Responsibilities

a. Coordinate the procurement and allocation of the medical resources required to support disaster medical operations.

b. Coordinate the transporting of casualties and medical resources to health care

facilities, including CCPs, within the area and to other areas, as requested.

c. Organize a system for staffing and operating CCPs and Disaster Support Areas.

d. Request and respond to requests from the Regional Disaster Medical/Health Coordinator (RDMHC) for disaster assistance.

e. Maintain status of medical resources, transportation, and communication services within the Operational Area.

f. Maintain liaison with the Red Cross, volunteer service agencies, and other representatives within the Operational Area.

g. Maintain liaison with the coordinators of other emergency functions such as communications, fire and rescue, health, law enforcement and traffic control, transportation, and care and shelter.

h. Coordinate and provide support to medical activities at the scene.

E. Public Health (see Annex E, Public Health Operations)

1. Purpose

To coordinate public health operations within the Operational Area, by providing preventive health measures and communicable disease control. This function will be coordinated at the Department of Health's Department Operations Center (DOC). All personnel and functions detailed below will be present at the Department of Health's DOC.

2. Personnel

a. Management - Director, Department of Health Services or designee

b. DOC Operations

(1) County Health Officer or designee

(2) Chief, Public Health Nursing or designee

(3) Chief, Public Health Education or designee

(4) Chief, Community Disease Control or designee

(5) Chief, Public Health Laboratory or designee

3. Responsibilities

a. Coordinate the procurement and allocation of public health resources required to support disaster public health operations.

b. Request and respond to requests from the Regional Disaster Medical/Health Coordinator for disaster assistance.

c. Maintain status of public health resources within the Operational Area.

d. Coordinate all public health related activities among other local public and private response agencies or groups, as well as state and federal agencies.

e. Provide preventive health services.

F. Medical Examiner (see Annex F, Medical Examiner Operations)

1. Purpose

To manage medical examiner operations during a disaster.

2. Personnel

a. The Medical Examiner or designated representative in Management.

b. Disaster Control Staff Coordinator, in the Operations Section.

3. Responsibilities are to establish and manage all medical examiner operations, including the following:

a. Medical Examiner Emergency Teams

b. Body Staging Areas

c. Temporary morgues and transportation

d. Identification and listing of victims

e. Notification of next of kin

f. Emergency procurement and allocation of supplies and resources

g. Request mutual aid, if required

G. **Care and Shelter Operations** (see Annex G, Care and Shelter Operations)

1. Purpose

To assure the provision of food, shelter, clothing and basic welfare needs to the victims of disaster; to establish contact and coordination with the American Red Cross (ARC) and provide assistance, as required.

2. Personnel

a. Designated Care and Shelter Coordinator.

b. Liaison personnel from the Red Cross (as assigned).

3. Responsibilities

a. Care and Shelter Coordinator

(1) Coordinate local government support to the Red Cross.

(2) Coordinate resource and mutual aid requests between the Red Cross and other government departments or agencies.

(3) Provide care and shelter to disaster victims until the Red Cross or other private disaster relief organizations are able to fulfill that responsibility.

b. Red Cross Liaison

(1) Maintain contact with Red Cross Headquarters and keep the Care and Shelter Coordinator informed of Red Cross operations during the disaster.

(2) Make requests to Care and Shelter Coordinator for assistance in providing care and shelter to disaster victims.

H. **Environmental Health** (see Annex H, Environmental Health Operations)

1. Purpose

To coordinate environmental health operations within the San Diego Operational Area by providing environmental health protection associated with disasters.

2. Personnel

a. Management - Director, Department of Environmental Health or designee

b. Operations

(1) Deputy Director, Environmental Health, or designee
(2) Chief, Hazardous Materials Management Division, or designee
(3) Chief, Community Food and Housing Division, or designee
(4) Chief, Land Use Division, or designee
(5) Chief, Occupational and Radiological Health Division, or designee
(6) Chief, Vector Surveillance and Control Division, or designee
(7) Chief, Building Division

3. Responsibilities

a. Coordinate procurement, allocation and distribution of environmental health resources required to support disaster environmental health operations.

b. Supervise food delivery system and assist in water supply, waste disposal, and housing.

c. Establish methods and procedures for vector and rodent control activities.

d. Advise on all occupational hazards as they occur.

e. Identify hazardous materials released, evaluate risks to the general public, and advise on mitigation measures to modify or reduce environmental health impact.

f. Coordinate damage assessment efforts throughout the Operational Area to include the coordination of building inspectors, architects and engineers.

I. **Communications** (see Annex I, Communications)

1. Purpose

To describe the various communication systems available throughout the Operational Area. This includes systems used by Operational Area agencies and certain mutual aid frequencies common to almost all law enforcement and fire agencies.

2. Personnel

Various agencies and organizations.

3. Responsibilities

Provide and maintain communications in the San Diego Operational Area for day-to-day and disaster operations.

J. **Construction and Engineering** (see Annex J, Construction and Engineering Operations)

1. Purpose

To coordinate the allocation of engineering resources (construction equipment, materials, etc.) required for emergency debris clearance, route recovery, shelter construction, and other engineering operations.

2. Personnel

a. The Director of the Department of Public Works or designated representative in Management.

b. Assigned representative in the Operations Section.

c. Assigned representative in the Logistics Section.

3. Responsibilities

a. Develop and maintain current records of road conditions throughout the Operational Area during emergencies.

b. Restore, maintain and operate essential services within the jurisdiction such as roads, sewers and drainage facilities.

c. Construct emergency facilities, such as bridges.

d. Assist in search and heavy rescue.

e. Assist in providing for repair, modification and/or construction of emergency facilities and housing.

f. Maintain an inventory of sources and provide for procurement and allocation of heavy construction equipment.

g. Manage and coordinate jurisdictional transportation facilities.

h. Maintain an inventory of sources and provide for procurement and allocation of transportation resources.

K. Logistics (see Annex K, Logistics)

1. Purpose

To coordinate the procurement and provision of emergency resources and support and advise the Emergency Services Director on resource allocations, distribution, priorities, expenditures, and related matters.

2. Personnel

a. Assistant CAO/Assistant City Manager, Coordinator

b. Public Works representative

c. General Services representative

d. Purchasing representative

e. Information Services Representative

f. Auditor's representative

g. Department of Human Resources (DHR) representatives.

h. Housing and Community Development representative.

i. Utility representatives (Operational Area EOC only).

j. Representatives from private industry, including "Plan Bulldozer" signatory contractors, as required.

k. American Red Cross representatives (Operational Area EOC).

3. Responsibilities

Logistics:

a. Implement emergency resources functions through pre-designated assignments from the Management group.

b. Procure and allocate essential resources (personnel, services and material) to support emergency operations.

c. Oversee the distribution and inventory of food stocks and other essential supplies for emergency subsistence.

d. Procure and allocate required transportation, fuel and similar equipment resources.

e. Provide for maintenance and repair of telecommunications, potable water systems, government-owned electrical, sanitation, and other utility systems and services.

f. Acquire, inspect and provide supplies for care and shelter facilities,

multipurpose staging areas and fixed or mobile clinical and medical facilities.

g. Establish control of resources in a manner compatible with the Operational Area Emergency Plan.

h. Provide accountability of resources requested and expended.

L. **Public Information** (see Annex L, Emergency Public Information)

1. Purpose

To provide the public with accurate and timely information and instructions through the news media.

2. Personnel

a. Assistant Public Affairs Manager/jurisdictional Public Information Officer, Coordinator

b. Media Team/PIO staff

c. Departmental liaisons as required.

3. Responsibilities

a. Secure briefings from EOC staff

b. Give regular briefings to news media representatives

c. Act as jurisdictional spokespersons

d. Prepare and disseminate news releases

e. Prepare and disseminate Life Saving Information For Emergencies (LIFE) and Emergency Broadcast System (EBS) messages for release by the Operational Area EOC. Requests from other jurisdictions for LIFE/EBS messages will be disseminated upon request.

e. Coordinate media interviews with jurisdictional officials.

f. Monitor news reports and correct inaccurate information.

g. Maintain liaison with Public Information Officers (PIOs) from other agencies and jurisdictions.

h. Notify the news media of any changes in EOC status.

M. **Mental Health** (see Annex M, Mental Health Operations)

1. Purpose

To coordinate mental health disaster response operations within the Operational Area by providing outreach, intervention and emergency psychological services. (Operational Area EOC only).

2. Personnel

a. Community Mental Health Disaster Coordinator

b. Assistant Disaster Coordinator

3. Responsibilities

a. Coordinate mental health intervention services for disaster victims and emergency response personnel, as well as the general public.

b. Maintain status of mental health resources, including facilities and personnel within the Operational Area.

c. Coordinate all mental health related activities among other local public and private response agencies or groups, as well as state and federal agencies.

d. Provide mental health debriefing sessions for EOC staffs.

N. **Damage Assessment and Recovery** (see Annex N, Damage Assessment and Recovery)

1. Purpose

To coordinate the gathering and reporting of damage during and following a disaster, using an effective system of response.

2. Personnel

a. Damage Assessment Coordinator

b. Field Operations/Field Survey Coordinator

c. Financial Estimate Coordinator

d. Data Entry staff

3. Responsibilities

a. Coordinate jurisdictional Damage Assessment Team.

b. Report situation and damage to Operational Area EOC. The Operational Area EOC will coordinate with the State Office of Emergency Services.

c. Coordinate and maintain files of all field survey reports.

d. Coordinate and maintain all records during recovery phase.

e. Coordinate dollar estimates for damage assessment.

f. Coordinate field operations/field survey teams.

g. Follow up on field reports in order to provide tax exemptions to owners of damaged private property. (Operational Area EOC only)

O. Animal Control (see Annex O, Animal Control)

1. Purpose

To provide immediate care and control of animals in the event of a major emergency or disaster and protect the health and safety of the community.

2. Personnel

a. Director, jurisdictional Animal Control Agency

b. Assigned representative in Operations Section

3. Responsibilities

a. Coordinate emergency Animal Control operations.

b. Develop and organize a system to identify and track animals received during a disaster.

c. Develop criteria establishing holding time and euthanasia standards for disaster situations.

AUTHENTICATION:

Director
Office of Disaster Preparedness

Date 9/23/96

ATTACHMENT A-1

UNIFIED SAN DIEGO COUNTY EMERGENCY SERVICES OPERATIONAL AREA

PROCLAMATION OF LOCAL EMERGENCY
(By Board of Supervisors/City Council)
(Page 1 of 2)

WHEREAS, Ordinance No._____ of the County/City of _____ empowers the Board of Supervisors/City Council to proclaim the existence or threatened existence of a Local Emergency when said jurisdiction is affected, or is likely to be affected, by a public calamity; and

WHEREAS, said Board of Supervisors/City Council has been requested by the Director of Emergency Services of said county/city to proclaim the existence of a Local Emergency therein; and

WHEREAS, said Board of Supervisors/City Council does hereby find that conditions of extreme peril to the safety of persons and property have arisen within said county/city, caused by _____ _____, (fire, flood, storm, epidemic, earthquake, drought, etc.) commencing on or about _____ __.m. on the ____ day of _____, _____; and

WHEREAS, the Board of Supervisors/City Council does find that the aforesaid conditions of extreme peril does warrant and necessitate the Proclamation of the existence of a Local Emergency;

NOW, THEREFORE, IT IS HEREBY PROCLAIMED by the Board of Supervisors/City Council of the County/City of _____, that a Local Emergency exists throughout said county/city and that said Local Emergency shall be deemed to continue to exist until its termination is proclaimed by the Board of Supervisors/City Council.

IT IS FURTHER PROCLAIMED AND ORDERED that during the existence of said Local Emergency the powers, functions, and duties of the Director of Emergency Services and the emergency organization of this county/city shall be those prescribed by state law, charter, ordinances, and resolutions of this jurisdiction approved by the Board of Supervisors/City Council.

IT IS FURTHER PROCLAIMED AND REQUESTED that the Governor of the State of California find and proclaim San Diego County to be in a State of Emergency and that he/she request a Presidential Declaration of Emergency for San Diego County.

IT IS FURTHER PROCLAIMED AND ORDERED that the Director of Emergency Services and the _____ are hereby designated as the authorized representatives of the County/City of _____ for the purpose of receipt, processing, and coordination of all inquires and requirements necessary to obtain available state and federal assistance.

ATTACHMENT A-1 (Continued)

UNIFIED SAN DIEGO COUNTY EMERGENCY SERVICES OPERATIONAL AREA

PROCLAMATION OF LOCAL EMERGENCY
(By Board of Supervisors/City Council)
(Page 2 of 2)

IT IS FURTHER ORDERED that a copy of this Proclamation of Local Emergency be forwarded to the San Diego County Operational Area, for forwarding to the State Director of the Governor's Office of Emergency Services with a request that;

1. The State Director find the Proclamation of Local Emergency acceptable in accordance with provisions of the Natural Disaster Assistance Act; and that

2. The State Director forward this Proclamation and request for a State Proclamation and Presidential Declaration of Emergency to the Governor of California for consideration and action.

PASSED AND ADOPTED by the Board of Supervisors/City Council of the County/City of _____ _____, San Diego County, State of California, this _____ day of _____, _____, by the following vote:

Ayes:
Noes:
Absent:

I hereby certify that the foregoing is a full, true and correct copy of the Original entered in the minutes of the Board of Supervisors/City Council.

Clerk of the Board of Supervisors/City Clerk

Date: _____ By: _____

ATTACHMENT A-2

UNIFIED SAN DIEGO COUNTY EMERGENCY SERVICES OPERATIONAL AREA

PROCLAMATION OF LOCAL EMERGENCY

(by Director of Emergency Services)
(Page 1 of 2)

WHEREAS, Ordinance No. _____ of the County/City of _____ empowers the Director of Emergency Services to proclaim the existence or threatened existence of a Local Emergency when said county/city is affected, or likely to be affected, by a public calamity and the Board of Supervisors/City Council is not in session; and

WHEREAS, the Director of Emergency Services of the County/City of _____ does hereby find that conditions of extreme peril to the safety of persons and property have arisen within said county/city, caused by _____ (fire, storm, epidemic, riot, earthquake, or other cause) commencing on or about _____ __.m. on the _____ day of _____, _____; and

WHEREAS, the Board of Supervisors/City Council of the County/City of _____ is not in session and cannot immediately be called into session; and

WHEREAS, this Proclamation of Local Emergency will be ratified by the Board of Supervisors/City Council within seven days of being issued.

NOW, THEREFORE, IT IS HEREBY PROCLAIMED by the Director of Emergency Services for the County/City of _____, that a Local Emergency exists throughout said county/city and that said Local Emergency shall be deemed to continue to exist until its termination is proclaimed by the Board of Supervisors/City Council.

IT IS FURTHER PROCLAIMED AND ORDERED that during the existence of said Local Emergency the powers, functions, and duties of the Director of Emergency Services and the emergency organization of this county/city shall be those prescribed by state law, charter, ordinances, and resolutions of this jurisdiction and by the Operational Area Emergency Plan as approved by the Board of Supervisors/City Council.

IT IS FURTHER PROCLAIMED AND REQUESTED that the Governor of the State of California find and proclaim San Diego County to be in a State of Emergency and that he/she request a Presidential Declaration of Emergency for San Diego County.

IT IS FURTHER PROCLAIMED AND ORDERED that the Director of Emergency Services and the _____ are hereby designated as the authorized representatives of the County/City of _____ for the purpose of receipt, processing, and coordination of all inquires and requirements necessary to obtain available state and federal assistance.

ATTACHMENT A-2 (Continued)

UNIFIED SAN DIEGO COUNTY EMERGENCY SERVICES OPERATIONAL AREA

PROCLAMATION OF LOCAL EMERGENCY
(by Director of Emergency Services)
(Page 2 of 2)

IT IS FURTHER ORDERED that a copy of this Proclamation of Local Emergency be forwarded to the San Diego County Operational Area, for forwarding to the State Director of the Governor's Office of Emergency Services with a request that;

1. The State Director find the Proclamation of Local Emergency acceptable in accordance with provisions of the Natural Disaster Assistance Act; and that

2. The State Director forward this Proclamation, and request for a State Proclamation and Presidential Declaration of Emergency, to the Governor of California for consideration and action.

PASSED AND ADOPTED by the Director of Emergency Services for the County/City of _____ _____, State of California, this _____ day of _____, _____.

_____
Director of Emergency Services

ATTACHMENT A-3

UNIFIED SAN DIEGO COUNTY EMERGENCY SERVICES OPERATIONAL AREA

PROCLAMATION
RATIFYING LOCAL EMERGENCY
PROCLAIMED BY THE
DIRECTOR OF EMERGENCY SERVICES

(Page 1 of 2)

WHEREAS, Ordinance No. _____ of the County/City of _____ empowers the Director of Emergency Services to proclaim the existence, or threatened existence, of a Local Emergency when said County/City is affected, or likely to be affected, by a public calamity and the Board of Supervisors/City Council is not in session subject to ratification by the Board of Supervisors/City Council within seven days; and

WHEREAS, such Proclamation entitles the Director of Emergency Services, and the emergency organization of this County/City, to all the powers, functions, and duties prescribed by state law, charter, ordinances, and resolutions of this jurisdiction and by the Operational Area Emergency Plan during the existence of said Local Emergency; and

WHEREAS, conditions of extreme peril to the safety of persons and property did arise within this County/City caused by _____ _____ (fire, flood, storm, epidemic, riot, earthquake, or other cause), commencing on the _____day of _____, _____ at which time the Board of Supervisors/City Council was not in session and could not be called into session; and

WHEREAS, the Director of Emergency Services of the County/City of _____ did issue a Proclamation of Local Emergency within said County/City on the _____ day of _____, _____; and

WHEREAS, said Proclamation requested the Governor of the State of California to find and proclaim San Diego County to be in a State of Emergency and that he/she request a Presidential Declaration of Emergency for San Diego County; and

WHEREAS, said Proclamation designated _____ as the authorized representatives of the County/City of _____ for the purpose of receipt, processing, and coordination of all inquires and requirements necessary to obtain available state and federal assistance; and

WHEREAS, the Board of Supervisors/City Council does hereby find that the aforesaid conditions of extreme peril did warrant and necessitate the Proclamation of Local Emergency and request for State Proclamation and Presidential Declaration of Emergency.

NOW, THEREFORE, BE IT RESOLVED AND PROCLAIMED that the Proclamation of Local Emergency and request for a State Proclamation and Presidential Declaration of Emergency for San Diego County issued by the Director of Emergency Services on _____, _____, is hereby ratified and confirmed.

ATTACHMENT A-3 (Continued)

UNIFIED SAN DIEGO COUNTY EMERGENCY SERVICES OPERATIONAL AREA

PROCLAMATION
RATIFYING LOCAL EMERGENCY
PROCLAIMED BY THE
DIRECTOR OF EMERGENCY SERVICES
(Page 2 of 2)

PASSED AND ADOPTED by the Board of Supervisors/City Council of the County/City of _____ _____, San Diego County, State of California, this _____ day of _____, _____, by the following vote:

Ayes:
Noes:
Absent:

I hereby certify that the foregoing is a full, true and correct copy of the Original entered in the minutes of the Board of Supervisors/City Council.

Clerk of the Board of Supervisors/City Clerk

Date: _____ By: _____

ATTACHMENT A-4

UNIFIED SAN DIEGO COUNTY EMERGENCY SERVICES OPERATIONAL AREA

RESOLUTION FOR _____
CONTINUANCE OF LOCAL EMERGENCY
(Page 1 of 2)

WHEREAS, Ordinance No._____ of the County/City of _____ empowers the Board of Supervisors/City Council to proclaim the existence, or threatened existence of a Local Emergency when said jurisdiction is affected, or is likely to be affected, by a public calamity; and

WHEREAS, the Board of Supervisors/City Council did find that conditions of extreme peril to the safety of persons and property, caused by _____ _____ (fire, flood, storm, epidemic, earthquake, drought, etc.), did arise within said County/City, commencing on the ____ day of _____, _____; and

WHEREAS, the Board of Supervisors/City Council did proclaim/ratify the existence of a Local Emergency within said jurisdiction on the _____ day of _____, _____ and requested the Governor of California proclaim San Diego County to be in a state of emergency; and further requested that the Governor request a Presidential Declaration; and

WHEREAS, Government Code, Section 8630, requires that Proclamations of Local Emergency must be reaffirmed by the governing body of the effected jurisdiction every 14 days during the time the Local Emergency remains in effect; and

WHEREAS, conditions of extreme peril to the safety of persons and property caused by said emergency continue to exist, and continue to be beyond the control of local resources, services, personnel, and equipment;

NOW, THEREFORE, BE IT RESOLVED that the Board of Supervisors/City Council of the County/City of _____ proclaim that the Local Emergency which first began on the _____ day of _____, _____ continues to exist.

BE IT FURTHER RESOLVED that the Board of Supervisors/City Council of the County/City of _____ hereby issues this _____ Resolution of Continuance of Local Emergency reaffirming the continuation of the local emergency.

BE IT FURTHER RESOLVED that said Local Emergency shall continue to exist for an additional 14 days unless terminated earlier by this Board of Supervisors/City Council.

ATTACHMENT A-4 (Continued)

UNIFIED SAN DIEGO COUNTY EMERGENCY SERVICES OPERATIONAL AREA

RESOLUTION FOR _____
CONTINUANCE OF LOCAL EMERGENCY
(Page 2 of 2)

IT IS FURTHER ORDERED that a copy of this Proclamation of Continuance be forwarded to the San Diego County Operational Area and to the State Director of the Governor's Office of Emergency Services.

PASSED AND ADOPTED by the Board of Supervisors/City Council of the County/City of _____ _____, San Diego County, State of California, this _____ day of _____, _____, by the following vote:

Ayes:
Noes:
Absent:

I hereby certify that the foregoing is a full, true and correct copy of the Original entered in the minutes of the Board of Supervisors/City Council.

Clerk of the Board of Supervisors/City Clerk

Date: _____ By: _____

ATTACHMENT A-5

UNIFIED SAN DIEGO COUNTY EMERGENCY SERVICES OPERATIONAL AREA

PROCLAMATION
TERMINATION OF LOCAL EMERGENCY
(Page 1 of 1)

WHEREAS, the Board of Supervisors/City Council of the County/City of _____ found that conditions of extreme peril to the safety of persons and property have arisen within said County/City caused by _____
(fire, flood, storm, epidemic, earthquake, drought, etc.) commencing on _____, _____; and

WHEREAS, the Board of Supervisors/City Council issued/ratified a Proclamation of Local Emergency on _____, _____, and

WHEREAS, the conditions of extreme peril caused by the emergency are now deemed to be within the control of the normal protective services, personnel, equipment, and facilities of said County/City.

NOW, THEREFORE, IT IS PROCLAIMED AND ORDERED by the Board of Supervisors/City Council of the County/City of _____, State of California, that said Proclamation of Local Emergency issued/ratified on _____, _____, is hereby terminated.

IT IS FURTHER PROCLAIMED AND ORDERED that the emergency powers, functions, and duties of the Director of Emergency Services and the emergency organization of this County/City authorized by said Proclamation of Local Emergency and as prescribed by state law, charter, ordinances, and resolutions of this jurisdiction, are terminated .

IT IS FURTHER ORDERED that a copy of this Proclamation of Termination of Local Emergency be forwarded to the San Diego County Operational Area and to the State Director of the Governor's Office of Emergency Services.

PASSED AND ADOPTED by the Board of Supervisors/City Council of the County/City of _____ _____, San Diego County, State of California, this _____ day of _____, _____, by the following vote:

Ayes:
Noes:
Absent:

I hereby certify that the foregoing is a full, true and correct copy of the Original entered in the minutes of the Board of Supervisors/City Council.

Clerk of the Board of Supervisors/City Clerk

Date: _____ By: _____

ATTACHMENT B

San Diego County Operational Area

Event/Major Incident Report

To: _____

(Name) (Jurisdiction)

From: _____

(Name) (Jurisdiction)

1. Overall Event Name:
(If this is an incident related to a larger event, select the name of the larger event. Otherwise, name this event/incident.)

2. Incident Name:
(If this is an incident related to a larger event, name this incident. Otherwise, leave blank.)

3. Event/Incident Type:

4. Date/Time of Event/Incident:

5. Event/Incident Location

- **a. Descriptive:**
- **b. Street:**
- **c. City:**
- **d. Zip:**
- **e. Map Reference:**
- **f. Lat/Long:**

6. Event/Incident Impact:

7. Impacted Area:

- **7a. Operational Area:** San Diego
- **7b. OES Region:** Southern
- **7c. Law Mutual Aid Region:**
- **7d. Fire Mutual Aid Region:**

8. Situation:

Functional Area Impact	(Optional)	Remarks (Optional)
9. Fire and Rescue:		
10. Law Enforcement:		
11. Care and Shelter:		
12. Medical/Health:		
13. Movement:		
14. Constr. and Engr.		
15. Utility		
16. EOC Activated?		
17. Mutual Aid Received in Last 24 Hours?		
18. Mutual Aid Needed in Next 24 Hours?		
19. Critical Issues?		

20. Prognosis:
- ☐ No Change
- ☐ Worsening
- ☐ Improving

21. Reported by:

21a. Name:

21b. Agency:

21c. Phone:

21d. Fax Number:

21e. Alternate Number:

22. Date/Time of this Report:

Attachment B, page 2

ATTACHMENT C

WARNING SYSTEM

I. GENERAL

The warning system is the means to relay to the public notices from the local, State or Federal local government of impending or actual disaster or attack. Appropriate responses and the most effective use of warning information may be limited by the amount of time available.

A. Actions

Warning actions are characterized by requiring high priority for a short period of time, the use of mass media systems for passing warning to the public, the small number of workers necessary to operate the system, the demand for fast activation of the system on short notice, and the need to maintain readiness to repeat all actions in the event of successive alerts or attacks.

The National Warning System (NAWAS) sends out warning information, which is received at the Sheriff's Communication Center and relayed to the Office of Disaster Preparedness (ODP). Members from local governments, schools, the news media, and industry are then notified by means of the Lifesaving Information for Emergencies (LIFE) System. The public is then warned by means of the Emergency Broadcast System/Emergency Alert System (EBS/EAS) and any other means, including mobile loudspeakers, when appropriate. The EBS/EAS is a national system which is activated by the President. It can also be activated by Operational Area authorities for local use. EBS/EAS is discussed further on page 2.

Alternate means of warning are via the California Law Enforcement Telecommunications System (CLETS), public safety radio systems, and the Radio Amateur Civil Emergency Services (RACES) network.

Notice of warning is also broadcast from the various county and city communications centers to special facilities (schools, hospitals, fire stations, utility stations, etc.). Key workers of emergency organizations may be alerted by telephone or radio. The EBS/EAS and LIFE Systems are expected to provide coverage for a large part of the population.

B. Warning Information

Authorized EBS/EAS stations will broadcast warning information as requested under the EBS/EAS Operational Area Agreement.

C. Warning Signal - Peacetime Emergencies

Warning of an extraordinary peacetime emergency may be received by local government over the California Law Enforcement Telecommunications System (CLETS), public safety radio systems, NAWAS, the LIFE System, and/or other means. The attention or alert signal is not used in this Operational Area.

II. EMERGENCY BROADCAST SYSTEM/EMERGENCY ALERT SYSTEM (EBS/EAS) AND LIFESAVING INFORMATION FOR EMERGENCIES (LIFE)

A. Emergency Broadcast System/Emergency Alert System (EBS/EAS)

NOTE: **At the time of this writing, EBS is undergoing a change and is being replaced by EAS, the Emergency Alert System. Changes will not be major, but some of the technical portions will change.**

1. General

The State of California has been divided into "EBS Operational Areas" for the purpose of disseminating emergency information. (Refer to the County's EBS Operational Area Plan.)

The San Diego EBS operational area encompasses the entire County. Two stations, KSDO (AM 1130) and KCBQ (AM 1170), have been provided with back-up generators. Other authorized stations continue to operate as conditions permit. There are several radio stations in the San Diego County Operational Area that broadcast in foreign languages to reach the non-english speaking public.

All authorized stations in each EBS operational area broadcast a common program. A "program entry point" has been established for each EBS area. Emergency services authorities for each jurisdiction will prepare emergency information and action instructions pertinent to the people of their respective jurisdictions, which will be routed to the designated program entry point for broadcast.

2. Operational Considerations

Authorized stations continue to broadcast on regular assigned frequencies during any type of emergency. They broadcast their call letter identification and the area identification. Listeners are advised to monitor those stations which serve the area in which they are located, since EBS announcements may vary according to the area served.

3. Facilities

The program entry point for the San Diego EBS operational area is the Operational Area EOC. Emergency information will be routed to the program entry point. The primary EBS station serving the San Diego EBS Operational Area is KSDO 1130 AM and the alternate EBS station is KCBQ 1170 AM. The majority of local radio and television stations that are operational after a disaster will be broadcasting emergency information.

B. Lifesaving Information for Emergencies (LIFE)

1. General

The Office of Disaster Preparedness has developed the LIFE system for the purpose of disseminating emergency information and warnings in times of emergency.

2. System Operation

The LIFE system uses the County radio facilities at the Operational Area EOC. The LIFE messages of public information can be received at participating broadcast stations and public/private facilities on special monitor receivers.

3. System Access

The LIFE system is available to the jurisdiction's officials (Mayor, City Manager, Police Chief, Fire Chief etc.) and can be accessed via ODP. If telephone service is not available to the jurisdiction, programming requests should be passed over the RACES radio system to the Operational Area EOC.

ATTACHMENT D

DISASTER APPLICATION CENTERS

Disaster Application Centers (DACs) may be opened in communities after disasters have occurred, in order to provide assistance to the victims. They are staffed by Federal, State, and local agencies, as well as other local representatives, including the Red Cross. The centers provide information and assistance and accept applications for disaster relief programs. The basic concept is that of a "one stop shop", where disaster victims can receive all of the information they need and make all of the necessary applications in one facility. Coordination among representatives of the various programs is facilitated as well.

DACs may be opened after there has been a Presidential Disaster Declaration, which makes available Federal disaster assistance. It is also possible that a DAC could be opened without a Presidential Declaration. In that case, only State and local assistance would be available.

The Centers are cooperative efforts among the various levels of government and the Red Cross and the responsibilities are as follows:

I. The Federal government coordinates with the State in setting up DACs, usually inspecting the sites and providing representatives from the following agencies, as determined by the Federal Coordinating Officer who will normally be the Regional Director of the Federal Emergency Management Agency, Region IX.

A. Small Business Administration (SBA)

Provides information about and takes applications for low-interest home and business loans.

B. Department of Housing and Urban Development (HUD)

Along with local and State resources, provides temporary housing, assistance, and guidance relating to existing FHA loans and other low-interest loans, limited home repair, and rental and mortgage payment assistance.

C. United States Department of Agriculture (USDA)

Provides assistance and guidance relating to existing Farmers Home Administration and Rural Electrification Act loans and other low-interest loans.

D. Internal Revenue Service (IRS)

Sometimes is represented and provides income tax assistance.

E. Other Federal agencies that might be in the DAC are the Veterans Administration, Social Security Administration, Health and Human Services, and the Food and Drug Administration.

II. The State government coordinates with the County government in selecting DAC sites; with the Federal government in staffing them; and furnishes representatives to provide services. Such representation is determined by the State Coordinating Officer who is normally the Director of the Office of Emergency Services (OES).

A. OES

Provides a State Coordinating Officer, assists in setting up the DACs, and provides staff wherever needed.

B. Department of Social Services (DSS)

Provides Individual and Family Grants

C. Employment Development Department

Provides State unemployment compensation for eligible disaster victims and, if implemented, disaster unemployment compensation. It also furnishes information related to employment and vocational retraining.

D. Department of Housing and Community Development

Provides temporary housing and building inspection to qualified applicants.

E. Department of Veterans Affairs

Provides assistance to victims whose homes or farms are financed under the Cal Vet program.

F. Other possible representation from the State includes the State Contractors Licensing Board, for contractor assistance, and the State Franchise Tax Board, for Income Tax assistance.

III. In general, local government's role is supportive; assisting the State and Federal representatives, providing local coordination of the centers, and furnishing staff when needed to provide services, including those listed below. The local jurisdiction also pays any costs associated with the centers/facilities, such as rent.

A. Office of Disaster Preparedness (ODP)

Serves as the lead agency for the Operational Area. Provides an Operations Officer to serve as Disaster Assistance Manager, to coordinate all of the Operational Area activities and serve as liaison to the State and Federal agencies, other jurisdictions, and private groups.

B. Department of Social Services (DSS)

In cooperation with the Red Cross, receives and distributes food and clothing from government and private sources and provides for other personal needs. Provides eligibility workers to do the intake and exit interviews.

C. Department of Planning and Land Use (DPLU), Codes Division/City Planning Departments

Provides staff to make available information about building permits, zoning and other regulatory requirements.

D. Department of Environmental Health, Building Division/City Building Inspectors

Provides building inspectors to inspect homes for safety and needed repairs.

E. Departments of General Services

Provides tables and chairs for the centers, if necessary, including their transportation and set up.

F. Departments of Public Works (DPW)

If requested, provides staff to make available flooding information, including protective measures that can be taken. Also, if requested to do so, may provide staff to read and interpret inundation maps.

G. County Assessor

After some disasters, provides staff to accept applications for reappraisal.

H. Department of Environmental Health (DEH)

If requested, provides staff for: information regarding public health matters such as safety of water and food supplies, adequacy of sewage disposal, and methods of rodent control.

I. Department of Health Services (DHS)

Provides mental health counselors to assist victims who are upset.

IV. AMERICAN RED CROSS (ARC)

In coordination with State and County welfare agencies, conducts registration and referral services and provides for individual and family needs; for example, food, clothing, shelter, and supplemental medical assistance.

V. CITIES

Any city suffering heavy damage provides staff to act as liaison and to provide specific information about the city. For example, public works and engineering personnel, as well as building inspectors, could be required at the DAC.

VI. DISASTER SERVICE CENTERS

These centers are designed for follow-up contacts and, therefore, usually have only a few primary service representatives and are much smaller operations than DACs.

EMERGENCY MANAGEMENT
EOC - EMERGENCY ACTION CHECKLIST
RESPONSE TO A MAJOR EARTHQUAKE

Action	Responsibility
Ensure that mobile and aerial survey units are dispatched to survey for damage, flooding, fires or other hazards.	Planning and Intelligence
Verify reports; poll field units and key facilities to determine situation in their vicinity and ability to function.	Planning and Intelligence
Determine if Emergency Operations Center (EOC) should be activated.	Jurisdictional Emergency Services Coordinator
Activate emergency forces if substantial damages are reported.	Operations
If the jurisdiction is in a dam inundation area, determine if failure of the dam is considered possible.	Planning and Intelligence
Monitor communications to determine situation in other areas.	Planning and Intelligence
Determine if support is required to other jurisdictions.	Planning and Intelligence
Make the determination to dispatch mutual aid to other jurisdictions.	Management
Check operation of dispatch and reporting systems. reporting systems. If necessary, provide alternate communications links.	Communications
Determine condition of medical support and health facilities.	Medical
Determine status of utilities and transportation routes.	Planning and Intelligence

Action	Responsibility
Advise key personnel of results of damage survey	Planning and Intelligence

IF LITTLE OR NO DAMAGE IS REPORTED, PREPARE TO SUPPORT MORE HEAVILY DAMAGED JURISDICTIONS.

IF EXTENSIVE DAMAGE IS REPORTED, TAKE THE FOLLOWING ACTIONS AS APPROPRIATE.

Activate EOC.	EOC Manager/ Emrg. Services Coord.
Activate Emergency Public Information (EPI) procedures.	Public Information
Poll field units and key facilities to determine extent of damage and ability to function.	Planning and Intelligence
Direct emergency self-help instructions to be broadcast to the public.	Management
Activate emergency medical care system.	Medical
Set up first aid stations as required.	Medical
Activate Casualty Collection Points as required.	Medical
Consider evacuation if any dam failures are reported or are imminent.	Management
Order evacuation of all unsafe structures and areas.	Incident Commander, Law Enforcement
Obtain proclamation of a LOCAL EMERGENCY	Management
Request that the Governor proclaim a STATE OF EMERGENCY, if required.	Management

Emergency Management
Earthquake Response

Action	Responsibility
Ensure that rescue operations of trapped people are underway.	Operations
Clear routes as needed to support fire and rescue activities.	Construction and Engineering
Obtain and provide engineering equipment needed for heavy rescue.	Construction and Engineering
Establish access controls into damaged areas damaged areas.	Law Enforcement
Request medical support as needed.	Medical
Provide for traffic control.	Law Enforcement
Expedite movement of emergency units.	Law Enforcement
Supervise first aid and movement of casualties to health facilities.	Medical
Obtain transportation, supplies, personnel and equipment needed by emergency forces.	Logistics
Determine condition of designated mass care facilities.	Planning and Intelligence
Direct opening of mass care facilities.	Care and Shelter
Active Multi-purpose Staging Areas as destination points for mutual aid.	Logistics

Appendix A-2

EMERGENCY MANAGEMENT
EOC - EMERGENCY ACTION CHECKLIST
RESPONSE TO HAZARDOUS MATERIAL INCIDENT

Action	Responsibility
Establish communication with on-scene Incident Command Post.	Operations
If required, activate Emergency Operations Center (EOC).	EOC Manager/Emrg. Services Coordinator
Ensure that Hazardous Materials Response Team is dispatched to scene.	Operations
Ensure that State Office of Emergency Services (OES) is notified of incident.	Management
If required, obtain proclamation of a LOCAL EMERGENCY.	Management
If required, request that the Governor proclaim a STATE OF EMERGENCY.	Management
Activate the damage assessment and reporting system.	Planning and Intelligence
Collect and evaluate incoming information.	Planning and Intelligence
Post pertinent information on status boards and maps, and maintain other essential records.	Planning and Intelligence
Obtain estimates of area that may be affected by release of the hazardous material.	Planning and Intelligence
Determine if evacuation is necessary.	Incident Commander, Operations
Direct implementation of public warning and movement operations as required.	Operations
Activate the care and shelter system and open shelters if required.	Care and Shelter

Emergency Management
Hazardous Material Response

Action	Responsibility
Ensure that all essential emergency services are activated.	Management
Establish contact with appropriate state agency coordinators.	Operations
Coordinate activities of private hazardous materials clean-up companies.	Operations
Establish priorities for emergency procurement and allocation of available resources.	Operations
Report situation and support requirements requirements to the OES Mutual Aid Region Office	Management
Activate Emergency Public Information procedures.	Management
Request communications assistance from telephone company, RACES, REACT, or others as required.	Logistics
Request assistance from the OES Mutual Aid Region Office as required.	Management

Appendix A-2, page 2

EMERGENCY MANAGEMENT
EOC - EMERGENCY ACTION CHECKLIST
RESPONSE TO IMMINENT/ACTUAL FLOODING

FLOODING EXPECTED

Action	Responsibility
Place Emergency Operations Center (EOC) Staff on standby.	Director/EOC Manager
Initiate sandbagging, levee reinforcement, and flood fighting activities.	Operations
Direct appropriate agencies to stockpile additional sandbags, shovels, and other needed resources.	Management
Activate Emergency Public Information procedures.	Public Information
Advise persons in flood-prone areas to prepare for evacuation.	Operations
Place emergency services on standby.	Operations
Test primary and alternate communications	Communications
Move emergency vehicles from facilities in areas subject to immediate flooding.	Operations
If flood appears imminent, initiate warning and evacuation of potential inundation areas.	Law Enforcement
Report situation and support requirements to the Office of Emergency services (OES) Mutual Aid Region Office.	Management

Emergency Management
Flood Response

FLOODING OCCURS

Action	Responsibility
Activate EOC.	EOC Manager
Activate warning procedures.	Operations
Activate evacuation procedures.	Law Enforcement
Activate search and rescue teams.	Law Enforcement/ Fire and Rescue
Direct the placement of sandbags.	Operations
Request communications assistance from telephone company, RACES, REACT or others, as required.	Logistics
Direct that utilities be shut off in flooded areas.	Management
Direct opening of mass care facilities, if necessary.	Care and Shelter
Report situation and support requirements to OES Mutual Aid Region Office.	Management
Direct law enforcement agencies to establish access controls around flooded areas.	Law Enforcement
Warn areas subject to additional or immediate flooding.	Operations
Direct the testing of drinking water for purity in areas that could be affected by flooding	Environmental Health
Establish traffic controls to permit return of displaced people when re-entry is feasible.	Law Enforcement
Obtain proclamation of a LOCAL EMERGENCY	Management
Request that the Governor proclaim a STATE OF EMERGENCY.	Management

Appendix A-3, page 2

EMERGENCY MANAGEMENT
RESPONSE TO IMMINENT/ACTUAL DAM FAILURE
EOC - EMERGENCY ACTION CHECKLIST

DAM FAILURE IMMINENT

Action	Responsibility
Attempt to avoid dam failure by requesting the release of water from the reservoir, if feasible.	Management
Activate warning system and order evacuation of predesignated evacuation area.	Law Enforcement
Proclaim a LOCAL EMERGENCY.	Management
Activate and staff Emergency Operations Center (EOC).	EOC Manager
Broadcast instructions directing evacuees to reception areas, using designated evacuation routes.	Public Information
Search the evacuation area to ensure that people have received warning.	Law Enforcement
Report to the OES Mutual Aid Region Office any ordered evacuation and the area involved.	Management
Provide assistance in the evacuation of of institutionalized people in the threatened area.	Law Enforcement
Provide traffic controls for evacuation operations.	Law Enforcement
Provide transportation, supplies, equipment and personnel.	Logistics
Establish access controls to vacated areas.	Law Enforcement
Keep EOC informed of evacuation progress. progress.	Law Enforcement

DAM FAILURE IMMINENT (Continued)

Action	Responsibility
Place emergency medical and health components on standby.	Medical/Public Health
Activate first aid facilities in reception areas.	Medical
Mobilize care and shelter components.	Care and Shelter
Activate mass care facilities in reception areas.	Care and Shelter
Receive, shelter and care for evacuees.	Care and Shelter
Develop preliminary estimate of homeless and inform the EOC. Periodically update.	Operations
Prohibit entry into vacated area until it is determined that area is safe.	Law Enforcement
When re-entry is feasible, establish traffic controls to permit return of displaced people.	Law Enforcement

DAM FAILURE OCCURS

Action	Responsibility
If not already accomplished, warn people in inundation area and order evacuation.	Law Enforcement
If not already accomplished, proclaim a LOCAL EMERGENCY and activate and staff EOC.	Management
Inform the OES Mutual Aid Region of the situation and support requirements.	Management
If required, request that the Governor proclaim a STATE OF EMERGENCY.	Management
Collect and evaluate incoming damage assessment reports.	Planning and Intelligence
Initiate search and rescue in affected areas.	Fire and Rescue
Establish access controls.	Law Enforcement
Inform EOC of evacuation progress.	Law Enforcement
Mobilize emergency medical and health components	Medical/Public Health
Activate first aid facilities in reception areas.	Medical
Mobilize care and shelter components.	Care and Shelter
Activate mass care facilities in reception areas.	Care and Shelter
Receive, shelter and care for evacuees.	Care and Shelter
Request needed supplies, equipment, and support services.	Operations
Develop preliminary estimate of homeless and inform the EOC; periodically update.	Operations
Prohibit entry into vacated area until area is safe to re-enter safe to re-enter.	Law Enforcement
Establish traffic control needed to permit return of displaced people when public re-entry is feasible.	Law Enforcement

UNIFIED SAN DIEGO COUNTY
EMERGENCY SERVICES ORGANIZATION
OPERATIONAL AREA EMERGENCY PLAN

ANNEX C

LAW ENFORCEMENT MUTUAL AID OPERATIONS

September 1996

UNIFIED SAN DIEGO COUNTY EMERGENCY SERVICES ORGANIZATION

ANNEX C

LAW ENFORCEMENT MUTUAL AID OPERATIONS

ACKNOWLEDGEMENTS

Sheriff

William B. Kolender
Jack Drown, Undersheriff

Law Enforcement Mutual Aid Operations

Jack Drown, Undersheriff
Chief Richard Emerson, Chula Vista Police Department
Lt. Scott McClintock, Sheriff's Department
Bob O'Hara, Sheriff's Department
Police Chief's Association of San Diego County
Sgt. Bill Wolf, San Diego Police Department

Operational Area Plan Review Committee

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Office of Disaster Preparedness

UNIFIED SAN DIEGO COUNTY EMERGENCY SERVICES ORGANIZATION

ANNEX C

LAW ENFORCEMENT MUTUAL AID OPERATIONS

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ANNEX C

LAW ENFORCEMENT MUTUAL AID OPERATIONS

I. INTRODUCTION

This Annex establishes organizational responsibilities and general procedures for the local law enforcement jurisdictions, and supporting agencies during natural and technological disasters.

II. OBJECTIVES

The primary objectives of law enforcement are the preservation of life and property and the maintenance of law and order. Functional objectives for law enforcement operations are:

A. Coordinate the mobilization of personnel and equipment from supporting agencies (e.g., Sheriff's Department, Jurisdictional Law Enforcement Agencies, Marshal of the Courts, Probation Department, Parks and Recreation).

B. Receive and disseminate warning information to the general public.

C. Deploy personnel and equipment to locations needed to accomplish primary objectives.

D. Coordinate evacuation of hazardous areas, and provide perimeter security and access control.

E. Provide security for essential facilities, services, and resources.

F. Implement aerial survey of the area to provide accurate information on hazards, victims, conditions, and other vital information.

G. Coordinate with the California Highway Patrol in establishing emergency traffic routing and entry/egress procedures.

H. Assist in the establishment of Multi-agency Staging Areas.

I. Coordinate with cities/jurisdictions in the Operational Area, Region and State agencies in accordance with local mutual aid agreements, the California Law Enforcement Mutual Aid Plan, and the Standardized Emergency Management System (SEMS).

III. CONCEPT OF OPERATIONS AND ACTIVATION OF MUTUAL AID

During emergencies, individual law enforcement agencies will operate under their own departmental emergency plans with their existing resources. When a Chief of Police determines that an emergency situation in his/her jurisdiction may be, or is already, beyond the control of his/her department's resources, it is the Chief's responsibility to request mutual aid from the Operational Area Law Enforcement Coordinator (the Sheriff).

IV. GENERAL REQUIREMENTS FOR MUTUAL AID

A. General requirements for requesting Mutual Aid include:

1. An emergency must exist or be imminent; and

2. Must have committed a maximum number of local resources prior to the request for Mutual Aid

3. A specific mission has to be stated.

B. Point Of Contact

The Sheriff of San Diego County serves as the Operational Area Law Enforcement Mutual Aid Coordinator. Requests for Mutual Aid should be directed to:

1. The Sheriff's Watch Commander via the Sheriff's Communications Center if the Operational Area EOC is not activated, or

2. To the Law Enforcement Mutual Aid Coordinator at the Operational Area EOC if activated.

C. Unanticipated Situations

Departments experiencing an unanticipated situation that is developing (but has not yet occurred) and it appears that the departments resources may soon be insufficient, should contact the Operational Area Law Enforcement Coordinator and advise that the department may be requesting mutual aid. This will help reduce response times.

D. Planned Events

If a department has a planned event (i.e., Concert, parade, etc.) a formal mutual aid request can not be made until you have an unanticipated emergency incident which could or has overwhelmed available resources. Departments may, however, utilize other departments personnel, equipment, and/or supplies by mutual agreement (MOU, Joint Powers Agreements, etc). Under these special agreements, the immunities, benefits, and funding available under formal mutual aid may not be available.

E. Proclamation of Emergency

A situation requiring mutual aid resources beyond the Operational Area level would usually result in a Proclamation of a Local Emergency. While a Proclamation of Local Emergency is not required for requests within the Operational Area or requests to the regional Coordinator, local government jurisdictions should consider making such a proclamation should an incident reach the mutual aid level due to the special powers and immunities that accompany such a Proclamation.

Such proclamations are normally made by:

1. City Council or Board of Supervisors

2. City Manager or Chief Administrative Officer if Council or Board of Supervisors are not in session.

V. ORGANIZATION AND RESPONSIBILITIES

A. The Sheriff serves as the Operational Area Law Enforcement Coordinator. When Mutual Aid is requested by a local law enforcement agency, the Sheriff or his/her representative will:

1. Confirm that an emergency or anticipated emergency exists

2. Determine that the involved local agency(s) resources are inadequate

3. Determine the mission(s)

4. Determine the quantity and type of resources needed to accomplish the mission(s)

5. Determine where to stage the incoming mutual aid resources

6. Identify the Liaison Officer of the requesting agency who will serve as the point of contact

7. Ensure that both the requesting agency and the Law Enforcement Mutual Aid Coordinator establish appropriate documentation procedures.

8. Ensure that responding resources are demobilized as soon as they are no longer needed

B. If the Operational Area Law Enforcement Coordinator determines that there are insufficient resources within the Operational Area, he/she will contact the Regional Law Enforcement Coordinator (Region VI). The regional Coordinator will then contact all necessary law enforcement agencies within Region VI to obtain the needed resources. If the Regional Coordinator determines that resources are insufficient within the region, he/she will then contact the OES State Law Enforcement Coordinator who will contact all necessary Regions within the state. Attachment A outlines the Law Enforcement Mutual Aid Regions and progression of requests.

VI. USE OF MILITARY FORCES FOR MUTUAL AID

A. State Military Forces

The Governor will normally commit the California National Guard (CNG) resources in support of civil authority only upon determination that:

1. An emergency condition exists or is imminent; and

2. All civil resources have been or will be reasonably committed; and

3. Civil authority cannot or will not be able to control the situation; and

4. Military assistance is required and has been requested by the chief executive of a city or the Sheriff of a county.

B. Federal Military

Commanders may commit federal troops:

1. Upon direction of the President of the United States; or

2. When the local commander feels that there is:

   a) An immediate and imminent threat to life; and

   b) Local resources are unavailable; and

   c) A delay in established mutual aid would result in unnecessary deaths, injuries or extensive property damage.

VII. RELATED LAW ENFORCEMENT MUTUAL AID ISSUES

A. Command

The local (requesting) agency remains in charge. Generally, responding resources from a jurisdiction will remain together. However, if used to supplement patrol, they could be paired with a local officer who is familiar with the area.

B. Fiscal Issues

Unless otherwise agreed to:

1. The requesting agency is responsible for feeding, billeting, fuel, and other on-scene support.

2. The requesting agency is not responsible to provide salary or employment benefits.

3. Emergency medical costs for a responder are paid by the responder's agency.

4. Damaged equipment (ie. Vehicles) is not reimbursable by the requesting agency. If a State Proclamation or Federal Declaration has been made, the responding agency should submit a claim through the requesting agency.

5. Materials used are normally replenished by the requesting agency.

VIII. ADDITIONAL DUTIES OF THE OPERATIONAL AREA LAW ENFORCEMENT COORDINATOR

A. Coordinate with involved law enforcement agencies to establish a central point of incident information related to law enforcement responsibilities.

B. Coordinate with affected law enforcement agencies to determine objectives and priorities affecting the allocation of mutual aid resources.

C. Coordinate with affected law enforcement agencies in developing Operational Area inter-jurisdictional law enforcement activities and plans (evacuation, area control, traffic control, etc.) during wide spread emergencies or disasters.

D. Provide for representation in the Operational Area Emergency Operations Center (EOC) Management and Operations sections.

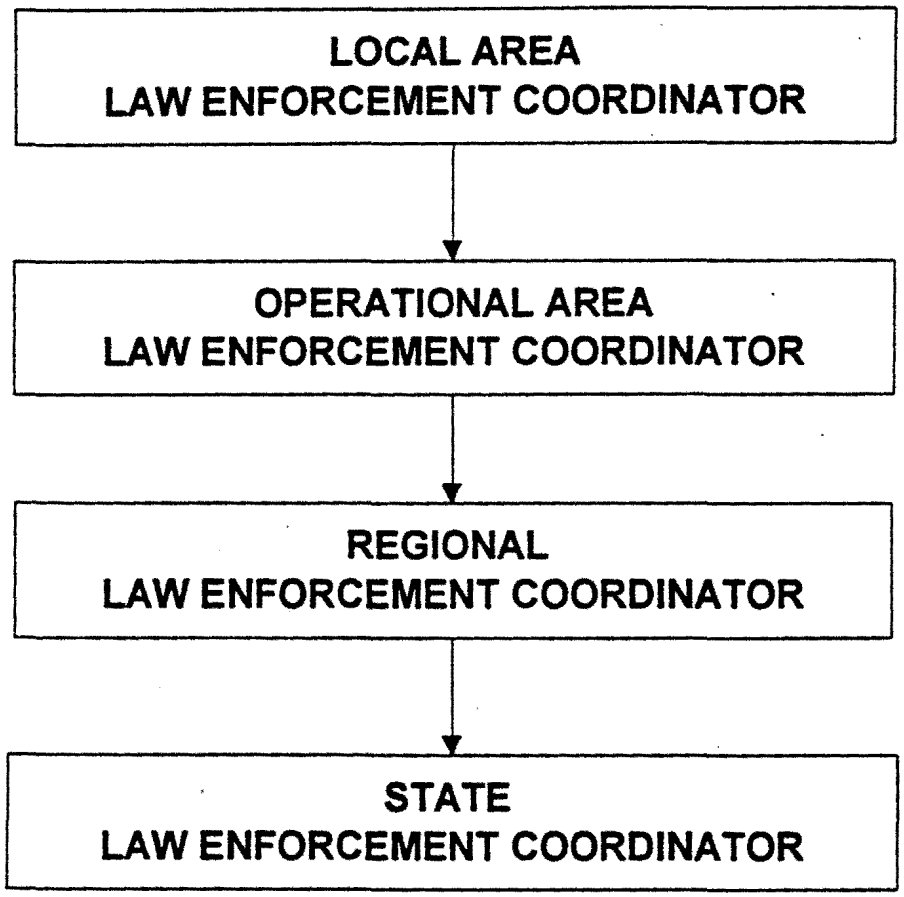
E. Assist the Medical Examiner's office in security and mutual aid requirements.

Authentication

William B. Kolender, Sheriff
San Diego County

9-18-96
Date

ACTIVATION CHANNELS FOR LAW ENFORCEMENT MUTUAL AID



ATTACHMENT A

SUPPORTING ORGANIZATIONS

1. County Sheriff
2. Jurisdictional Law Enforcement Agencies from the Operational Area
3. County Marshal of the Courts
4. County Probation Department
5. County Department of Animal Control
6. California Highway Patrol (CHP)
7. California State Police
8. Port of San Diego Harbor Police
9. School District Police
10. County District Attorneys
11. County Department of Parks and Recreation
12. Private Security Officers
13. California National Guard
14. California Department of Justice
15. California Department of Corrections
16. California Fire Marshal
17. Military Forces of the United States

ATTACHMENT B

TYPES OF SUPPORT

LAW ENFORCEMENT SUPPORT MAY BE IN ONE OR MORE OF THE FOLLOWING MISSIONS:

1. Law Enforcement
2. Aerial Support
3. Special Teams (SWAT, hostage negotiators, etc.)
4. Traffic Control
5. Evacuation
6. Search and Rescue
7. Movement
8. Field Bookings
9. Prisoner Management
10. Building and Facility Security
11. Mass Care/Collection Center Security
12. Explosive Ordnance Disposal
13. Investigation of Arson and Bombings
14. Waterborne Enforcement/Dive Rescue and Support

Attachment C

ACCESS CONTROL

I. INTRODUCTION

In the event of a pending or existing natural disaster, technological incident or a nuclear defense emergency, it may be necessary to restrict access to and from a hazard area. There are four aspects to consider:

A. Perimeter control and area security

B. Access control (to and from the perimeter)

C. Command Post coordination

D. Temporary Evacuation Points (TEPs)

II. OBJECTIVES

The overall objectives of access control operations will be to:

A. Provide a controlled area and prevent entry by unauthorized persons.

B. Protect lives by controlling entry into extreme hazard areas, thus reducing public exposure to the current or pending hazard agent.

C. Maintain law and order in the hazard area as well as the normal areas of responsibility.

D. To control the entry of authorized persons into the closed area.

III. SITUATION

A hazard or a potential hazardous situation could justify the need to control or limit access for a short period of a few hours to several days or weeks, depending on the hazard and its severity. In order to limit access to the closed area, various personnel and devices will be required in the following functions:

A. Establish a control point (may be the Command Post).

B. Man access point(s).

C. Establish a system for entry of an exit from secured areas for authorized persons and media.

D. Route traffic from highway and surface roads away from closed areas.

E. Set up signs and markers to give motorists advance notice of secured area.

F. Provide security in closed areas with patrols or airborne monitoring.

G. Establish, and coordinate with the American Red Cross, TEPs for those evacuated, displaced or relocated persons.

IV. LEVELS OF OPERATION

There are seven levels of operation that effect access control. They are listed in priority:

A. Lifesaving operations.

B. Evacuation operations.

C. Medical Examiner operations and continued rescue.

D. Safety Inspection Teams.

E. Owners and managers of critical facilities.

F. Authorized managers, and employees of businesses.

V. RESPONSIBILITIES

A. Local

(1) Law Enforcement

a. Handle law enforcement duties within and outside the secured areas.

b. Direct the placement of barricades and traffic control devices.

c. Establish a command post and control point for the perimeter.

d. Initiate TEPs, with the Red Cross, if needed.

e. Initiate the entry pass system.

(2) Environmental Health Building Division

a. Determine structural safety of buildings to be used for care and shelter of evacuees.

(3) Environmental Health Department/Hazardous Materials Team

a. Determine environmental safety.

B. Operational Area

(1) Sheriff's Department

a. Handle law enforcement for all unincorporated and contracted areas.

b. Support access control effort, coordinate with the local law enforcement agency or California Highway Patrol in the incorporated area.

(2) Environmental Health Department

a. Determine structural safety to unincorporated areas.

b. Determine environmental safety.

C. State

(1) California Highway Patrol

a. Manage and direct access control on the state and federal highway systems and the unincorporated public roads.

ATTACHMENT D

EVACUATION OPERATIONS

I. INTRODUCTION

Law enforcement agencies and supporting organizations have the responsibility of evacuation, dispersal, and relocation of persons from threatened or hazardous areas to less threatened areas during natural disasters and technological incidents. This attachment describes the organization and responsibilities for conducting evacuation operations, with the ultimate goal of care and shelter.

II. OBJECTIVES

The overall objectives of emergency evacuation operations are to:

A. Expedite the movement of persons from hazardous areas.

B. Control evacuation traffic.

C. Provide adequate means of transportation for disabled persons, the elderly, and persons without vehicles.

D. Institute access control measures to prevent unauthorized persons from entering vacated, or partially vacated areas.

E. Provide for the procurement, allocation, and use of necessary transportation resources and law enforcement resources by means of mutual aid or other agreements.

F. Provide for evacuation to appropriate mass care facilities.

III. SITUATION

In the event of dam failures, thorough site-specific evacuation plans are on file at the Office of Disaster Preparedness.

Other events, both large and small may require evacuations. Evacuations involving only a small number of people can generally be handled without elaborate measures by on-scene public safety personnel. Large scale evacuation should be supported by the Emergency Operations Center and the Department Operations Center of the involved agencies.

IV. LEGAL CONSIDERATIONS

In February, 1995, the Chief Legal Counsel the Sheriff rendered an opinion based on case law that Penal Code section 409.5 does NOT authorize <u>forcible</u> evacuations: "In conclusion, without a specific legislative amendment to Penal Code section 409.5, it would be improper to infer statutory authority to forcibly evacuate people who do not wish to be evacuated, unless their presence in the closed area resulted from an entry made after the area was closed pursuant to 409.5(a) or 409.5(b)". All procedures in this plan, therefore, will pertain to <u>voluntarily</u> evacuated persons.

V. ORGANIZATION AND RESPONSIBILITIES

A. County

The designated County Evacuation Coordinator is the Sheriff. The Evacuation Coordinator will be assisted by other county police resources and support agencies.

Evacuation operations will be conducted by law enforcement agencies, highway/road/street departments, and public and private transportation providers. Procurement, regulation, and allocation of resources will be accomplished by those designated.

B. Operational Area

In large scale evacuation operations, the Operational Area Law Enforcement Coordinator is responsible for coordinating transportation resources and operations on a countywide basis. This coordination will be accomplished in the Operational Area EOC with the involved city EOCs and the Sheriff's Department's DOC.

C. Mutual Aid Region

A designated member of the California Highway Patrol (CHP) will function as the State Office of Emergency Services (OES) Mutual Aid Region Movement coordinator and will coordinate traffic control operations on a region wide basis. The Movement Coordinator will be assisted by a representative of the State Department of Transportation (CALTRANS), who will function as the Mutual Aid Region Transportation Coordinator.

These coordinators will work between the Operational Area and Statewide resources.

D. State

The coordination and support of evacuation operations on a Statewide basis will be accomplished by the State Movement Operations Group. This group will be chaired by the Director (or a designee) of State OES and will include a Traffic Control Coordinator (CHP representative) and Transportation Coordinator (CALTRANS representative).

State agencies which may be involved in a major evacuation are the CHP, National Guard, CALTRANS, County Department of General Services, and Public Utilities Commission.

E. Federal

The U. S. Department of Transportation supports and assists federal, state, and local agencies with disaster relief transportation requirements. The Federal Aviation Administration can assist with communications and search and rescue coordination. The Interstate Commerce Commission coordinates the location and scheduling of common carriers authorized and equipped to provide emergency transportation into and within disaster areas.

VI. PROCEDURES

A. Identifying the Area and Population to be Evacuated

Site-specific information which identifies areas at risk for the known hazards which could threaten the Operational Area is referenced in the Basic Plan, Attachment A. This information provides guidance in making decisions about the area to be evacuated. For areas not covered by specific plans, data gathered at the time of the threat will determine the hazard area. Throughout the emergency period, it will be necessary to continuously reevaluate the size and location of the danger area and, if necessary, expand the areas of evacuation.

B. Coordinating with the American Red Cross

The Red Cross is very adept at establishing evacuation facilities and can perform many logistical functions for those facilities. The Evacuation Coordinator should establish liaison with the Red Cross early in the evacuation process.

C. Identifying Temporary Evacuation Points (TEPs)

An event may occur that requires an immediate evacuation out of the danger area. For such an event, it may be necessary to evacuate to TEPs. These points can be used as staging areas with the intent to relocate, or as short-term holding areas. The selection of the location will require consideration for the type of incident, location, safety from incident, number of persons involved, and weather conditions. The goal is to safely evacuate to an appropriate, safe location. TEPs ideally should have access to restrooms and adequate space for the numbers involved. Potential sites include middle schools, high schools, parks, elementary schools and parking lots not downwind or in the potential path of the hazard.

D. Identifying Evacuation Routes

The Evacuation Coordinator selects the best routes from the endangered area to mass care facilities or TEPs, considering the size of the population to be moved, road capacity, and the roads which could become impassable.

For areas not covered by site-specific plans, the best evacuation routes are selected at the time of the event. As the emergency situation develops, the Evacuation Coordinator requests regular updates from field personnel on the condition of the road network and adjusts the selection of evacuation routes accordingly. Changes in evacuation routes are communicated to traffic control personnel, transportation resource coordinators, access control personnel, Reception and Care Center Directors, and Public Information Officers.

E. Warning the Public and Providing Evacuation Instructions

When the decision to evacuate is made, and facilities and routes are designated, the public is alerted and given evacuation instructions by various means. Emergency broadcast technology is installed at the Operational Area EOC as well as in the Office of Disaster Preparedness. Public Information Officers and field units using public address systems may also be necessary.

Evacuation information provided to the public will include the following:

1. When and why they must evacuate.

2. Routes to take, including conditions of roads, bridges, and freeway overpasses.

3. What to do if vehicles break down.

4. Where to go for mass care.

5. Anticipated duration of the emergency and evacuation.

F. Evacuating Special Facilities

Facilities which require special plans and resources to carry out evacuations include hospitals, prisons, institutions for the handicapped or disabled, and nursing homes. These facilities should have their own evacuation plans, personnel trained, and logistics arranged, but this may not always be the case. Facilities like these will be warned of the emergency situation.

G. Providing Transportation Assistance

Some people will not have access to a motor vehicle including households without motor vehicles, and persons left at home without a vehicle. Some people with disabilities or illnesses may require special transportation assistance. The number of persons requiring transportation assistance varies substantially from area to area, and by time of day, and day of the week. Buses, vans, ambulances, and other transport vehicles will be requested from transportation providers. The public will be told where to go to obtain transportation and a telephone number will be provided for persons who require special assistance.

H. Controlling Traffic

Traffic controls are established at key intersections and at access points on evacuation routes, to expedite the flow of traffic. It may be necessary to control traffic on routes outside the hazard area, to minimize conflicts with evacuation traffic.

Appendix C-1

LAW ENFORCEMENT

EMERGENCY ACTION CHECKLIST

RESPONSE TO A MAJOR EARTHQUAKE

Action	Responsibility
Dispatch units to survey damage, particularly pre-designated key facilities and initiate roll call of unit.	Jurisdictions/ Communications Center
Provide alternate communications, if telephone or radio communications are not operational.	Communication/ Watch Commander
Call in regular personnel and reserves; assign responsibilities according to plan.	Watch Commander/ Station Commanders
Assist or join in establishment of multi agency staging areas.	Incident Commander
Contact American Red Cross for potential and confirmed evacuation and shelter needs of displaced population.	Law Enforcement/ Station X/ODP
Coordinate relocation of people to safe areas.	Law Enforcement
Coordinate the evacuation of hazardous areas with other agencies.	Law Enforcement
Search vacated areas to ensure that all people have received warnings.	Law Enforcement/Fire
Assist with the removal and disposition of the dead, if requested by the County Medical Examiner.	As Assigned
Provide law enforcement and crowd control at mass care facilities.	Law Enforcement
Continue surveys for further damage or hazards.	ASTREA/Field Units
Impose curfew, if appropriate.	Sheriff /Law Enforcement
Protect inmates within detention facilities.	Detention Watch Commander
Assist with the evacuation of institutionalized persons, as necessary.	Incident Commanders
Request mutual aid assistance from the Operational Area, or Regional Law Enforcement Coordinator, as appropriate.	Law Enforcement

Law Enforcement
Earthquake Response

Action	Responsibility
Assist in heavy rescue operations.	Incident Commander/ SAR/USAR
Provide security to protect people remaining in area.	Incident Commander
Provide traffic control.	Incident Commander/ CHP
Assist emergency vehicles and equipment in entering or leaving the area.	Incident Commander/ CHP
Establish perimeter access control, as required.	Incident Commander/ CHP
Coordinate with the Construction and Engineering Coordinator for streets/roads barricades.	Incident Commander
Establish security for vital facilities and essential supplies.	Law Enforcement
Control access to these facilities giving priority to utility repair and industrial recovery teams.	Incident Commander
Coordinate with CHP to determine capacity and safety of evacuation routes.	Incident Commander
Coordinate with Public Works and Fire Department for debris clearance and heavy rescue operations.	Incident Commander
Evacuate persons if dam failure is possible.	Law Enforcement/Fire

Appendix C-2

LAW ENFORCEMENT

EMERGENCY ACTION CHECKLIST

RESPONSE TO A HAZARDOUS MATERIAL INCIDENT

Action	Responsibility
Carry out assigned duties in accordance with the San Diego County Hazardous Materials Area Plan.	Field Units/Jurisdiction Communications Center
Determine if evacuation of population is necessary and notify Law Enforcement.	Incident Commander
Notify American Red Cross of any potential evacuation	Law Enforcement/ Station X/ODP
Determine location of mass care facilities, as necessary.	American Red Cross/ Law Enforcement
Dispatch units to survey the situation, and to estimate the extent of the affected area.	Incident Commander/ Jurisdiction
Notify appropriate local, state, and federal hazard response agencies.	Dispatch/ODP
Contact National Weather Service for wind direction and other weather information.	Communications Center/ ODP
Ensure that all personnel remain upwind or upstream of the incident site. This may require repositioning of personnel and equipment as conditions change.	Incident Commander
Establish traffic and perimeter control for affected area.	Incident Commander/ CHP
Assist in the coordination of medical assistance.	Dispatch/EMS
Direct designated hazardous incident responders to the incident site.	Dispatch/ Incident Commander

Law Enforcement
Hazardous Materials Response

Action		Responsibility
Assist in efforts to identify spilled substance. This would include locating shipping papers and placards and contacting as required:		Hazardous Incident Response Team (HIRT)/ Law Enforcement
	Telephone Numbers	
- Shipper		
- Manufacturer		
- CALTRANS/CHP	688-6845/268-2276	
- County Hazardous Materials Management Division (HMMD)	338-2222	
- CHEMTREC	1-800-424-9300	
- TOXCENTER	1-818-993-4333	
Assist in the warning dissemination and search and rescue operations.		Dispatch/ODP
Establish command post with other emerency responders.		Incident Commander
Provide law enforcement and crowd control services at mass care facilities.		Incident Commander
Determine if the use of aircraft will make hazardous conditions worse. If so, convey information to appropriate parties.		HIRT/ Incident Commander
Assist with the removal and disposition of the dead, if requested by the County Medical Examiner.		Field Units
Establish traffic and other controls to permit re-entry when safe.		Incident Commander/ CHP
Request mutual aid assistance from the Operational Area Law Enforcement Coordinator, or Regional Law Enforcement Coordinator, as appropriate.		Law Enforcement

Appendix C-3

LAW ENFORCEMENT ACTION CHECKLIST
RESPONSE TO IMMINENT/ACTUAL FLOODING

FLOODING EXPECTED

Action	Responsibility
Order evacuation, as necessary.	Incident Commander
Warn population in threatened areas, if evacuation ordered.	Field Units/Fire Units/ ASTREA/ODP
Notify American Red Cross.	Law Enforcement/ Station X/ODP
Determine location of mass care facilities, as necessary.	American Red Cross/ Law Enforcement
Prepare to relocate personnel and equipment from stations that are subject to flooding.	Station Commanders
Review evacuation routes and warning procedures, including special facilities, such as hospitals, convalescent homes, residential care facilities and others requiring special assistance.	Incident Commander/ ODP/Department Operations (DOC)
Place reserves and auxiliaries on standby.	Station Commanders
Prepare to move personnel from detention facilities subject to flooding.	Detention Facility Watch Commanders
Provide security for vacated areas.	Incident Commander
Establish access controls to vacated areas.	Incident Commander/ CHP

Law Enforcement
Flood Response

FLOODING OCCURS

Action	Responsibility
Activate warning procedures.	ODP/Fire/ Law Enforcement
Notify American Red Cross.	Law Enforcement/ Station X/ODP
Determine location of mass care facilities.	American Red Cross/ Law Enforcement
Implement evacuation plans.	Law Enforcement/ODP
Coordinate with fire agencies, life guards and other public service agencies for the rescue of persons trapped in flooded areas.	Law Enforcement/Fire Incident Commanders
Assist or join with other agencies in establishing multi-agency staging areas.	Incident Commander
Provide law enforcement and crowd control at mass care facilities.	Law Enforcement
Conduct aerial survey of impacted area.	ASTREA
Request mutual aid assistance from the Operational Area Law Enforcement Coordinator, or Regional Law Enforcement Coordinator, as appropriate.	Law Enforcement

Appendix C-4

LAW ENFORCEMENT
EMERGENCY ACTION CHECKLIST
RESPONSE TO IMMINENT/ACTUAL DAM FAILURE

DAM FAILURE IMMINENT

Action	Responsibility
Order evacuation, as necessary.	Incident Commander
Attempt to warn population in dam inundation area using all available means.	Law Enforcement/Fire ASTREA/ ODP
Notify American Red Cross.	Law Enforcement/ Station X/ODP
Determine location of mass care facilities for displaced population.	American Red Cross/ Law Enforcement
Provide traffic control for evacuation.	Law Enforcement/CHP
Provide security for vacated areas.	Field Units
Establish access controls to vacated areas.	Incident Commander/ CHP

Law Enforcement
Dam Failure Response

DAM FAILURE OCCURS

Action	Responsibility
Dispatch units to survey extent and severity of damage including aerial survey.	Incident Commander
Provide security for damaged area.	Incident Commander
Coordinate search and rescue operations.	Incident Commander
Assist fire units and heavy equipment operators in entering or leaving vacated area.	Field Unit/CHP
Coordinated with Public Works and Fire Department for debris clearance and heavy rescue operations.	Incident Commander/ EOC
Provide law enforcement and crowd control services at mass care facilities.	Incident Commander
Provide alternate mobile communications if necessary.	Law Enforcement/Fire
Assist with the removal and disposition of the dead, if requested by the County Medical Examiner.	Field Units
Impose curfew, if appropriate.	Law Enforcement/ Sheriff
Establish traffic controls to permit re-entry when conditions warrant.	Incident Commander/ CHP
Request mutual aid assistance from Operational Operational Area Law Enforcement Coordinator, or Regional Law Enforcement Coordinator, as appropriate.	Law Enforcement
Assist or join with other agencies in establishing multi-agency staging areas.	Incident Commander

Appendix C-4, page 2

Appendix C-5

LAW ENFORCEMENT

EMERGENCY ACTION CHECKLIST

RESPONSE TO A MAJOR FIRE

Action	Responsibility
Notify Law Enforcement of any potential evacuation.	Incident Commander
Notify American Red Cross.	Law Enforcement/ Station X/ODP
Provide security and protection.	Law Enforcement
Evacuate unsafe areas and designate Temporary Evacuation Points (TEPs), as necessary.	Law Enforcement
If evacuation ordered, warn population in threatened areas.	Law Enforcement/Fire ASTREA/ODP
Determine location of mass care facilities.	American Red Cross/ Law Enforcement
Make arrangements for transportation of people in special facilities.	Law Enforcement
Provide crowd/perimeter control.	Law Enforcement

UNIFIED SAN DIEGO COUNTY
EMERGENCY SERVICES ORGANIZATION
OPERATIONAL AREA EMERGENCY PLAN

ANNEX H

ENVIRONMENTAL HEALTH OPERATIONS

September 1996

UNIFIED SAN DIEGO COUNTY EMERGENCY SERVICES ORGANIZATION

ANNEX H

ENVIRONMENTAL HEALTH OPERATIONS

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UNIFIED SAN DIEGO COUNTY EMERGENCY SERVICES ORGANIZATION

ANNEX H

ENVIRONMENTAL HEALTH OPERATIONS

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UNIFIED SAN DIEGO COUNTY EMERGENCY SERVICES ORGANIZATION

ANNEX H

ENVIRONMENTAL HEALTH OPERATIONS

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ANNEX H
ENVIRONMENTAL HEALTH OPERATIONS

I. GENERAL

The Environmental Health Operations Annex to the San Diego County Operational Area Emergency Plan describes the basic concepts, policies and procedures for providing environmental health services in the event of any disaster. This Annex serves as the unifying environmental health document for the County of San Diego and the cities in the County, as authorized by the Emergency Services Agreement.

Note: This Annex is not applicable for incidents at the San Onofre Nuclear Generating Station (SONGS). For all events at SONGS, refer to the San Diego County Nuclear Power Station Emergency Response Plan.

A. Purpose

To establish emergency environmental health operations, assign responsibilities, and provide actions and responses to environmental health problems associated with disasters.

B. Goals and Objectives

The overall goal of environmental health disaster operations is to:

- Minimize loss of life and human suffering, prevent disease, and promote optimum health by controlling environmental factors.

The overall objectives of environmental health disaster operations are to:

- Provide leadership and guidance in all environmental health related incidents.
- Provide environmental health protection measures.
- Provide food handling and mass feeding sanitation service in emergency facilities.
- Inspect and advise on general sanitation matters.
- Coordinate environmental health-related activities among other local public and private response agencies and groups.
- Perform structural damage assessments

C. Concept of Operations

There are three levels of emergency response. These levels are based on the nature and severity of the situation and the availability of resources. These three levels are described in the Basic Plan.

LEVEL I -

- The scope and degree of the emergency can be handled effectively with the environmental health resources available within the Operational Area.

- The countywide emergency response system and the Emergency Operations Center (EOC) may or may not be activated.

LEVEL II -

- There are heavy casualties, severe damage, and severe impact upon resources available to handle the emergency; requiring mobilization of the emergency organization and the use of mutual aid.

- Affected government agencies will be notified and the Operational Area EOC will be activated.

- Requests for environmental health mutual aid to the State Department of Health Services (DHS) will be made via the Regional Disaster Medical/Health Coordinator.

- Assistance from other governmental agencies such as the National Guard and other military may be required.

LEVEL III -

- The Operational Area Emergency Operations Center will be activated and fully staffed.

- Assistance will be required from both state and federal resources.

D. Plan Activation and Termination

Activation and termination of this Annex shall be by the direction of (1) the County's Chief Administrative Officer (CAO) in that capacity, or as Emergency Services Coordinator of the Unified San Diego County Emergency Services Organization; or (2) a designated Assistant CAO; or (3) the Director, Office of Disaster Preparedness or designated representative; or (4) the Director, Department of Environmental Health or designated representative.

Upon activation, the Director, Department of Environmental Health, determines the extent of environmental health services needed for the disaster and notifies the appropriate divisions.

II. ORGANIZATION

A. City Emergency Operations Centers (EOCs)

Each city has a central facility designated as an EOC. From the EOC, disaster operations are directed or coordinated. It is activated when a disaster occurs and is staffed by city employees from departments with emergency responsibilities, as well as liaison representatives from other agencies and jurisdictions.

City plans may call for an environmental health liaison representative to be present when the EOC is activated. In each city, the City Manager is designated as Director of Emergency Services, by ordinance, and directs emergency operations from the EOC.

B. Operational Area EOC

The County EOC also serves as the Operational Area EOC and performs the same function as the city EOCs, with the Chief Administrative Officer serving as Director of Emergency Services. The CAO also functions as the Emergency Services Coordinator for the Operational Area.

The Operational Area EOC is located at 5555 Overland Avenue, County Operations Center, Kearny Mesa and is used as the central point for resource acquisition and allocation, as well as coordination. The Environmental Health Section of the EOC (Figure 1) is normally activated when the EOC is fully activated. It is staffed by pre-designated environmental health personnel who coordinate the environmental health response for the Operational Area. The EOC environmental health staff serve as advisors to the Emergency Services Coordinator and the Management Section. and make decisions about resource allocation and priorities, and other public environmental health matters.

1. Emergency Services Coordinator (Normally the CAO) - directs, or coordinates, the Emergency Services Organization and the emergency management program. In a disaster located entirely within the County unincorporated area, the CAO is the director of emergency operations. In a disaster involving more than one jurisdiction, the CAO serves as coordinator of emergency operations.

2. Director, Department of Environmental Health (DEH) - reports to the CAO and is primarily responsible for providing and coordinating the provision of county wide environmental health and sanitation services. The Director, DEH, identifies environmental health problems, determines the resources needed, and coordinates resource allocation. Additionally, the Director coordinates activities with public works agencies, fire departments, and utilities (sewage, water, etc.). The Director advises the Emergency Services Coordinator of the need for mutual aid.

3. Chief, Hazardous Materials Management Division, or Designee - reports to the Director, DEH, and is responsible for coordinating hazardous materials personnel and resources. The HAZMAT Coordinator maintains an active liaison with the San Diego Fire Department to coordinate a joint response.

4. Chief, Community Food and Housing Division, or Designee - reports to the Director, DEH, and is responsible for supervising the food delivery system and assists in water supply, waste disposal, and housing.

5. Chief, Land Use Division, or Designee - reports to the Director, DEH, and is responsible for monitoring and evaluating the water supply. The Chief is also responsible for determining the risks/hazards for the disposal of sewage and the establishment of quarantine areas in the event of sewage contamination.

6. Chief, Occupational and Radiological Health Division, or Designee - reports to the Director, DEH, and advises on all occupational/radiological hazards as they occur.

7. Chief, Vector Surveillance and Control Division, or Designee - reports to the Director, DEH, and is responsible for establishing methods and procedures for vector control activities to include the control of flies, mosquitos, human body pests, ectoparasites and rodents as well as the supervision of the disposal of dead animals.

8. Chief, Solid Waste Local Enforcement Agency, or Designee - reports to the Director, DEH, and is responsible for the monitoring and evaluating the management of solid waste. The Chief is also responsible for establishing emergency Notices to allow local landfills and transfer stations to temporarily exceed their permitted tonnages in order to manage additional volumes of solid waste resulting from a disaster.

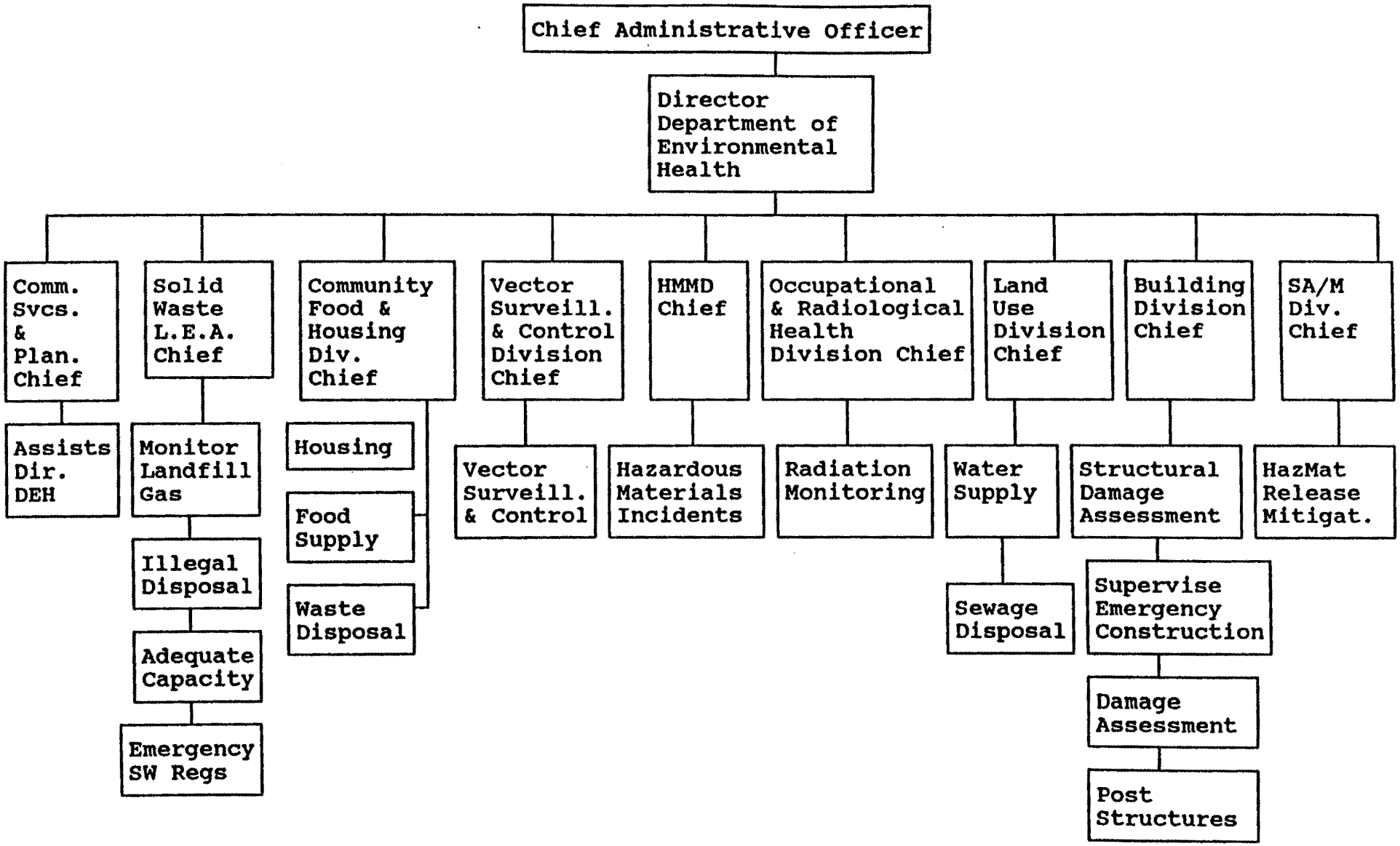
9. Chief, Site Assessment and Mitigation Division, or Designee - reports to the Director, DEH, and is responsible for coordinating site assessment personnel and resources. The SAM coordinator maintains an active liaison with the Fire Departments, Building Departments and Regional Water Quality Control Board to coordinate activities related to leaking underground storage tanks and other chemical contamination issues.

10. Chief, Building Division, or Designee - reports to the Director, DEH, and is responsible for establishing the Division's emergency plan and processes, which encompass damage assessment, evaluation and posting of structures, and supervising the implementation of the plan during and following a disaster. The Building Division also coordinates and compiles damage assessment reports from throughout the Operational Area. In addition, the Building Division is responsible for providing organized response to the State Office of Emergency Services' requests for mutual aid.

11. Chief, Community Services and Planning Division, or Designee - reports to the Director, DEH, and is responsible for assisting with emergency operations as directed.

FIGURE

ENVIRONMENTAL HEALTH OPERATIONS AT THE SAN DIEGO COUNTY OPERATIONAL AREA EOC



III. ROLES AND RESPONSIBILITIES

A. All Environmental Health Agencies/Divisions

1. Prepare Standard Operating Procedures (SOPs) and functional checklists for environmental health response to a disaster, including a system for automatic reporting of pre-designated personnel to assigned disaster posts.

2. Train personnel and alternates.

B. County Department of Environmental Health

1. Writes and updates the Environmental Health Annex and any other emergency environmental health plans and procedures.

2. Coordinates environmental health disaster operations within the Operational Area.

3. Coordinates the procurement, allocation and distribution of environmental health resources required to support disaster environmental health operations during disasters.

4. Develops and maintains a capability for identifying environmental health resources within the Operational Area.

5. Coordinates all environmental health related activities among other local public and private response agencies or groups, as well as state and federal agencies.

6. Requests and responds to requests from the Regional Disaster Medical Health Coordinator for disaster assistance.

C. Community Food and Housing Division

1. Supervises the food delivery system and assists in water supply, waste disposal, and housing.

2. Coordinates the inspections for purity and usability of vital foodstuffs, water, and other consumables.

3. Coordinates the provision of temporary measures for sanitary disposal of human waste and other refuse.

4. Inspects and advises on general sanitation matters for mass feeding and sanitary facilities in emergency shelters.

5. Conducts inspections of health hazards in damaged buildings and housing facilities.

D. Vector Surveillance and Control Division

1. Establishes methods and procedures for vector control activities to include the control of flies, mosquitos, human body pests, and ectoparasites.

2. Develops and supervises methods and procedures for control of rodents.

3. Supervises the disposal of dead animals.

4. Conducts surveys and surveillance to determine potential for vector-borne disease transmission and control measures needed to prevent and control vectors.

E. Occupational and Radiological Health Division

1. Advises on all occupational hazards as they occur.

2. In conjunction with the County Radiological Officer:

   a. Advises on radioactive contamination of the environment and the population.

   b. Assists with the coordination of radiation monitoring teams as well as decontamination activities.

   c. Advises on control measures and recovery efforts from radiological incidents.

   d. Advises County Health Officer (CHO) of the need for administration of potassium iodide (KI) to emergency workers.

3. Appendix II discusses emergency response to various radiological incidents.

F. Hazardous Materials Management Division

1. Conducts environmental surveys to identify the hazardous materials released.

2. Evaluates the risks that the hazardous substances may pose to the general public and environment.

3. Advises on mitigation measures necessary to modify or reduce adverse conditions effecting public or environmental health.

4. Coordinates environmental health mitigation and response activities with other public and private response organizations.

G. Land Use Division

1. Determines the risks and hazards for the disposal of sewage.

2. Establishes quarantine areas in the event of sewage contamination.

3. Evaluates source of water for use as a potable water supply.

4. Establishes procedures for the sanitary transportation and treatment of water to be used as a water supply.

H. Building Division

1. Performs structural damage assessment in unincorporated areas.

2. Performs rapid evaluation of structures within unincorporated areas, and posts evaluated structures with the objective of maintaining a balance between safety and the need for shelter.

3. Coordinates damage assessment throughout the Operational Area and compiles and forwards dollar estimates of damage to the State.

4. Provides supervision for the repair, modification, and/or construction or emergency facilities and housing.

5. Responds to requests for mutual aid.

I. Solid Waste Local Enforcement Agency (LEA)

1. Approves waiver requirements of State standards for solid waste operators to accept disaster-related solid waste.

2. Reviews the handling and acceptance of solid waste with haulers and operators.

3. Monitors the storage, handling, and disposal of solid waste in the LEA's jurisdiction.

4. Coordinates the disposal of special wastes, such as food waste generated from mass feeding centers and quarantines, and human waste generated from lack of sanitary facilities.

5. Monitors the potential migration of landfill gas due to damaged gas control systems or emergency construction activities adjacent to landfills.

J. Site Assessment and Mitigation Division

1. Conducts environmental surveys to determine the extent of releases from underground storage tanks and other chemical contamination sources.

2. Evaluates the risks posed to public health and water resources from hazardous materials releases.

3. Advises on mitigation measures necessary to mitigate hazardous materials releases.

4. Coordinates site assessment and mitigation activities with other public agencies and private entities.

K. **Community Services and Planning Division**

1. Coordinates the regular update of Annex H by the Department of Environmental Health.

2. Assists the Director of the Department as directed during an emergency situation.

L. **Office of Disaster Preparedness (ODP)**

1. Assists with environmental health disaster planning and training.

2. Coordinates, through the logistics section, efforts to obtain resources both within the county and out of the county, including supplies and logistical support.

3. Requests and obtains, via the logistics section, military assistance in accordance with established protocols and procedures.

4. Activates, manages, and staffs the Operational Area EOC.

5. Assists with recovery efforts, particularly in obtaining state and federal reimbursement funds.

M. **State (See Attachment A)**

1. Responds to requests for resources from the Operational Area.

2. The Director, State Department of Health Services, serves as the State Director of Public Health and has the overall responsibility of coordinating statewide disaster environmental health operations and support requirements.

N. **Federal (See Attachment B)**

1. Public Health Service

   - Assists state and local communities in taking protective and remedial measures for ensuring sanitary food and potable water supplies; adequate sanitary systems; rodent, insect, and pest control; care of sick and injured; and control of communicable disease.

   - Assigns professional and technical personnel to augment state and local forces.

2. Food and Drug Administration

   - Works with state and local governments in establishing environmental health controls through the decontamination or condemnation of contaminated food and drugs.

IV. FUNCTIONS

A. Mass Feeding Services

Several aspects of the food delivery system will need supervision to prevent the spread of disease and the spoilage or waste of food. Some of the most important aspects are:

1. Quality control of incoming foods in order to detect spoilage or contamination.

2. Quality control of water supplied to food preparation centers.

3. Provision for proper storage and cooking of food.

4. Provision for proper disposal of solid and liquid wastes.

5. Provision for proper washing and sanitizing of utensils.

6. Supervision of food preparation and serving.

7. Supervision of cleaning of all food handling and serving areas.

8. Control of insects and rodents in food stores, kitchens, and eating areas.

9. Management of personnel, including training, health checks, and assignment at sanitary facilities.

Due to the increase of population in reception areas, feeding facilities will be in great demand. Those facilities in existence will have to be used to their maximum capacity, and additional mass feeding centers may have to be created. Maintaining cleanliness and sanitation standards will be of the utmost importance. All sections must be kept clean and disinfected and only potable water should be used in the feeding centers. These centers should be equipped with proper washing facilities to include: a sink for hand washing use; a two or three-compartment sink for the cleansing of cooking utensils and dishes; and a separate sink for the washing of fruits and vegetables. All sinks should be provided with detergents, access to hot water, and organic waste containers where grease and food scraps can be deposited. Multi-use dishes should be sanitized as approved by an Environmental Health Specialist.

Food handlers must practice good hygiene and be free of boils, sores, or any communicable disease. Food handlers should also attend a brief training session which stresses personal cleanliness, emphasizing and washing of hands and the wearing of clean, washable garments for food service and preparation. Food handlers should be instructed not to sneeze or cough near food.

With the exception of foods being processed, all foods should be kept in fly-proof containers. Perishables must be refrigerated at 45° F or less.

B. Sanitation

1. Waste Disposal

To accommodate the increased population in reception areas, construction of human waste disposal units may be required. Tank trucks with pumping capabilities may be used for removal of liquid wastes. Specialists should inspect and supervise the construction of these units for the following three reasons: 1) potential for fly-breeding areas, 2) increase in the incidence of disease caused by pathogenic organisms, and 3) potential soil or water contamination if units are poorly constructed.

Three types of sewage disposal units include 1) community trench latrines, 2) pit privies, 3) mobile latrines or chemical toilets.

2. Solid Waste Disposal

Most solid waste will accrue at the mass feeding facilities, with organic wastes being of particular concern to environmental health officials. At all facilities, organic and inorganic wastes should be collected and stored separately. Organic wastes will require heavier, washable watertight containers with tight-fitting lids. When deciding upon types of containers and upon methods of collection, the following should be considered:

a. Four containers will be needed per 100 people at mass feeding facilities.

b. Containers should always be stored outside buildings.

c. Plastic bags may be used for storage but only for short periods.

d. Garbage collection from mass feeding centers should take place daily.

e. Garbage trucks with a 10 cubic meter capacity, manned by one driver and two helpers, can serve 6,000 people if three trips are made to the disposal area daily. An adequate number of garbage trucks and operating staff should be reserved or allocated.

Four methods of disposal are listed below. The methods include sanitary landfills, burial, incineration, and open dumping.

(1) Sanitary landfills - These are the best option. In the case of landfills, refuse should be compacted, covered with earth, and then compacted again.

(2) Burial - This is the next best option. Like the sanitary landfill, it involves covering the refuse at the end of the day.

(3) Incineration - This method can be used if the first two options are impractical or inadequate for the existing volume of garbage (pathogenic materials from hospitals or infirmaries <u>must</u> be burned).

(4) Open dumping - This method is to be discouraged and will be allowed only in extreme cases. Open dumping refuse should be hauled to the dump sites and covered where possible to deter rodents and flies. Cans should be crushed because they provide excellent breeding grounds for mosquitoes.

C. Vector Control

Vectors are organisms that transmit disease or cause annoyance. Vectors are present in virtually every environment, and at times are involved in the transmission of serious diseases, particularly under crowded or less sanitary conditions. The more common vectors that transmit disease through biting, skin infection, or food or water contamination are listed below:

Vector	Main Diseases
Mosquitoes	Malaria, dengue (breakback fever), yellow fever, filariasis, viral encephalitis (sleeping sickness).
Rodents	Leptospirosis, salmonellosis, rat bite fever, plague, tularemia.
Rodent fleas	Murine typhus, bubonic plague.
Rodent mites	Rickettsialpox, scrub typhus.
Lice	Pediculosis, epidemic typhus, relapsing fever, trench fever, skin irritation.
Ticks	Colorado fever, Tularemia, relapsing fever, viral encephalitis, Rocky Mountain spotted fever, Lyme disease.
Cockroaches	Diarrhea, dysentery, or salmonellosis.
Cone-nose bugs	Chagas' disease, severe allergic reactions
Bedbugs	Severe skin inflammation.
Domestic flies	Conjunctivitis, enteric diseases.

Mapping vector sources is essential to determine (1) the extent of infestations, (2) the potential for disease occurrence, (3) the level of nuisances to be eliminated, and (4) the amount of damage to be expected. Mapping is a tool which also allows implementation of preventative measures before disease occurs and/or control operations if/when disease occurs.

Mosquitos require water for part of their breeding cycle. Any body of water or container may serve as a breeding place for mosquitoes. Flies breed in a variety of decaying organic matter; cockroaches are also associated with less than sanitary conditions and thrive where organic matter is available and hiding places (cracks and crevices) exist. Domestic rats live where food, water and harborages are available. Many vectors occur in open areas, and are a problem

because of man's encroachment into areas where they naturally abound. Under urgent circumstances (as during a disease outbreak) chemical control is the primary method of control, combined with a vigorous mass public information/education approach to obtain public assistance/cooperation in reducing the conditions leading to vector propagation.

D. Emergency Water Supply

If the water supplier has placed only limited restrictions on the supply of water for the emergency facility the estimated water use should be in the range of 25 to 50 gallons/person/per day to conserve water. If water must be trucked in or on-site treatment is necessary, restricted use of the water supply is necessary. Estimates of minimum water supply needs for various emergency facilities follows:

1. First aid stations - 10 to 15 gals/person/day
2. Mass feeding centers - 5 to 15 gals/person/day
3. Housing and shelter - 4 to 5 gals/person/day

If the municipal or a private potable water supply is not available or is damaged, it may be necessary to calculate the water supply needs for the facility and begin locating alternate water supplies.

Most of the major water districts in San Diego Operational Area now have emergency plans and have mutual aid agreements to try to supply water to the most critical needs. The first step would be to contact the water district(s) and determine if they can supply the facility by trucking water to you or emergency repair to transmission lines.

If it is necessary to use alternate water sources such as agricultural wells, springs, ponds and streams, methods of treatment will have to be established. The military will have a limited number of portable filter and treatment units available. If these are not available or trucking of potable water is not possible, on site treatment will be necessary.

1. Disinfection - The following methods should be used on questionable groundwater: Boiling, chlorination (five parts of chlorine per million parts of water) or use of tincture of iodine. Boiling should only be considered for small volumes of groundwater and should not be used for surface waters since the source may contain chemical or radiological contaminates that might be unaffected or concentrated by boiling. Disinfection, via chemical disinfectants, will probably not be accomplished on surface waters but should be acceptable for groundwater.

2. Coagulation and Filtration - This method should be employed along with disinfection in the treatment of surface waters. Alum or other chemicals are mixed with cloudy surface water prior to filtration.

A swimming pool test kit may be used to determine the chlorine residual and the pH of chlorinated water. During an emergency such as an earthquake, it may be beneficial to check the chlorine residual of the municipal tap water.

The Department of Health Services Public Health Laboratory has a rapid Coli Alert bacteria test to aid in testing water for coliforms. These and other methods of testing drinking water are found in Standard Methods of Water Quality, American Public Health Association (APHA), Current Edition.

The San Diego County Operational Area Emergency Water Contingencies Plan discusses the response to a catastrophic interruption to the Operational Area's water supply. It is incorporated into this Annex by reference.

E. Hazardous Materials Management

The Hazardous Materials Management Division (HMMD) of the Department of Environmental Health is trained and equipped to respond to hazardous materials incidents associated with a chemical emergency. Through an agreement between the Unified Disaster Council members, HMMD, and the San Diego City Fire Department, the Hazardous Incident Response Team (HIRT) was formed to provide a regional response program, serving the San Diego County Operational Area.

Upon activation, the responding unit will proceed to the incident site and coordinate with other on-site agencies, such as the CHP, police, or fire departments.

HMMD will assist the designated Incident Commander as requested and will offer the following services:

1. Conduct environmental surveys to identify the hazardous materials and wastes.

2. Continuously monitor the status of the incident to determine the population at risk, the effect on environmentally sensitive areas, and the impact to economically sensitive areas.

3. Conduct field sampling to determine the extent of contamination in soil, water, or air.

4. Conduct on-site screening for identification of chemical unknowns.

5. Provide laboratory analysis of unidentified hazardous materials which may adversely affect individuals, the general public, or the environment, on an as needed basis.

6. Provide health and safety information to all response agencies and act as an on-site safety officer as necessary.

7. Assist the Incident Commander in determining the necessity for area evacuation and/or post incident site entry.

8. Make recommendations to the Incident Commander and other private or public response agencies concerning methods to be used in spill control, clean-up and site restoration.

9. Evaluate the adequacy of final site clean-up and help coordinate the removal of the hazardous materials.

10. As necessary, assist the Incident Commander in obtaining outside financial and other resources from State and/or Federal agencies to help in any environmental cleanup in the absence of a responsible party.

11. Provide technical information concerning the characteristics of released or spilled substances to the medical and other response agency having need of such information.

Responses to a significant oil spill impacting or with the potential to impact the San Diego Operational Area are addressed in the San Diego County Operational Area Oil Spill Contingency Element of the Area Hazardous Materials Plan.

F. Radiological Health Protection

1. Monitoring Teams

In the event of emergencies involving radioactive materials, the Department of Environmental Health will assist in the effort to save lives and minimize radiation exposure and environmental contamination. The Hazardous Materials Management Division and the Oceanside Fire Department both have teams that are trained as radiological monitors. The HMMD team may be activated by the Director of Department of Environmental Health or by the environmental health specialist who assumes responsibility at the time of disaster mobilization. The Oceanside Fire Department team may be activated through the Office of Disaster Preparedness. In addition, several other fire agencies within the Operational Area have trained radiological monitors. These may be requested through the Office of Disaster Preparedness.

In the event of a large radiological incident which exceeds the Operational Area's response capabilities, the Occupational and Radiological Health Division of Environmental Health Services, in conjunction with the Office of Disaster Preparedness would request State and Federal resources through the logistics section of the EOC and coordinate response activities through the EOC operations section.

The Monitoring Teams receive orders from or respond to the following:

a. The County Health Officer or designee.

b. The Director, Department of Environmental Health.

c. The Environmental Health Specialist in Command in lieu of the Director, Department of Environmental Health.

d. The Director of the Office of Disaster Preparedness (ODP) or designee.

2. Equipment

a. The Oceanside Fire Department has field monitoring kits which include:

Personnel monitoring equipment
Dose rate measuring equipment
Iodine/Particulate Air Sampler (2)
Protective clothing and equipment

b. HMMD has personnel monitoring equipment available.

c. ODP has a stock of radiological survey kits (CD V-777) available.

d. Additional information regarding the response to radiological incidents is found in Appendix II.

G. Structures

The Building Division of the Department of Environmental Health performs many functions regarding structures in the unincorporated areas of the County during an emergency. They perform structural damage assessments in the unincorporated areas, receive, collate and disseminate damage assessment reports for the Operational Area and report dollar estimates of damage for State/Federal reimbursement funds. They perform rapid evaluation of structures and post evaluated structures. The Building Division is also responsible for supervising the repair, modification, and/or construction of emergency facilities and housing. Lastly, they respond to requests for mutual aid.

H. Local Enforcement Agency

The Local Enforcement Agency (LEA) of the Department of Environmental Health regulates solid waste issues in the County. After disasters that impact solid waste handling and disposal, the California Integrated Waste Management Board is authorized to adopt emergency regulations for the LEA to provide maximum availability of handling, processing, transportation, storage and disposal capacity through the period of increased need. In addition, the LEA has trained staff to field monitor any potential public health and safety issues related to the migration of landfill gas. The LEA will coordinate issues and environmental concerns related to solid waste and disposal sites with other regulatory agencies, the operator/owners, and the community. These issues may include odors, noise, dust, longer operating hours at disposal sites, contaminated water, vectors, and landfill gas. In addition, the LEA will investigate and monitor solid waste issues in the general community related to storage and illegal disposal of solid waste.

I. Resources

The Department of Environmental Health develops and maintains a capability for identifying health resources within the Operational Area. Additionally, the Department of Environmental Health ,through the logistics section of the Operational Area EOC, is responsible for the procurement, allocation and distribution of all environmental resources required to support disaster environmental health operations.

Environmental Health Disaster Manual

The Environmental Health Disaster Manual includes information, Standard Operating Procedures and checklists to facilitate disaster environmental health response. The following information is included in the manual.

- Notification and Recall lists of Public Health Personnel
- Public Health Emergency Telephone Numbers
- Designated Amateur Radio Operators
- Emergency Transportation Resources
- Sewage Systems
- Septic Tank Pumpers
- Emergency Chemical Toilet Suppliers
- National Guard Resources (Public Health specific)
- Emergency Water Supply
- Portable Generators
- Water Retrieval in Emergencies
- Water Purveyors
- Well Locations
- Pesticide Emergencies Reference List
- Miscellaneous Support Agencies
- For Radiological Health Protection, the following information is available:
    - Members of Radiation Monitoring Teams
    - Location of Field Monitoring Equipment
    - Location of Potassium Iodide and issue log sheets
    - Hospitals with capability to handle ill or injured patients contaminated with radioactive material

J. State Mutual Aid

The State of California is divided into six mutual aid regions. The San Diego County Operational Area is in Region VI which also includes the Counties of Mono, Inyo, San Bernardino, Riverside, and Imperial. In the event that local public health resources are unable to meet the needs of the Operational Area, assistance from the neighboring jurisdictions may be requested through the Regional Disaster Medical/Health Coordinator or the Office of Emergency Services (Regional EOC). The Regional Coordinator coordinates the provision of medical and public health resources to the Operational Area. If a state response is indicated, the Regional Coordinator functions are subsumed under the overall State medical and health response. Disaster environmental health requests are consolidated at the Operational Area EOC and provided to the Regional Coordinator at the REOC who transmits it to the State Operations Center (SOC). The Regional Coordinator will perform the following functions.

- Coordinate the acquisition and allocation of critical public and private medical and public health resources required to support disaster medical operations.

- Coordinate medical resources in unaffected counties in the Region for acceptance of casualties.

- Request assistance from the Emergency Medical Services Authority (EMSA) and the State Department of Health Services (DHS) as needed.

AUTHENTICATION:

Daniel J. Avera
Director,
Department of Environmental Health

Date 9/19/96

ATTACHMENT A
STATE RESPONSIBILITIES

The Director, State Department of Health Services, serves as State Director of Public Health and will have the overall responsibility for coordinating statewide disaster environmental health operations and support.

The following state agencies have varied capabilities and responsibilities for providing support to environmental health disaster operations.

Department of Health Services (DHS)

DHS is primarily responsible, under the State Director of Public Health, for the administration and coordination of a statewide disaster environmental health program. This includes coordinating, supervising, and assisting those essential services required to do the following.

1. Assure availability of safe drinking water.

2. Prevent and control communicable disease.

3. Provide technical assistance in the safe operation of sewage collection, treatment, and disposal systems.

4. Assure prevention and control of vectors, including flies, mosquitoes, and rodents.

5. Assure observance of health aspects in management of solid waste disposal, including proper disposal of dead animals and human remains.

6. Assure safe management of hazardous wastes, including handling, transportation, and disposal.

7. Ensure safety of emergency supplies of food, drugs, medical devices, and other products.

8. Ensure rapid restoration or replacement of facilities for processing, storing, and distributing food, drugs, medical devices, cosmetics, and other products.

9. Rapidly establish measures to mitigate damage to environmental health from radiological accidents, including safety criteria for recovery, reoccupancy, and rehabilitation of contaminated areas.

10. Provide support to the California Air Resources Board in carrying out the public health aspects of the California Air Pollution Emergency Plan.

11. Provide technical assistance for incidents involving radioactive material.

Department of Food and Agriculture

1. Administers programs for the control and eradication of diseases, pests or chemicals affecting animals, poultry or crops.

2. Provides information on the protection of human and animal food from contamination by harmful residues or chemicals.

3. Provides entomological and veterinary assistance in support of emergency operations.

California Environmental Protection Agency - Air Resources Board

1. Develops plans to prevent substantial endangerment to the health of persons by anticipating and preventing or abating air pollution emergencies.

2. Coordinates the execution of air pollution emergency plans with County and Regional Air Pollution Control Districts, State OES and other public agencies.

3. Coordinates the monitoring of air quality and issues bulletins consistent with public safety as required by the Department of Health Services.

California Environmental Protection Agency - State Water Resources Control Board

1. Assures safe operation of sewage collection, treatment, and disposal systems.

2. Provides water quality advice and support in emergency operations.

California Integrated Waste Management Board

1. Assures proper disposal of solid wastes.

2. Prepares and adopts emergency regulations for LEAs to provide maximum availability for the proper disposal of solid waste.

ATTACHMENT B
FEDERAL RESPONSIBILITIES

The Department of Health and Human Services, operating under its own statutory authority or following a Presidential Declaration of an EMERGENCY, may provide disaster environmental health services.

Public Health Service

Has the primary federal responsibility for activities associated with health hazards resulting from emergencies and will:

- Assist state and local communities in taking protective and remedial measures for ensuring sanitary food and potable water supplies; adequate sanitary systems; rodent, insect, and pest control; care of sick and injured; and control of communicable disease.

- Assign professional and technical personnel to augment state and local forces.

Food and Drug Administration

Works with state and local governments in establishing public health controls through the decontamination or condemnation of contaminated food and drugs.

Policies and Procedures

1. If a local situation requires the regulation of a local health department in accordance with Section 207 of the Health and Safety Code, the State Department of Health Services will notify the appropriate health officer and assume control of local public health functions.

2. If local resources (both public and private) are inadequate to cope with the situation(s), required support will be requested through the Operational Area EOC to the appropriate OES Mutual Aid Regional Emergency Operations Center (REOC). If the requirement cannot be met through resources available within the counties in the Region, the REOC staff or Director will request assistance from the State Operations Center (SOC) in Sacramento who will then forward the request to the State Department of Health Services for assistance.

3. The provision of Federal resources prior to a Presidential declaration of an EMERGENCY is justified where prompt action is essential for the protection of life and property. After a Presidential declaration is made, and upon instructions from the Director, Region IX, Federal Emergency Management Agency, Federal agencies will make their resources available to support local and state emergency public health and sanitation efforts.

APPENDIX I-1
DEPARTMENT OF ENVIRONMENTAL HEALTH
EMERGENCY ACTION CHECKLIST

RESPONSE TO A MAJOR EARTHQUAKE

Action	Responsibility
Conduct field survey to detect damage to water and sewage systems.	DepartmentofEnvironmentalHealth
Locate and check status of potable water sources.	DepartmentofEnvironmentalHealth

IF LITTLE OR NO DAMAGE IS REPORTED, PREPARE TO SUPPORT MORE HEAVILY DAMAGED JURISDICTIONS.

IF EXTENSIVE DAMAGE IS REPORTED, TAKE THE FOLLOWING ACTIONS AS REQUIRED (Water, Sewage, Food, Housing, others).

Aid in the development of emergency community water supplies.	Water
Give guidance and supervise chlorination of all water supplies.	Water
Coordinate the transportation of water to points of consumption.	Water
Supervise the development of new and repaired water systems.	Water
Conduct field survey to detect damage to sewage systems.	Sewage
Coordinate transportation and use of emergency chemical toilets and other temporary facilities for the disposal of human waste and other infected refuse.	Sewage
Coordinate the procurement of portable sewage pumps.	Sewage
Supervise the collection and disposal of toilet wastes.	Sewage
Supervise the development of mass housing and sewage disposal facilities.	Sewage
Provide sanitation inspection services in emergency facilities.	Sewage
Supervise the rehabilitation of sewage plants and systems.	Sewage

Major Earthquake

Action	Responsibility
Inspect foodstuffs, water, drugs, and other consumables for purity and usability.	Food
Supervise sanitation in commercial mass feeding units.	Food
Supervise food salvage operations.	Food
Conduct inspection of health hazards in damaged buildings.	Housing/Building
Assist in the selection and development of public emergency shelters.	Housing/Building
Conduct structural damage assessment.	Housing/Building
Evaluate and post closures.	Housing/Building
Supervise the repair, modification, and/or construction of emergency facilities and shelters.	Housing/Building
Provide mutual aid when requested.	Housing/Building
Establish methods and procedures for control of flies, mosquitoes, human body pests, and ectoparasites.	Vector Surveillance & Control
Develop and supervise methods and procedures for control of rodents.	Vector Surveillance & Control
Conduct surveys and surveillance to determine densities, species, distribution, disease-bearing and control measures needed to prevent and control vectors.	Vector Surveillance & Control
Supervise disposal of radioactive waste.	Occupational & Radiological Health
Supervise radiological monitoring and decontamination (if required) of evacuees housed in emergency shelters and incoming patients in medical centers.	O&RH/County Radiological Officer
Assess risk to public health and safety and the environment from releases of hazardous materials.	Hazardous Materials

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Major Earthquake

Coordinate risk assessment activities with other responsible agencies.	Hazardous Materials
Survey underground storage tank sites to determine if releases may have occurred.	Site Assessment & Mitigation
Assess risk to public health and water resources from hazardous materials releases.	Site Assessment & Mitigation
Coordinate site assessment and mitigation activities with other public agencies and private entities.	Site Assessment & Mitigation
Approves waiver requirements based on emergency regulations adopted by the California Integrated Waste Management Board.	Solid Waste LEA
Review the handling and acceptance of solid waste with solid waste haulers and disposal site operators.	Solid Waste LEA
Monitors the storage, handling and disposal of solid waste.	Solid Waste LEA
Monitors the potential migration of landfill gas.	Solid Waste LEA
Supervise the collection, storage, and disposal of all garbage and refuse.	DepartmentofEnvironmentalHealth
Supervise the cleaning and decontamination of trucks to be used for hauling of water, milk, or other products.	DepartmentofEnvironmentalHealth

APPENDIX I-2
DEPARTMENT OF ENVIRONMENTAL HEALTH
EMERGENCY ACTION CHECKLIST

RESPONSE TO A HAZARDOUS MATERIAL INCIDENT

Action	Responsibility
Coordinate a systematic inspection of health hazards in the affected area.	County Health Officer
Coordinate health related activities among local public and private response agencies.	County Health Officer
Coordinate with the Medical Examiner, on health problems associated with the disposition of the dead.	County Health Officer
Request outside assistance from the Regional Disaster Medical/Health Coordinator.	County Health Officer
PRELIMINARY ASSESSMENT	
Conduct environmental surveys to identify the hazardous materials released. Determine the population at risk, and characterize the degree of hazard.	Hazardous Materials
Conduct field sampling for the identification of unknowns.	Hazardous Materials
Determine if specialized monitoring and survey equipment is necessary to assess the risk.	Hazardous Materials
Provide information acquired during surveys to monitor the fate of the release.	Hazardous Materials
Provide risks assessment information to other agencies involved in chemical incidents.	Hazardous Materials
EVALUATION/RISK ASSESSMENT	
Evaluate the risks that the hazardous substances pose to the general public and environment.	Hazardous Materials
Continually monitor the migration of contaminates released during chemical emergency.	Hazardous Materials

Environmental Health
Hazardous Materials

Action	Responsibility
Determine the population at risk.	Hazardous Materials
Determine the impact to environmentally-sensitive areas (i.e., endangered species and ecosystems).	Hazardous Materials
Determine the impact to economically-sensitive areas.	Hazardous Materials
SAFETY/CONTROL	
Make recommendations for control actions to modify or reduce impact.	Hazardous Materials
Provide information on cleanup techniques and resources.	Hazardous Materials
Can act as "site safety officer" during chemical emergencies.	Hazardous Materials
Make recommendations for cleanup, restoration methods, and disposal of hazardous wastes.	Hazardous Materials
COORDINATION	
Coordinate public health mitigation and response activities with other public and private response organizations.	Hazardous Materials

APPENDIX I-3
DEPARTMENT OF ENVIRONMENTAL HEALTH
EMERGENCY ACTION CHECKLIST

RESPONSE TO IMMINENT/ACTUAL FLOODING

FLOODING EXPECTED

Action	Responsibility
Determine potential health hazards and establish standards for control.	County Health Officer
Request assistance from the Regional Disaster Medical/Health Coordinator, as required.	County Health Officer
Determine potential health hazards and establish standards for control.	DepartmentofEnvironmentalHealth
Initiate actions to accommodate potential sewerage back-up caused by flood waters.	DepartmentofEnvironmentalHealth
Issue standby orders for self-contained chemical toilets.	DepartmentofEnvironmentalHealth
Inspect mass care facilities.	DepartmentofEnvironmentalHealth
Enlist additional personnel to handle increased vector control problems.	Vector Surveillance and Control
Identify buildings that contain hazardous materials.	Hazardous Materials
Advise on mitigation and control measures. Take environmental samples to determine extent of contamination.	Hazardous Materials

FLOODING OCCURS

Conduct survey to detect water and sewage system damage.	DepartmentofEnvironmentalHealth
Locate and check status of potable water sources.	DepartmentofEnvironmentalHealth
Supervise chlorination of transported water.	DepartmentofEnvironmentalHealth
Conduct inspection of health hazards in damaged buildings.	DepartmentofEnvironmentalHealth
Request and coordinate chemical toilets and other temporary facilities for the disposal of human waste and infected refuse.	DepartmentofEnvironmentalHealth

Environmental Health
Imminent/Actual Flooding

FLOODING OCCURS

Action	Responsibility
Inspect foodstuffs, water, and other consumables.	DepartmentofEnvironmentalHealth
Provide food handling and mass feeding sanitation services in mass care facilities.	DepartmentofEnvironmentalHealth
Provide inspection and advice on general sanitation matters, including providing environmental health inspection services.	DepartmentofEnvironmentalHealth
Coordinate sanitary facilities in mass care facilities.	DepartmentofEnvironmentalHealth
Cordon off areas where effluent is present.	DepartmentofEnvironmentalHealth
Coordinate the procurement of portable sewage pumps.	DepartmentofEnvironmentalHealth
Coordinate mosquito and other vector control operations.	Vector Surveillance and Control
Advise on mitigation control and clean-up measures.	Hazardous Materials
Survey underground storage tank sites to determine if tanks have floated and if releases have occurred.	Site Assessment and Mitigation
Assess risk to public health and water resources from hazardous materials releases.	Site Assessment and Mitigation
Coordinate site assessment and mitigation activities with other public agencies and private entities.	Site Assessment and Mitigation
Survey landfills and evaluates damage.	Solid Waste
Survey transfer stations for water saturated waste/runoff.	Solid Waste
Monitor the storage, handling and disposal of solid waste.	Solid Waste

APPENDIX I-4
DEPARTMENT OF ENVIRONMENTAL HEALTH
EMERGENCY ACTION CHECKLIST

RESPONSE TO IMMINENT/ACTUAL DAM FAILURE

DAM FAILURE IMMINENT

Action	Responsibility
Coordinates actions necessary to mitigate potential sewage back-up caused by flood waters.	DepartmentofEnvironmentalHealth
Coordinates acquisition and placement of chemical toilets.	DepartmentofEnvironmentalHealth
Inspect mass care facilities.	DepartmentofEnvironmentalHealth
Identify additional resources to handle increased vector control problems.	Vector Surveillance and Control
Enlist additional personnel to handle increased vector control problems.	Vector Surveillance and Control
Conduct surveys to determine adverse impact to facilities handling, storing, or disposing of hazardous materials.	Hazardous Materials
Advise on mitigation, control, and clean-up measures involving hazardous material releases.	Hazardous Materials

DAM FAILURE OCCURS

Coordinate survey to detect water and sewage system damage.	DepartmentofEnvironmentalHealth
Locate and check status of potable water sources and request water transportation to points of consumption.	DepartmentofEnvironmentalHealth
Supervise chlorination of transported water.	DepartmentofEnvironmentalHealth
Conduct inspection of health hazards in damaged buildings.	DepartmentofEnvironmentalHealth
Coordinate chemical toilets and other temporary facilities for	DepartmentofEnvironmentalHealth
the disposal of human waste and refuse.	DepartmentofEnvironmentalHealth
Inspect foodstuffs, water, and other consumables.	DepartmentofEnvironmentalHealth

Department of Environmental Health
Dam Failure Response

Action	Responsibility
Provide food handling and mass feeding sanitation services in mass care facilities.	DepartmentofEnvironmentalHealth
Provide inspection and advice on general sanitation matters including providing environmental health inspection services.	DepartmentofEnvironmentalHealth
Coordinate sanitary facilities in mass care facilities.	DepartmentofEnvironmentalHealth
Cordon off areas where effluent is present.	DepartmentofEnvironmentalHealth
Coordinate the procurement of portable sewage pumps for bypassing damaged sewer systems.	DepartmentofEnvironmentalHealth
DAM FAILURE OCCURS	
Provide mosquito and other vector control.	Vector Surveillance and Control
Advise on mitigation, control, and clean-up measures.	Hazardous Materials
Conduct surveys to determine adverse impact to facilities handling, storing, or disposing of hazardous materials.	Hazardous Materials
Survey underground storage tank sites to determine if tanks have floated and if releases have occurred.	Site Assessment and Mitigation
Assess risk to public health and water resources from hazardous materials releases.	Site Assessment and Mitigation
Coordinate site assessment and mitigation activities with other public agencies and private entities.	Site Assessment and Mitigation

APPENDIX I-5
DEPARTMENT OF ENVIRONMENTAL HEALTH
EMERGENCY ACTION CHECKLIST

RADIOLOGICAL INCIDENT

Action	Responsibility
Ensure that operations are conducted from an upwind position.	Occupational and Radiological Health*
Determine the magnitude of the incident and establish perimeter to prevent spread of contamination.	Occupational and Radiological Health*
Identify spilled or leaked substance. This would include locating shipping papers and placards and contacting, as required:	Occupational and Radiological Health*

	Telephone Number
County Sr. Health Physicist	694-2169
County Radiological Officer	565-3490
HIRT	236-7773/338-2222/911
OES Southern Region	(310) 795-2900
OES HazMat (Warning Ctr. - 24 hrs.)	(800) 852-7550
IT Corporation	(800) 262-1900
General Atomic	455-3000
Radiological Health Branch (RHB)	(916) 391-7716

***HMMD to assist ORHD in field identification and inactivations where additional staff capable of conducting radiological surveys to assess hazards and potential hazards to the public are needed.**

Take necessary steps to protect or save human life.	Occupational and Radiological Health*
Establish perimeter controls to keep the public a safe distance from the scene.	Occupational and Radiological Health*
Identify radioactive element involved in incident. Evaluate radiological component of the hazard.	Occupational and Radiological Health*
Reevaluate perimeters as the radio-active element is identified and/or environmental conditions change.	Occupational and Radiological Health*
Assist medical personnel in identifying, isolating and removing contaminated or injured persons from the scene.	Occupational and Radiological Health*

Environmental Health
Radiological Incident

Action	Responsibility
Take action to contain and/or prevent the spread of the material.	Occupational and Radiological Health*
Ensure OES has been notified.	Occupational and Radiological Health*
Recommend evacuation, if necessary.	Occupational and Radiological Health*
Maintain radiological exposure records on all emergency personnel.	Occupational and Radiological Health*
Coordinate clean-up activities of private radioactive materials companies with RHB.	Occupational and Radiological Health*
Advise Public Information Officer of specific radiological information that should be given to the public.	Occupational and Radiological Health*

APPENDIX II
DEPARTMENT OF ENVIRONMENTAL HEALTH
RADIOLOGICAL PROTECTION

I. GENERAL

A. Introduction

1. This appendix establishes the basic operational concepts, responsibilities and techniques to support governmental efforts to save lives and minimize exposure to radiation in the event of an emergency involving radioactive materials. These emergencies may involve transportation accidents, industrial/medical facility accidents, or an incident at the San Onofre Nuclear Generating Station.

2. The basic capabilities required for response to a radiological emergency are:

   a. A radiation monitoring system to detect, measure and report radiation dose rates.

   b. Trained staff to receive, analyze and evaluate information provided by the monitoring teams.

B. Objectives

1. To establish organizational responsibilities and prescribe those actions required to provide timely and coordinated protective actions to minimize the loss of life and human suffering.

2. Provide a system for monitoring, reporting, processing and analyzing radiological data.

3. Provide technical support to implement radiological countermeasures and situation analysis.

4. Provide a system for receipt and dissemination of information required for effective response and recovery operations.

5. Provide a basis on which local jurisdictions can establish coordinated and supporting plans and Standard Operating Procedures (SOPs).

C. Authorities and References

1. Federal Radiological Emergency Response Plan.

2. California Emergency Services Act.

3. California Emergency Plan.

4. California Health and Safety Code

   a. Control of Radioactive Contamination of the Environment (Division 20, Chapter 7, Sections 25600 - 25610).

   b. Transportation of Radioactive Materials Division 20, Chapter 7.3, Sections 25650 - 25654).

   c. Radiation Control Law (Division 20, Chapter 7.6, Sections 25800 - 25876).

5. California Administrative Code Title 17.

6. California Master Mutual Aid Agreement.

7. County of San Diego Emergency Services Ordinance No. 8183 dated December 15, 1992.

8. County of San Diego Resolution Adopting the California Master Mutual Aid Agreement, dated December 11, 1950.

9. NUREG - 0654/Rep 1, Criteria for Preparation and Evaluation of Radiological Response Plans and Preparations in Support of Nuclear Power Plants.

10. NUREG - 0610, Draft Emergency Action Level Guidelines for Nuclear Power Plants.

11. Agreement between the State of California and the Nuclear Regulatory Commission (NRC) pursuant to Section 274 of the Atomic Energy Act of 1954, as amended.

12. San Diego County Nuclear Power Station Emergency Response Plan dated December, 1990.

13. Commander Submarine Force U.S. Pacific Fleet Representative, West Coast Procedures for the Notification of the State of California in Support of the Radiological Emergency Plan for Naval Nuclear Propulsion Plants in the San Diego Area.

14. CPG 1-7 Guide for Increasing Local Government Civil Defense Readiness During Periods of International Crisis.

15. State of California Nuclear Blackmail Plan.

D. Coordination With Other Jurisdictions and Agencies

Although the response for radiological emergencies is addressed in various emergency plans, the basic policies and procedures for emergency operations remain unchanged from those used

in response to other emergencies or disasters. In most cases the responsibilities assigned in this annex fall within the normal purview of the organization(s) to which these assignments are made.

II. CONCEPT OF OPERATIONS

A. Preparation for coping with a radiological emergency is a joint cooperative effort by local and state government, federal agencies and private organizations. Each organization or agency must define its role, prepare plans and procedures, train personnel, conduct exercises and develop and maintain the appropriate resources in order to ensure the capability to effectively coordinate with other agencies and to provide effective response to the emergency.

During the normal day-to-day operating mode, emphasis is placed on:

1. Developing plans, standard operating procedures (SOPs) and emergency checklists.

2. Training Radiological Officers, Radiological Monitors and the Radiological Response Team. The Radiological Response Team for the San Diego County Operational Area is the Hazardous Incident Response TEAM (HIRT).

3. Identification of radiological threats or hazards.

4. Maintaining calibrated monitoring equipment. For members of the Unified San Diego County Emergency Services Organization, replacement of equipment may be coordinated through ODP.

5. Maintaining a list of the locations of CDV-777 kits. This is accomplished by ODP.

6. Maintaining current list of facilities licensed to store and use radioactive materials.

7. Developing and conducting drills and exercises for emergency personnel (both tabletop and functional exercises).

B. Emergency Response Phase

This phase begins with the threat of a release of radioactive material either from an incident at the San Onofre Nuclear Generating Station, a terrorist threat involving nuclear or radioactive materials, or other events such as major fires threatening facilities with large inventories of radioactive materials.

Smaller incidents, such as those that may arise from transportation accidents, will usually be handled by normal response procedures, but may require full or partial implementation of this plan.

Actions required during this phase may include:

1. Activating the Operational Area and local EOCs

2. Reviewing/updating plans, SOPs and checklists.

3. Testing/inventory of equipment, supplies and facilities:

4. Distributing equipment to monitoring teams.

5. Dissemination of radiological protection guidance.

6. Providing radiological protection information to the public.

7. Assigning radiological monitors as necessary.

8. Activating medical care facilities, first aid stations, etc.

9. Activating emergency communications systems such as Radio Amateurs for Civil Emergency Service (RACES) and the Emergency Broadcasting System (EBS).

10. Mobilization and prepositioning of personnel and equipment.

C. Recovery Phase

1. Early Recovery

This phase continues the assessment of radiological hazards to determine if they are a threat to life or health. Direct exposure hazards, as well as hazards from water sources and the food chain, must be identified. Decontamination of critical facilities will be undertaken.

2. Final Recovery

The objective is to restore the environment to a safe radiation level as quickly as possible. All areas will be carefully monitored to determine the degree of contamination with appropriate actions taken to reclaim such areas for human habitation as soon as possible.

D. Activation

1. The Emergency Services Coordinator, or his/her designated representative (as outlined in the basic portion of Annex H), may direct this appendix be activated upon receiving information of an actual or potential radiological emergency in the Operational Area.

2. This appendix will automatically be in effect in the event of a nuclear terrorist threat anywhere within the Operational Area.

3. Upon activation, the Operational Area Radiological Officer (RO) will:

   a. Receive, collate and assess data from the radiological monitoring teams.

   b. Forward all radiological data, operational information and situation intelligence summaries to the State OES Mutual Aid Region VI.

   c. Maintain dose and exposure records for emergency response personnel within the unincorporated area.

   d. Ensure response personnel read their personal dosimetry equipment at appropriate intervals and in no case less frequently than once an hour.

   e. Establish and maintain coordination with local government Radiological Officers, Occupational and Radiological Health and appropriate private agencies.

   f. Advise senior decision makers on the radiological situation.

   h. Coordinate information with the Operational Area Public Information Officer (PIO).

   i. Provide an Operational Area-wide overview of the radiological situation to officials and the public.

4. Radiological Monitoring Teams - Operate the radiological monitoring instruments and report the data. Each team consists of a minimum of two trained monitors equipped with CDV-700 and CDV-715 survey meters (or their civilian equivalent). Radiological monitors will be assigned as required. Decontamination of personnel and property will be conducted by assigned teams in accordance with the San Diego County Nuclear Power Station Emergency Response Plan.

6. Emergency response personnel will not be permitted to receive radiation doses exceeding EPA protective action guides (PAGs) without the approval of the County Health Officer.

7. Where feasible, emergency workers may be issued Potassium Iodine (KI), under the supervision of the County Health Officer. The purpose for administering KI is to limit the uptake, by the Thyroid, of radioactive iodine. KI will not be issued to the general population.

8. Local Radiological Officers will perform those functions listed under the Operational Area Radiological Officer for their respective jurisdictions.

E. Deactivation

This Appendix will be deactivated at the discretion of the Emergency Services Coordinator or his/her designated representative.

III. ORGANIZATION AND RESPONSIBILITIES

The Operational Area will respond to a radiological emergency as outlined in this plan and the San Diego County Nuclear Power Station Emergency Response Plan (SDCNPSERP).

A. Local Governments

The Emergency Services Director for each jurisdiction has ultimate responsibility for direction and control of that jurisdictions response actions.

Each jurisdiction is responsible for:

1. Planning for the safety of employees and the protection of property in the event of a radiological emergency.

2. Coordinating plans and actions with other jurisdictions and agencies within the Operational Area.

3. Maintaining SOPs and call lists.

4. Training personnel assigned to emergency tasks.

5. Participating in drills and exercises.

6. Preparing damage and loss survey reports.

IV. SUPPORTING ORGANIZATIONS AND RESPONSIBILITIES

A. State Agencies

1. Office of Emergency Services (OES)

a. Provide radiological training.

b. Provide radiological equipment maintenance.

c. Organize and staff the State Dose Assessment Center.

d. Manage state radiological fallout and monitoring system.

e. Disseminate radiological intelligence.

f. Evaluate monitoring data and advise those concerned.

g. Act as liaison between Federal and local government.

h. Provide technical guidance.

i. Coordinate radiological recovery operations.

j. Coordinate state agency assistance to local governments.

k. Maintain the State Nuclear Power Plant Emergency Plan.

l. Monitor and evaluate data, then advise those concerned.

2. OES Mutual Aid Region VI Staff

a. Function as an intermediate coordinating level (Regional EOC) between the Operational Area and the State Operations Center (SOC).

b. Compile and transmit operational information and situation intelligence summaries to the SOC and Operational Areas.

3. Other State agencies that have responsibilities during a radiological emergency response are:

a. Department of Health Services, Radiological Health Branch

b. Emergency Medical Services Authority

c. California Highway Patrol

d. California Department of Transportation (CalTrans)

e. Department of Justice

f. Department of Forestry and Fire Protection (CDF)

g. National Guard

h. Department of Fish and Game (DFG)

B. Federal Agencies

1. Federal Emergency Management Agency (FEMA): Coordinate Federal response actions and agencies.

2. Other Federal Agencies : May assist by providing support or services as requested by State or Local governments.

APPENDIX II-1
RADIOLOGICAL PROTECTION

FIXED NUCLEAR POWER STATION
EMERGENCY RESPONSE PLAN

I. PURPOSE

To develop and maintain a response capability to adequately safeguard life and property in the event of an incident at the San Onofre Nuclear Generating Station (SONGS).

II. CONCEPT OF OPERATIONS

The nature of the threat posed by SONGS coupled with the requirements of NUREG 0654 and those imposed by the Interjurisdictional Planning Committee dictate that a separate plan for this emergency be developed and maintained. The current plan for such an emergency is the San Diego County Nuclear Power Station Emergency Response Plan adopted February, 1982 and last updated December, 1990. That plan, by reference, is made a part hereof.

APPENDIX II-2
RADIOLOGICAL PROTECTION

NUCLEAR TERRORIST EMERGENCY RESPONSE PLAN

I. PURPOSE

To develop and maintain a response capability to minimize the threat to public safety caused by a terrorist action involving nuclear weapons or radiological material.

II. BACKGROUND

A. General

Terrorist activities around the world continue to increase in sophistication. More ominously, terrorist attacks appear to be aimed towards maximizing damage and publicity rather than the accomplishment of political goals. When this is combined with the fact that weapons grade nuclear material is becoming increasingly more common, the possibility of a terrorist act involving nuclear weapons also increases.

B. Scenario

The scenario for a nuclear terrorist threat would most probably begin with the theft of weapons grade fissionable material (from which a bomb is made) or of a weapon itself from a military base or a Department of Energy (DOE) weapons shipment. Federal, State or Local governments may be notified of the presence of a nuclear weapon by the terrorist organization.

C. Credibility

The credibility of the threat would depend on knowledge of any previous theft of fissionable material or nuclear weapon and any knowledge of the nature of the terrorist group. The most important information required is an assessment of the ability of the terrorists to successfully detonate the weapon. Evaluation of the situation would be performed by the FBI, Department of Defense (DoD), DOE, and other federal agencies assisted by state and local law enforcement organizations.

III. CONCEPT OF OPERATIONS

A. Activation

1. Upon receipt of information of a nuclear threat by a terrorist group, the Emergency Services Coordinator, or his/her designated representative, may proclaim a Local Emergency for the San Diego County Operational Area and activate the Operational Area EOC. Once a Local Emergency is proclaimed the Emergency Services Coordinator may request the declaration of a State of Emergency from the Governor.

2. Upon activation of the Operational Area EOC radiological resources within the Operational Area will be mobilized to respond to the threat. The State Office of Emergency Services will be notified through the OES Southern Region.

B. Deactivation

This Appendix will be deactivated at the discretion of the Emergency Services Coordinator, or his/her designated representative.

C. Response

1. The nature of the response would depend on:

   a. Nature of the threat. It is possible that the terrorists may threaten to detonate the device if any public protective measures are taken.

   b. Size of the threatened population and the length of time available for evacuation.

   c. Size and type of weapon.

2. Protective measures may take two forms:

   a. Evacuation of the population at risk.

   b. Sheltering actions.

3. The situation will determine which is the best course of action. If the weapon is located in a heavily populated area and there is little time before the threatened detonation, evacuation may not be possible. In this case, protective sheltering actions would be called for.

D. Effects of Detonation

1. The overall impact of the detonation of a single nuclear device would be devastating to the immediate area. However, the infrastructure of the Operational Area would remain intact, allowing for rapid rescue and decontamination actions.

2. While the immediate response actions would center around rescue and decontamination operations, equally important will be those activities aimed at preventing contamination of the water or food chain in outlying areas. Long range responses will include long term medical care and screening of survivors and emergency response personnel who have received exposure to radiation.

3. All of these activities will require Federal and State resources.

APPENDIX II-3
RADIOLOGICAL PROTECTION

REACTOR ACCIDENT ONBOARD A U.S. NAVY NUCLEAR POWERED VESSEL IN-PORT SAN DIEGO

I. PURPOSE

To develop and maintain a response capability to minimize the threat to public health and safety resulting from an accident involving a nuclear power plant onboard a U.S. Navy ship while it is in-port in San Diego harbor.

II. BACKGROUND

A. General

1. Although the likelihood of a reactor accident occurring in U.S. Naval nuclear powered ships is extremely remote, prudence dictates that provisions be made to deal with such an occurrence. At any given time there may be one, or more, nuclear powered aircraft carriers, surface ships or submarines in-port in San Diego.

2. It is the policy of the Navy and the Department of Energy to ensure that State or Local officials are notified of occurrences that might cause concern because of radiological effects outside the plant. Such occurrences will not necessarily be emergencies, alerts or unusual events.

B. Classification

1. Classification of emergencies involving U.S. Naval nuclear power plants are the same as for an incident at the San Onofre Nuclear Generating Station. These are:

a. Unusual Event - Releases of radioactivity which indicate a potential degradation of the level of safety of the plant. Projected doses offsite would be less than 0.1 rem Whole Body or 0.5 rem Thyroid.

b. Alert - Releases of radioactivity which involve an actual or potential substantial degradation of the level of safety of the plant. Projected rem Whole Body or 0.5 to 5.0 rem Thyroid.

c. Site Area Emergency - Releases of radioactivity which involve actual or major failures of plant functions needed for the protection of the public. Projected offsite doses are 1.0 to 5.0 rem Whole Body or 5.0 to 25 rem Thyroid.

d. General Emergency - Releases of radioactivity which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity. Projected offsite doses exceed 5 rem Whole Body or 25 rem Thyroid.

2. Event classifications will either be upgraded or downgraded as the incident progresses and additional information becomes available.

3. Events which do not involve release of radioactivity or the potential for release or do not involve the safety of the plant but may cause concern about radiological effects outside the plant will be reported to State or Local officials.

B. Term of Event

Projected dose commitments and dose rate equivalents assume an 8 hour accident term.

III. CONCEPT OF OPERATIONS

A. Notification

1. The normal sequence of events for notification would be for the Commander Submarine Force U.S. Pacific Fleet Representative, West Coast (COMSUBPACREP WEST COAST) to notify OES who would, in turn, notify the Office of Disaster Preparedness (ODP).

2. Should the urgency require, COMSUBPACREP WEST COAST will notify ODP direct. State OES will then be informed by COMSUBPACREP WEST COAST of their notification of the Operational Area.

3. Any notification of an accident involving a Navy nuclear power plant will be verified by calling the COMSUBPACREP WEST COAST duty officer.

B. Specific Response Actions

1. Upon verification of an Unusual event, the ODP Staff Duty Officer (SDO) will notify the Director, ODP and the other operations officers, as appropriate.

2. Upon verification of an Alert or higher classification event, the Operational Area EOC will be activated in accordance with the Nuclear Power Station Emergency Response Plan (NPSERP).

3. The NPSERP will be the base document governing the Operational Area's response to an event at a Naval nuclear propulsion plant. The following modifications to the notification procedure in the NPSERP will be instituted when activating this appendix:

   a. Notify the City of San Diego Disaster Preparedness. Request that City Radiological Monitoring teams be mobilized.

   b. Disregard notification of the cities of Carlsbad, Encinitas, San Marcos and Vista.

c. Notify the City of Oceanside and request the Radiological Monitoring (RadMon) Teams be placed on standby. If the situation warrants, the RadMon teams may be requested to stage at the Operational Area EOC to facilitate their use in a timely manner.

d. Notify the Department of Environmental Health and request the County Health Physicist report to the Operational Area EOC.

e. Notify the cities of National City and Chula Vista if the incident is at the Naval Station.

f. All other notifications will be made in accordance with the NPSERP.

C. Activation

1. This tab shall be activated by the Emergency Services Coordinator, his/her designated representative or the Director, ODP whenever the County has verified an accident onboard a Navy nuclear powered ship which has a classification of Alert or higher.

2. If the ODP SDO believes the situation requires it, he/she may begin notification prior to receiving authorization to activate the Operational Area EOC.

D. Deactivation

This appendix shall be deactivated whenever the initiating event is downgraded to Unusual Event, is closed out or at the discretion of the Emergency Services Coordinator or his/her designated representative.

APPENDIX II-4
RADIOLOGICAL PROTECTION

EMERGENCY ACTION CHECKLIST FOR RADIOLOGICAL RESPONSE
MAJOR EARTHQUAKE

Action	Responsibility
If little/no damage reported prepare to support and assist more heavily damaged jurisdictions.	Director, ODP
If extensive damage reported, take the following actions:	
Verify reports.	ODP SDO
Determine if any damage reports involve radiological material	All Radiological Officers
Alert radiological monitoring personnel of any reported radiological incidents.	All Radiological Officers
Dispatch monitor team(s) to survey and report damage.	All Radiological Officers
Provide protective actions as required for each incident	All Radiological Officers
Ensure radiological exposure records properly maintained for radmon personnel.	All Radiological Officers
Keep responders informed of areas threatened by radiological hazards.	All Radiological Officers
Determine current and forecasted wind conditions and predict the winds affect on dispersion of radioactive particles.	All Radiological Officers
Assure priority given to life-saving actions.	Incident Commander
Establish safe access controls to damaged/contaminated areas and assist people to safe areas.	Incident Commander
Recommend evacuation, if necessary.	All Radiological Officers
Obtain transportation, supplies and equipment needed for response teams.	All Radiological Officers
Provide radiation monitors for areas without qualified personnel	All Radiological Officers

APPENDIX II-5
RADIOLOGICAL PROTECTION

EMERGENCY ACTION CHECKLIST FOR RADIOLOGICAL RESPONSE HAZARDOUS MATERIALS INCIDENT

Action	Responsibility
Ensure that operations are conducted from an upwind position.	Incident Commander
Determine the magnitude of the incident and establish perimeter to prevent spread of contamination.	Incident Commander
Identify spilled or leaked substance. This would include locating shipping papers and placards.	Incident Commander
Take steps necessary to protect or save human life.	Incident Commander
Establish perimeter controls to keep the public a safe distance from the scene.	Incident Commander
Reevaluate perimeters as the radioactive element is identified and/or environmental conditions change.	All Radiological Officers
Assist medical personnel in identifying, isolating and removing contaminated or injured persons from the scene.	RadMon Team
Take action to contain and/or prevent the spread of the material.	Incident Commander
Ensure OES has been notified.	Incident Commander
Recommend evacuation, if necessary.	All Radiological Officers
Maintain radiological exposure records on all emergency personnel.	All Radiological Officers
Coordinate clean-up activities of private radioactive materials companies with RHB	All Radiological Officers
Advise Public Information Officer of specific radiological information that should be given to the public	Incident Commander/ All Radiological Officers

APPENDIX II-6
RADIOLOGICAL PROTECTION

EMERGENCY ACTION CHECKLIST FOR RADIOLOGICAL RESPONSE IMMINENT/ACTUAL FLOODING

FLOODING EXPECTED

Action	Responsibility
Establish liaison with EOC and provide technical support	All Radiological Officers
Prepare to relocate radiological equipment from flood plain	All Radiological Officers
Provide monitoring support for flood fighting activities where required.	All Radiological Officers
Contact Radiological Health Branch to ascertain if any licensed facility has problems requiring attention.	Op Area Rad. Officer
Stand by to provide support as the situation develops	All Radiological Officers
Provide advice to licensees on how to protect their facilities.	All Radiological Officers

FLOODING OCCURS

Provide monitoring support for rescue operations if required.	All Radiological Officers
Provide support on damage assessment teams.	All Radiological Officers
Report situation and support requirements to OES Southern Region via Operational Area EOC.	All Radiological Officers

APPENDIX II-7
RADIOLOGICAL PROTECTION

EMERGENCY ACTION CHECKLIST FOR RADIOLOGICAL RESPONSE IMMINENT/ACTUAL DAM FAILURE

DAM FAILURE IMMINENT

Action	Responsibility
Prepare to relocate any radiological equipment in inundation areas.	All Radiological Officers
Provide monitoring support, if needed, to workers in inundation areas.	All Radiological Officers
Establish liaison with, and provide technical support to, the EOC.	All Radiological Officers
Provide advice to licensees on how to protect their facilities and secure their material.	All Radiological Officers
Stand by to provide support as the situation develops	All Radiological Officers

DAM FAILURE OCCURS

Stand by to provide support: Monitoring for rescue operations Support for damage assessment teams	All Radiological Officers
Report on situation and requirements to OES Southern Region, via Operational Area EOC.	All Radiological Officers

UNIFIED SAN DIEGO COUNTY
EMERGENCY SERVICES ORGANIZATION
OPERATIONAL AREA EMERGENCY PLAN

ANNEX I

COMMUNICATIONS

INTERIM

June 1999

UNIFIED SAN DIEGO COUNTY EMERGENCY SERVICES ORGANIZATION

ANNEX I

COMMUNICATIONS

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UNIFIED SAN DIEGO COUNTY EMERGENCY SERVICES ORGANIZATION

ANNEX I

COMMUNICATIONS

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ANNEX I

COMMUNICATIONS

I. GENERAL

Essential to all organizations is an effective communications capability to support their daily operations. In a disaster, these communications systems become critical. The magnitude of a particular emergency situation will determine the degree to which communications systems are utilized.

The San Diego County Operational Area has 18 jurisdictions and many Special Districts which support different communications systems. While all have the telephone and some cellular phones in common, in many cases that is the only common communications capability.

Many of the jurisdictions in the San Diego County Operational Area have moved from high band VHF communications into 800mhz communications. The unincorporated areas and most jurisdictions have joined the new Regional Communications System, a multi-million dollar system which eventually will provides a coordinated communications capability for the San Diego County Operational Area.

In addition, there are two Operational Area alert and warning systems designed to provide our citizens with emergency information. One is the Lifesaving Information For Emergencies (L.I.F.E.) Radio System and the other is EAS, the Emergency Alert System, formerly called the Emergency Broadcast System.

This Annex will address the systems that are currently in existence, and will focus on those radio frequencies and systems that are used for mutual aid and Alert and Warning. This Annex will be updated as new systems come on line.

II. PURPOSE

The purpose of this Annex is to describe the Mutual Aid Communications Systems that are currently in place in the San Diego County Operational Area.

III. TYPES OF SYSTEMS

The County of San Diego and many of the jurisdictions within the County have joined the Regional Communications System (RCS). This system is regional in that it provides coverage over the entire San Diego County Operational Area by utilizing trunked 800 MHz frequencies and assigning talkgroups to all participating agencies. The system also provides mutual aid frequencies that can be used to communicate with other agencies if there is a need to coordinate information. Law Enforcement, Fire and EMS could all talk to each other at the scene without having to rely on third parties or borrowed radios.

A. County Government Communications Systems

1. **Local Government**

The local Government Communications System is centered at the Sheriff's Communication Center (Station M) and operates on 800 MHz. All County agencies have been assigned talkgroups which allow them to talk to themselves and through the use of mutual aid talkgroups, they can also talk to each other. Some of the County agencies which are on this system include:

a.	Medical Examiner	b.	Parks and Recreation
c.	Building Inspection	d.	Public Works
e.	Environmental Health	f.	Humane Society
g.	Probation	h.	Risk Management
i.	Office of Disaster Preparedness	j.	Animal Control

2. **Law Enforcement**

The San Diego County Sheriff's Department and some jurisdictions use 800 MHz through the Regional Communication System (RCS). The Cities of San Diego and Escondido are using 800 MHz frequencies which are not part of the RCS but can be accessed by that system. The California Highway Patrol uses VHF Low Band in the 39 and 42 MHz band. Most of the other agencies are currently using VHF Hi-Band frequencies in the 153.000 to 155.000 MHz range.

While different types of radios and frequencies are used, there are some common frequencies that are at least monitored in the communications centers. There are three common frequencies:

a. CLEMARS- The California Law Enforcement Mutual Aid Radio System VHF 154.920

b. County BLUE Net- A Countywide Law Enforcement mutual aid radio frequency 153.995

c. NALEMARS- The National Law Enforcement Mutual Aid Radio System 155.475

d. Conventional 800 MHz

1) CLEMARS

2) ICALL

3) ITAC

As the various law enforcement agencies develop their 800 MHz systems there will be 800 MHz talkgroups established for mutual aid within that spectrum.

When mutual aid is requested and law enforcement units are dispatched from other areas, the RCS can provide patches between talkgroups and conventional 800 MHz and VHF users so that all can communicate.

3. **Fire**

Most of the fire agencies in the San Diego County Operational Area are using the RCS 800 MHz system. Escondido and San Diego are currently using different 800 MHz systems, but have allowed access to their systems by members of the RCS. The Area Fire Coordinator, the California Department of Forestry, uses VHF Hi-Band as do a few other agencies in the county. Some of the agencies on VHF will be joining the RCS within the next 12 months.

In an incident where mutual aid has been requested, dispatch will inform the responding strike teams or units what the command frequency will be - either 800 MHz or VHF. Command vehicles in those agencies using any of the 800 MHz systems will also have VHF capability. Orders will be given to the incoming command units on a compatible frequency with the IC and passed to the other members of the strike team by their command on their frequency or talk group.

The control point for integrated communications in the field is ECHO III. ECHO III is actually a two vehicle mobile communications unit, consisting of the Amateur Radio Emergency Services (RACES) Communications Van (RACES 1) and a command vehicle owned by the RCS. When the two units meet up at the incident, they become ECHO III. ECHO III has the capability of utilizing any VHF frequency or 800 MHz talkgroup as a command channel or Tactical frequency.

ECHO III is requested through and dispatched by the Sheriff's Communications Center to the incident to assign and coordinate radio frequency use, as set forth in the Incident Command System (Ref. Field Operations Guide ICS 420-1).

Communications at the incident are managed through the use of a common communications plan and an incident-based communication center established solely for the use of tactical and support resources assigned to the incident. This includes incident-established radio networks, on-site telephone, public address, and off-site incident telephone/ microwave/radio systems.

RADIO NETWORKS:

Radio networks for large incidents will normally be organized as follows:

Command Net: This net should link: Incident Command with Communication Center, Key staff members, Section Chiefs, Division and Group Supervisors.

Tactical Net: There may be several tactical nets. They may be established around agencies, departments, geographical areas, or even specific functions. The Communications Unit Leader will develop the plan, with cooperation and

input from Planning and Operations and the concurrence of Echo I.

Support Net: A support net will be established primarily to handle status and location changes for resources, support requests, and certain other non-tactical or command functions.

Air to Ground Net: A ground-to-air tactical frequency designated, or regular tactical nets may be used to coordinate ground-to-air traffic.

Air-to-Air Net: Air-to-air nets will normally be pre-designated and assigned for use at the incident.

a. System Capability

The system is designed to provide each fire agency with a Local Communications Net, Tactical Frequencies within a Zone, Out-of-Zone Tactical as well as Out-of-Zone Command and a County Mutual Aid Command Net.

Communications Plan

Command	Red White1	155.085 154.280	These channels are for Command only. They may be used whenever a command channel is designated and two or more agencies are involved. Echo I will coordin the usage and will prioritize requests and designate the channels when dema exceed capacity. A local command channel can be created where two zones combine local dispat frequencies and designate one for command and the other for dispatch.
Command	Local	Command	This is a new "terminology" within the Communications category. I implementation will depend on the ability of two or more zones making determination to utilize one zone's current dispatch frequency to dispatch two more zones, and utilizing the other as "Local Command". This would provi greater versatility in the communications system
Optional	Local	Options	Some jurisdictions work in cooperation with their local police departments, or oth city administrative departments and may decide to use this radio position for th purpose. Its use is a local determination, only limited by the capability of t individual radio to span the frequency desired.

c. Communication Units

The communication units are responsible for developing plans to make the most effective use of incident assigned communications equipment and facilities; the installation and testing of all communication equipment; supervision and operation of the Incident Communications Center; distribution and recovery of equipment assigned to incident personnel; and

the maintenance and on-site repair of communications equipment.

The Field Communications Unit (Echo III) has a major responsibility for effective communications planning, due to the potential multi-agency use of ICS. This is especially important in determining required radio nets, establishing interagency frequency assignments, and ensuring that maximum use is made of all assigned communications capability.

To enhance this communications system, the following fixed facilities and mobile units exist within this County.

Echo I:

This Communication Center is located at the California Department of Forestry at Monte Vista and is operated by them. This is the Primary Command and Control Station to coordinate and control the fire radio system within the County. It is designed to provide the highest possible radio communications efficiency for the fire services of the County.

Echo II:

This is the emergency back-up center which assures uninterrupted operations of the system in the event of a temporary failure of the primary control station (Echo I). It is located at the Rancho Santa Fe Fire Protection District Dispatch (North County JPA) in Rancho Santa Fe.

Echo III:

This is the mobile Communications Unit which is dispatched to the incident in the field. Upon its arrival, it will be utilized as the Communications Unit for the incident.

TABLE II

RADIO ZONES AND DISPATCH FOR COUNTY-WIDE FIRE RADIO NETWORK SYSTEM

* 800 MHz # VHF

Zone #1	Dispatched By	
Rancho Santa Fe Fire Protection District Zone Coord. for Zone #1	North County JPA	*
North County Fire Protection District Alternate Coord. for Zone #1	Self	#
City of Escondido/Rincon Del Diablo **(800 MHz system with some VHF Mutual Aid Frequencies)**	Self	*
City of San Marcos Fire Dept. /San Marcos Fire Protection Dist.	North County JPA	*
Deer Springs Fire Protection Dist.	CDF	#
San Onofre Fire Department (Private)	Self	
City of Vista Fire Department/Vista Fire Protection District	North County JPA	*
City of Carlsbad Fire Department	Self	*
City of Del Mar Fire Department	Self	*
City of Encinitas Fire Department	North County JPA	*
City of Oceanside Fire Department	Self	#
City of Solana Beach Fire Department	North County JPA	*
Elfin Forest Volunteer Fire Department (County Service Area 107)	North County JPA	*
Camp Pendleton Fire Department	Self	

NOTE: Zones #1 and #2 have been combined and, as a result, there is no Zone #2.

Zone #3 "Metropolitan Zone"	Dispatched By	
City of San Diego, Zone Coord. **(800 MHz with some VHF Mutual Aid Capability)**	HQ Self	*
City of Poway	San Diego Fire	*
All Military Installations, except Camp Pendleton	Self	
Federal Fire Department	Self	

ZONE #4 "HEARTLAND ZONE"	Dispatched By	

Heartland is on an 800 MHz System but has VHF Mutual Aid Frequencies in at least some units on scene.

San Miguel Consolidated Fire Protection, District, Zone Coordinator	Heartland Fire JPA	*
Alpine Fire Protection District	Heartland Fire JPA	*
East County Fire Protection District	Heartland Fire JPA	*
City of El Cajon/ Heartland Dispatch	HQ/Heartland Fire JPA	*
Lakeside Fire Protection District	Heartland Fire JPA	*
City of La Mesa Fire Department	Heartland Fire JPA	*
City of Lemon Grove Fire Department	Heartland Fire JPA	*
City of Santee Fire Department	Heartland Fire JPA	*

ZONE #5 "SOUTH BAY"

City of Chula Vista, Zone Coordinator	HQ/Chula Vista Fire	*
Bonita-Sunnyside Fire Protection District	Chula Vista Fire	*
City of Coronado Fire Department	Self	#
City of Imperial Beach Fire Department	Chula Vista Fire	*
Lower Sweetwater Fire Protection District	Heartland Fire JPA	*
National City Fire Department	Heartland Fire JPA	*

ZONE #6	Dispatched By	
California Department of Forestry, Zone Coordinator	HQ CDF	#
Reservation Fire District	CDF	#
Valley Center Fire Protection District	CDF	#
Pala Reservation Fire Department	CDF	#
Yuima, Mootamai, Pauma (CDF)	CDF	#
United States Forestry Service	Self	

Campo Reservation Fire Department	CDF	#
Sycuan Reservation Fire Department	CDF	#
Julian-Cuyamaca Fire Protection District	CDF	#
Ramona Fire Department	CDF	#
Mesa Grande Reservation Fire	CDF	#
San Pasqual Fire	CDF	#
Barona Fire	CDF	#
ZONE #7 "RURAL"		
Rural Fire Protection District,Zone Coordinator	CDF	#
ZONE #8 "INLAND"		
Borrego Springs Fire Protection District	Heartland Fire JPA	*
Boulevard (County Service Area 111)	Heartland Fire JPA	*
Campo (County Service Area 112)	Heartland Fire JPA	*
Mt. Laguna (County Service Area 109)	Heartland Fire JPA	*
Inter-Mountain Fire and Rescue	Heartland Fire JPA	*
Ocotillo Wells Volunteer Fire Department	Heartland Fire JPA	*
Palomar Mountain (County Service Area 110)	Heartland Fire JPA	*
Pine Valley Fire Protection District	Heartland Fire JPA	*
Ranchita Fire and Rescue	Heartland Fire JPA	*
San Pasqual (County Service Area 113)	Heartland Fire JPA	*
Shelter Valley Volunteer Fire Department	Heartland Fire JPA	*
Sunshine Summit	Heartland Fire JPA	*
Warners Springs Ranch Fire Department	Heartland Fire JPA	*

NOTE: Federal installations may be included in any of the above zones.

4. Emergency Medical Services (EMS) Communications System

The EMS Radio System is part of the 800 MHz Regional Communications System. All ambulances and hospitals are using 800 MHz radios for communications. The Base hospitals are contacted by incoming EMTs and Paramedics directly.

There are currently nine Base Hospitals in the County. These Base Hospitals are:

Children's Hospital and Health Center
Tri-City Medical Center
Grossmont District Hospital
Mercy Hospital and Medical Center
Palomar Memorial Hospital
Scripps Memorial Hospital - La Jolla
Sharp Memorial Hospital
U.C.S.D. Medical Center
Scripps Memorial Hospital of Chula Vista

In the event of a disaster, the base hospital for the affected area is responsible for assigning patients to satellite hospitals.

5. **Amateur Radio**

There are two active Amateur Radio groups in San Diego County. Both of these groups are amateur in name only. They are experienced, volunteer radio communicators who devote many hours to improving the communications capabilities of all of our emergency services.

a. RACES - Radio Amateur Civil Emergency Service

RACES is supported by the Office of Disaster Preparedness and the Sheriff's Department. They have developed, outfitted and maintained RACES 1 which is one of the two vehicles which make up ECHO 3. They provide communications to Fire Departments, Law Enforcement Agencies and other Public Safety agencies as requested when other normal communications systems need to be augmented or replaced. They also have established radio stations in each city to provide communications between that city and the Operational Area EOC

RACES has the ability to obtain a great deal of information for local government even when other communications systems are unavailable. Their ability to communicate over a long distance is vital in the absence of normal communications links.

They are dispatched by the Sheriff's Communications Center.

b. ARES - Amateur Radio Emergency Service

ARES is a part of the Amateur Radio Relay League and volunteers it's

services primarily to agencies involved in health and welfare. They work closely with County EMS, the American Red Cross, the Salvation Army and they provide emergency communications to all of the area hospitals.

They can be requested through RACES or the Office of Disaster Preparedness.

A. Operational Area Alert and Warning

Emergency information, advice, and action instructions are given to the public by various media. The Emergency Alert System (EAS), the Lifesaving Information for Emergencies (LIFE) radio system, and mobile loudspeakers are the primary media. Other available media are bulletins, handbills, and the press.

1. Emergency Alert System (EAS)

a. General

The State of California has been divided into "Operational Areas" for the purpose of disseminating emergency information. (Refer to the County's EAS Operational Area Plan.) The San Diego EAS operational area encompasses the entire County. Two radio stations, KOGO (600 AM) the LP-1 and KPOP (1360 AM) the LP-2 have emergency generators and have volunteered to be the local primary stations for the San Diego County Operational Area. Other radio and television stations continue to operate as conditions permit.

All radio and television stations in San Diego County along with all cable TV providers will be broadcasting emergency public information in the event of an activation of the EAS. The system is designed so that all of the radio, TV and cable stations/systems monitor the LP-1 and LP-2 stations and forward the information to their listeners and viewers.

b. Users

Most of the EAS broadcasts will originate at the National Weather Service facility in Rancho Bernardo. The Office of Disaster Preparedness is also authorized to activate the EAS. Any jurisdiction in the San Diego County Operational Area can contact the Office of Disaster Preparedness to activate the system in the event of the need to notify it's citizen of the need to evacuate or to provide them with emergency

2. Lifesaving Information for Emergencies (LIFE)

a. General

The Office of Disaster Preparedness (ODP) has developed the LIFE system for the purpose of disseminating emergency information and warnings in times of emergency. This is a very simple and very fast system which

simultaneously alerts radio and television stations, School Districts, Hospitals, Fire Departments, Law Enforcement Agencies and Jurisdiction administrators to any kind of an emergency.

b. System Operation

The LIFE system uses the County radio facilities at the EOC, Building 12. The LIFE messages of public information can be received at participating broadcast stations and public/private facilities on special monitor receivers.

c. System Access

The LIFE system is available to the jurisdiction's officials (Mayor, City Manager, etc.) and can be accessed via ODP. If telephone service is not available to the jurisdiction, programming requests should be passed over the Radio Amateur Civil Emergency Service (RACES) radio system to the Operational Area EOC.

B. Federal and State Alert and Warning

The warning system is the means for relaying to the public, notice from the Federal, State or local government of impending or actual disaster or attack. Appropriate responses and the most effective use of warning information may be limited by the amount of time available.

1. Actions

Warning actions are characterized by requiring high priority for a short period of time, the use of mass media systems for passing warning to the public, the small number of workers necessary to operate the system, the demand for fast activation of the system on short notice, and the need to maintain readiness to repeat all actions in the event of successive alerts or attacks.

The National Warning System (NAWAS) sends out warning information, which is received at the Sheriff's Communication Center and relayed to the Office of Disaster Preparedness. Members from local governments, schools, the news media, and industry are then notified by means of the Lifesaving Information for Emergencies (LIFE) System. The public is then warned by means of the Emergency Alert System (EAS) and any other means, including mobile loudspeakers.

Alternate means of warning are via the California Law Enforcement Telecommunications System (CLETS), public safety radio systems, and the Radio Amateur Civil Emergency Services (RACES) network.

Notice of warning is also broadcast from the various county and city communications centers to special facilities (schools, hospitals, fire stations, utility stations, etc.). Key workers of emergency organizations may be alerted by telephone or radio. The EAS and the LIFE Systems are expected to provide coverage for a large part of the population.

2. Types of Attack Warning

a. Attack Warning

A warning that an actual attack against this country has been detected.

b. Fallout Warning

A warning of radiation hazards resulting from a nuclear cause.

3. Warning Information

Authorized EAS stations will broadcast warning information as requested under the EAS Operational Area Agreement.

4. Warning Signals - War Emergency

Emergency Services authorities will route war emergency warnings via designated EAS program entry points to the media.

5. Warning Signal - Peacetime Emergencies

Warning of an extraordinary peacetime emergency may be received by local government over the California Law Enforcement Telecommunications System (CLETS), public safety radio systems, NAWAS, the LIFE System, and/or other means. The attention or alert signal is not used in this County.

D. Other Communications Capabilities

1. OASIS

OASIS is an acronym for Operational Area Satellite Information System. It is a State of California owned satellite system which has been set up at the Operational Area EOC, and which provides the EOC with 6 outgoing phone lines for voice, and one line for data.

2. Cellular Telephones

Most, if not all agencies have cellular phone capabilities. All agencies should have cellular phone numbers for all of their staff who have cellular phones, and the cellular phone numbers for their closest jurisdiction.

3. PCS Phones

These phones are similar to cellular phones, and are most useful in the urban areas of the county. As the coverage area increases, these digital phones will be of more value to emergency organizations in the outlying areas of the county.

E. EOC Communications Systems

The communications systems installed in or controlled from the County Emergency Operations Center (EOC) support the field activities of the emergency organization. Other communications systems provide links to nearby jurisdictions and to higher levels of the statewide emergency organization. The communications systems in the EOC include the radio systems licensed to the County. Such radio systems are augmented, in an emergency, by radio signals licensed to other governmental agencies, to private industry, and to individuals. During a State of War emergency, privately-owned radio systems, equipment, and facilities, subject to approval of the licensee, will generally be used to support field activities of the emergency services not already linked directly to the EOC.

The communications section is the technical support section in the EOC which provides communications for the management of emergency operations. Messages sent outside the EOC are handled by operators assigned to the communications section. The County communications operation is under command of the Sheriff, who provides operators.

The Department of Information Services (DIS) provides staff to make provisions for additional equipment in addition to maintaining communications equipment. The operations personnel assess their communications requirements and advise the Communications Officer. Procurement of communications resources and services will be managed by the DIS Telecommunications Division, in consultation with and on advice from the resources group.

1. Radio systems subject to County control are used for message transmission according to the following table, subject to such revisions as may be issued by the EOC Communications Officer. Operators of radio equipment provide service in accordance with Table III, or revisions, as issued.

TABLE III

RADIO SYSTEM	EMERGENCY SERVICE
Sheriff	Law Enforcement Traffic Control Radiological Defense Evacuation
Fire	Fire, Rescue, Radiological Defense
Road and Highway Maintenance	Public Works, Radiological Defense
Local Government	Medical and Health, Mass Care, Public Works, Medical Examiner, Resources Management
Disaster Network	Countywide Direction and Control, Medical and Health, Radiological Defense, Public Information, Mass Care, Medical Examiner
EAS/EAS	Emergency Public Information and Warning
LIFE Broadcast System	Emergency Public Information and Warning

2. Communications Systems in the EOC (Building 19, County Operations Center)

   a. County Local Government

   b. County Public Works

   c. Law Enforcement Mutual Aid (Blue) plus 6 Sheriff's frequencies

   d. Fire Mutual Aid (Red) State Fire (White) plus all Zone and County Fire Nets

   e. California Law Enforcement Mutual Aid Radio System (CLEMARS)

   f. Emergency Medical Services Communications

   g. Paramedic Net

   h. Disaster Net (37.98 MHz), to City Managers, outlying areas, and private organizations

   i. American Red Cross

   j. State Office of Emergency Services (OES) (direct Satellite link to Sacramento)

   k. National Warning System (NAWAS), providing two-way communications with the Federal government

   l. Emergency Alert System (EAS), the entry point for the County

   m. Lifesaving Information for Emergencies (LIFE)

   n. Amateur Radio Equipment. The EOC has extensive amateur radio equipment to serve as redundant systems to government radios and to provide communication with shelters, mass care centers, and mobile field communications. The group that serves in the EOC is the Radio Amateur Civil Emergency Service (RACES).

   o. State Fish and Game Net

   q. Landline (Commercial Telephone) and 911

   r. Air to Ground Sheriff's Helicopter (ASTREA) and Civil Air Patrol

   s. San Onofre Yellow Phone and Teletype

UNIFIED SAN DIEGO COUNTY
EMERGENCY SERVICES ORGANIZATION
OPERATIONAL AREA EMERGENCY PLAN

ANNEX L

EMERGENCY PUBLIC INFORMATION

Interim

June 1999

UNIFIED SAN DIEGO COUNTY EMERGENCY SERVICES ORGANIZATION

ANNEX L

EMERGENCY PUBLIC INFORMATION PLAN

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UNIFIED SAN DIEGO COUNTY EMERGENCY SERVICES ORGANIZATION

ANNEX L

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ANNEX L
EMERGENCY PUBLIC INFORMATION PLAN

I. GENERAL

A. Purpose and Scope

A vital part of the Unified Emergency Services Organization's responsibility during an emergency or disaster is providing the public with accurate information and instructions. The Office of Disaster Preparedness (ODP) and the Operational Area Media Team work closely with the news media to accomplish this task. This Annex is designed to provide a framework for the most efficient, accurate, and complete dissemination of information. It provides for the conduct and coordination of public information activities and establishes a mutual understanding of responsibilities, functions, and operations.

The procedures, as outlined, are utilized in the event of any type of emergency or disaster. Some examples are fire, earthquake, flooding, hazardous materials incident, and war emergency.

This Annex is used in an emergency situation at the San Onofre Nuclear Generating Station, as well, in combination with Interjurisdictional Procedure (IP) #6 and SOP #6, of the County's Nuclear Power Plant Emergency Response Plan. The two documents include specialized procedures for public information in an incident at San Onofre, including specific EAS messages.

B. Policies and Guidelines

1. Information is disseminated according to the following policies:

   a. The public has the right and need to know lifesaving and other important information related to emergencies or disasters as soon as it is available.

   b. The news media plays a key role in assisting ODP in disseminating emergency or disaster related information to the public. Representatives of the news media are, therefore, treated with the respect warranted by that role.

2. The following guidelines are in effect:

   a. Operational Area disaster related information is collected and disseminated through the Operational Area EOC.

   b. The Operational Area Media Team members act as the official spokesperson for the Operational Area and the county in an emergency situation, and for member jurisdictions if requested by that jurisdiction.

   c. The Operational Area Media Team generally disseminates information about areas within the County's jurisdiction only, but makes referrals to, and coordinates with, other jurisdictions.

d. The Operational Area Media Team initiates contacts with the news media, providing information at regular and frequent press briefings and as it becomes available.

e. Questions from news media representatives are answered completely and truthfully to the extent possible from information available.

f. Only information verified by the appropriate EOC staff position is disseminated.

II. OPERATIONAL AREA MEDIA TEAM

A. The Operational Area Media Team is comprised of public information personnel employed in various County departments, who assist with emergency public information during emergencies or disasters.

B. The Media and Public Relations Director serves as coordinator of the Team and ODP provides a staff person to act as liaison.

C. The Team is activated whenever the Operational Area EOC is activated, or at the request of the Chief Administrative Officer (CAO) or the Director of ODP.

D. The primary role of the Team is to compile and disseminate information to the public via the news media.

III. RESPONSIBILITIES OF THE OPERATIONAL AREA MEDIA TEAM

A. Insure Team briefings by ODP and/or other EOC staff on a regular, timely basis.

B. Schedule regular and frequent briefings for news media representatives. Also brief visitors, such as visiting officials.

C. Respond to questions as Operational Area spokespersons.

D. Write and distribute press releases and EAS messages, including rumor control personnel in the distribution.

E. Coordinate media interviews with Operational Area officials.

F. Refer the media to the appropriate agency or jurisdiction for information regarding activity within that agency's or jurisdiction's area of responsibility.

G. Monitor news reports and take action to correct any inaccurate information being reported.

H. Maintain liaison with the State Office of Emergency Services (OES) PIO, the SONGS Emergency News Center, the Federal Emergency Management Agency (FEMA) PIO and/or any other public information operations that are activated.

I. Notify the news media of any changes in the status of the EOC.

IV. OPERATION

A. Staffing

1. The Operational Area Media Team staffs the Operational Area EOC upon its activation. This is its first priority.

2. In some situations, a Team member is provided at the scene of a disaster, upon request of the jurisdiction, to assist if needed, and to provide information to the EOC staff. This Team member would not be authorized to speak to the Media unless specifically directed to do so by the local jurisdiction. This person is sent to the scene only after sufficient staffing at the EOC has been established.

B. Notification

1. ODP staff notifies the Operational Area Media Team Coordinator of the activation of the EOC as early as possible.

2. The Coordinator notifies one of the first shift representatives and immediately reports to the EOC.

3. That representative contacts the other Team members scheduled for the first shift, then the remaining team members (to put them on standby), and then reports to the EOC.

C. Shifts

Media Team coverage of the EOC is set up on a basis of two 12-hour shifts per day. The members are divided into Team 1 (Shift 1) and Team 2 (Shift 2).

D. Facilities

The Media Room, in the EOC, is headquarters for the Media Team. The materials and supplies listed in Attachment A are stored at this location.

V. DISSEMINATION OF INFORMATION

A. Methods of Disseminating Emergency Information

The Media Team and ODP staff will use a variety of methods of disseminating emergency information. The most rapid means is by commercial radio, but others that are available are:

1. Commercial radio stations and wire services

2. Television stations (including cable).

3. Orange County or Los Angeles County radio stations whose signals reach the stricken area (if local stations are off the air).

4. Internal sites (local Media and County websites)

5. Newspapers.

6. Special supplements to newspapers.

7. Leaflets distributed by volunteers.

8. Public safety bullhorn, via emergency personnel.

9. Personal contact.

B. Emergency Alert System (EAS) and Lifesaving Information for Emergencies (LIFE)

1. EAS

In the event power is lost and other means of communication are unavailable, contact with the public can still be maintained by the Emergency Alert System (EAS).

a. The EAS radio equipment is located at the EOC.

b. It is operated by local radio station personnel.

c. It provides a communication link to the primary EAS stations: KOGO 600 kHz and KPOP 1360 kHz

d. The primary stations, in turn, relay the information to the other radio stations and, therefore, to the public.

e. Sample EAS messages are kept by each Media Team member and on file in the EOC. San Onofre messages are included in the Nuclear Power Plant Response Plan as well. Public health advisories are included in the samples.

f. The EAS messages are selected or prepared by the Media Team, authorized by the Director or designated staff of ODP, then broadcast over the EAS radio.

2. LIFE

The LIFE system is an Operational Area information/warning system using tone alert receivers, each with battery back-up. It can be used separately or in conjunction with the EAS system to simultaneously broadcast to LIFE subscribers, such as:

a. Radio and television stations

b. Public safety agencies

c. City/County/Operational Area officials

d. Schools

e. Hospitals

f. Private industry

C. Special Populations

1. Lists of volunteer translators are kept on file in the EOC, for use in translating EAS messages into the predominant foreign language in the Operational Area, particularly Spanish.

2. The Emergency Alert System will be used to disseminate information to the population at large, but will not work for the hearing impaired. Other methods will have to be found.

D. Rumor Control

Volunteer staff from United Way/INFO LINE will relay rumors and other information/questions to the Media Team. The Media Team will verify these rumors/information/questions with appropriate EOC staff positions. The Media Team will then relay this information to the public via press release or INFO LINE. Calls will be monitored for trends and passed to the Media Team for appropriate action.

AUTHENTICATION:

Public Affairs Manager

6/28/99
Date

ATTACHMENT A

MATERIALS AND SUPPLIES

I. THE MEDIA

In order to facilitate the gathering and dissemination of disaster information, the following items are kept at the Operational Area EOC for news media representatives:

A. Adequate working space separate from that of Operational Area staff. If necessary, special arrangements will be made. For example, in a long term disaster situation, a trailer might be needed for news media operations.

B Separate telephones, instruments and numbers.

C. Work tables.

II. REFERENCE MATERIALS

The following reference materials are permanently available in the Operational Area EOC and are regularly updated by the ODP staff:

A. County of San Diego office telephone directory.

B. City of San Diego office telephone directory.

C. Telephone books, including the North County and Suburban editions.

D. List of emergency telephone numbers.

E. List of referral numbers, comprised of officials in other jurisdictions.

F. List of County officials with key roles in emergencies, descriptions of those roles, titles, and phone numbers.

G. Copies, from the Operational Area Plan, of the Mass Care Shelters, Casualty Collection Points, and First Aid Stations.

H. List of translators.

III. SUPPLIES

The following supplies are permanently stored in the EOC for use by the Media Team and media representatives.

A. Finder Binder

B. Computers and printers

C. Adequate telephone lines and instruments

D. ODP stationary and news release paper

E. Television monitors and radio available for monitoring news reports.

F. Fax machine

Attachment A, page 2

ATTACHMENT B

MEDIA INFORMATION RELEASE LOG

_____	_____	METHOD	OF	RELEASE	_____	_____
DATE	TIME	WRITTEN	_____	VERBAL	_____	BY
_____ _____	_____ _____	Indicate #	Briefing	Telephone	Other (Specify)	_____ _____

ATTACHMENT C

CALIFORNIA EMERGENCY PUBLIC INFORMATION SYSTEM

The California Emergency Public Information System includes city, Operational Area, Office of Emergency Services (OES) Mutual Aid Region, State and Federal PIOs and public information representatives from private agencies. The scope of the emergency will determine how many levels of the system become actively involved in Emergency Public Information (EPI) release.

City and Operational Area PIOs will release EPI locally and will provide status information to PIOs at the next higher level of government. They should coordinate in advance with the public information representatives of local private agencies such as the Red Cross, Salvation Army, and utility companies, so that mutual needs may be fulfilled during emergencies.

When the OES Emergency Public Information Organization at the OES Headquarters in Sacramento is activated, PIOs will be assigned to the affected OES Mutual Aid Region(s) to gather information from local jurisdictions and provide it to the State OES PIO. Mutual Aid Region PIOs may reply to media calls, and will relay information from the state and federal level to local PIOs.

The State OES PIO will summarize the disaster situation for the media and report on state agency response activities. The State OES PIO will also establish statewide Emergency Alert System (EAS) programming, keep the Federal Emergency Management Agency (FEMA) PIO informed of developments, and provide EPI Staff support to local jurisdictions on request. The State OES PIO will coordinate news releases pertaining to a particular jurisdiction with that jurisdictional PIO ***PRIOR*** to dissemination to the news media. When prior coordination is not feasible, the local PIO will be informed at the earliest possible opportunity.

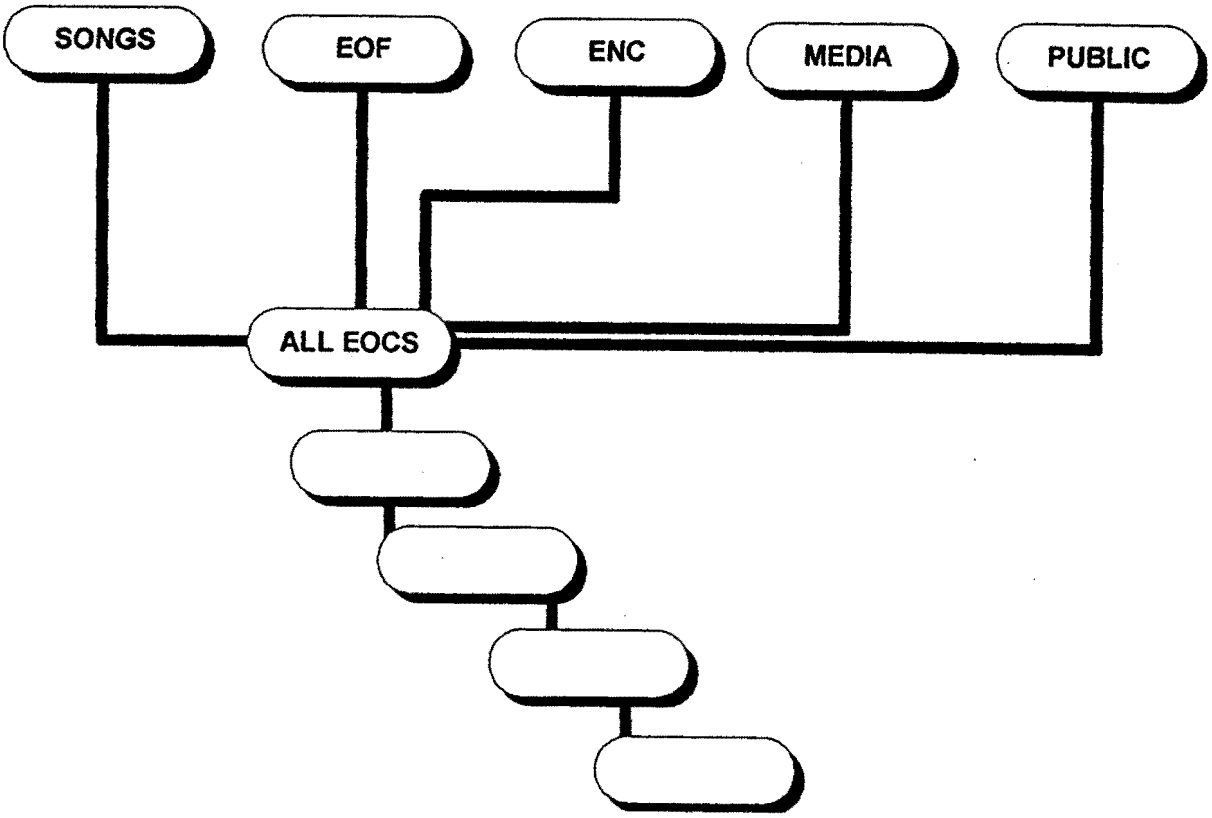
The FEMA PIO will provide information on federal response efforts and federal assistance programs and may provide EPI Staff support to the state on request. The federal government determines nationwide EAS programming.

ATTACHMENT D

SAN ONOFRE NUCLEAR GENERATING STATION

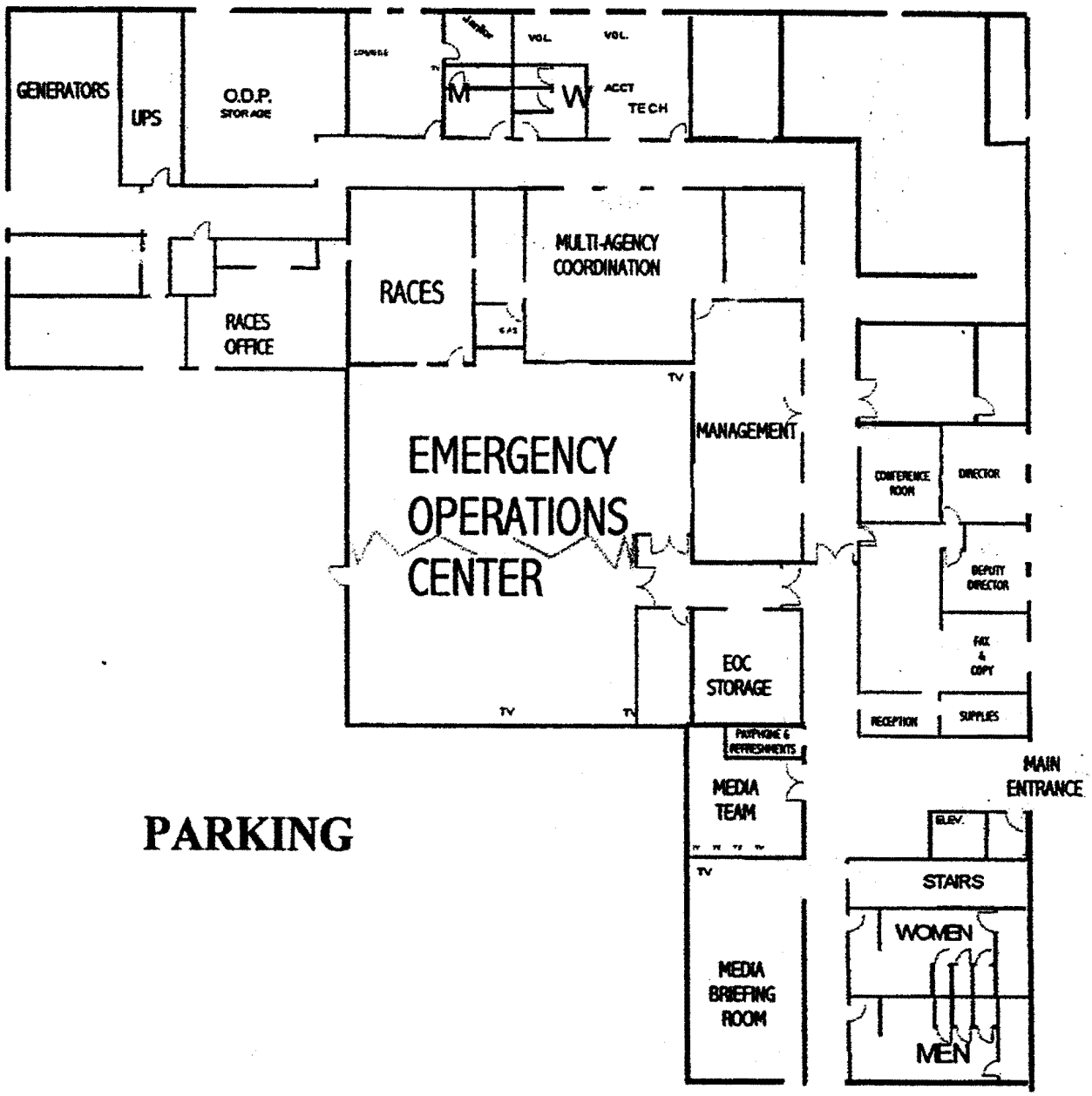
EMERGENCY RESPONSE

INFORMATION FLOW CHART



ATTACHMENT E

Operational Area Emergency Operations Center
5555 Overland Avenue, San Diego, CA 92123
Bldg. 19



PARKING

ATTACHMENT F

MEDIA ACCESS REGULATIONS

The following are extracts from Government Codes and Regulations relating to the granting of access to the media to closed or restricted areas during incidents and disasters:

California Penal Code

Section 409.5 Power of peace officers to close areas during emergencies; Entering or remaining within area as misdemeanor; Exception as to newspaper representatives, etc.

(a) Whenever a menace to the public health or safety is created by a calamity such as flood, storm, fire earthquake, explosion, accident or other disaster, officers of the California Highway Patrol, California State Police, police departments or sheriff's office, any officer or employee of the Department of Forestry designated a peace officer by subdivision (f) of Section 830.3 and any officer or employee of the Department of Parks and Recreation designated a peace officer by subdivision (I) of Section 830.3, may close the area where the menace exists for the duration thereof by means of ropes, markers or guards to any and all persons not authorized by such officer to enter or remain within the closed area. If such a calamity creates an immediate menace to the public health, the local health officer may close the area where the menace exists pursuant to the conditions which are set forth above in this section.

(b) Officers of the California Highway Patrol, California State Police, police departments, or sheriff's office or officers of the Department of Forestry designated as peace officers by subdivision (f) of Section 830.3 may close the immediate area surrounding any emergency field command post or any other command post activated for the purpose of abating any calamity enumerated in this section or any riot or other civil disturbance to any and all unauthorized persons pursuant to the conditions which are set forth in this section whether or not such field command post or other command post is located near to the actual calamity or riot or other civil disturbance.

(c) Any unauthorized person who willfully and knowingly enters an area closed pursuant to subdivision (a) or (b) and who willfully remains within such area after receiving notice to evacuate or leave shall be guilty of a misdemeanor.

(d) Nothing in this section shall prevent a duly authorized representative of any news service, newspaper, or radio or television station or network from entering the areas closed pursuant to this section.

ATTACHMENT G

Federal Aviation Regulations
Subpart B - Flight Rules
Section 91.137* Temporary Flight Restrictions

(a) Whenever the Administrator determines it to be necessary in order to prevent an unsafe congestion of sight-seeing aircraft above an incident or event which may generate a high degree of public interest, or to provide a safe environment for the operation of disaster relief aircraft, a Notice to Airmen will be issued designating an area within which temporary flight restrictions apply.

(b) When a Notice to Airmen has been issued under this section, no person may operate an aircraft within the designated area unless--

(1) That aircraft is participating in disaster relief activities and is being operated under the direction of the agency responsible for relief activities;

(2) That aircraft is being operated to or from an airport within the area and is operated so as not to hamper or endanger relief activities;

(3) That operation is specifically authorized under an IFR ATC clearance;

(4) VFR flight around or above the area is impracticable due to weather, terrain, or other considerations, prior notice is given to the Air Traffic Service facility specified in the Notice to Airmen, and en route operation through the area is conducted so as not to hamper or endanger relief activities; or,

(5) That aircraft is carrying properly accredited news representatives, or persons on official business concerning the incident or event which generated the issuance of the Notice to Airmen; the operation is conducted in accordance with 91.79 of this chapter; the operation is conducted above the altitudes being used by relief aircraft unless otherwise authorized by the agency responsible for relief activities; and further, in connection with this type of operation, prior to entering the area the operator has filed with the Air Traffic Service facility specified in the Notice to Airmen a flight plan that includes the following information:

(I)Aircraft identification, type and color.
(ii)Radio communications frequencies to be used.
(iii)Proposed times of entry and exit of the designated area.
(iv)Name of news media or purpose of flight.
(v)Any other information deemed necessary by ATC.

*** To activate Section 91.137, contact: LA Center @ (805) 265-8203**

ATTACHMENT H

EMERGENCY PUBLIC INFORMATION PRIORITIES

1. **Lifesaving/Health Preservation Instructions**

   - What to do (and why).
   - What not to do (and why).
   - Information (for parents) on status and actions of schools (if in session).
   - Hazardous/contaminated/congested areas to avoid.
   - Curfews.
   - Road, bridge, freeway overpass, and dam conditions, and alternate routes to take.
   - Evacuation:
     - Routes
     - Instructions (including what to do if vehicle breaks down).
     - Arrangements for persons without transportation.
   - Location of mass care/medical/coroner facilities, food, safe water. Status of hospitals.
   - First aid information.
   - Firefighting instructions.
   - Emergency telephone number (otherwise request people not to use telephone). Stress to out-of-area media that people should NOT telephone into the area. Lines must be kept open for emergency calls.
   - Instructions/precautions about utility use, sanitation, how to turn off utilities.
   - Essential services available--hospitals, grocery stores, banks, pharmacies, etc.
   - Weather hazards (if appropriate).

2. **Emergency Status Information**

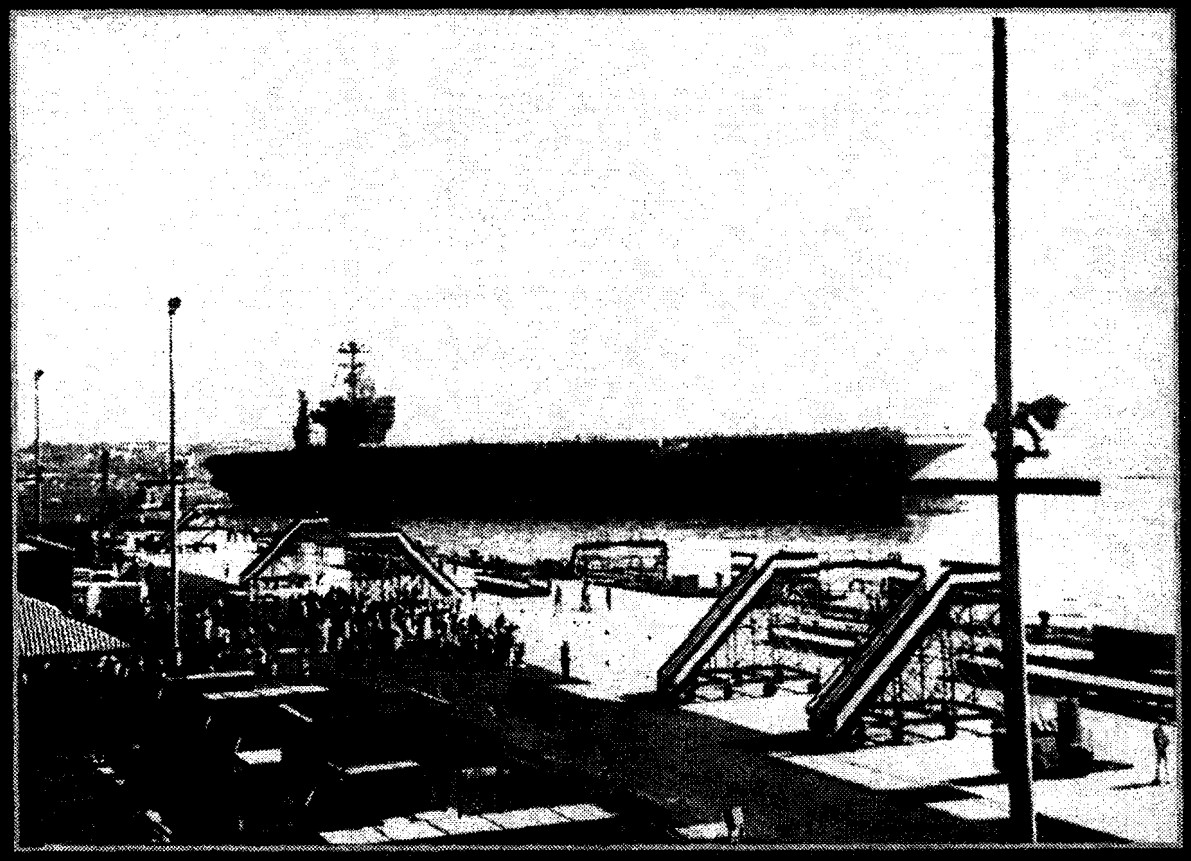
   - Media hotline number. Public hotline number.
   - Description of the emergency situation, including number of deaths and injuries, property damage, persons displaced.
   - Description of government and private response efforts (mass care, medical, search and rescue, emergency repair, debris clearance, fire/flood fighting, etc.).
   - Any of the priority 1 information in summary form on a "nice to know" rather than "vital to know and act upon" basis.

- Status of local and Governor's Proclamation, Presidential Declaration.
- Where people should report/call to volunteer.
- How people in other areas can obtain information about relatives/friends in the disaster area (coordinate with Red Cross on release of this information). How disaster victims can locate family members.

3. Other Useful Information

- Usually this type of information will be released in the Post-Emergency Period because of lack of time and other priorities during other phases.
- State/Federal assistance available.
- Disaster Assistance Center opening dates/times.
- Historical events of this nature.
- Charts/photographs/statistics from past events.
- Human interest stories.
- Acts of heroism.
- Historical value of property damaged/destroyed.
- Number of those killed/injured.

Emergency Response Plan



NAVAL NUCLEAR POWER HISTORY

- Over 5100 reactor-years of operating experience without a reactor accident or any problem causing a significant effect on the environment

- Over 118,000,000 miles safely steamed by nuclear-powered ships

- Presently: 86 ships and 103 operating reactors

- Over 40 years of safe homeport operation in San Diego

NAVAL REACTORS ARE SAFE AND RELIABLE

Naval reactors are robust

- Designed to operate after battle shock
- Multiple boundaries contain fission products
- Unlimited seawater cooling available

Naval reactors differ from commercial plants

- Lower power ratings
- Smaller fission product inventory
- Standard plant design
- Mobile

Extensive crew training ensures prompt response to potential plant casualties

SAN DIEGO EMERGENCY PLANNING IS WELL ESTABLISHED

Navy and civilian emergency response plans are:

- Extensive – Cover a wide range of scenarios
- Comprehensive - Been in place for decades
- Well practiced – Frequent joint and separate training

Distinct Naval and civilian emergency response organizations operate together to ensure prompt, coordinated action.

SAN DIEGO AREA NAVAL EMERGENCY RESPONSE

Ship reports casualty to local Navy Operations Office and begins initial casualty response

Navy Operations Office:

- Alerts Affected Navy Command Duty Officer, Fire, Security and Medical support
- Activates Local Navy Emergency Control Center (ECC)
- Deploys On Scene and Remote Monitoring Teams

SAN DIEGO AREA NAVY – CIVILIAN EMERGENCY INTERACTION

Navy ECC Manned – Control of Casualty Response Begins

Communications established with remote ECC's

- Heads up call to State and local officials
- Formal Notification to State Office of Emergency Services Warning Center
- Press Statements Coordinated with State Officials

Navy conducts offsite monitoring and provides data and recommended protective actions, if any to State and local authorities

STATE AND LOCAL AREA EMERGENCY PLANNING

- Based on statewide Standardized Emergency Management System
- Planning for local emergencies by local officials
- Local plans integrated into statewide system. Extensive resources of personnel, equipment and control centers available.
- Emergency Management plan for events such as earthquakes, floods, and chemical spills cover the range of responses necessary for naval nuclear propulsion program emergencies
- Frequent interaction between Navy and civilian emergency planning personnel
- Extensive public outreach on emergency planning conducted by State and local agencies