

Table 1A. Biosolids production projections (dry metric tonnes per year) based on EPA Region 9 biosolids information, ABAG* and DOF*

Agency	Facility County	EPA 2011	2020	2030	2040
Challenge	Marin	1,515	1,540	1,570	1,610
Delta Diablo Sanitation District (DDSD)	Contra Costa	2,854	3,082	3,334	3,597
Dublin San Ramon (DDSRD)	Alameda	2,118	2,331	2,562	2,819
East Bay Municipal Utility District (EBMUD)	1	17,063	18,782	20,639	22,708
Encina WPCF	San Diego	5,433	6,164	6,748	7,260
Fairfield-Suisun Sewer District (FSSD)	Solano	2,250	2,397	2,518	2,627
Inland Empire Regional Composting Facility	San Bernardino	43,000	49,905	54,231	58,536
Inland Empire Utilities Plant 1	San Bernardino	7,066	8,201	8,911	9,619
Inland Empire Utilities Plant 2	San Bernardino	3,970	4,608	5,007	5,404
Los Angeles Griffith Park Compost	Los Angeles	700	744	786	828
Los Angeles Hyperion WWTP	Los Angeles	62,915	66,876	70,636	74,385
Los Angeles Terminal Island WRF	Los Angeles	2,567	2,729	2,882	3,035
Millbrae WPCP (City of Millbrae)	San Mateo	267	285	300	315
North San Mateo County WWTP	San Mateo	1,269	1,387	1,493	1,599
Novato S.D. Novato WWTP	Marin	1,029	1,059	1,087	1,114
Orange County SD # 2	Orange	24,093	26,794	26,658	26,523
Sacramento Regional WWTP	Sacramento	22,226	24,375	27,091	29,868
San Francisco Southeast WWTP	San Francisco	3,291	3,523	3,798	4,081
San Francisco Southeast WWTP	San Francisco	11,017	11,794	12,714	13,662
Santa Rosa Laguna WWTP (City of Santa Rosa)	Sonoma	3,967	4,175	4,405	4,645
South San Francisco - San Bruno WQCP	San Mateo	1,755	1,918	2,065	2,212
Union Sanitary District WWTP	Alameda	4,268	4,698	5,162	5,680
Ventura Water Reclamation Facility	Ventura	1,906	2,280	2,130	1,985
		226,539	249,645	266,727	284,112

*ABAG - Association of Bay Area Governments, 2005 Data

*DOF - California Department of Finance, May 2012 Data

Table 1B. Has your agency conducted any studies that project a different biosolids amount for your agency for 2020, 2030, or 2040?

Agency	2020	2030	2040	Name of Study
Central Marin Sanitation Agency	*	*	*	
City of Los Angeles	*	*	*	
Delta Diablo Sanitation District	4,300	*	*	2002 Biosolids Master plan (Carollo)
Dublin-San Ramon Services District	3,626	4,031	*	Phase II Biosolids Master Plan, Oct 2007, Whitley Burchett & Associates
East Bay Municipal Utility District	*	*	*	
Encina	Same	Same	Same	
Fairfield-Suisun Sewer District	*	*	*	
Inland Empire Utilities Agency	*	*	*	
Millbrae	*	*	*	
North San Mateo	*	*	*	
Novato S.D. Novato WWTP	*	*	*	
Orange County Sanitation District	41,565	43,419	45,272	Centrifuge Project, 2011, Engineering Planning
Sacramento Regional County Sanitation District	*	*	*	
Santa Rosa	*	*	*	
South San Francisco	*	*	*	
Union Sanitary District	*	*	*	
Ventura Water Reclamation Facility	*	*	*	

*No studies completed

Table 2A. What biosolids product(s) does your agency currently produce? For each category, list percent of total production.

Southern California Agencies				
Challenge	Dewatered Class A/EQ Cake	Dewatered Class B Cake	Dried Pellets/Other Dried Product	Compost
	%	%	%	%
City of Los Angeles	100			
Encina			100	
Inland Empire Utilities Agency ¹				100
Orange County Sanitation District		61		39
Ventura Water Reclamation Facility			100	
Total Number of Agencies	1	1	2	2

¹Inland Empire Utilities Agency produces dewatered Class B Cake; this biosolids product is then composted at an adjacent composting facility. The final product that leaves the composting site is Class A EQ composted biosolids.

Table 2B. Please list the percent of **Class B Cake** for each end use.

Southern California Agencies			
Agency	Land Application	ADC	Landfill
	(%)	(%)	(%)
Inland Empire Utilities Agency			
Orange County Sanitation District	51		10
Number of Agencies	1	0	1

Table 2C. How is your agency currently ensuring a market for Class B or Class A/EQ cake, compost, dried pellets, and other dried products?

Southern California Agencies		
Agency	Land Applier (i.e. Synagro)	Market directly to specific end users (ie. Reliance on agency staff,
City of Los Angeles	X	
Encina		X - <i>Not specified</i>
Inland Empire Utilities Agency		X - Reliance on agency Staff
Orange County Sanitation District	X	
Ventura Water Reclamation Facility		X - Reliance on agency staff,

Table 3A. What biosolids products does your agency plan to generate in 2020?

Southern California Agencies						
Challenge	Dewatered Class A/EQ Cake	Dewatered Class B Cake	Dried Pellets	Compost	Other	
	%	%	%	%	%	Description
City of Los Angeles	100					
Encina	1		100			
Inland Empire Utilities Agency ¹		100				
Orange County Sanitation District		61		39		
Ventura Water Reclamation Facility					100	other dried product
Total Number of Agencies	1	2	1	1	1	

¹Inland Empire Utilities Agency plans to continue producing Class B cake that will then be composted at an on-site composting facility to produce Class A EQ biosolids compost.

Table 3B. How will your agency ensuring a market for Class B or Class A/EQ cake, compost, dried pellets, and other dried products in

Southern California Agencies			
Agency	Land Applier (i.e. Synagro)	Market directly to specific end users (ie. Reliance on agency staff, BAB2E)	Other
City of Los Angeles	X		
Encina		X - Puregreen Fertilizer	
Inland Empire Utilities Agency		X - Reliance on agency Staff	
Orange County Sanitation District	X		
Ventura Water Reclamation Facility		X - Reliance on agency staff, contract with large soil amendment company	X

Table 3C. Do you anticipate upgrades at your agency from Class B cake to Class A/EQ cake or other biosolids product by 2040? If so, what are the predicted costs of the upgrades?

Southern California Agencies			
Agency	No	Yes	Predicted Cost
City of Los Angeles	X		
Encina	X		
Inland Empire Utilities Agency	X		
Orange County Sanitation District		X	Not yet determined
Ventura Water Reclamation Facility	X		

Table 4A. What requirements or incentives are currently driving your agency's biosolids program beyond federal Part 503 requirements? Rate the level of importance for each of the following items on a scale of 1 (not driving your agency's program at all) to 5 (a primary driver of your agency's biosolids program).

Bay Area Agencies					
Challenge	Incentives				
Agency	AB32 - GHG reduction requirements	Cal Recycle 75% Recycle Goal	Other Air Quality Rules	County Ordinance	Alternative Energy Production
Central Marin Sanitation Agency	1	2	2	2	2
Delta Diablo Sanitation District	3	2	1	4	4
Dublin-San Ramon Services District	1	1	1	1	4
East Bay Municipal Utility District	3	4	3	5	5
Fairfield-Suisun Sewer District	1	2	1	4	3
Millbrae	1	1	1	1	1
North San Mateo	1	4	4	5	4
Novato S.D. Novato WWTP	1	1	1	1	2
Sacramento Regional County Sanitation District	1	1	1	1	1
Santa Rosa	3	2	2	2	3
South San Francisco	1	3	1	1	1
Union Sanitary District	1	2	1	5	2
Average	1.50	2.08	1.58	2.67	2.67

Table 4A (cont.). What requirements or incentives are currently driving your agency's biosolids program beyond federal Part 503 requirements? Rate the level of importance for each of the following items on a scale of 1 (not driving your agency's program at all) to 5 (a primary driver of your agency's biosolids program).

Bay Area Agencies					
Agency	Incentives				
	Carbon Credits	Energy Incentive Legislation	Hauling Costs	Number	Description
Central Marin Sanitation Agency	1	1	2	N/A	
Delta Diablo Sanitation District	3	4	4	N/A	
Dublin-San Ramon Services District	1	4	3	5	Developing additional management alternatives
East Bay Municipal Utility District	4	4	5	N/A	
Fairfield-Suisun Sewer District	1	2	2	N/A	
Millbrae	1	1	1	N/A	
North San Mateo	3	4	5	N/A	
Novato S.D. Novato WWTP	1	1	1	N/A	
Sacramento Regional County Sanitation District	1	1	1	N/A	
Santa Rosa	2	2	4	4	High cost for compost production
South San Francisco	1	1	4	N/A	
Union Sanitary District	1	3	4	N/A	
Average	1.67	2.33	3.00		

Table 4B. What requirements or incentives are currently driving your agency's biosolids program beyond federal Part 503 requirements? Rate the level of importance for each of the following items on a scale of 1 (not driving your agency's program at all) to 5 (a primary driver of your agency's biosolids program).

Southern California Agencies					
Agency	Incentives				
	AB32 - GHG reduction requirements	Cal Recycle 75% Recycle Goal	Other Air Quality Rules	County Ordinance	Alternative Energy Production
City of Los Angeles	3	5	4	5	3
Encina	5	1	3	5	3
Inland Empire Utilities Agency	1	2	2	4	1
Orange County Sanitation District	4	4	4	5	4
Ventura Water Reclamation Facility	3	3	3	3	4
Average	3.20	3.00	3.20	4.40	3.00

Table 4B (cont.). What requirements or incentives are currently driving your agency's biosolids program beyond federal Part 503 requirements? Rate the level of importance for each of the following items on a scale of 1 (not driving your agency's program at all) to 5 (a primary driver of your agency's biosolids program).

Southern California Agencies						
Agency	Incentives				Number	Description
	Carbon Credits	Energy Incentive Legislation	Hauling Costs	Other		
City of Los Angeles	3	3	5		N/A	
Encina	3	3	5	5		Control our business/community acceptance
Inland Empire Utilities Agency	1	1	5		N/A	
Orange County Sanitation District	4	4	5		N/A	
Ventura Water Reclamation Facility	1	3	3		N/A	
Average	2.40	2.80	4.60			

Table 5A. What challenges may impact your agency's biosolids program and future plans by year 2020?
Rate each challenge on a scale of 1 (not an anticipated challenge) to 3 (anticipated to be a significant challenge).

Bay Area Agencies						
Challenge	Millbrae	Delta Diablo Sanitation District	Dublin-San Ramon Services District	South San Francisco	Central Marin Sanitation Agency	Union Sanitary District
Other agencies entering your biosolids end use market due to restrictions in their own market	1	2	1	1	2	2
Lack of local biosolids management options for land application of Class B biosolids	3	3	1	3	2	2
Lack of local biosolids management options for land application of Class A/EQ and/or composted biosolids	1	2	3	2	2	2
Landfill closures	1	2	2	2	1	1
Loss of diversion credits for ADC	1	1	1	2	2	1
Increasingly stringent State and Federal regulation for or biosolids management	2	2	3	2	2	3
Increasingly stringent regulations for air quality/GHG	1	1	2	2	2	2
Capital Costs for equipment upgrades/new technology	3	3	2	3	3	2
High operation cost or difficulties in achieving targeted biosolids quality	2	2	3	2	1	1
Development of renewable energy projects	2	2	3	1	2	2
Higher transportation costs	3	2	3	2	2	3
Public contracting restrictions	2	2	2	1	1	1
Public perception	2	2	3	1	1	2
Product odor	1	1	3	1	1	2
Lack of market development	2	2	2	1	1	1

Table 5A (cont.). What challenges may impact your agency's biosolids program and future plans by year 2020?
Rate each challenge on a scale of 1 (not an anticipated challenge) to 3 (anticipated to be a significant challenge).

Bay Area Agencies					Average
Challenge	East Bay Municipal Utility District	Fairfield-Suisun Sewer District	North San Mateo	Sacramento Regional County Sanitation District	
Other agencies entering your biosolids end use market due to restrictions in their own market	3	3	1	1	1.7
Lack of local biosolids management options for land application of Class B biosolids	3	2	3	1	2.3
Lack of local biosolids management options for land application of Class A/EQ and/or composted biosolids	3	2	1	1	1.9
Landfill closures	3	2	3	1	1.8
Loss of diversion credits for ADC	3	3	3	1	1.8
Increasingly stringent State and Federal regulation for or biosolids management	3	2	3	1	2.3
Increasingly stringent regulations for air quality/GHG	2	2	3	3	2
Capital Costs for equipment upgrades/new technology	3	3	3	3	2.8
High operation cost or difficulties in achieving targeted biosolids quality	2	2	3	2	2
Development of renewable energy projects	2	2	3	1	2
Higher transportation costs	2	2	3	3	2.5
Public contracting restrictions	2	1	2	1	1.5
Public perception	3	2	2	1	1.9
Product odor	2	1	3	1	1.6
Lack of market development	2	2	2	3	1.8

Table 5B. What challenges may impact your agency's biosolids program and future plans by year 2020?
Rate each challenge on a scale of 1 (not an anticipated challenge) to 3 (anticipated to be a significant challenge).

Southern California Agencies						Average
Challenge	Inland Empire Utilities Agency	Encina	Orange County Sanitation District	City of Los Angeles	Ventura Water Reclamation Facility	
Other agencies entering your biosolids end use market due to restrictions in their own market	3	1	3	1	2	2.0
Lack of local biosolids management options for land application of Class B biosolids	2	1	3	1	1	1.6
Lack of local biosolids management options for land application of Class A/EQ and/or composted biosolids	2	1	3	3	2	2.2
Landfill closures	2	1	3	2	1	1.8
Loss of diversion credits for ADC	2	1	2	1	1	1.4
Increasingly stringent State and Federal regulation for or biosolids management	2	1	3	3	2	2.2
Increasingly stringent regulations for air quality/GHG	2	2	3	2	2	2.2
Capital Costs for equipment upgrades/new technology	2	3	3	2	2	2.4
High operation cost or difficulties in achieving targeted biosolids quality	2	2	3	2	1	2.0
Development of renewable energy projects	2	2	3	3	2	2.4
Higher transportation costs	3	1	3	3	2	2.4
Public contracting restrictions	2	1	2	2	2	1.8
Public perception	3	2	3	3	3	2.8
Product odor	2	2	3	1	2	2.0
Lack of market development	3	1	3	1	2	2.0

Table 6A. If your agency accepts a grease substance for co-digestion, what is it and where is the discharge point?

Southern California Agencies				
Challenge	Fats, Oils, Grease	Industrial Waste	Discharge Point	
			Headworks	Directly in anaerobic digestion
Encina	X*			X
Orange County Sanitation District	1		X	
City of Los Angeles	X	X		X

*Plan to start accepting FOG in 2014

Table 6B. How many thousand gallons of this waste (including FOG, industrial waste) does your agency accept per month now and anticipate accepting per month in 2020 and beyond?

Southern California Agencies			
Agency	2012	2020	Beyond 2020
Orange County Sanitation District	852	720	720
City of Los Angeles	<i>No response</i>		

Table 7A. What is the current reason(s) for accepting FOG/industrial waste? Rate each category on a scale of 1 (not a reason at all) to 3 (the most important reason).

Southern California Agencies					
Challenge	Keep it out of sewers	Increase quantity of digester gas	Divert waste from landfill	Make other energy form(s) other than biogas	Other
Encina	1	3	1	1	
Orange County Sanitation District	3	2	2	1	
City of Los Angeles	1	3	3	3	
Average	1.7	2.7	2.0	1.7	

Table 7B. What is the anticipated reason(s) for accepting FOG and/or industrial waste in 2020? Rate each category on a scale of 1 (not a reason at all) to 3 (the most important reason).

Southern California Agencies					
Agency	Keep it out of sewers	Increase quantity of digester gas	Divert waste from landfill	To make energy	Other
Encina	1	3	1	1	
Orange County Sanitation District	3	3	3	3	
City of Los Angeles	3	3	3	3	
Average	2.33	3.00	2.33	2.33	

Table 8A. Why is your agency accepting food or organic waste now?

Rate each category on a scale of 1 (not a reason at all) to 3 (the most important reason).

Southern California Agencies				
Challenge	Have additional digestion capacity	Increase the amount of digester gas	Divert food or organic waste from landfill	Increase nutrient value of biosolids
City of Los Angeles	2	3	3	3

1

Table 8B. What is the reason(s) for planning to accept food waste in 2020?

Rate each category on a scale of 1 (not a reason at all) to 3 (the most important reason).

Southern California Agencies				
Agency	Have additional digestion capacity	Increase the amount of digester gas	Divert food or organic waste from landfill	Increase nutrient value of biosolids
Encina	2	3	1	2
Orange County Sanitation District	3	3	3	2
City of Los Angeles	2	3	3	3
Average	2.3	3.0	2.3	2.3

Table 9A. Have you recently developed biosolids master plans, feasibility studies or pilot studies for yellow grease, trap waste, or food waste? If so, may we obtain copies of the biosolids master plans, feasibility studies or pilot studies your agency has conducted?

Bay Area Agencies			
Challenge	No	Yes	
		Yes, you may obtain copies	No, you may not obtain a copy at this time
Central Marin Sanitation Agency		X	
Delta Diablo Sanitation District	1		
Dublin-San Ramon Services District		X	
East Bay Municipal Utility District		X	
Fairfield-Suisun Sewer District	X		
Millbrae	X		
North San Mateo	X		
Novato S.D. Novato WWTP	X		
Sacramento Regional County Sanitation District			X
Santa Rosa	X		
South San Francisco	X		
Union Sanitary District	X		

Table 9B. Have you recently developed biosolids master plans, feasibility studies or pilot studies for yellow grease, trap waste, or food waste? If so, may we obtain copies of the biosolids master plans, feasibility studies or pilot studies your agency has conducted?

Southern California Agencies			
Agency	No	Yes	
		Yes, you may obtain copies	No, you may not obtain a copy at this time
City of Los Angeles		<i>No response</i>	
Encina		X	
Inland Empire Utilities Agency		X	
Orange County Sanitation District		X	
Ventura Water Reclamation Facility	X		

Table 10A. Does the anticipated positive court action in Kern County, the renewal of the Solano County land application ordinance, and the defeat of the San Luis Obispos ordinance indicate that land application of biosolids is still a viable market in California?

Bay Area Agencies		
Challenge	Yes	No
Central Marin Sanitation Agency	X	
Delta Diablo Sanitation District	X	
Dublin-San Ramon Services District	1	
East Bay Municipal Utility District	X	
Fairfield-Suisun Sewer District	X	
Millbrae	X	
North San Mateo	X	
Novato S.D. Novato WWTP	X	
Sacramento Regional County Sanitation District		X
Santa Rosa	X	
South San Francisco		X
Union Sanitary District	X	

Table 10B. Does the anticipated positive court action in Kern County, the renewal of the Solano County land application ordinance, and the defeat of the San Luis Obispos ordinance indicate that land application of biosolids is still a viable market in California?

Southern California Agencies		
Agency	Yes	No
City of Los Angeles	X	
Encina	X	
Inland Empire Utilities Agency	X	
Orange County Sanitation District		X
Ventura Water Reclamation Facility	X	

Table 11A. Have your agency's future biosolids plans changed as a result of these recent events described in Q30?

Bay Area Agencies		
Challenge	Yes	No
Central Marin Sanitation Agency		X
Delta Diablo Sanitation District	Pursuing Bay Area Biosolids to Energy	
Dublin-San Ramon Services District	1	X
East Bay Municipal Utility District		X
Fairfield-Suisun Sewer District		X
Millbrae		X
North San Mateo	Pursuing Bay Area Biosolids to Energy	
Novato S.D. Novato WWTP		X
Sacramento Regional County Sanitation District		X
Santa Rosa		X
South San Francisco		X
Union Sanitary District		X

Table 11B. Have your agency's future biosolids plans changed as a result of these recent events described in Q30?

Southern California Agencies		
Agency	Yes	No
City of Los Angeles		X
Encina		X
Inland Empire Utilities Agency		X
Orange County Sanitation District		X
Ventura Water Reclamation Facility		X