

ANNUAL REPORT
TO THE
SOLANO COUNTY
BOARD OF SUPERVISORS

March 5, 2008

Prepared by the BACWA Biosolids Committee

Introduction

This report has been produced by the Bay Area Clean Water Agencies (BACWA) Biosolids Committee for the Solano County Board of Supervisors in response to the Board's request for an annual update on agency activities and progress towards compliance with the goals set forth in Chapter 25. The affected agencies decided to coordinate the reporting requirement through BACWA so as to produce a single report for the Board. This report therefore includes an update on the Regional Facility, an effort undertaken by seven Bay Area agencies, as well as individual agency updates, where relevant.

Overview of Biosolids Trends in California and the Bay Area

To provide context for the land application of Class B biosolids in Solano County, biosolids reuse data for both the Bay Area and the State of California as a whole were compiled. The data presented herein represent a summary of the 2006 Annual Report data collected by EPA Region 9.

The production of Class B biosolids in the Bay Area shows a similar trend to that of the state as a whole. Figure 1 shows the distribution of Class A and B production among California land applicators. Figure 2 shows this same distribution for the Bay Area; the two distributions are nearly identical, with the bulk of the agencies producing Class B biosolids.

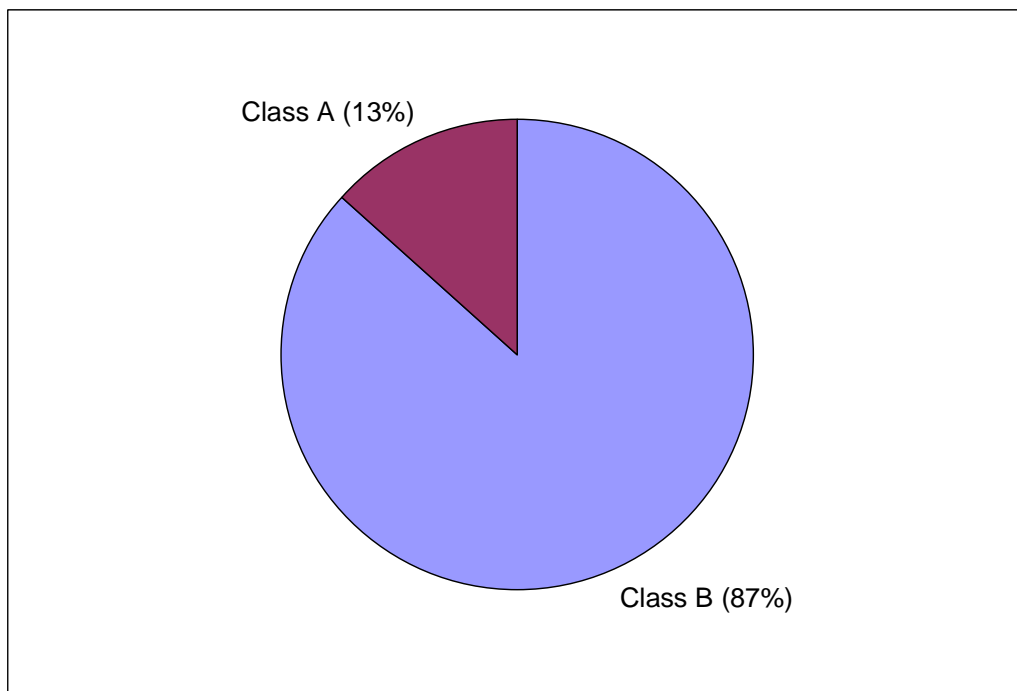


Figure 1. Distribution of Class A and Class B biosolids in California, 2006 (Source: EPA Region 9)

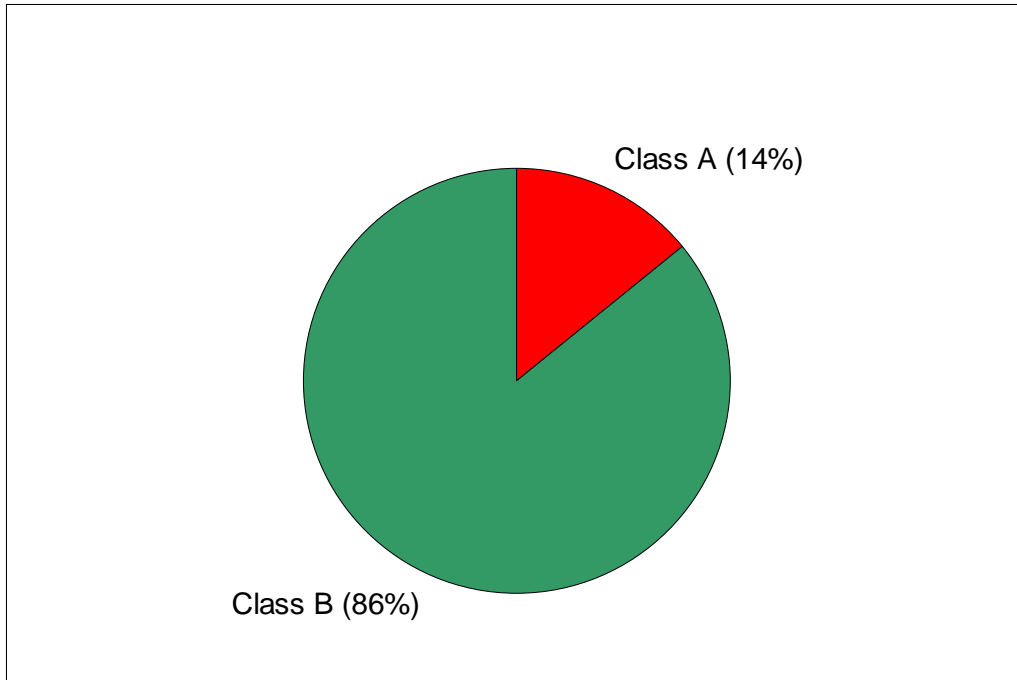


Figure 2. Distribution of Class A and Class B biosolids in the Bay Area, 2006 (Source: EPA Region 9)

For California as a whole, compost and land application are popular biosolids reuse options, as can be seen in Figure 3. Comparing this figure against Figure 4, the chart for Bay Area agencies, demonstrates a general difference in the way that Southern California agencies and Northern California agencies manage their biosolids. Southern California agencies tend to rely more heavily on land application and compost, while Northern California agencies largely use a combination of landfill ADC, landfill disposal, and land application.

Within the Bay Area, there is considerable geographic diversity for biosolids reuse. Figure 5 shows the destination counties for the Bay Area's biosolids. Solano County has been further divided by the three common reuse/disposal options – landfill disposal, landfill alternative daily cover (ADC), and land application. All totaled, Solano County receives approximately 12% of the Bay Area agency's biosolids, of which land application is just over 4% of the total. Santa Clara County receives the bulk of the area's biosolids – this percentage represents landfill uses. Overall, this chart indicates that reuse/disposal of biosolids is spread out throughout the Bay Area.

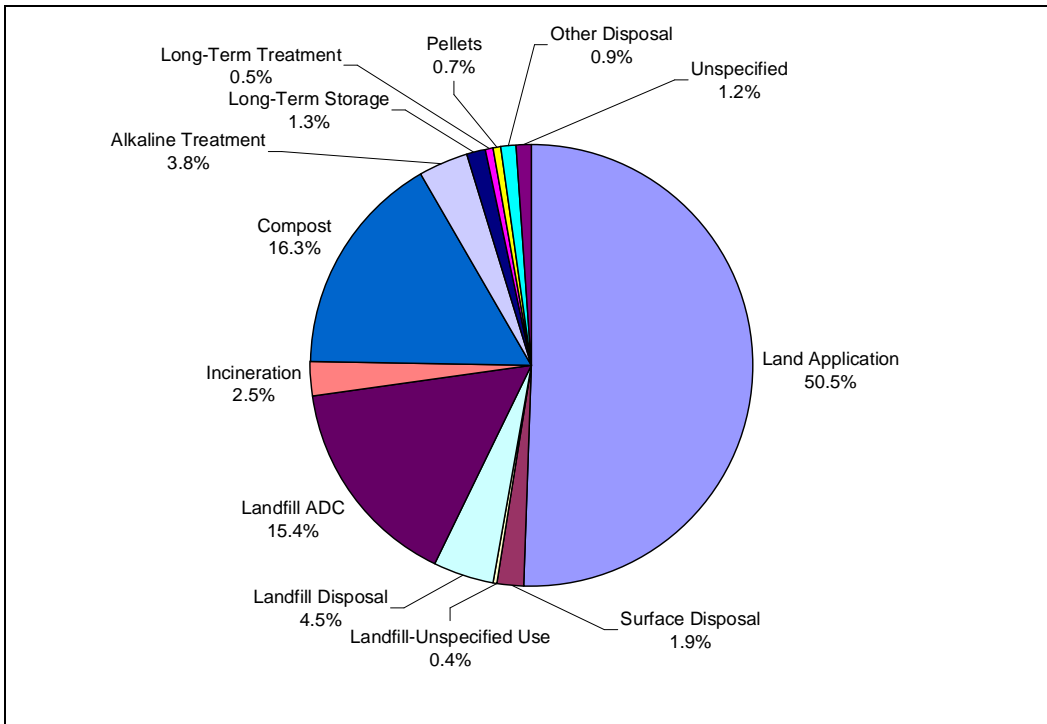


Figure 3. Distribution of biosolids reuse/disposal options for the State of California (Source: EPA Region 9)

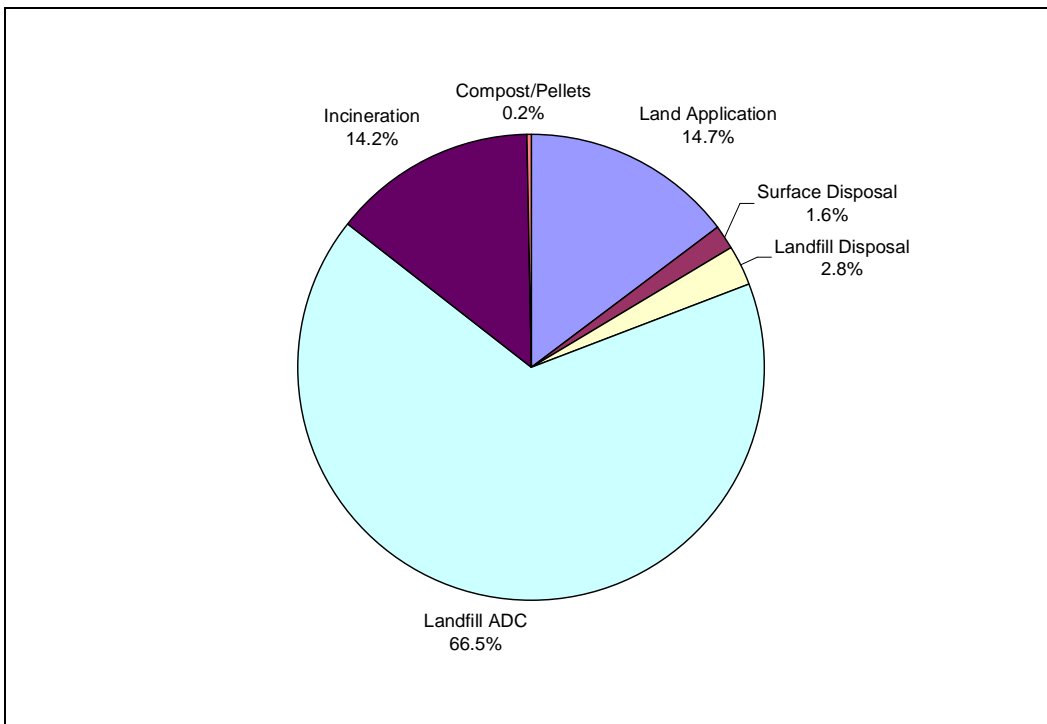


Figure 4. Distribution of biosolids reuse/disposal options for BACWA agencies (Source: EPA Region 9)

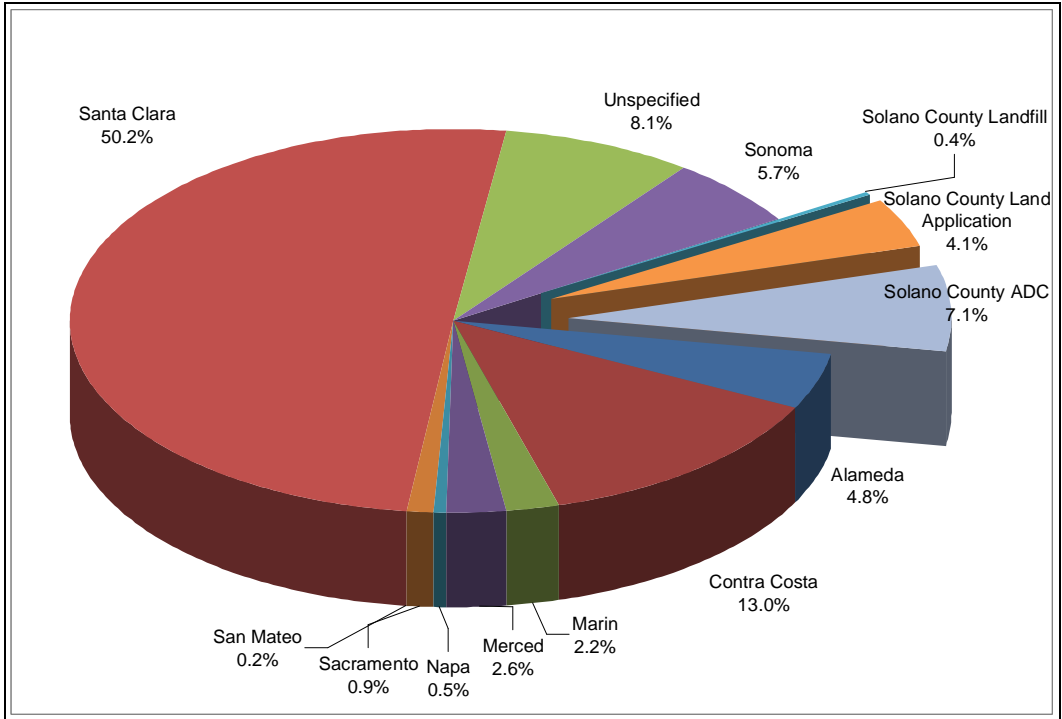


Figure 5. Location of biosolids end use options for the BACWA agencies, 2006 (Source: EPA Region 9).

Overall, the common thread running through all the figures presented is that agencies in California use a diverse array of options for biosolids reuse and disposal. Frequently, agencies will use multiple options in order to have a more robust program. Land application clearly plays a significant role in reuse and is viewed in the industry as the highest and best use for Class B biosolids. The desire to maintain a diverse profile for biosolids reuse and disposal, of which land application is a part, has led the Bay Area agencies to pursue innovative new outlets for biosolids reuse. These are described in subsequent sections.

Bay Area Regional Facility

For the past few years, seven wastewater treatment agencies (EBMUD, SFPUC, DDS, DSRSD, FSSD, USD, and Millbrae) in the San Francisco Bay Area have been pursuing the feasibility of developing a regional biosolids facility. Two preliminary feasibility studies were completed by the Bay Area Clean Water Agencies (BACWA) Biosolids Committee. The studies concluded there were three interested agencies to host a biosolids drying facility. From those studies, the seven agencies executed the Joint Exercise of Powers Agreement (JEPA) in July 2006 to further evaluate the costs and impacts of a facility. The JEPA provides the framework for cost sharing and decision making for the Phase 3 efforts which include facility planning and environmental documentation for a regional thermal drying facility. The seven agencies went through a consultant selection process and retained Carollo Engineers to assist with engineering and environmental

evaluation at the viable sites. Delta Diablo Sanitation District is the project coordinator and the project manager for the consultant contract. The first task was completed in March 2007 and identified interim solutions with costs that could be implemented if the JEPA agencies wish to go forward with the project.

Following Task 1 but prior to initiating the feasibility analysis for a thermal dryer, the consultant was asked to evaluate a waste-to-energy option that was excluded from Phase I and Phase II studies. Although originally assumed to be too difficult to permit in the Bay Area; the agencies wanted to confirm the project could be permitted, confirm the waste-to-energy costs as compared to the thermal dryer and understand the Greenhouse Gas Emissions as compared to the alternatives. Early analysis indicates a waste-to-energy facility, with Best Available Control Technology to reduce emissions, could meet BAAQMD permit requirements. Costs for a waste-to-energy facility are being prepared and compared to the thermal drying which will lead to a decision on the treatment technology. The Steering Committee for that Regional Facility will be meeting some time in late March or early April to determine the future direction of the project.

Individual Agency Reports

The agencies that land apply in Solano County do not have a universal approach for biosolids handling. Even those agencies participating in the Regional Facility may also be engaging in additional measures to maintain a diverse biosolids portfolio. Brief descriptions of individual agency efforts are provided below; most of the agencies that land apply in Solano County are captured below. BACWA will continue to work with all agencies to provide a consolidated report to the Board. Please note that while Delta Diablo Sanitation District and Fairfield Suisun Sanitation District are not listed below, they are participants in the Regional Facility, and expect to achieve compliance with the ordinance as participants in that effort.

Burlingame: Burlingame has recently completed capital improvements around its biosolids dewatering system. Additionally, it has experienced a 69% increase in expenditures for biosolids reuse (including hauling) over the past 5 years. As a small agency, conversion to a Class A process would represent a significant portion of the agency's budget, and it is more likely that Burlingame would work with contractors to send its material to other reuse outlets.

Ironhouse: Ironhouse currently contracts with Synagro to remove, transport and reuse the solids from their treatment and effluent storage ponds and will continue to do so until a new wastewater treatment plant (WWTP) becomes operational. Ironhouse is currently designing a new WWTP. Upon completion of the WWTP in late 2010 Ironhouse will be sending dewatered biosolids to Altamont and/or Vasco landfills. Future plans for Ironhouse's facilities include a small solar drying facility to produce Class A biosolids. In addition, Ironhouse will remain engaged with BACWA to keep abreast of any future biosolids processing facilities in the Bay Area.

Millbrae: The City of Millbrae has recently installed a system that co-digests grease and sludge for the purpose of energy production. This proprietary system has substantially

decreased the amount of biosolids the plant must dewater, haul and dispose. For example, although the volume (gallons) of sludge sent to the solids processing units has increased slightly over this past year (increased 14%), the amount of dewatered biosolids decreased by an average of 30% over the same period. The new microturbine at the facility generates 250Kw per hour (6,000 Kw per day), enough to power the Millbrae treatment facility. The system captures and utilizes the waste heat from the microturbine process to keep the digestion system at optimal temperature of 98 degrees F. (co-generation) increasing the efficiency of that process. This state of the art project has received considerable attention from diverse media sources ranging from local newspapers to national trade publications, and the project received the 2007 Sustainable San Mateo County award. Millbrae would like input as to whether this project qualifies it for compliance under the Solano County amendments as stated.

Pacifica: Pacifica currently produces a Class A biosolids cake through an aerobic digestion process, and is therefore in compliance with the Solano County ordinance. Pacifica is currently engaged in efforts to make its biosolids processing more reliable and is generally seeking to optimize its biosolids product.

Petaluma: The City of Petaluma is currently constructing a new wastewater treatment facility which will have the capability to produce Class A biosolids. In the future, the City intends to conduct a benefit/cost evaluation for producing Class A biosolids and will continue to work with BACWA to submit annual reports

San Francisco Public Utilities Commission: The San Francisco Public Utilities Commission (SFPUC) utilizes a diverse array of reuse options, one of which is to send a portion of its biosolids to Synagro's Central Valley Composting Facility (CVC) for conversion to Class A compost. In 2007, San Francisco sent nearly 3900 wet tons, or 5% of the total, of biosolids to the CVC. Two compost giveaway events allowed the SFPUC to distribute 50 tons of this compost to San Francisco citizens. Although reuse options are limited within San Francisco, this is one way to raise our resident's awareness of biosolids reuse. This year, the compost giveaway will be expanded to include participation from community gardens and the Parks and Recreation Department. The compost contract with Synagro has been in place for two years, and the SFPUC will be renewing it this year.

In addition, the SFPUC is undergoing a Master Planning process; the draft report should be available this summer. One of the key recommendations of the Master Plan is to replace the Southeast Plant digesters with a new digester complex, capable of producing Class A cake. Once the report is complete, the SFPUC will be going through the EIR process, after which design and construction of the new facility can begin.

City of San Mateo: The City of San Mateo utilizes Synagro for biosolids disposal. While San Mateo currently generates Class B biosolids, a portion of these are sent to Synagro's CVC for conversion to Class A compost. As a BACWA member, the City will work with BACWA to submit annual reports and is in the process of developing a Master Plan for future biosolids reuse.

Sonoma County Water Agency: For calendar year 2008, Synagro, Sonoma's contractor, is sending biosolids to the CVC for conversion to Class A compost.

Sunnyvale: The City of Sunnyvale contracts with Synagro for removal and reuse of its Class B biosolids generated by the Water Pollution Control Plant (WPCP). In 2007, 294 dry tons were applied on sites in Solano County. The City is in the early stages of a Strategic Implementation Plan (i.e. Master Plan) for the WPCP. That effort will examine all wastewater and solids processing options, and will result in recommendations for new or refurbished facilities to accommodate treatment needs over the next thirty to fifty years. However, realistically speaking, actual construction of any new facilities as a result of that planning process will not occur for 8-10 years. In the interim, it is very unlikely that the City would upgrade treatment processes to produce Class A biosolids, but would instead seek alternative reuse methods for its Class B biosolids.

Union Sanitary District: In 2007, Union Sanitary District (USD) Wastewater Treatment Plant produced a total of 18,393 wet tons of biosolids, of which 1029 wet tons of biosolids (6% of USD biosolids) were composted to a Class A product at Synagro's CVC in Merced County. Additionally, USD is in discussion with Synagro to divert a total of approximately 10% of USD's biosolids to the CVC in 2008.

Conclusions

Land application in Solano County represents a small component of the Bay Area's biosolids reuse options overall. The agencies comprising BACWA wish to retain a diverse profile of biosolids reuse options to allow for the most flexibility on a regional basis. Five of the land applying agencies (FFSD, SFPUC, USD, Millbrae, and DDSD) are participating in planning efforts for a regional biosolids processing facility, which would be used to process a portion of those agencies' biosolids. In addition, several of the other land applying agencies have undertaken efforts to meet the challenge outlined in Solano County's Chapter 25. This report is the first effort to meet the Solano County Board of Supervisors request for annual reports from the land applying agencies.