2012 SCAP Biosolids Trends Survey

Southern California Alliance of Publicly Owned Treatment Works

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January 2013

SCAP 2012 Biosolids Trends Survey

Executive Summary

I would like 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 my sincere hope that the information provided will be useful to our SCAP members for future planning and will provide the basis for a more comprehensive statewide report.

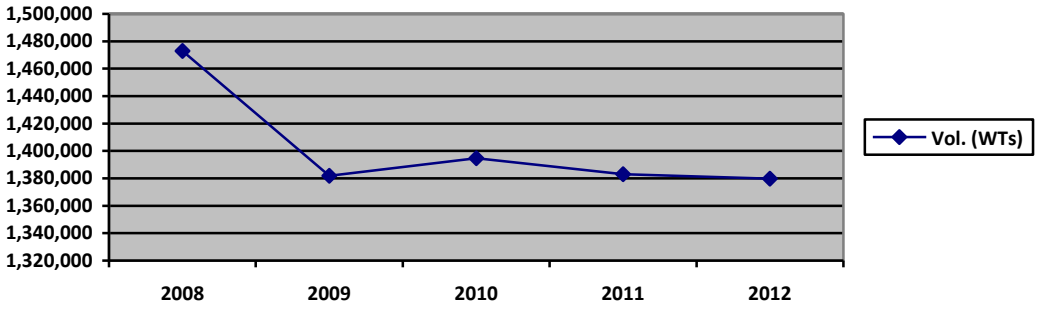
The intent of this survey was to update the previous 2010 survey information obtained from SCAP members in order to identify current industry trends for the following issues:

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

Annual Biosolids Production

Comparing the total volume of wet tons produced in the 5-year period from 2008 to 2012, it appears that annual biosolids production declined by 6.3% or 93,344wts/yr over this period, as can be seen in **Figure 1** below and again in **Figure 4**. However, the biggest decline occurred in the one year period 2008 to 2009, resulting in a reduction of 6.2% or 91,102 wts/yr in annual production. Remarkably, since 2009, the annual biosolids production has remained fairly constant, as can be seen by comparing the 2009 production with the estimated 2012 production, resulting in a minor reduction of only 0.16% or 2,242wts/yr.

Figure 1*



**Includes data from 2010 survey*

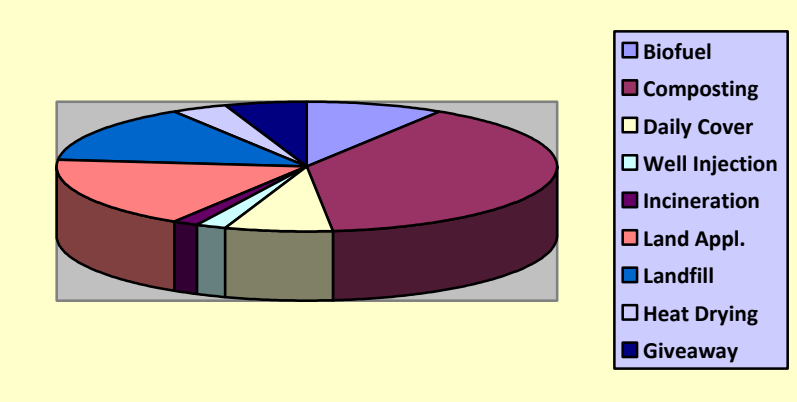
The reason for the significant decline in biosolids production between 2008 and 2009 could partially be attributed to the sudden downturn in the economy at that time. To a lesser degree, on-going water conservation efforts may also have been a contributing factor, as evidenced by reported reduction in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

Technology, Disposal Methods and Cost

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 summarized in **Summary Table 3** and **Figure 2** below. The various types of technologies and disposal methods reported include: bio-fuel production, composting, daily landfill cover, deep well injection, incineration, land application, landfilling, pelletized dryers, and community giveaway programs. By far the most prevalent technology or disposal method employed by SCAP agencies was composting (39%), with land application (18%), landfilling (14%) and the production of biofuels (9%) being the next most widely used methods. Use of the top five methods and technologies did not change significantly from that reported in 2010, as can be seen from the following comparisons.

Biosolids Technology (by usage)	2012	2010
Composting	39%	40%
Land Application	18%	24%
Landfill	14%	16%
Daily Landfill Cover	7%	7%
Biofuel	9%	9%

Figure 2



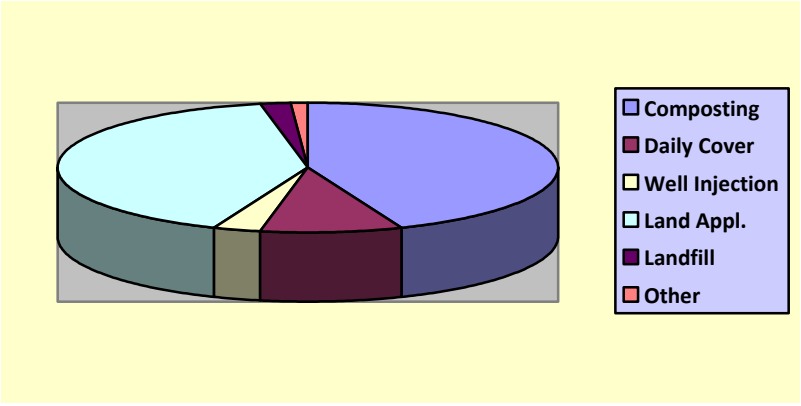
2012 Biosolids Technology by Usage

Enertech SlurryCarb Facility

Ranking of these same biosolids management methods by estimated volume in wet tons for 2012, 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. Surprisingly, the use of deep well injection is the fourth most used method by volume, which can be directly attributed to the amount of biosolids injected by the City of Los Angeles at its TIRE facility. Landfill disposal saw the largest reduction by volume dropping from 15% in 2010 to only 2% in 2012. Landfilling remains the generally accepted method for the smaller agencies that have less options to consider.

Biosolids Technology (by volume)	2012	2010
Composting	44%	39%
Land Application	41%	28%
Daily Landfill Cover	9%	7%
Deep Well Injection	3%	2%
Landfill	2%	15%

Figure 3



2012 Biosolids Technology by Volume

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. Breakdown of costs are shown in **Table 2**, where provided by the agency, otherwise a total cost is shown that reflects both the gate fee and the transportation cost. The average of the total rate/ton reported was calculated to be $52.29/ton, which is a decrease of $1.05/ton from the 2010 average rate. The average transportation cost was calculated to be $13.94/ton, which is a decrease of $2.82 from that reported in 2010. Interestingly, the average one-way transportation mileage increased from 136.5 miles in 2010 to 150 miles in 2012.

Dewatering Statistics

The on-site methods employed by agencies to dewater their biosolids prior to final use included: drying beds, centrifuges, belt presses and dryers. The percent solids for each technology are shown in **Table 4** and reported to be in the following ranges:

Heat Dryers at Toland Sanitary Landfill

- Drying beds: 60% – 90%
- Centrifuge: 21%– 28%
- Belt Press: 15% – 20%
- Dryer: 90% - 93%

Averaging of the submitted data for percent drying results in an overall statistical average of 35.5% solids and a 25.0% weighted average of solids, for all reported biosolids produced. Furthermore, based on the total 2012 wet ton projections and the average solids reduction reported for each facility, the total estimated dry tons projection for 2012 is calculated to be 345,050 tons, which is a 4.2% or 15,033 dts/yr reduction from 2010.

Heat Dryer at the Encina JPA WRF

Agency Challenges

The question was asked as to "what challenges did each agency face with regards to biosolids recycling?" There were 17 different categories of challenges identified with a total of 42 responses received from the agencies. As shown in Summary Table 5, the most reported challenge was related to rising costs, followed closely by concerns over securing long term disposal options. Approximately 24% of the responding agencies indicated that they were struggling with increasing costs due to a variety of reasons, which included:

- Lack of local biosolids management options for land application of Class A and composted biosolids
- Landfill closures
- Increasingly stringent regulations
- Future dewatering equipment purchases
- Development of renewable energy projects
- Higher transportation costs
- Contracting restrictions

A comparison of answers received in 2010 with the 2012 answers is shown in **Summary Table 5.**

Future Plans

The second survey question dealt with what each agency was planning to do with their biosolids 5 years from now. Thirteen 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, incineration, land application, bio-fuel production, landfills, investigating new dewatering alternatives and expanding markets for the use of dried pellets. As expected, a majority (30%) of the 47 responses indicated that most agencies would continue composting their biosolids in 5 years, although many indicated that they would also continue to, or consider to, landfill or land apply their biosolids. The results of this question are summarized in **Summary Table 6**.

Marketing

The third survey question asked if agencies directly marketed their biosolids products. Currently none of the 24 responders indicated that they actively market their biosolids, although 4 agencies reported that they did sell their biosolids products (pellets and compost).

Social Media

The final survey question asked if any agencies used social media outlets such as Facebook, Twitter or Youtube for public outreach or educational purposes. Currently 22 of the 23 responders answered that they did not use social media for disseminating biosolids related information. However, many of the agencies use their agency websites to post biosolids related information. The one agency that presently uses all three of these social media outlets for biosolids outreach is the Orange County Sanitation District.

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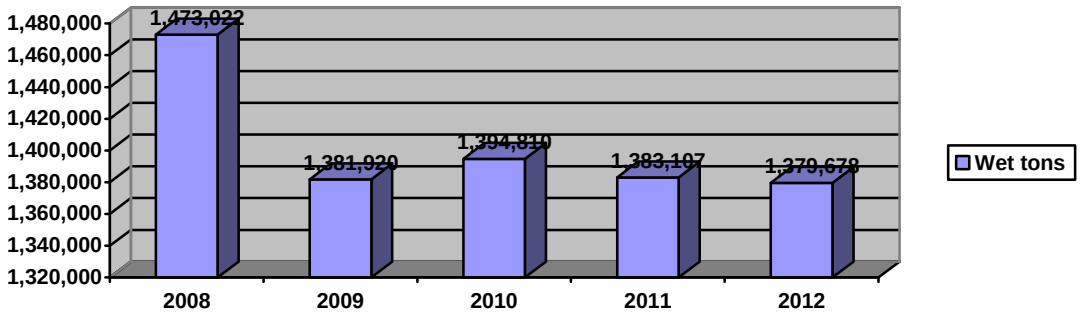
Summary of Survey Responses

1. How many tons of biosolids did your agency produce?

Table 1

Agency	2010 Wet Tons	2011 Wet Tons	2012 Projected WTs
Camarillo Sanitary District	1091	1399	1200
Carpinteria Sanitary District	1705	1445	1400
City of Barstow	1,143	1,171	1150
City of Corona DWP	3,738	9,902	6,057
City of Corona DWP Pellets	648 dts= 720 wts	717 dry tons=797 wts	1,535 dry tons=1705wts
City of Los Angeles	242,259	251,205	237,946
City of Riverside	35,939 (Land App-25,909) (SlurryCarb-10,030)	31,673 (land App-18,233) (SlurryCarb-13,450)	37,000
City of San Diego	127,710	111,510	110,000
City of Santa Barbara	11,396	10,930	10,570
City of Santa Maria	3,708	2,511	4,000
City of Thousand Oaks	14,600	14,073	14,300
City of Ventura	13,025	12,100	12,500
Crestline Sanitation District	592	587	620
Eastern MWD	63,256	51,216	60,000
Encina Wastewater Authority	6,788 pellets/462 cake	6,296 pellets/375 cake	6,212 pellets
Fairbanks Ranch CSD	170	134	164
Goleta Sanitary District	5,774	3,468	3,000
Inland Empire Utilities Agency	68,515	70,324	65,000
Las Virgenes MWD	6,700	6,200	6,000
Los Angeles CSD	489,759	481,704	467,000
Orange County San. District	249,952	268,346	285,936
Ojai Valley Sanitary District	6,023	5,840	5,840
Rancho Santa Fe CSD	456	525	465
San Elijo JPA	3,417	3,149	3,200
Santa Margarita Water Dist.	6,180	5,865	6,600
South Orange County Wastewater Authority (SOCWA)	25,577	25,539	25,600
Victor Valley WRA	5,493	5,906	5,906
Whispering Palms CSD	367	362	307
Total Volume (Wet Tons)	**1,394,810**	**1,383,107**	**1,379,678**

Figure 4*



**Includes data from 2010 survey*

Windrowing at Las Virgenes MWD indoor composting facility

2. Where did you send your agency's biosolids in 2011-2012?

Table 2

Agency/ Destination/ Volume (wt)	Technology Employed	Rate at Gate $/Ton	Miles (one way)	Transportation Cost $/Ton	Total Cost $/Ton
Camarillo Sanitary District—Liberty Recycling , Bakersfield, CA—1400 WT	Drying Beds/ Composting	Included in total		Included in total	$47.65
Carpinteria Sanitary District—1,035WT	Composting (off-site)	$65.00± (included in final charge)	90	Included in total	$65.00±
City of Barstow—Liberty Composting in Kern County	Composting	$25.00	380	$31.16	$56.16
City of Corona DWP—All	Composting	Included in total	247	Included in total	$65.00
City of Corona DWP—Composting is sent to Yuma, AZ and the dry pellets for fuel are sent to Cemex in Victorville.	Composting Alternative Fuel	Included in total	247 61	Included in total	≈$46.81 (can vary with the fuel surcharge) $17.00
City of Los Angeles—174,695 WT	Land Application-Green Acres Farm (Kern County)	Included in total	112	Included in total	$40.46 Varies w/fuel charge
City of Los Angeles -- 3,474.12 WT	Land Application – Merced, CA & Yuma, AZ	Included in total	300	Included in total	$55.93 Varies with fuel surcharge
City of Los Angeles—20,073 WT	Composting	Included in total	120	Included in total	$72.17 Varies w/fuel charge
City of Los Angeles—37,691WT	Deep Well Injection	Included in total	23	Included in total	$89.50 (Demonstration Project)
City of Riverside	Land App/SlurryCarb (Enertech)	Included in total	13/230	Included in total	$57.33
City of San Diego—63,620 WT	Daily Cover	$45.30	Proprietary Contractor	Proprietary Contractor	Proprietary Contractor
City of San Diego—18,660WT	Land Application	Proprietary Contractor	Proprietary Contractor	Proprietary Contractor	Proprietary Contractor
City of Santa Barbara—6,846 WT	Landfill	Included in total		Included in total	$42.77
City of Santa Barbara—1,961 WT	Composting	Included in total		Included in total	$46.92 Plus variable fuel surcharge
City of Santa Maria—1,993 WT	Composting	Included in total	NA	Included in total	$29.41
City of Santa Maria—2,511 WT	Daily Cover	Included in total	6.5	Included in total	$5.40

City of Thousand Oaks—Ventura RWA Dryer @Toland Landfill—14,073 WT	Belt Press/ Drying Beds/ Daily Cover	Included in total	25	Included in total	$55.70
City of Ventura—Ventura Regional SDDryer @ Toland Landfill—9,050 WT	Plate & Frame Press/ Daily Cover	Included in total	24	Included in total	$52.79
Crestline Sanitation District	Composting	$55.00	35	$10.00	$65.00
Eastern Municipal Water District—18,559WT	Land Application	Included in total	614	Included in total	$55.00
Eastern Municipal Water District—8,486 WT	Landfill	Included in total	462	Included in total	$55.00
Eastern Municipal Water District-24,171 WT	Composting	Included in total	475	Included in total	$55.00
Encina Wastewater Authority—935 Pellets WT	Heat Dryer/Fertilizer	$25.00 Included in total	0	Included in total	$25.00
Encina Wastewater Authority—5,282 Pellets WT	Heat Dryer/Cement Kiln fuel	$6.50	130	$38.00	$44.50
Fairbanks Ranch CSD—Otay Landfill-All	Landfill	Included in total	30	Included in total	$45.81 (trans. & tipping fee)
Goleta Sanitary District—Honey Bucket Farms, Kern County – 3,773 WT	Land Application w/ Lime Stabilization	$39.85	180	Included in total	Included in rate at gate value $39.85
Inland Empire Utilities Agency—62,918 WT	Composting	$44.00	12	$6.00	$50.00
Inland Empire Utilities Agency—7,407 WT	Composting	$38.94	185	Included in total	$38.94
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)
Las Virgenes Municipal Water District—Rancho Las Virgenes Composting Facility—50%	Land Application by Nursery Products* *50%of cake produced in 2012 was land applied thru Nursery Products, Inc. while RLV Composting was undergoing repairs	$62.00	100	Included in total	$62.00
Los Angeles County Sanitation Districts —(JWPCP & Valencia)-Honey Bucket Farms-69,593 WT	Land Application w/ Lime Stabilization	Included in total	160	Included in total	$37.50

Los Angeles County Sanitation Districts—(JWPCP)-Enertech-70,133 WT	Renewable E-Fuel	Included in total	70	Included in total	$76.00
Los Angeles County Sanitation Districts—(JWPCP)-South Kern Composting Facility-51,816 WT	Composting	Included in total	127	Included in total	$66.00
Los Angeles County Sanitation Districts—(JWPCP, Valencia, Palmdale & Lancaster)-Liberty Composting-74,862 WT	Composting	I Included in total	152	Included in total	$43.00
Los Angeles County Sanitation Districts—(JWPCP)-Inland Empire Regional Composting Facility-65,912 WT	Composting	$44.00	61	$12.16	$56.16
Los Angeles County Sanitation Districts—(JWPCP)-Puente Hills Landfill-149,388 WT	Co-Disposal (Landfill)	$38.41	27	$6.96	$45.37
Orange County Sanitation District— Yuma-83,770 WT	Land Application	$46.80	260	$7.64 (averaged)	$54.44
Orange County Sanitation District— South Kern Co., CA - 80,657 WT	Composting	$68.24	263	$3.87 (averaged)	$72.11
Orange County Sanitation District— La Paz Co., AZ - 20,832 WT	Composting	$44.48	153	$8.77 (averaged)	$53.25
Orange County Sanitation District—Rialto, CA - 24,025 WT	Slurry Carb/Dryer	$70.85	57	$9.55 (Transportation & fuel surcharge)	$80.41
Orange County Sanitation District— Yuma-59,062 WT	Land Application	Included in total	260	Included in total	$64.18

Ojai Valley Sanitary District—sent to Liberty Composting during WW months, onsite composting during DW months—1,697 WT	Composting on-site in summer & offsite during wet weather & a Community giveaway program	Included in total	167	Included in total	$44.54
Rancho Santa Fe CSD—Otay Landfill	Landfill	Included in total	30	Included in total	$45.81
San Elijo Joint Powers Authority—Arizona—2,628 WT	Arizona Land Application	Included in total	200	Included in total	$42.50
Santa Margarita Water District—20,981 WT	Composting	Included in total	200	Included in total	$70.00
Santa Margarita Water District—2,578 WT	Landfill	Included in total	14	Included in total	$32.00
South Orange County Wastewater Authority- Otay Mesa Landfill 1686 WT	Landfill	Included in total	92	Included in total	$63.96
SOCWA Prima Deshecha Landfill 5,515 WT	Landfill	$35.40	20	$ 15.00	$50.40
SOCWA Synagro- Arizona Soils 9,156 WT	Compost	Included in total	365	Included in total	$58.14
SOCWA Synagro- South Kern 9182 WT	Compost	Included in total	175	Included in total	$71.28
Victor Valley Wastewater Reclamation Authority—Mitsubishi Cement Plant in Lucerne Valley, CA.-2130 WT &CEMEX in Apple Valley, CA—0 tons hauled to-date	Incineration in burn kilns	NA $0.00 per lease agreement	20	NA $0.00 per lease agreement	NA $0.00 per lease agreement
Whispering Palms CSD—Otay Landfill	Landfill	Include in total	30	Included in total	$45.81
Averages		**$44.85**	**150**	**$13.94**	**$52.29**
Ranges		**$6.50 -$70.85**	**6.5 - 614**	**$3.87 - $38.00**	**$5.40 - $89.50**

Summary Table 3

Management Technology	Facilities Reporting	2012 Volume (Wet Tons)	Total Cost/ Ton Range	Avg.Total Cost/Ton	2012 Percent of Total	2010 Percent of Total
Bio-fuel	5	NA	$17.00 to $76.00	$48.71	9%	6%
Composting	22	470,245	$29.41 to $72.17	$56.11	39%	40%
Daily Landfill Cover	4	89,254	$5.40 to $55.70	$39.80	7%	8%
Deep Well Injection	1	37,691	$89.50	$89.50	2%	2%
Incineration	1	2,130	NA	NA	2%	4%
Land Application	10	434,214	$37.50 To $64.18	$49.69	18%	24%
Landfill	8	26,047	$32.00 To $63.96	$66.88	14%	16%
Heat Drying/ Pellets/Fertilizer	2	935	$25.00	$25.00	4%	
Community Giveaway Program	3	NA	NA	NA	5%	

Composting operation at Ojai Valley Sanitary District

3. What percent solids are your agency's biosolids?

Table 4

Agency	% Solids	Est. 2012 (DT)
Camarillo Sanitary District	90%	1,080
Carpinteria Sanitary District	18%-21%	273
City of Barstow	25%-95%	834
City of Corona DWP	90+%	5,450
City of Los Angeles	28.5%	67,815
City of Riverside	18-22%	7,000
City of San Diego	27-29%	30,800
City of Santa Barbara	15.5%	1,638
City of Santa Maria	25%	927
City of Thousand Oaks	15% Belt press, 85% air dried	2,000
City of Ventura	15-18%	2,599
Crestline Sanitation District	30%	150
Eastern Municipal Water District	Morena Valley RWRF – 21% Temecula Valley RWRF – 20% Perris Valley RWRF – 15% San Jacinto Valley RWRF –26%	11,230
Encina Wastewater Authority	22%-Cake 93%-Pellets	3,572
Fairbanks Ranch CSD	21%	34
Goleta Sanitary District	20%	900
Inland Empire Utilities Agency	20%	12,500
Las Virgenes Municipal Water District	20-22% (centrifuged)	1,260
Los Angeles County Sanitation Districts	JWPCP – 28% (centrifuge) Valencia – 19% (filter press) Lancaster – 60-90% (dry bed) Palmdale – 60-90% (dry bed) (centrifuge & drying bed)	JWPCP – 123,000 Valencia – 4,800 Lancaster – 375 Palmdale – 1,500
Ojai Valley Sanitary District	15%	908
Orange County Sanitation District	18%-22%	53,545
Rancho Santa Fe CSD	21% (centrifuge)	98
San Elijo Joint Powers Authority	18-20% (BP)	608
Santa Margarita Water District	17.5%	1,155
South Orange County Wastewater Authority	22.5 %	5760

Agency	% Solids	Est. 2012 (DT)
Victor Valley Wastewater Reclamation Authority	90-95%	5,088
Whispering Palms CSD	21%	65
Total Volume (Dry Tons)	**Stat. Avg. – 35.5%**	**345,050**
Total Volume (Dry Tons)	**Wgtd Avg. – 25.0%**	**345,050**

4. What are the main challenges your agency faces with biosolids recycling?

Carpinteria Sanitary District – Concerns about long term viability and cost.

City of Barstow – Because biosolids produced at the BWRF are not being certified as Class B biosolids, they must receiver further treatment by an outside contractor. For several years, Liberty Composting has produced Class A compost for the BWRP at its Kern County facility. Increasing hauling costs to Kern County is an issue. It is also a concern with having one source of disposal in the event they shut down.

City of Corona DWP –Since the previous survey, the City has entered into contracts with a few different companies which allows some flexibility. However, with the biosolids dryer there have been periods where the dryer does not operate. This leads to an increase in wet tons of biosolids, which are more expensive for the City to dispose of since the City transports the biosolids outside of California for composting. The regulations have limited the disposal options in California, which in turn leads to increased costs associated with transporting to Arizona.

City of Los Angeles – In recent years, there has been increasing public perception and regulatory changes that have adversely impacted biosolids management activities. There is increasing public concern over land application of biosolids for agricultural use in California. Due to local pressure, a number of counties have implemented or are considering implementation of regulations restricting/banning land application of biosolids. In Kern County where the City's Green Acres Farm is located, a ballot initiative was overwhelmingly passed in June 6, 2006. This biosolids initiative banned land application of all biosolids or biosolids products in the unincorporated areas of Kern County. The City of Los Angeles, along with other affected Southern California biosolids generators, managers, haulers, and farmers continues its legal challenge to Kern County Measure E.

City of San Diego – Cost for recycling (upgrade to Class A), opposed to current 100% beneficial use.

City of Santa Barbara – Dewatering and storing our biosolids is our biggest challenge at this point. Our belt press performance could be improved. The dewatered Biosolids area also handled multiple times by plant staff and contractor prior to handling.
City of Santa Maria – We do not have many challenges with recycling, except that we run short on space in our drying beds in the winter.

City of Thousand Oaks – Landfill destination only dries biosolids for recycling a small percentage of the time due to problematic dewatering technology at landfill. This reduces the ultimate recycling of our biosolids.

City of Ventura – Inevitable rising costs.

Crestline Sanitation District– We are always concerned with our disposal site (One Stop Landscape) and the chance of being shut down, and we are always searching for a back-up location to haul our solids to.

Encina Wastewater Authority –

- Dust control and thermal reheating for pellet distribution.
- Pellets cannot be stored on-site due to reheating. 2 day maximum for delivery and application for fertilizer or bio-fuel.
- Pellets are high in odors in storage and several days after fertilizer application.

Fairbanks Ranch CSD – We are concerned over the cost to provide additional treatment and hauling if the current landfill stops accepting our biosolids.

Goleta Sanitary District – Acceptance within local community.

Inland Empire Utilities Agency – All Agency biosolids are processed into Class A EQ compost. The main challenges:

- Compost marketing – the soft economy has slowed down construction and maintenance activities that use compost.
- Public perception of biosolids – always a looming challenge.

Las Virgenes MWD – The main challenges we face are increasing operational costs and aging infrastructure.

Los Angeles County Sanitation Districts – The following are LACSD's main biosolids challenges:

- Securing long term and cost effective biosolids management options;
- Handling public concerns/ perception of biosolids management, such as emerging contaminants in biosolids. ;
- Developing current capital projects, such as a large-scale advanced composting facility facility in Kings County;
- Cross media regulations that could prohibit biosolids management (ie. Regulatory limits on VOC and ammonia emissions for biosolids compost);
- Local county measures and ordinances that would ban or limit the reuse of biosolids (ie. Kern County Measure E, Imperial County Measure X).

Orange County Sanitation District – Finding low-cost regional facilities and planning low-cost onsite solutions to reduce truck traffic and pollution. Lowest cost options are further away. Higher cost options are closer, but hard to justify in this economy.

Ojai Valley Sanitary District – Operationally it is completing compost cycle for windrows in-progress when wet weather hits. For long –term recycling the biggest concern is new regulations that would require capital investment for odor control or in-vessel technology. If this occurs the district has the option to haul biosolids to the new Toland Landfill Biosolids Drying unit and halt on-site composting.

Rancho Santa Fe CSD – We are concerned over the cost to provide additional treatment and hauling if the current landfill stops accepting our biosolids.

San Elijo JPA – Cost.

Santa Margarita Water District – Increasing disposal costs.

South Orange County Wastewater Authority – We are concerned with both the cost and great distance that biosolids must be hauled for composting and reuse.

Victor Valley Wastewater Reclamation Authority – Very few problems, occasional public relations issues but relatively minor in the last 5 years.

Whispering Palms CSD – We are concerned over the cost to provide additional treatment and hauling if the current landfill stops accepting our biosolids.

Summary Table 5

Challenges	Reported in 2010	Reported in 2012
Rising Costs	13	10
Public Perception/Relations	3	5
Finding Low Cost Local Disposal Options	3	4
Space for Drying Operations	3	1
Regulatory Restrictions & New Regulations	3	3
Securing Long Term Disposal Options	3	8
Wet Weather Impeding Drying Operations	3	3
Contractual Considerations	1	1
Dewatering Technologies	1	2
Finding Class B Disposal Options	1	0
Consistency of Pellet Dryness & Operational Issues	1	1
Finding Markets for Class A and/or Compost Materials	2	1
Meeting Air District Regulations	1	0
Aging Infrastructure	1	1
Developing New Composting/Biofuel Projects	1	0
Cross Media Regulations	1	1
Cost of Recycling Technology	1	1

5. What does your agency plan to do with its biosolids in 5 years?

Camarillo Sanitary District – No changes.

Carpinteria Sanitary District – We plan to continue with current management practice of off-site composting by a third party contractor. We are exploring opportunities to participate in a regional heat drying / pelletizing project.

City of Barstow – Effective 10/28/2010, Liberty Composting will be the first fully permitted gasification plant ever in the State of California. It is considered gasification/transfer-processing and we will be burning the biosolids to generate electricity – eventually up to 15 megawatts added to the grid

City of Corona DWP –The City plans to continue supplying biosolids for use as an alternate fuel source. The City would also like to continue with composting but reduce the distance the biosolids are hauled.

City of Los Angeles – The City of Los Angeles may consider issuance of a Request for Proposal to solicit new alternatives for biosolids management.

City of Riverside – To continue current practice. We realize that land application in Arizona remains our best option for biosolids disposal in the next 5 years.

City of San Diego – A Business Case Evaluation was conducted in 2010. At that time it was concluded to continue with producing class B sludge for future disposal methods..

City of Santa Barbara – Our agency will be doing an assessment project to plan and design future upgrades to our plant solids handling systems.

City of Santa Maria – We plan on continuing to send our biosolids to Engel and Gray for composting.

City of Thousand Oaks – Exploring new dewatering technology, such as a screw press to decrease % wet tons leaving facility. Exploring modifications to treatment process to increase % solids in digesters and decrease quantity sent to dewatering. Ultimate disposal to remain at Toland Landfill.

City of Ventura – Continue same operation.

Crestline Sanitation District – Currently we are planning to continue to haul to a compost dump.

Eastern Municipal Water District- New digesters being constructed at our San Jacinto RWRF will allow Class B biosolids to be produced

Encina Wastewater Authority –

- R&D on hydrocarbon harvesting of pellets to increase market of fertilizer.
- Expand market for local fertilizer application.

Fairbanks Ranch CSD – We are concerned over the cost to provide additional treatment and hauling if the current landfill stops accepting our biosolids.

Goleta Sanitary District – Continue to ship to Kern County for land application, as long as their price remains competitive.

Inland Empire Utilities Agency – Continue to send all material to its composting facility.

Las Virgenes MWD – Continue to compost or truck the dewatered biosolids to a local landfill for drying and use as ADC.

Los Angeles County Sanitation Districts – LACSD will continue to utilize its existing biosolids management options that include composting, land application, landfill disposal, and renewable energy production (drying). LACSD is currently developing its large-scale advanced composting facility located in Kings County, CA, and anticipates managing biosolids at that facility in 2013. In addition, LACSD will continue to evaluate biosolids management opportunities as they become available.

Orange County Sanitation District –OCSD is working with Orange County Waste and Recycling to divert approximately 12% (max) of OCSD daily biosolids production to local landfill. OCSD would like to study in-plant technologies to reduce our environmental footprint. OCSD has also found that land application in Arizona is remaining more sustainable. Land application is diversifying OCSD's portfolio with a low-tech, proven option while helping to balance costs of higher priced options

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

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

San Elijo JPA – Probably land application in AZ, depending on cost ,availability and other options.

Santa Margarita Water District – Our agency is seriously pursuing future incineration and power generation options for our biosolids.

Victor Valley Wastewater Reclamation Authority – We anticipate a new WDR permit which will require us to dewater our solids before they are placed in our drying beds. Probably looking at a capital project in the 10M range. We are also developing public-private partnerships to develop energy from biosolids.

Whispering Palms CSD – We are concerned over the cost to provide additional treatment and hauling if the current landfill stops accepting our biosolids.

Summary Table 6

Agencies 5-Year Biosolids Disposal Plans	Reported in 2010	Reported in 2012
Composting	9	14
Heat Drying/Pelletizing	2	3
Gasification/Energy Production	3	1
Evaluation of Class A Certification	2	0
New Undetermined Alternatives	1	4
Daily Landfill Cover	3	3
Deep Well Injection	1	1
Incineration	3	1
Land Application	6	6
Bio-fuel Production	1	2
Landfill	4	9
Investigate Dewatering Options		2
Expand Market for Use of Pellets		1

6. Does your agency directly market biosolids products (e.g. compost, pelletized fuel)? If yes, what products? Where are products sold?

Camarillo Sanitary District – No

Carinteria Sanitary District – No.
City of Corona – No.

City of Riverside – No.

City of Los Angeles - No, during the past fiscal year we did not sell any compost. However, in previous years the City of Los Angeles, Bureau of Sanitation was directly responsible for marketing and selling biosolids products (compost).

City of Santa Barbara – No.

Crestline Sanitation District – We do not.

City of Santa Maria – No.

City of Thousand Oaks – No.

City of Ventura – No.

Fairbanks Ranch CSD – No.

Goleta Sanitary District - No.

Eastern Municipal Water District – No.

Encina JPA –

- Pellets sold as fuel to cement manufacturer.
- Pellets sold as fertilizer @ $25/ton.
- Marketing in-house for fertilizer pellets.

Inland Empire Utilities Agency – The Agency operates a 200,000 wt/y composting facility in partnership with LACSD producing 240,000 cyds of compost per year. Products are sold locally into turf and landscape projects as a soil amendment or topdressing.

Las Virgenes MWD – Finished Class A-EQ Compost is given away to the community. We charge a loading fee of $8/cy for bulk loading. We do "sell" a large portion (est. 40%) of RLV compost to landscapers and gardeners this way.

Los Angeles County Sanitiation Districts - At the Inland Empire Regional Composting Facility (IERCF), the finished compost is screened and marketed as a soil amendment. Some buyers use or sell the product in bulk. Others mix the compost with the other materials and sell the resulting product in retail bags or bulk. 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 2013.

Ojai Valley Sanitary District – No. We have a give-away program.

Orange County Sanitation District – No.

Rancho Santa Fe CSD – No.

San Elijo JPA – No.

South Orange County Wastewater Authority– No.

Victor Valley Regional Wastewater Authority - Does not.

Whispering Palms CSD – No.

7. Does your agency utilize social media for biosolids outreach/education? If yes, what type (e.g. Facebook, Twitter, YouTube)?.

Camarillo Sanitary District – No.

Carinteria Sanitary District – No.

City of Corona – No.

City of Riverside – Not at the moment.

City of Santa Barbara – No.

City of Los Angeles – No.

City of Santa Maria – No.

City of Thousand Oaks - Yes, general biosolids process information posted on City webpage.

City of Ventura – No.

Crestline Sanitation District – We do not.

Eastern Municipal Water District – No.

Encina JPA - No.

Fairbanks Ranch CSD – No.

Goleta Sanitary District - No.

Inland Empire Utilities Agency - Social media (Facebook and Twitter) is used to provide Agency updates but is not focused on biosolids issues.

Las Virgenes MWD – No. Webpage for Water District, local newspapers and bill stuffers only.

Los Angeles County Sanitation Districts – No.

Ojai Valley Sanitary District – No.

Orange County Sanitation District - Yes, OCSD uses social media. Facebook, Twitter and YouTube.

Rancho Santa Fe CSD – No.

South Orange County Wastewater Authority– No.

Victor Valley Regional Wastewater Authority - Utilizes Facebook and Twitter.

Whispering Palms CSD – No.

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 2010 and 2012 surveys.