

# 2014 SCAP Biosolids Trends Survey



**Southern California Alliance of Publicly Owned  
Treatment Works**

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# SCAP 2014 Biosolids Trends Survey

## Executive Summary

SCAP wishes to thank all of our agencies that took the time and effort to assist with the production of this survey. The response has been exceptional, as can be seen by the number of agencies contributing. It is our sincere hope that the information provided will be useful to our SCAP members for future planning and will provide the basis for a comprehensive statewide report.

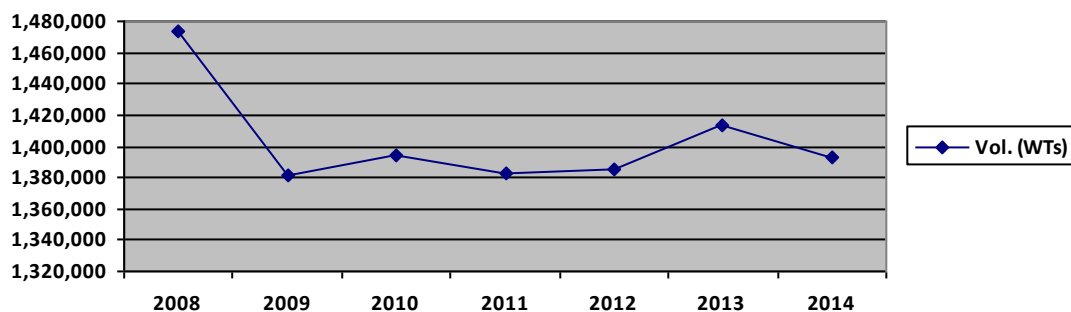
The intent of this survey was to update the previous 2012 survey information obtained from SCAP members in order to identify current industry trends for the following issues:

- *Biosolids Production*
- *Dewatering Technologies*
- *Biosolids Management Technologies and Destinations*
- *Biosolids Management Costs and Transportation Rates*
- *Agency Challenges*
- *Co-digestion Data*
- *Agencies Future Biosolids Management Plans*
- *Marketing and Media Practices*

## Annual Biosolids Production

**Figure 1** compares the total volume of wet tons produced in the 6-year period from 2008 through 2014. The annual biosolids production appears to have remained somewhat steady from 2009 until 2012. Then as the economy picked up, the amount of biosolids increased in 2013. The 2014 trend should be discounted, as it merely represents an estimated volume at this time.

**Figure 1**



One reason for the significant decline in biosolids production between 2008 and 2009 could partially be attributed to the sudden downturn in the economy at that time. To a lesser degree, on-going water conservation efforts may also have been a contributing factor, as evidenced by reported reduction in wastewater flows for many agencies. The

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relatively constant annual biosolids production since 2009 may reflect the slow and steady recovery of the economy over this period, as well as the fact that water conservation efforts may have reached their full effectiveness resulting in a stabilization of treatment plant flows for most agencies.

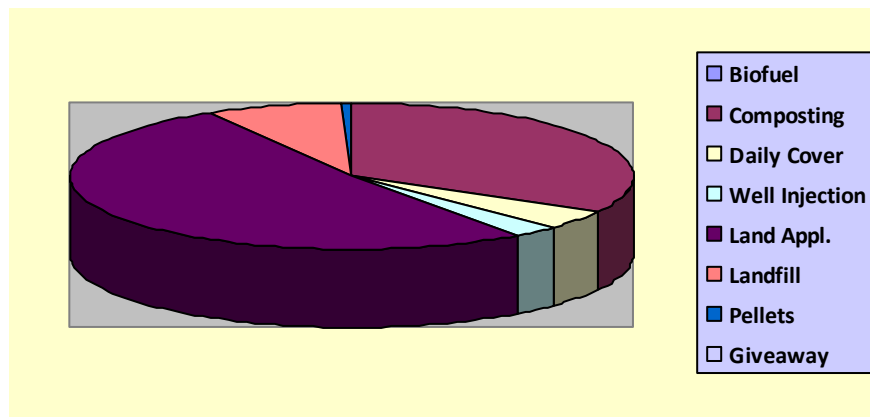
## Management Options, Management Costs and Dewatering Statistics

### Biosolids Management Options

Results of the survey pertaining to the types of technologies and disposal methods employed by agencies for biosolids management are reported in **Table 2** and further summarized in **Table 3**. The various types of technologies and disposal methods reported included: bio-fuel production, composting, daily landfill cover, deep well injection, land application, landfilling, pelletized dryers, and community giveaway programs. As shown in **Figure 2**, the most prevalent technology or disposal method employed by SCAP agencies in 2014 was composting (47%), with land application (16%), daily landfill cover (16%), landfilling (14%) and the production of pellets/fertilizer (5%) being the next most widely reported methods. Use of these methods and technologies did not change significantly from that reported in 2012, with the exception of land application and daily land fill cover, which both experienced significant increases in popularity.

<u>Biosolids Management Options (by usage)</u>	<u>2014</u>	<u>2012</u>	<u>2010</u>
Composting	47%	39%	40%
Land Application	16%	8%	24%
Landfill	14%	14%	16%
Daily Landfill Cover	16%	7%	7%
Biofuel	0%	9%	9%
Pellets/Fertilizer	5%	4%	0%

**Figure 2**



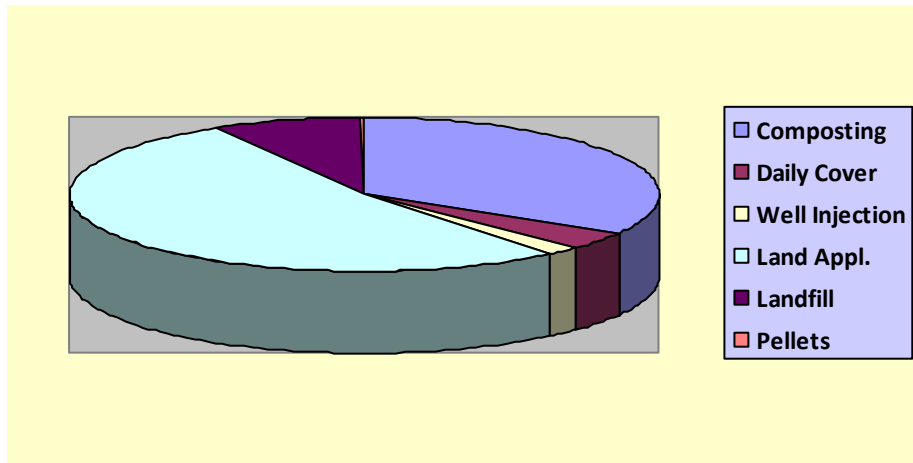
**2014 Biosolids Technology by Usage**

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Ranking of these same biosolids management methods by estimated volume in wet tons for 2014, as shown below and in **Figure 3**, confirms that composting, land application, and daily landfill cover remain the three most popular methods for disposal, as shown in the following comparisons. Land application of biosolids, while only utilized by 16% of the responding agencies, appears to represent the largest volume of biosolids disposal methods in 2013 and 2014. Landfilling remains the generally accepted method for the smaller agencies that have fewer options to consider.

<b><u>Biosolids Management Options (by volume)</u></b>	<b><u>2014</u></b>	<b><u>2012</u></b>	<b><u>2010</u></b>
Composting	33%	44%	39%
Land Application	52%	41%	28%
Daily Landfill Cover	4%	9%	7%
Deep Well Injection	2%	3%	2%
Landfill	8%	2%	15%
Pellets	>1%	>1%	0%

**Figure 3**



**2014 Biosolids Technology by Volume**

## **Management Costs**

A breakdown of biosolids management costs is more difficult to interpret, as the so called “rate at the gate” includes many different factors for each agency. Similarly, the transportation costs reported vary widely due to the inclusion/exclusion of fuel charges and tipping fees, as well as travel distance. Details of the reported costs are shown in **Table 2**, otherwise only a total cost is shown that reflects both the gate fee and the transportation cost. The 2014 average of the total rate/ton reported was calculated to be \$53.94/ton, which is an increase of \$1.65/ton from the 2012 average rate. Interestingly, the average one-way transportation mileage decreased from 150 miles per trip in 2012 to 129 miles per trip in 2014.

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## Dewatering Statistics

The on-site methods employed by agencies to dewater their biosolids prior to final use included: drying beds, centrifuges, belt filter presses and dryers. The percent solids for each technology are shown in **Table 5** and reported to be in the following ranges:

Drying Beds	20% – 90%	Centrifuges	10%– 90%
Belt Presses	11% – 20%	Dryers	90% - 99.9%

Dewatering equipment employed is listed in **Table 4**.



***Heat Dryers at the Toland Sanitary Landfill-Ventura County***



***Harvest Time at Green Acres Farms-Kern County***

Averaging of the submitted data for percent drying results in an overall statistical average of 38.8% solids and a 30.6% weighted average of solids, for the estimated biosolids produced in 2014. Furthermore, based on the total 2014 wet ton projections and the average solids reduction reported for each facility, the total estimated dry tons projection for 2014 is calculated to be 965,577 tons, compared with 345,050 dry tons reported for 2012 (*a larger number of agencies reported in 2014*).

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***Heat Dryers at Encina Wastewater Authority-San Diego County***

## **Challenges, Future Planning, Digestion Enhancement and Public Outreach**

### **Challenges**

The question was “what challenges did each agency face with regards to biosolids recycling?” Responses were limited to 7 different categories of challenges with a total of 100 responses received from the agencies. The most frequently reported challenge was identified as “securing long term disposal options: This was followed closely by rising costs and finding low cost local disposal options. A comparison of answers received in 2010 and 2012 with the 2014 responses are shown in **Table 6**.

### **Future Plans**

The second survey question dealt with what each agency was planning to do with their biosolids both in 2015 and 5 years from now. Most agencies answered that they planned to continue their current method of biosolids management, while a few others mentioned plans to construct new digesters and evaluate new technologies. For the longer term, eleven different technologies or methods of disposal were reported which included: composting, heat drying/pelletizing, gasification/energy production, evaluation of Class A certification, development of new undetermined alternatives, daily landfill cover, deep well injection, land application, bio-fuel production, landfilling, investigating new dewatering alternatives and expanding markets for the use of dried pellets. As in 2012, a majority (30%) of the responses indicated that most agencies plan to continue composting their biosolids for the next 5 years, while others indicated that they would also continue to, or consider to, land apply or landfill their biosolids. The results of this question are summarized in **Table 7 and Table 8**.

### **Digestion Enhancement**

The third question asked for information from those agencies that co-digest high strength feedstock with solids to enhance their methane gas production. Four agencies responded that they currently perform co-digestion to enhance their methane gas

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production. One agency indicated that they were currently in the initial testing phase of co-digestion and another agency indicated they would be adding co-digestion beginning in 2015.

## **Marketing**

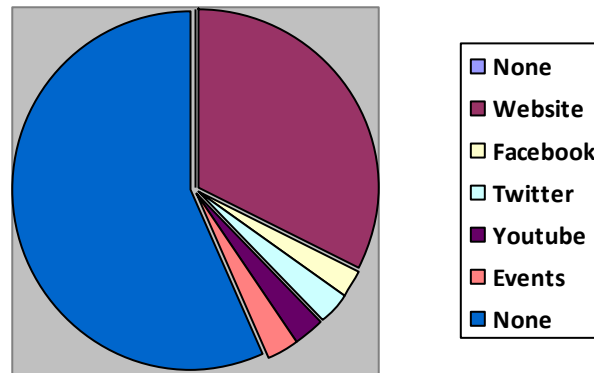
The fourth survey question asked if agencies directly marketed their biosolids products. Currently, only 7 of the 24 responders indicated that they actively market their biosolids products or participate in a community giveaway of their product. Two agencies give their composted biosolids away to the public or their customers as a public service. Two agencies sell their composted product as a soil amendment for turf and landscape projects. Two agencies sell their dried pellets as a fertilizer directly to customers and one agency sells their dried pellets directly to a cement company.

## **Social Media**

The fifth and final survey question asked if any agencies used social media outlets such as website, Facebook, Twitter or Youtube for public outreach or educational purposes to promote their biosolids program. Half of the responders answered that they did not use social media for disseminating biosolids related information.

Of the responders indicating they used social media to promote their biosolids programs, all 12 utilized their websites, 3 used Facebook, 1 used Twitter, 1 used Youtube and 1 used annual community outreach events.

**Figure 4**



**2014 Biosolids Multi Media**

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## Summary of Survey Responses

### Total Wet Tons of Biosolids Produced by Agency with Class Type

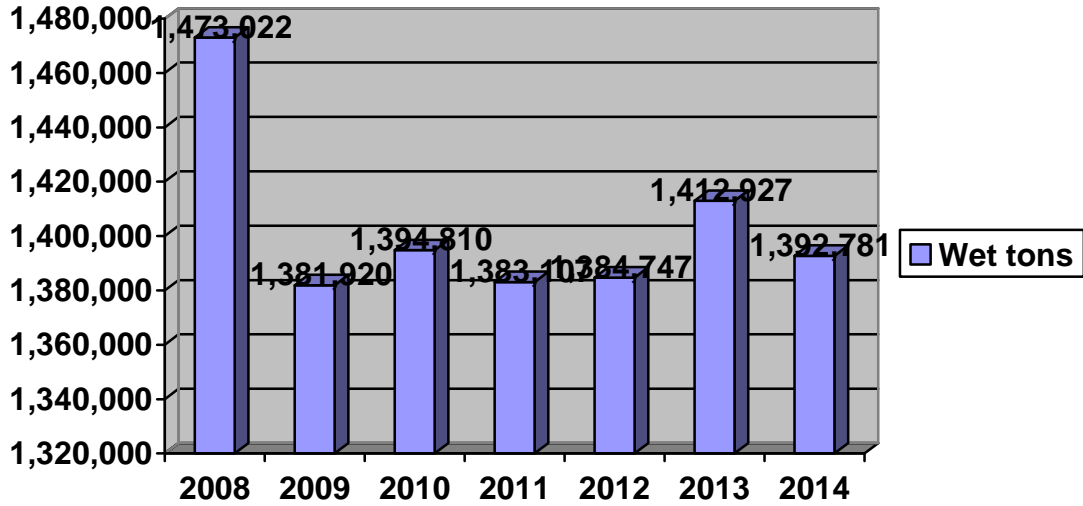
Table 1

Agency Name	2012 Wet Tons Reported	2013 Wet Tons Reported	2014 Wet Tons Projected
Carpinteria Sanitary District	1,484 subB	1,351 subB	1,890 subB
City of Corona DWP	5,243 A,A-EQ,B	9,820 A,A-EQ,B	4,320 A,A-EQ,B
City of Los Angeles	225,656 A-EQ	233,169 A-EQ	237,000 A-EQ
City of Redlands	5,077 B	4,293 B	4,500 B
City of Riverside	34,676 B	33,928 B	41,132 B/Other
City of San Diego	111,173 subB	117,642 subB	116,280 subB
City of San Bernardino MWD	37,715 subB	43,185 subB	25,596 subB
City of Santa Barbara	11,290 B	10,874 B	11,203 B
City of Santa Maria	2,450 subB	2,281 subB	2,300 subB
City of Thousand Oaks	9,738 A, subB	8,702 A,subB	8,500 A,subB
City of Ventura	12,426 B	13,367 B	14,000
Crestline Sanitation District	637 B	614 B	593 B
Eastern MWD	50,516 B,subB	53,475 B,subB	56,960 B,subB
Elsinore Valley MWD	13,014 subB	14,953 subB	16,000 subB
Encina Wastewater Authority	6,000 A-EQ	6,000 A-EQ	4,500 A-EQ
Fairbanks Ranch CSD	165 subB	190 subB	220 subB
Fallbrook PUD	350 A-EQ,B	337 A-EQ,B	360 A-EQ,B
Goleta Sanitary District	2,589 B	2,369 B	2,500 B
Inland Empire Utilities Agency	74,668 B	62,410 B	58,000 B
Julian Sanitation District	161 subB	159	200
Las Virgenes MWD	35 B	36 B	33 B
Los Angeles CSD	472,437 B	468,504 B	475,000 B
Orange County San. District	273,400 B	274,353 B	276,000 B
Ojai Valley Sanitary District	4,548 B	5,123 B	4,836 B
Rancho California WD	4,404 subB	4,239 subB	4,300 subB
Rancho Santa Fe CSD	432 subB	402 subB	424 subB
San Elijo JPA	3,385 B	3,352 B	3,360 B
Santa Margarita WD	7,502 subB	6,852 subB	7,294 subB
South Orange County WA (SOCWA)	24,212 subB	23,673 subB	23,500 subB
Valley Center MWD	301 B	355 B	240 B
Valley Sanitary District	791 subB	684 subB	1,000 subB
Victor Valley WRA	6,165 A	5,887 A	6,000 A
Whispering Palms CSD	227 subB	348 subB	350 subB
<b>Total Volume (Wet Tons)</b>	<b>1,384,747</b>	<b>1,412,927</b>	<b>1,392,781</b>



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**Figure 5**



Las Virgenes MWD's indoor composting facility

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## Management of Biosolids in 2013 with Cost Data by Agency/Facility

**Table 2**

Agency/ Destination/ Volume (wt)	Technology Employed	Rate at Gate \$/Ton	Trip Miles	Transportation Cost \$/Ton	Total Cost \$/Ton
Carpinteria Sanitary District—1,350WT	Composting Engel & Gray	Included in total	70	Included in total	\$72.00
City of Corona DWP— 14,517 WTs Terra Renewal AZ and 547 WTs Nursery Products	Composting	Included in total	248	Included in total	\$50.98
	Composting	Included in total	75	Included in total	\$49.80
City of LA—174,876 WTs Merced, Yuma, Kern	Land Application- RBM, Terra Renewal,	Included in total	110-300	Included in total	\$42 to \$57
City of LA— 27,980 WTs	Composting TR, LA city, South Kern, NP & Griff. Park	Included in total	20-110	Included in total	\$62 to \$75
City of LA— 30,325 WTs	Deep Well Injection	Included in total	23	Included in total	\$89.50
City of Redlands 4,293 WTs	Composting One Stop Landfill/City of Redlands		10 1	Included in total	\$65.00
City of Riverside 26,769 WT Class B	Land Application Terra Renewal, AZ	Included in total	223	Included in total	\$44.78
City of Riverside 14,528 WT Class B	Composting Terra Renewal, CA	Included in total	66	Included in total	\$44.78
City of Riverside 14,528 WTs subB	Composting Terra Renewal, CA	Included in total	66	Included in total	\$55.00
City of San Diego— 99,079 WTs	Landfill Daily Cover Terra Renewal	Included in total	23	Included in total	\$46.41
City of San Diego— 18,562WT	Land Application Terra Renewal, AZ	Included in total	200	Included in total	\$46.41
City of Santa Barbara— 8,527WTs	Land Application Western Express Holloway Landfill	Included in total		Included in total	\$43.06
City of Santa Barbara— 1,961 WTs	Composting Engel & Gray	Included in total		Included in total	\$46.77
City of Santa Maria— 3,653 WTs	Composting Engle and gray	NA	zero	NA	\$29.41
City of Santa Maria— 1,978 WTs	Landfill Final Cover	NA	8	NA	\$8.63
City of Santa Maria— 2,511 WT	Landfill Daily Cover	Included in total	6.5	Included in total	\$5.40
City of Thousand Oaks— Toland Landfill—7,999 WT	Landfill Burial	Included in total	30	Included in total	\$61.76

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City of Thousand Oaks— Ventura RWA Dryer @Toland Landfill—703 WTs	Daily Cover	Included in total	30	Included in total	\$61.76
City of Ventura— Dryers	Landfill Daily Cover		22		
City of San Bern. MWD 58,116Wt	Composting Nursery Products, CA	Included in total	89	Included in total	\$42.00
Crestline SD 614 WTs	Composting One Stop, CA		35	\$55.00	\$65.00
Eastern Municipal Water District—142,081 WTs	Land Application Tule Ranch, AZ	Included in total	220	Included in total	\$46.00
Eastern Municipal Water District—7,626 WTs	Landfill Tule Ranch, AZ	Included in total	220	Included in total	\$46.00
Eastern Municipal Water District- 11,304 WTs	Composting Synagro, AZ	Included in total	235	Included in total	\$46.00
Encina WA—Pellets	Heat Dryer/Fertilizer	NA	NA	NA	NA
Elsinore Valley MWD	Composting Synagro, CA	Included in total	200	Included in total	\$80.00
Fairbanks Ranch CSD— Otay Landfill	Landfill Direct Burial	\$45.41	30	\$269/tripl	---
Fallbrook PUD San Diego County	Fertilizer	NA	varies	NA	NA
Goleta Sanitary District— Holloway Landfill & Liberty Composting	Land Application Composting	NA \$30.00	154 157	Included in total \$25.00	\$39.00 \$55.00
Inland Empire Utilities Agency—60,186 WTs	Composting IERC	NA	12	\$6.00	\$53.00
Inland Empire Utilities Agency—2,274 WTs	Composting Nursery Products, CA	NA	100	Included in total	\$38.94
Julian Sanitation District	Landfill Otay Landfill	NA	34	Included in total	\$52.50
Las Virgenes Municipal Water District—Rancho Las Virgenes Composting Facility—50%	Onsite composting disposal via community giveaway program & commercial vendor contract	NA	NA	NA	\$620.00 (cost)
Los Angeles County San. Dist. - 44,520 WTs	Land Application Terra Renewal, AZ	Included in total	280	Included in total	\$50.57
Los Angeles County San. Dist. - 2,646 WTs	Land Application Terra Renewal, CA	Included in total	290	Included in total	\$49.99
Los Angeles County Sanitation Districts – 19,127 WTs	Composting Nursery Products, CA	Included in total	145	Included in total	\$50.03
Los Angeles County Sanitation Districts- Puente Hills Landfill- 136,414 WTs	Landfill Direct Burial	NA	30	\$38.41	\$6.96

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Los Angeles County Sanitation Districts- Holloway Landfill-25,316 WTs	Landfill Direct Burial	NA	168	Included in total	\$46.36
Los Angeles County Sanitation Districts – 69,772 WTs	Composting Liberty Composting CA	Included in total	170	Included in total	\$53.34
Los Angeles County Sanitation Districts – 51,525 WTs	Composting Synagro, CA	Included in total	128	Included in total	\$72.78
Los Angeles County Sanitation Districts – 82,897 WTs	Composting IERCF	Included in total	60	Included in total	\$52.00
Los Angeles County Sanitation Districts – 25,564 WTs	Composting Liberty Composting, CA	Included in total	120	Included in total	\$43.82
Los Angeles County Sanitation Districts – 3,196 WTs	Land Application Terra Renewal, CA	Included in total	245	Included in total	\$44.37
Los Angeles County Sanitation Districts – 655 WTs	Land Application Terra Renewal, AZ	Included in total	300	Included in total	\$44.35
Los Angeles County Sanitation Districts – 4,572 WTs	Land Application Terra Renewal, CA	Included in total	260	Included in total	\$46.47
Orange County Sanitation District— Yuma-140,138 WTs	Land Application Tule Ranch, AZ	Included in total	290	included in total	\$54.50
Orange County Sanitation Dist.— South Kern Co., CA – 91,705 WTs	Composting	\$68.24	153	included in total	\$75.13
Orange County Sanitation Dist.— La Paz Co., AZ – 39,527 WTs	Composting	\$44.48	263	included in total	\$62.90
Orange County Sanitation Dist.— Orange County, CA 2,683 WT	Landfill	\$40.26	260	\$6.00 to \$12.80	NA
Ojai Valley San. District— Lib. Cmpt (WW months- 1,691 WTs) onsite comp. ( DW months 3,432WTs)	Composting on-site in summer & offsite during wet weather & a Community giveaway program	Included in total	129	Included in total	\$47.75

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Rancho California Water District	Composting	Included in total	60	Included in total	\$50.00
Rancho Santa Fe CSD— Otay Landfill	Landfill Direct Burial	\$45.41	30	\$296/trip	---
San Elijo JPA — 3,362 WTs	Land Application Terra Renewal, AZ/Ag Tech, AZ	Included in total	200	Included in total	\$42.50
Santa Margarita Water District—5,782/3,609 WTs	Composting Synagro, CA	Included in total	188	Included in total	\$84.00
Santa Margarita Water District—1,161/1,227 WTs	Composting Nursery Products, CA	Included in total	121	Included in total	\$62.00
Santa Margarita Water District—1,720/2,106 WTs	Landfill/Composting Prima Desceca	Included in total	7	Included in total	\$37.36
South Orange County WA-(SOCWA) 8,762 WTs	Composting Synagro, AZ	Included in total	425	Included in total	\$62.00
South Orange County WA-(SOCWA) 11,066 WTs	Composting Synagro, CA	Included in total	150	Included in total	\$75.36
SOCWA Synagro- Arizona Soils 9,156 WT	Landfill Nursery Products, CA	\$38.00	150	\$552/trip	---
Valley Center MWD	Otay Landfill Direct Burial	\$45.00	30	\$305/trip	---
Valley Sanitary District 1,684 WTs	Land Application Terra Renewal, AZ	Included in total		Included in total	\$48.00
Victor Valley Wastewater Reclamation Authority—5,614 WTs	Land Application American organics	Lucerne Valley, san Bernardino, CA	35	Land applied alfalfa fields	\$0
Whispering Palms CSD	Otay Landfill Direct Burial	\$45.41	30	\$269/trip	---
<b>Averages</b>					<b>\$53.94</b>
<b>Ranges</b>					<b>\$5.40 To \$89.50</b>

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## Biosolids Management Technology and Cost Summary

**Table 3**

Management Technology	Agencies Reporting	2013&14 Volume (Wet Tons)	Total Mgmt Cost/Ton Range	Avg.Total Mgmt Cost/Ton	2013&14 Percent of Total	2012 Percent of Total
Bio-fuel	0	NA	NA	NA	NA	9%
Composting	20	782,805	\$29.41 to \$84.00	\$56.75	<b>47%</b>	39%
Daily Landfill Cover	7	101,770	\$5.40 to \$61.76	\$31.72	<b>16%</b>	7%
Deep Well Injection	1	61,126	\$89.50	\$89.50	<b>2%</b>	2%
Incineration	0	0	NA	NA	NA	2%
Land Application	7	1,226,672	\$39.00 To \$57.00	\$47.13	<b>16%</b>	18%
Landfill Direct Burial	6	187,419	\$45.00 To \$52.50	\$50.41	<b>14%</b>	14%
Heat Drying/ Pellets/Fertilizer	2	11,477	NA	NA	<b>5%</b>	4%
Community Giveaway Program	3* *Included above	NA	\$47.75 To \$620.00	\$240.91	7%* *Included above	5%

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## Dewatering Equipment Utilized

Table 4

Filter Press	Dryer	Centrifuge
Envirex	Siemens	Centrisys
Huber	Andritz	Sharples
Andritz	Fenton	Alfa Laval
Ashbrook-Simon-Hartley		Flotweg
Bellmer Winkler		Andritz Bird
Rittershaus & Belcher		Humboldt Decanter



*Anaerobic Digesters at Victor Valley WRA's WRP-San Bernardino County*

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## Percent Solids Data for Agency's Biosolids

Table 5

Agency	% Solids	Est. 2014 Wet Tons	Est. 2014 Dry Tons
Camarillo Sanitary District			
Carpinteria Sanitary District	10%-20%	1,890	1,606
City of Corona DWP	Filter Press 11%-20% Dryer 91%-99%	4,320	216
City of Los Angeles	Centrifuge 31%-40%	237,000	152,865
City of Redlands	Centrifuge 20% to 30%	4,500	3,375
City of Riverside	Centrifuge 40%-90%	41,132	14,396
City of San Bernardino	Centrifuge 10%-20% Filter Press 20%-30%	25,596	20,477
City of San Diego	20-30% Centrifuge	116,280	87,210
City of Santa Barbara	10%-20% Filter Press	1,638	1,392
City of Santa Maria	Drying Beds 20%-30%	2,300	1,725
City of Thousand Oaks	Filter Press 11%-20% Drying Beds 41%-90%	2,000	690
City of Ventura	Filter Press 10%-20%	14,000	11,900
Crestline Sanitation District	20% - 30% Filter Press	593	445
Eastern Municipal Water District	Centrifuge & Filter Press 10%-20%	56,960	48,416
Encina Wastewater Authority	Direct Dryer 90%-99.9%	4,500	225
Elsinore Valley MWD	Belt Press 10%-20%	16,000	13,600
Fairbanks Ranch CSD	Centrifuge 11%-20%	220	186
Goleta Sanitary District	10% -20% Screw Press, Drying Beds	2,500	2,125
Fallbrook PUD	Centrifuge & Indirect Dryer 90%-99.9%	360	18
Inland Empire Utilities Agency	Centrifuge 41%-90% Filter Press 31%-40%	58,000	26,390
Julian Sanitation District County of San Diego DPW	Drying Beds 40%-90%	25	38
Las Virgenes Municipal Water District	Centrifuge 20%-30%	33	25



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Los Angeles County Sanitation Districts	JWPCP – 29% (centrifuge) Valencia – 19% (filter press) Lancaster – 36% (DB &, centr) Palmdale – 20% (centrifuge)	475,000	315,875
Ojai Valley Sanitary District	Filter Press/Composting 91%-99%	4,836	242
Orange County Sanitation District	Filter Press 11%-20%	276,000	233,220
Rancho California Water District	Filter Press 91%-99%	4,300	215
Rancho Santa Fe CSD	Centrifuge 21%-30%)	424	316
San Elijo Joint Powers Authority	Filter Press 11%-20%	3,360	2,839
Santa Margarita Water District	Filter Press 10%-20%%	7,924	6,735
South Orange County Wastewater Authority	Centrifuge 20%-30%	23,500	17,625
Valley Center MWD	Centrifuge 20%-30%	240	180
Valley Sanitary District	40%-90% Filter Press/Drying Bed	1,000	450
Victor Valley Wastewater Reclamation Authority	90%-99.9% Drying Bed	6,000	300
Whispering Palms CSD	Centrifuge 21%-30%	350	260
<b>Total Volume (Wet Tons)</b>	<b>% Dry – 38.8% (statistical avg.)</b>	<b>1,392,781</b>	
<b>Total Volume (Dry Tons)</b>	<b>% Dry – 30.6% (weighted avg.)</b>		<b>965,577</b>

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## Main Challenges Agencies Face with Biosolids Recycling

**Table 6**

Challenges	Reported in 2010	Reported in 2012	Reported in 2014
Rising Costs	13	10	17
Public Perception/Relations	3	5	12
Finding Low Cost Local Disposal Options	3	4	16
Space for Drying Operations	3	1	12
Regulatory Restrictions	3	3	14
Securing Long Term Disposal Options	3	8	19
Wet Weather Drying Operations	3	3	12

### Additional Comments

**City of Corona DWP** – Seeking low cost, long term storage solutions.

**City of Thousand Oaks** – Contractors technology for drying biosolids to class A is unreliable, only 5-10% of eligible biosolids are being dried to class A for landfill cover.

**Encina Wastewater Authority** – a high quality fertilizer increases the market value.

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## Agencies Plans for Biosolids in 2015

Table 7

Management Option	Number Reporting
Composting	16
Heat Drying/Pelletizing	3
Gasification/Energy Production	1
Evaluation of Class A or B Certification	2
New Undetermined Alternatives	1
Landfill	11
Deep Well Injection	1
Incineration	0
Land Application	11
Bio-fuel Production	1
Investigate Dewatering Options	3
Expand Market for Use of Pellets	2

# SCAP 2014 Biosolids Trends Survey

## Agencies Plans for Biosolids in Next 5 Years

**Table 8**

Management Option	Reported in 2014	Reported in 2012
Composting	17	14
Heat Drying/Pelletizing	3	3
Gasification/Energy Production	1	1
Evaluation of Class A or B Certification	2	0
New Undetermined Alternatives	1	4
Landfill	12	12
Deep Well Injection	1	1
Incineration	0	1
Land Application	12	6
Bio-fuel Production	1	2
Investigate Dewatering Options	3	2
Expand Market for Use of Pellets	2	1

### **Additional Comments**

**Carpinteria Sanitary District** – We plan to construct new aerobic digesters.

**City of Corona DWP** –The City plans to find outlets for soil blenders taking dry biosolids pellets.

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**City of Los Angeles** – The City of Los Angeles will continue with its present strategy.

**City of Redlands** - To continue current practice.

**City of Riverside** – To continue current practice.

**City of San Bernardino** – To continue current practice.

**City of San Diego** – The city is currently looking into other methods of disposal.

**City of Santa Barbara** – The city is currently conducting a Solids Handling assessment to rehabilitate and upgrade the treatment plant's solids handling facilities from solids removal in the liquid treatment train, through thickening, digestion, dewatering and dewatered Biosolids handling and storage.

**City of Santa Maria** – To continue current practice.

**City of Thousand Oaks** – The city is currently evaluating new dewatering technology and is in the design phase for a new screw press. Additionally evaluating transformational biosolids to dramatically reduce the amount of biosolids leaving facility and potentially extract energy or other useful byproducts.

**City of Ventura** – Continue same operation with landfill disposal.

**Crestline Sanitation District** – To continue current practice.

**Eastern Municipal Water District**- continue with land disposal in Arizona. We are exploring options for producing class A biosolids at a reasonable cost. Most alternatives reviewed to-date would more than double our costs without accounting for capital recovery.

**Elsinore Valley Municipal Water District** – Planning for a plant expansion with the possibility of anaerobic digestion to get to Class B biosolids.

**Encina Wastewater Authority** – In 2015, we plan to produce and market biochar, as well as PureGreen fertilizer. Long term we will strive to establish long term partnerships with private companies and share in the profits.

**Fairbanks Ranch CSD** – To continue current practice.

**Fallbrook Public Utility District** – To continue current practice and hope to find more stable local users.

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**Goleta Sanitary District** – Continue with current practice unless there is a need for change.

**Inland Empire Utilities Agency** – Investigate reducing wet tons through improved dewatering and composting of the biosolids.

**Julian Sanitation District** – Continue with current practice as the produced volume is too small to consider marketing.

**Las Virgenes MWD** – To continue current practice.

**Los Angeles County Sanitation Districts** – LACSD plans to continue to develop and foster a diversified, cost-effective biosolids program. We will continue to monitor regulatory, technological and public opinion trends when evaluating future biosolids management options. LACSD will continue to compost, landfill, and land apply biosolids. In addition, we will look at increasing our indirect dryer capacity and utilizing a process to convert biosolids into transportation fuel.

**Ojai Valley Sanitary District** – No change. Continue onsite windrow composting as long as possible.

**Orange County Sanitation District** – OCSD will continue with its existing plan towards Biosolids Management Diversification-land application, composting and landfill disposal.

**Rancho California Water District** – To continue current practice.

**Rancho Santa Fe CSD** – Continue with landfill disposal as long as possible.

**San Elijo JPA** – No change as current contract with AG Tech expires in 5 years. May install a screw press to replace existing belt press.

**Santa Margarita Water District** – Our agency plans to investigate Plasma Arc Gasification technology

**South Orange County Wastewater Authority** - To continue current practice.

**Valley Center Municipal Water District** – Apply locally towards agriculture land application.

**Victor Valley Wastewater Reclamation Authority** – To continue current practice.

**Whispering Palms CSD** – To continue current practice.

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## Agencies That Market Biosolids Products

**City of Corona** – Yes. Biofuel pellets with Cemex, Apple Valley, CA.

**Encina JPA** – Yes. Fertilizer pellets sold to golf courses/sod, wholesale nurseries and agricultural farms.

**Fallbrook Public Utility District** – Yes. Fertilizer pellets sold directly to customer.

**Inland Empire Utilities Agency** – Yes. The Agency operates a composting facility in partnership with LACSD. Products are sold locally into turf and landscape projects as a soil amendment or topdressing.

**Las Virgenes Municipal Water District** – Yes. Finished Class A-EQ Compost is given away to the community.

**Los Angeles County Sanitation Districts** – Yes. LACSD co-owns the Inland Empire Regional Composting Facility (IERCF) with IEUA, the finished compost is screened and marketed as a soil amendment.. In addition, LACSD is constructing a composting facility in Kings County (Westlake Farms Composting Facility) that will manufacture and provide biosolids compost to a contract farmer that will apply the compost on an adjacent 14,000 acres. The anticipated startup date for the Westlake Farms Composting Facility is in the summer of 2015.

**Ojai Valley Sanitary District** – Yes. We have a give-away program to the public.

## Co-Digestion with High Strength Feedstock to Enhance Gas Production

**City of Los Angeles** – Yes. 50,000 gallons of fog and food waste. Contractor is Co-West Feed Resources. Tipping cost is NA.

**City of Santa Barbara** – Yes. 2,600 wet tons of fats, oil and grease. Contractor is Marborg Industries. Tipping fee is \$12.00 per ton.

**City of Thousand Oaks** – Yes. 2012 estimated 32,300 wet tons of fats, oils and grease feed to digesters. Estimated 20,300 wet tons in 2013. Contractors—various.

**Encina WA JPA** – No, but plan to start importing FOG in spring 2015.

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**Los Angeles County Sanitation Districts** – Yes. 84 tons per day (2 year test project). Contractor is Waste Management. Tipping fee is \$10.38per ton.

**Victor Valley Wastewater Reclamation Authority** –Yes, but the process is in its initial test phase at this time. FOG and meat slurry.

## **Agencies That Utilize Social Media for Biosolids Outreach/Education**

**Carinteria Sanitary District** – Yes. Facebook and website.

**City of Riverside** – yes. Website.

**City of Los Angeles** – Yes. Website.

**City of Thousand Oaks** – Yes. Website.

**City of Ventura** – Yes. Website.

**Eastern Municipal Water District** – Yes. Facebook and website.

**Elsinore Municipal Water District** – Yes. Website and community outreach open house in March.

**Inland Empire Utilities Agency** – Yes. Website.

**Las Virgenes MWD** – Yes. Website.

**Ojai Valley Sanitary District** – Yes. Website.

**Orange County Sanitation District** - Yes, OCSO uses social media. Facebook, Twitter and YouTube and website.

**South Orange County Wastewater Authority**– Yes. Website.

### **Disclaimer**

*The conclusions in this report are predicated on the assumption that the unreported biosolids production from the few agencies not participating in this updated survey will not constitute a significant deviation in the comparative results between the 2012 and 2014 surveys.*