



Memorandum

MONTEREY REGIONAL WASTE MANAGEMENT DISTRICT

Reviewed by Umm Date 9.12.08
General Manager

DATE: September 11, 2008
TO: General Manager
FROM: Senior Engineer
SUBJECT: Proposed Tipping Fee Increase for Sludge Diversion/Disposal

RECOMMENDATION: That the Board of Directors schedule a public hearing for October 17, 2008 to consider an increase in the tipping fee for acceptance of wastewater sludge for processing/diversion and/or landfill disposal, from \$23 per ton (average) to \$30 per ton, effective January 1, 2009, with an annual adjustment for inflation.

BACKGROUND

The following background information provides the history regarding the acceptance and handling of liquid waste and dewatered municipal wastewater treatment plant sludge (also known as "biosolids") by the Monterey Regional Waste Management District (MRWMD) at the Monterey Peninsula Landfill (MPL):

1. From 1968 to 1990, the MRWMD received most of the liquid waste generated in Monterey County. These wastes consisted primarily of undewatered (liquid) sludge from local wastewater treatment plants, and septic tank pumpings (septage) from the unsewered areas. The MRWMD also received chemical toilet pumpings and restaurant grease trap pumpings. These liquid wastes were not placed in the MPL, but were land applied by spreading and discing into the 200 acre sand dune deposits at the MRWMD's Marina site. This was done to maximize water evaporation.
2. Prior to 1990, the MRWMD accepted dewatered sludge from the Carmel Area Wastewater District (CAWD). The CAWD sludge was co-disposed with solid waste at the MPL.
3. In 1990, the Monterey Regional Water Pollution Control Agency (MRWPCA) began operations of the new regional wastewater treatment plant, located next to the MPL. At that time, the MRWMD's liquid waste land spreading operation was largely phased out. In August 1990, the land spreading operation was limited to restaurant grease trap pumpings and other non-hazardous commercial liquid waste that were not acceptable for treatment at the MRWPCA's regional treatment plant.
4. During the period of 1990 to 1996, all of the dewatered sludge accepted by the MRWMD from MRWPCA and CAWD were co-disposed with solid waste at the MPL.
5. In June 1996, the MRWMD began receiving dewatered sludge from the South County Regional Wastewater Authority (SCRWA), serving the cities of Gilroy and Morgan Hill. Initially, all of the SCRWA sludge was landfilled, and later, a portion was diverted for beneficial use at the MPL.
6. In May 1997, the CAWD began hauling their dewatered sludge for disposal outside of Monterey County.

7. In 1997, the MRWMD began diverting a portion of the incoming dewatered sludge for beneficial use at the MPL site. Beneficial uses include:
- Co-composting dewatered sludge with yardwaste prior to the application to the vegetative layer of the long-term intermediate and final cover slopes at the MPL. The nutrients in the applied sludge promote vegetative growth which in turn provides increased erosion control at the site.
 - Use of dewatered sludge as an Alternative Daily Cover (ADC) at the MPL.

The enclosed table presents the tonnage of sludge accepted, landfilled and diverted from the Base Year 1990 through 2007. Also included is a table showing a tonnage breakdown as to where the dewatered sludge was generated from 2001 to 2007.

SLUDGE MANAGEMENT COST ANALYSIS

Staff has internally analyzed the current cost of managing sludge at the MPL, and has identified that the current sludge tipping fee does not cover all the costs borne by the MRWMD in handling the sludge. With the renewed emphasis on the financial performance and efficiencies of all MRWMD operations as a result of the MRWMD's current financial status, it is imperative that the rates for services adequately cover the cost for the provision of those services.

The MRWMD currently receives approximately 21,000 tons per year of dewatered sludge from the MRWPCA and approximately 16,000 tons per year from the SCRWA. The last tipping fee increase for MRWPCA sludge was in 2004, when the Belt Press Sludge rate (with a solids content of approximately 25%) was increased from \$15 per ton to \$20 per ton and the Drying Bed Sludge rate (with a solids content of approximately 50%) was increased from \$20 per ton to \$25 per ton. In 2003, the tipping fee for sludge from the SCRWA (with a solids content of approximately 20%) was increased from \$20 to \$25 per ton.

In April 2008, the MRWMD and MRWPCA jointly retained the services of R3 Consulting Group, Inc. to assist with the review of the "reasonableness" of the basis for a proposed tipping fee increase for the District to continue to manage wastewater sludge at the MPL. A draft of R3's report was reviewed and discussed at the August 22, 2008 meeting of the ad hoc Finance Committee. MRWPCA staff has also reviewed the R3 report.

There are currently two management options available to the MRWMD for the handling of the sludge received at the MPL. One option is for diversion with treatment and beneficial use at the landfill site, and another option is for landfill disposal. A discussion of these two sludge management options, along with the cost analysis as included in the R3 report, is provided below.

1. **Diversion and Beneficial Use.** The sludge management option that the MRWMD currently utilizes is diversion and beneficial use by converting the sludge into a stabilized vegetative cover material for use on the long-term intermediate and final cover side slopes at the MPL. This management option is not sustainable over the long-term because staff has determined that the volume of stabilized sludge already stockpiled at the site, estimated at approximately 150,000 cubic yards, exceeds the MRWMD's long-term need for erosion control material on the landfill side slopes. Any additional sludge stockpiled at the site would need to be removed in the future development of the landfill at an additional cost to the MRWMD. Therefore, future sludge accepted by the MRWMD must be exported to some other off-site end use, either through complete composting and use by the landscaping industry, conversion to energy, or co-disposed in a landfill with solid waste.

A separate jointly-funded study, being conducted concurrently by Carollo Engineers, will provide an analysis of the "highest and best use" and "least-cost" alternatives for the future management of the MRWPCA's sludge. The results of this study are not yet available. Staff is recommending that the current sludge stabilization process be terminated within two years, or until the Carollo study recommendations are implemented, whichever occurs first.

For the District's current sludge diversion operation, the costs include the following:

- Cost to provide the sludge bulking agent (green waste/wood waste chips). Bulking agent materials for the sludge processing operation are provided from the MRWMD's on-site Materials Recovery Facility (MRF). Green waste and wood waste from various sources are ground and screened at the MRF prior to delivery to the sludge processing area.
- Cost to process the sludge on the lined Landfill Module 3. Processing costs include blending sludge and chips into windrows, turning windrows, and transporting stabilized sludge to stockpile.
- MRWMD system organizational and administrative overhead costs associated with their respective activities have been assigned to the sludge processing and green waste bulking agent production based on the appropriate methodology.
- Time value of money due to postponing the use of the 1,152,000 tons of remaining airspace/waste capacity of Landfill Module 3, accelerating the expenditure of \$2,000,000 (construction of Module 5 liner) by five years.
- A credit has been assigned for the revenues generated from the green waste tipping fees. This has been calculated based on the tons of bulking agent that is used to create the stabilized composted vegetative cover.

As presented in the draft R3 report, the cost for the MRWMD to convert the sludge into a stabilized vegetative cover material is approximately \$38 per ton. Staff is recommending that the Board approve a sludge handling rate of \$30 per ton, to match the landfill disposal cost (see below).

2. **Disposal (Landfilling) by Direct Burial with Municipal Solid Waste at the MPL.** For the landfill disposal option, the costs include the following:

- Cost to process the sludge for direct burial in lined Landfill Module 3. The dewatered sludge is mixed thoroughly with the solid waste at the working face to take advantage of the absorptive capacity of the relatively dry solid waste. Using a landfill compactor or dozer, the sludge is mixed with the solid waste, then pushed, spread, and compacted up the working face. More solid waste is then spread on top of the sludge/solid waste mixture prior to covering with six inches of soil or alternative daily cover at the end of the day. The Waste Discharge Requirements stipulate that a minimum ratio of 5 parts solid waste to 1 part sludge must be maintained for landfill disposal of the sludge.
- MRWMD system organizational and administrative overhead costs.

Disposal of sludge at the landfill will require significant changes in the landfill operation. Because of the unique nature of the sludge, direct burial in the landfill presents several operational difficulties. Foremost is the requirement to meter and blend the sludge with solid waste at the minimum 5:1 waste-to-sludge ratio. Additionally, the sludge must be buried in a lined landfill module, which would negate the MRWMD's ability to use the disposal capacity of unlined Modules 1 and 2. Further operational difficulties include equipment cleaning, worker exposure, odor, and tracking of material by vehicle traffic.

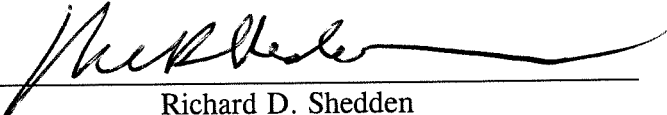
As presented in the draft R3 report, the cost for the MRWMD to bury the sludge in the landfill is approximately \$30 per ton.

INCREASED REVENUE

Implementation of a sludge tipping fee increase to \$30 per ton will result in increased revenue to the MRWMD in the amount of approximately \$230,000 per year. This consists of an increase of \$150,000 per year for the MRWPCA and an increase of \$80,000 per year for the SCRWA. It should be noted that the service areas of the MRWMD and the MRWPCA are not the same. As shown on the attached maps, on the basis of population served, the most significant difference between the two service areas is the fact that MRWPCA serves the City of Salinas, while the MRWMD does not.

RECOMMENDATION

It is therefore recommended that that the Board of Directors receive staff report and schedule a public hearing for October 17, 2008 to consider an increase in the tipping fee for acceptance of wastewater sludge for diversion and/or disposal at the MPL, from the current \$23 per ton (average) to \$30 per ton, effective January 1, 2009, with an annual adjustment for inflation.


Richard D. Shedden

Attachment

Monterey Regional Waste Management District

DEWATERED SLUDGE ACCEPTED, LANDFILLED, AND DIVERTED

Year	Sludge Accepted (tons)	Sludge Landfilled (tons)	Sludge Diverted (tons)	Sludge Diverted (%)
1990 ⁽¹⁾	4,398	4,398	0	0.0%
1991	10,825	10,825	0	0.0%
1992	13,540	13,540	0	0.0%
1993	10,760	10,760	0	0.0%
1994	10,809	10,809	0	0.0%
1995	13,415	13,415	0	0.0%
1996	10,767	10,767	0	0.0%
1997	31,305	24,316	6,989	22.3%
1998	27,190	11,599	15,591	57.3%
1999	30,050	13,333	16,717	55.6%
2000	30,443	14,508	15,935	52.3%
2001	36,611	6,164	30,447	83.2%
2002	40,330	5,025	35,305	87.5%
2003	37,305	1,018	36,287	97.3%
2004	41,696	2,342	39,354	94.4%
2005	40,741	2,733	38,008	93.3%
2006	38,150	3,850	34,300	89.9%
2007	40,357	3,920	36,437	90.3%
TOTAL	468,692	163,322	305,370	65.10%

⁽¹⁾ Prior to 1990, MRWMD received a small amount of sludge from Carmel Area Wastewater District, all of which was landfilled. In 1990, the MRWMD began receiving sludge from the MRWPCA regional wastewater treatment plant.

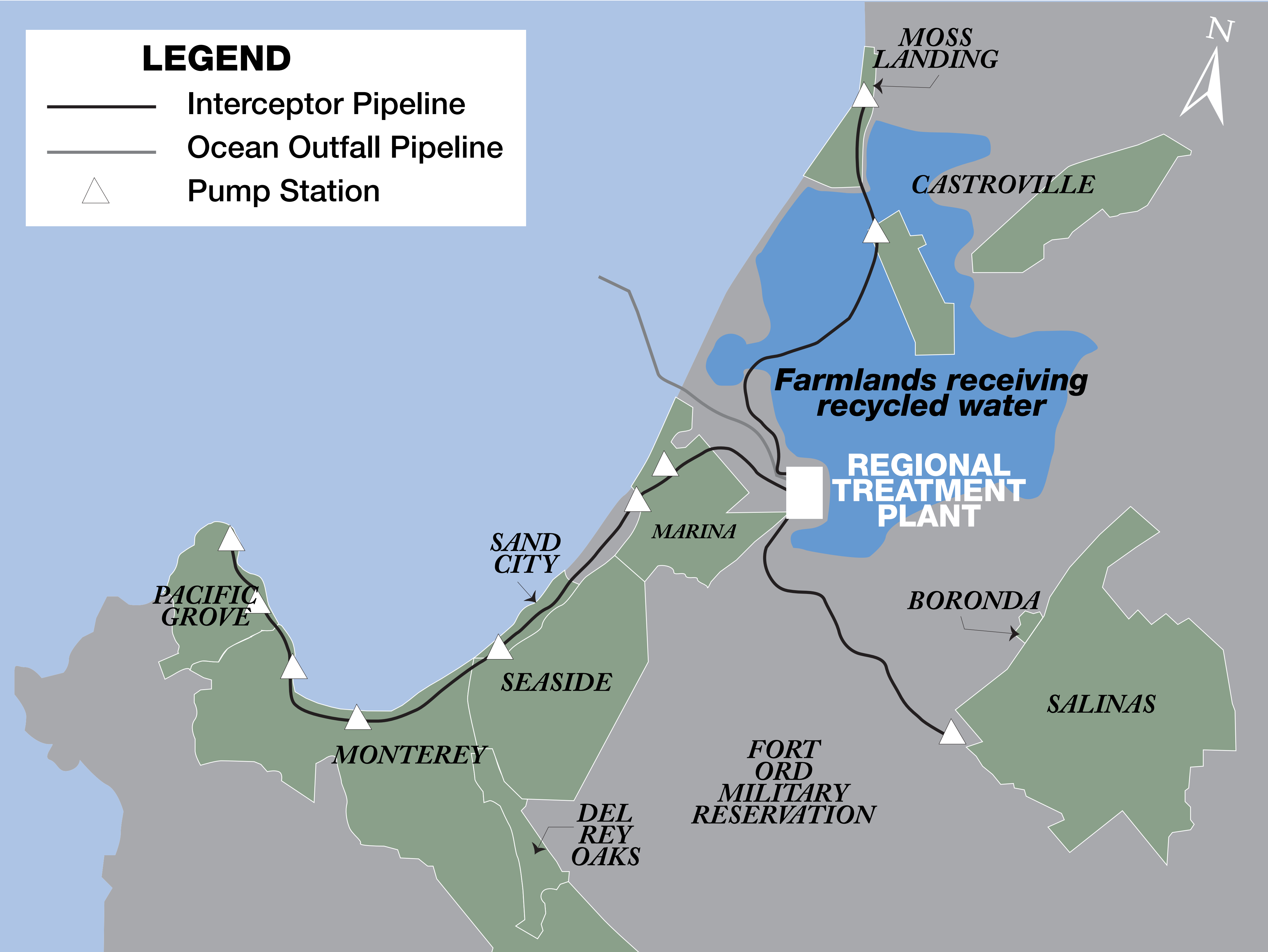
Monterey Regional Waste Management District

Dewatered Sludge - 2001 thru 2007 Tonnage

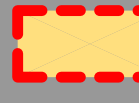

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year Totals
2001													
California Utility Services	0	7	30	23	6	0	69	32	72	0	0	0	240
MRWPCA	1,680	414	228	1,300	2,041	3,581	1,851	917	2,687	2,478	2,761	1,823	21,761
SCRWA	1,346	1,202	1,300	1,174	1,356	1,101	1,106	1,326	1,012	1,312	1,118	1,258	14,610
Totals	3,026	1,623	1,558	2,497	3,403	4,683	3,026	2,275	3,771	3,790	3,878	3,080	36,611
2002													
Cal. Utility Services/Scotts Valley	43	8	128	23	8	32	92	42	46	20	57	37	536
Carmel Area Waste Water Dist	0	0	0	0	0	0	0	0	0	0	0	138	138
MRWPCA	1,469	1,237	2,289	1,462	1,145	2,568	2,582	1,817	2,157	3,115	3,359	1,641	24,840
SCRWA	1,353	1,190	1,271	1,244	1,315	1,099	1,234	1,209	1,134	1,283	1,138	1,345	14,816
Totals	2,865	2,435	3,688	2,729	2,468	3,699	3,907	3,069	3,337	4,418	4,554	3,160	40,330
2003													
California Utility Services	28	17	34	31	26	47	40	10	19	5	18	15	289
Carmel Area Waste Water Dist	21	167	46	0	0	0	0	0	0	0	0	0	234
City of Scotts Valley	0	0	0	0	0	0	185	150	167	181	155	181	1,018
MRWPCA	1,117	284	1,694	1,755	1,703	4,594	4,652	2,113	2,811	311	0	58	21,091
SCRWA	1,384	1,113	1,246	1,229	1,237	1,272	1,306	1,115	1,191	1,218	1,145	1,216	14,673
Totals	2,550	1,581	3,020	3,015	2,966	5,913	6,183	3,387	4,187	1,715	1,318	1,470	37,305
2004													
California Utility Services	29	22	47	34	11	0	4	26	13	13	26	27	252
City of Scotts Valley	173	134	224	195	153	161	168	173	158	175	161	194	2,070
MRWPCA	97	591	2,860	3,625	3,665	3,211	1,933	1,825	1,923	2,020	2,266	1,861	25,877
SCRWA	1,059	1,100	1,291	1,135	1,152	1,218	990	1,172	927	1,074	1,217	1,163	13,497
Totals	1,359	1,846	4,422	4,990	4,980	4,589	3,096	3,195	3,021	3,283	3,670	3,245	41,696
2005													
California Utility Services	10	41	5	39	5	0	19	14	62	27	74	35	331
City of Scotts Valley	200	180	242	182	188	194	138	175	185	159	187	190	2,220
MRWPCA	1,907	1,953	289	0	508	2,692	1,451	3,625	927	3,054	1,915	693	19,012
SCRWA	1,235	1,073	1,177	1,110	1,207	1,236	1,236	1,254	1,110	1,125	1,327	1,404	14,494
Sunnyslope County Water Dist	0	0	0	0	0	0	0	0	2,222	2,462	0	0	4,684
Totals	3,352	3,247	1,712	1,331	1,908	4,122	2,845	5,068	4,506	6,827	3,503	2,321	40,741
2006													
California Utility Services	39	36	0	16	36	34	43	17	33	39	31	28	350
City of Scotts Valley	217	192	223	178	222	197	171	197	189	192	199	197	2,375
MRWPCA	0	79	1,476	1,936	3,226	882	1,677	1,287	1,886	2,506	2,834	1,925	19,714
SCRWA	1,304	1,086	1,307	1,284	1,336	1,274	1,120	1,189	1,135	1,286	1,144	1,208	14,674
Other	0	0	0	0	0	0	0	0	0	1,033	0	4	1,037
Totals	1,559	1,393	3,006	3,414	4,820	2,387	3,012	2,691	3,243	5,055	4,208	3,362	38,150
2007													
California Utility Services	40	34	8	36	26	35	31	22	17	11	86	40	387
City of Scotts Valley	212	172	227	192	213	190	191	198	173	218	194	197	2,377
MRWPCA	2,398	2,206	2,110	0	0	0	1,431	3,212	3,375	2,843	2,225	1,520	21,320
SCRWA	1,333	1,408	1,389	1,463	1,448	1,404	1,349	1,239	1,255	1,326	1,231	1,427	16,272
Totals	3,984	3,820	3,735	1,691	1,687	1,629	3,002	4,671	4,820	4,399	3,735	3,184	40,357

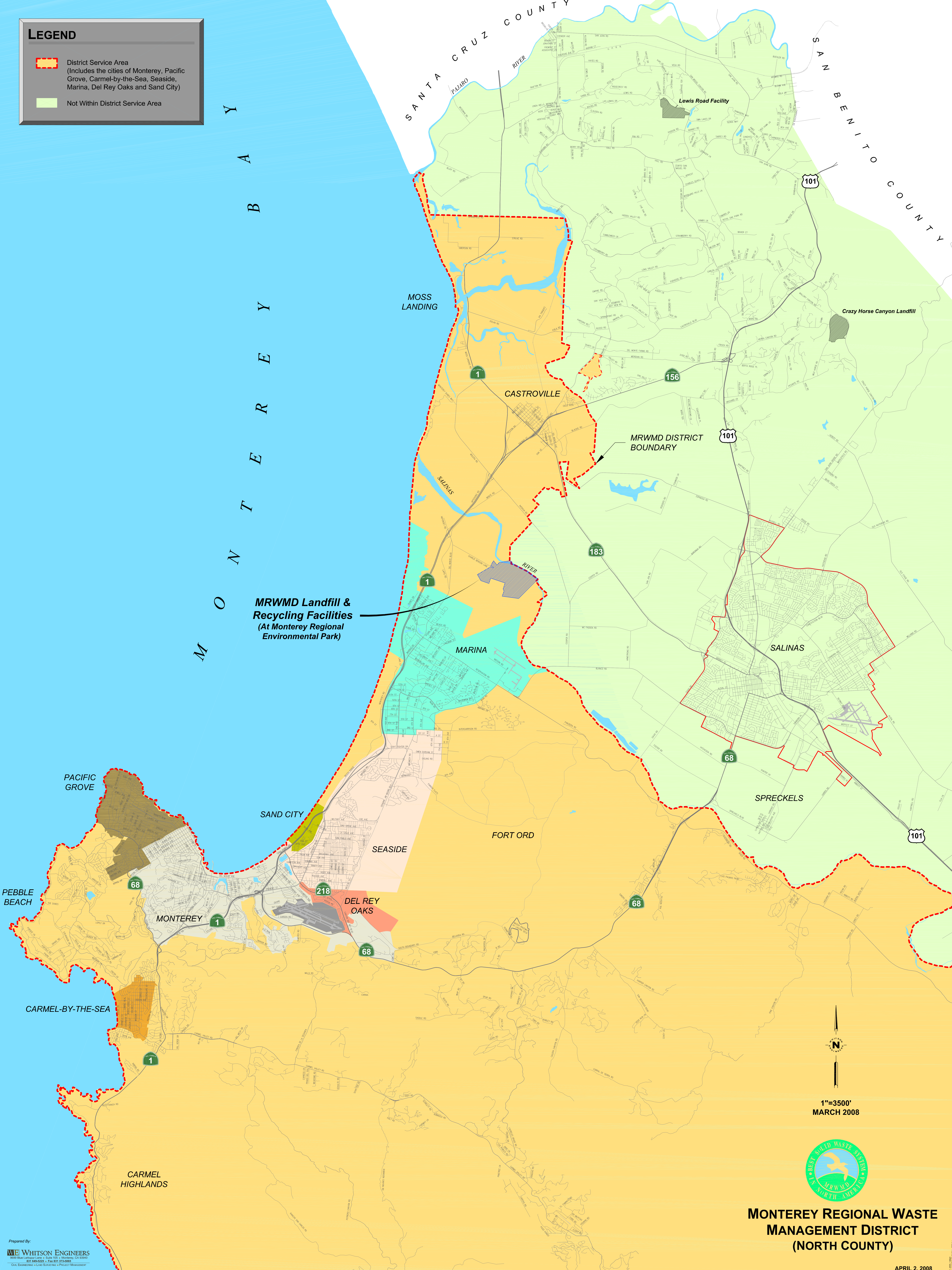
LEGEND

- Interceptor Pipeline
- Ocean Outfall Pipeline
- △ Pump Station



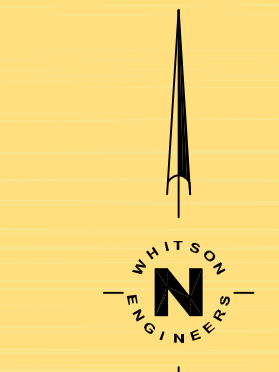
LEGEND

-  District Service Area
(Includes the cities of Monterey, Pacific Grove, Carmel-by-the-Sea, Seaside, Marina, Del Rey Oaks and Sand City)
-  Not Within District Service Area



MRWMD Landfill & Recycling Facilities
(At Monterey Regional Environmental Park)

MRWMD DISTRICT BOUNDARY



1"=3500'
MARCH 2008



MONTEREY REGIONAL WASTE MANAGEMENT DISTRICT (NORTH COUNTY)