

APPENDIX H

**IN-BAY DISPOSAL VOLUMES (1991-1999)**

## Appendix H

**Table H-1. Total and Average Annual Maintenance Dredging Volumes (1991-1999)**

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Category <sup>1</sup>	Disposal Site	Project <sup>2</sup>	Project Depth (MLLW)	Year									Total Volume dredged: 91-99	Annual Average dredged: 91-99	
				1991	1992	1993	1994	1995	1996	1997	1998	1999			
S	SF-11	Aeolian YC	-9	13,454	0	0	0	0	0	0	0	18,605	0	32,059	3,562
S	SF-11	Allied	-5	0	0	0	16,800	0	0	0	0	0	0	16,800	1,867
S	SF-11	Ballena Bay Beveudere Cove	-5	527	0	0	0	0	0	0	0	0	0	527	59
S	SF-11	(Homeowners)	-6	0	0	0	0	0	10,503	0	0	0	0	10,503	1,167
S	SF-11	Berkeley Marina Black Point	-12	111,987	12,182	32,169	0	0	0	0	0	0	0	156,338	17,371
S	SF-10	Launch Ramp	?	0	0	0	0	0	200	235	0	0	0	435	48
S	SF-11	Brickyard Cove	-10	0	0	0	0	0	2,750	0	0	0	0	2,750	306
S	SF-11	Candlestick Point City of Benicia	-8	0	0	0	0	0	50,700	0	6,825	0	0	57,525	6,392
S	SF-09	Marina City of Corte	-11	6,651	39,000	19,766	919	15,809	0	16,090	20,955	22,800	0	141,990	15,777
S	SF-11	Madera	?	0	0	29,000	0	0	0	0	0	0	0	29,000	3,222
S	SF-11	City of Emeryville City of Vallejo	?	35,029	3,000	0	0	0	0	0	0	0	0	38,029	4,225
S	SF-09	Ferry Terminal	-12	0	0	8,000	0	0	0	8,305	0	0	0	16,305	1,812
S	SF-11	Clipper YC Contra Costa	-8	0	0	0	9,880	800	34,730	0	0	500	0	45,910	5,101
S	SF-11	Flood Dist Continian Yacht	?	0	0	0	4,800	0	0	0	0	0	0	4,800	533
S	SF-11	Harbor	-5	0	2,100	0	0	0	0	7,825	20,315	0	0	30,240	3,360
S	SF-11	Coyote Pt Marina	-12	0	0	0	118,500	250	0	0	0	0	0	118,750	13,194
S	SF-11	Emery Cove	-9	40,273	0	0	0	0	55,175	0	0	0	0	95,448	10,605
S	SF-11	Galilee Harbor	-10	0	0	0	0	0	0	0	0	5,235	0	5,235	654

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Category <sup>1</sup>	Disposal Site	Project <sup>2</sup>	Project Depth (MLLW)	Year									Total Volume dredged: 91-99	Annual Average dredged: 91-99
				1991	1992	1993	1994	1995	1996	1997	1998	1999		
S	SF-10	Gilley Property		0	0	0	0	0	0	0	0	0	0	0
S	SF-09	Glen Cove Greenbrae	-10	0	0	0	0	0	2,600	13,990	3,375	14,675	34,640	3,849
S	SF-11	Marina (City of Greenbrae)	-10	0	0	0	75,000	0	0	0	0	0	75,000	8,333
S	SF-10	Marina (City of Greenbrae)	-10	0	0	0	0	13,920	0	0	0	0	13,920	1,547
S	SF-11	Jackson, Michael	?	0	0	0	0	0	0	0	0	200	200	22
S	SF-11	Kappas Marina	?									24,580	24,580	24,580
S	SF-11	Limbach, Karl Loch Lomond	?	0	792	0	0	0	0	0	0	0	792	88
S	SF-10	Marina Marin Rowing	?	0	0	0	0	0	0	32,570	46,585	28,845	108,000	12,000
S	SF-11	Ass.	-5	0	3,342	0	0	0	0	0	0	2,000	5,342	594
S	SF-10	Marin YC Marinship Yacht	-8	3,700	0	42,000	1,000	0	0	3,475	0	0	50,175	5,575
S	SF-11	Harbor	?	0	200	0	0	0	0	0	0	0	200	22
S	SF-11	McNear Pier Oyster Point	?	0	0	0	0	32,800	0	0	0	0	32,800	3,644
S	SF-11	Marina		0	0	0	0	0	0	0	0	38,328	38,328	4,259
S	SF-11	Paradise Cay	<-8	40,691	0	0	0	16,175	800	11,700	0	0	69,366	7,707
S	SF-11	Payne Property Pt. San Pablo	?	0	0	0	0	0	0	0	0	0	0	0
S	SF-10	Yacht Harbor	-8	15,155	0	0	0	0	0	0	0	0	15,155	1,684
S	SF-11	Pullman Building	-10	41,518	14,312	0	0	0	0	0	0	0	55,830	6,203
S	SF-11	Redrock Marina	?	0	14,950	0	0	0	0	0	0	0	14,950	1,661
S	SF-11	Redwood City YC	-10	0	0	54,000	15,000	0	0	0	0	0	69,000	7,667

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Category <sup>1</sup>	Disposal Site	Project <sup>2</sup>	Project Depth (MLLW)	Year									Total Volume dredged: 91-99	Annual Average dredged: 91-99
				1991	1992	1993	1994	1995	1996	1997	1998	1999		
S	SF-11	San Leandro Marina	-7	0	0	0	0	0	0	60,150	26,170	0	86,320	9,591
S	SF-10	San Rafael Canal	-8	0	0	0	0	122,507	35,700	28,750	0	0	186,957	20,773
S	SF-11	San Rafael Canal	-6	0	0	0	0	0	0	750	0	0	750	83
S	SF-09	San Rafael Yacht Club	?	2445	12,310	920	0	1,900	0	0	0	0	17,575	1,953
S	SF-11	Sausalito Marine Corp	-8	0	1,400	0	0	0	0	0	0	0	1,400	156
S	SF-11	Sausalito Yacht Club	-13	160	0	0	0	0	0	0	0	0	160	18
S	SF-10	Scheier Property	?	0	0	0	0	0	0	0	0	0	0	0
S	SF-11	SF Marina St. Francis YC	-12	0	0	0	11,544	0	22,863	0	52,902	0	87,309	9,701
S	SF-11	(Belvedere)	-11	0	16,299	0	1,544	4,775	0	0	0	0	22,618	2,513
S	SF-11	SF Yacht Club Sierra Point	?	0	0	0	0	0	0	0	0	4,100	4,100	456
S	SF-11	Marina Strawberry Rec	?	0	0	0	0	0	0	0	0	0	0	0
S	SF-11	Dist	-6	0	137,000	81,136	0	0	45,675	0	0	0	263,811	29,312
S	SF-11	Timmer's Landing	?	0	0	0	0	0	0	0	0	11,600	11,600	1,289
S	SF-10	Vallejo Yacht	-9	0	0	0	0	0	0	1,500	0	0	1,500	167
S	SF-11	Valentine	?	0	0	0	0	0	0	0	0	0	0	0
S	SF-11	Clausen, W.B.	?	0	820	0	0	0	0	0	0	0	820	91
<b>TOTAL</b>				<b>311,590</b>	<b>257,707</b>	<b>266,991</b>	<b>254,987</b>	<b>208,936</b>	<b>261,696</b>	<b>185,340</b>	<b>195,732</b>	<b>152,863</b>	<b>2,095,842</b>	<b>232,871</b>

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Category <sup>1</sup>	Disposal Site	Project <sup>2</sup>	Project Depth (MLLW)	Year									Total Volume dredged: 91-99	Annual Average dredged: 91-99
				1991	1992	1993	1994	1995	1996	1997	1998	1999		
M	SF-11	ARCO Benecia Port Terminal	-35	35,000	0	0	0	0	0	0	0	0	35,000	3,889
M	SF-09	Chevron (Richmond Long Wharf)	-39	27,600	45,000	28,000	25,771	0	72,335	2,149	90,000	0	290,855	32,317
M	SF-11	City of Larkspur Exxon/Valero	-45	284,800	0	261,110	0	141,634	156,802	283,030	187,800	72,757	1,387,933	154,215
M	SF-10	City of Larkspur Exxon/Valero	?	20,285	0	0	0	13,920	0	0	0	0	34,205	3,801
M	SF-09	(Benecia) Larkspur Ferry Terminal	-35	19,500	40,000	11,700	7,597	12,200	61,086	19,000	14,800	39,380	225,263	25,029
M	SF-11	Terminal	-15	0	0	217,200	0	466,937	0	20,905	0	91,660	796,702	88,522
M	SF-11	PG&E Pacific Kenning Co.	-16	31,200	16,000	0	0	0	0	0	0	0	47,200	5,244
M	SF-09	Port of Oakland (berths)	-38	102,906	0	0	0	0	0	0	0	0	102,906	11,434
M	SF-11	Port of Redwood City (berths)	-42	302,586	156,000	328,806	126,490	42,335	178,272	176,200	129,918	220,616	1,661,223	184,580
M	SF-11	Port of Richmond City (berths)	-35				20,000				39,950	0	59,950	19,983
M	SF-11	(Berths)	-38	8,446	0	0	28,500	124,600	0	0	22,093	0	183,639	20,404
M	SF-11	Port of SF	-40	60,343	51,000	30,000	26,000	45,079	140,832	0	88,256	462,280	903,790	100,421
M	SF-11	RMC Lonestar San Rafael Rock Quarry	?	0	0	0	0	0	0	0	0	0	0	0
M	SF-11	SF Drydock (SW Marine)	-16	33,300	0	0	0	0	0	0	0	51,000	84,300	9,367
M	SF-11	Marine)	-35	0	89,000	0	0	119,000	0	0	143,750	178,400	530,150	58,906
M	SF-11	Schnitzer Steel	-37	0	0	13,440	0	0	15,811	7,284	0	0	36,535	4,059
M	SF-09	Shore Terminal	-38	0	0	0	0	0	0	0	0	743	743	83
M	SF-09	Unocal/Tosco USCG	-35	55,600	0	50,655	0	0	89,556	26,300	84,705	0	306,816	34,091
M	SF-11	(Horseshoe Cove)	-18	0	0	0	55,000	0	0	0	0	0	55,000	6,111
M	SF-11	Wickland Oil	-38	0	0	0	0	0	3,604	0	0	0	3,604	400
<b>Total</b>				<b>981,566</b>	<b>397,000</b>	<b>940,911</b>	<b>289,358</b>	<b>965,705</b>	<b>718,298</b>	<b>534,868</b>	<b>801,272</b>	<b>#####</b>	<b>6,745,814</b>	<b>749,535</b>

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Category <sup>1</sup>	Disposal Site	Project <sup>2</sup>	Project Depth (MLLW)	Year									Total Volume dredged: 91-99	Annual Average dredged: 91-99
				1991	1992	1993	1994	1995	1996	1997	1998	1999		
	SF-09	Mare Is Strait	-36	154,242	304,838	976,415	1,200,000	0	0	0	0	0	2,635,495	292,833
COE	10/So	Petaluma ATF	-8	0	115,000	0	340,460	0	200	0	148,842	0	604,502	67,167
COE	SF-10	Pinole Shoal	-45	88,885	0	55,213	0	373,829	0	256,846	66,986	349,167	1,190,926	132,325
COE	SF-11	Oakland Harbor	-42	98,904	231,922	267,185	154,206	118,350	69,334	213,982	222,317	0	1,376,200	152,911
COE	SF-11	Richmond Harbor Redwood City	38 to	475,500	379,000	353,214	300,000	476,532	491,850	346,024	269,800	376,100	3,468,020	385,336
COE	SF-11	Harbor	-30	0	251,000	399,544	0	0	965,998	0	115,658	430,705	2,162,905	240,323
COE	SF-11	San Rafael ATF	-6	0	9,500	0	0	0	0	191,829	0	0	201,329	22,370
COE	SF-11	San Rafael Creek	-6	0	15,000	0	0	0	0	0	0	0	15,000	1,667
COE	SF-16	Suisun Bay Channel	-35	88,885	32,900	32,900	66,321	37,206	284,981	0	104,942	0	648,135	72,015
<b>Total</b>				906,416	#####	2,084,471	#####	1,005,917	#####	#####	928,545	#####	12,302,512	1,366,946
<b>TOTAL</b>				#####	#####	3,292,373	2,605,332	2,180,558	#####	#####	#####	2,425,671	21,144,168	2,349,352

<sup>1</sup> "S" = small dredgers (i.e. project depth < -12', > 50,000 cy/yr, non-COE project); "M" = medium dredgers (i.e. not small and not COE projects); "COE" = all Corps-maintained projects.

<sup>2</sup> Bay maintenance projects only (i.e. not sand dredging, new work, SF Bar Channel, or Delta (e.g. New York Slough)). Also not including U.S. Navy projects or projects with dedicated upland disposal sites (e.g. San Leandro).

APPENDIX I

**DREDGING**

**“BEST MANAGEMENT PRACTICES”<sup>1</sup>**

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<sup>1</sup> Derived from the Hartman Consulting Group presentation “*How to Develop and Manage Successful Dredging Projects*”, 13-14 November 1996.