



# County of San Luis Obispo • Public Health Department

## *Environmental Health Services*

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To: Board of Supervisors

From: Gregory Thomas, Health Officer, Public Health Agency Director

Date: March 12, 2002

Subject: The San Luis Obispo County Treated Sewage Sludge/Biosolids Land Application Task Force Report and Recommendations

### Recommendation:

Receive and file the San Luis Obispo County Treated Sewage Sludge/Biosolids Land Application Task Force Report.

Direct the Public Health Department to draft a local ordinance regulating the land application of biosolids pursuant to the recommendations contained in the Task Force report.

### Discussion:

#### **Background**

Since 1998, the issue of the land application of biosolids/treated sewage sludge has been the subject of two separate efforts to guide public policy in San Luis Obispo County. Both efforts included public and local agency participation in working groups. In 1998, concern over a proposal to apply biosolids to a ranch to grow alfalfa near San Miguel led the Health Commission to form a task force. The Health Commission Task Force explored the subjects of wastewater treatment practices in San Luis Obispo County, the disposition of locally generated material, biosolids land application issues, federal, state and local regulations and oversight of the practices involved. The report was completed in September 1999. The Health Commission Task Force on biosolids reported to your Board and made the following recommendations:

1. Develop a county-based program to ensure local control of biosolids management.
2. Convene a working group to develop a policy for biosolids land applications in San Luis Obispo County.
3. Initiate a public education campaign

On February 8, 2000, the Public Health Department presented to the Board seven options for regulating the land application of biosolids. The options ranged from maintaining the status quo to a complete ban. Your Board directed the Public Health Department to convene a public working group to consider four of the seven options for managing the land application of biosolids and return for discussion and authorization to proceed. The four options were:

1. Create a local ordinance based on federal and state regulations providing local control and oversight of how, when, and where biosolids may be applied.
2. Create a local ordinance establishing more stringent requirements for quality of acceptable biosolids material, as well as local control and oversight of how, when and where biosolids may be applied.
3. Create a local ordinance limiting biosolids land application to “exceptional quality” (EQ), the highest quality grade of biosolids as defined by existing federal regulations.
4. Create an interim ban on biosolids land application while the workgroup conducts an evaluation to determine whether the ban should be lifted or remain in place.

All of the above options included a public education campaign. Your Board specifically excluded from consideration by the public working group the two options that would retain the status quo and the option that would create a total ban on the land application of biosolids.

### **The San Luis Obispo County Treated Sewage/Biosolids Land Application Task Force Recommendations**

Pursuant to Board direction, the Public Health Department convened a public working group that is now referred to as the San Luis Obispo Treated Sewage Sludge/Biosolids Land Application Task Force. The Task Force was a broad community based collaborative effort with people representing various segments of the community. The meetings were planned to provide information to the task force members on the issue before any discussion on the recommendations. The meetings discussed the ground rules of the Task Force, brought in technical experts on the issue of biosolids from the University of California at Riverside, US EPA, the State Water Resources Control Board, California Farm Bureau, and Cornell University, and provided presentations from local people representing biosolids applicators, wastewater treatment facilities, and a presentation on heavy metals.

Of particular interest and relevance to our county were guest speakers from three counties who had developed local ordinances regulating biosolids. They presented their experiences in framing their local regulations and ordinances to regulate the land application of biosolids. The final meetings discussed the main recommendation, seventeen motions, and created the report. The Task Force completed its recommendations on October 26, 2001. Since that time, presentations were made to the Health Commission on December 10, 2001 and the Planning Commission on December 13, 2001 and January 24, 2002. The Task Force recommendations are as follows:

1. Create a local ordinance establishing more stringent requirements than currently exist in federal and state law for the quality of acceptable biosolids material.
2. Provide for local control and oversight of the land application of biosolids.
3. Local standards shall be derived from but not limited to state and federal regulations.
4. Use pollution accumulation limits considering local soil pollutant levels.
5. Develop a comprehensive set of constituents including heavy metals (zinc, cadmium, copper, nickel, chromium, lead), synthetic chemicals, pathogens and other pollutants for setting biosolids quality and land accumulation limits.
6. Limit the acceptance or processing of new land application projects beyond historical amounts of exceptional quality (EQ) treated sewage sludge until a local ordinance is completed.

7. Consider all feasible methods of treated sewage sludge/biosolids management and their relative impacts. (It is not the intent of the land application ordinance to establish standards for other methods of biosolids management, but rather to allow for use of other methods such as composting, incineration and land filling and as necessary consider their relative impacts.)
8. Develop procedures to ensure public and community notification of project proposals.
9. Ensure that the fees imposed on projects are sufficient to fund assessment, monitoring and oversight activities.
10. Consider limitations on applying biosolids to various crops, playgrounds, parks, and other specific circumstances.
11. Determine the project requirements identifying conditions for the application of biosolids such as weather, water supply protection, erosion control, frequency of application and other requirements.

The above recommendations of the Biosolids Task Force are more conservative and restrictive than the federal 40 CFR part 503 regulations for biosolids. As indicated in the Task Force recommendation #1:

- Create a local ordinance establishing more stringent requirements than currently exist in federal and state law for the quality of acceptable biosolids material.

#### **Public Education**

During the public process, the Task Force sponsored a public forum on February 21, 2001. It included three speakers representing differing viewpoints on land application. The speakers included an employee of a biosolids land application company promoting its benefits, a researcher from Cornell University who was opposed to land application on the basis of alleged risks to human health, and the legal counsel for a large carrot producer located in Kern County who represented growers against land application. The forum covered risks and benefits but did not include such issues as responsibility for safe production and disposal of biosolids and the public's ability to improve the quality of the material. The public education campaign needs to continue during the ordinance development phase of the project.

#### **Alternate Viewpoints**

There were a number of suggestions that were considered by the Task Force but were not supported by the majority of the members and therefore were not included as recommendations. The alternate viewpoints were as follows:

1. A more restrictive interim prohibition against land application while the ordinance was being developed.
2. Procedures to ensure property owners are aware of the effects of land application of biosolids on land value, credit, and insurance coverage.
3. Direct county enforcement of indemnification or hold harmless agreements between private parties involved in biosolids land application.
4. Specifications for the type of review required under the California Environmental Quality Act.
5. Prohibition of the land application of biosolids.

6. County-enforced independent testing of all materials and background conditions for which monitoring requirements are established and for agronomic rate calculations.

#### **Recommendations from the Health and Planning Commissions**

The recommendations of the Task Force were presented to the Health Commission on December 10, 2001. At that meeting, the Health Commission supported the final report and recommendations of the Task Force. The Health Commission also wanted to draw attention to two issues as follows:

1. Explore the possibility of testing soil in South County where biosolids have been applied for several years.
2. Consider the use of performance bonds and/or insurance to protect against known and unknown risks associated with delivery and application of generated biosolids.

The Task Force recommendations were also presented to the Planning Commission on December 13, 2001 and January 24, 2002. At the January 24<sup>th</sup> meeting, the Planning Commission voted to recommend to the Board of Supervisors to support the three recommendations on page 1-II of the December Planning Commission staff report to:

1. Analyze all alternatives.
2. Look at data from past projects.
3. Consider establishing a full moratorium until further studied or maintain the status quo.

The cost of researching alternative biosolid management practices and the time necessary to complete the task would vary depending upon the depth and scope of the research. In addition, this analysis would likely generate a great deal of interest and public participation. Therefore, the amount of time and cost necessary to complete the research is difficult to predict. However, John Larson, facilitator for the Task Force, was asked to provide a general idea of the scope and cost of the project. An analysis of alternatives of biosolids management would consist of the following:

1. Additional treatment prior to land application
  - Thermal drying
  - Chemical stabilization
  - Composting
2. Landfilling
  - Disposal
  - Alternative Daily Cover
3. Incineration
  - Energy production
  - Re-use of ash in other products
4. Land application for agronomic purposes

Each alternative would be evaluated for its capability of meeting the County's public health and other objectives, wastewater treatment facility objectives, potential for environmental impacts, appropriate mitigation measures and a cost for implementation of each alternative. Generally, the scope of the project would consist of consultations to define objectives and determine the range of alternatives to be investigated, research the environmental effects and public health risks, and report preparation. The alternatives analysis as outlined by Mr. Larson is expected to cost approximately \$8,000 to \$9,000. This does not include the time and cost to consider public

input and response. If directed to pursue this course of action, the Public Health Department would have to develop a specific request for proposal and select a suitable contractor to carry out the project.

The cost and time to gather soil data at existing sites where biosolids have been land applied would also vary depending upon the scope of the project. The purpose of the project would be to identify the effects on pollution accumulation within the soils from previous applications of biosolids within San Luis Obispo County. Again, Mr. Larson was asked to provide a general scope of work with associated cost estimates. Two sites were identified: one in south county and one near San Miguel in the north county. The south county site was used for biosolids land application for several years but was discontinued in the year 2000. The north county site was used in a demonstration project in 1997. There are several factors that may influence the usefulness of information gathered during this study:

1. Both sites have been in agricultural use since the application of biosolids and have been subject to applications of commercial fertilizer or manure. Irrigation and tillage practices and the crops grown all could have an effect on the levels of pollutants identified in the soil.
2. Permission has not been given by the property owners to conduct this study. In addition, it is unknown whether records regarding the agricultural practices on the properties are available.
3. The levels of the pollutants in the soils are influenced by the quality of material applied at the time and background information about the soil conditions at the sites prior to biosolids application may not be available.

It is generally agreed that metals such as zinc, cadmium, lead, chromium, and copper are normally present in soil and sewage sludges and are persistent in soils for a long time. Dr. Andrew Chang, Professor of Agriculture Engineering, University of California, Riverside and one of the speakers to the Task Force, has studied this issue and found that the build up of metals in soil is directly related to the concentration of metals in the sludge and the amount of sludge added to the soil. The negative impacts of applying heavy metals in sewage sludge to the soil can be mitigated by setting accumulation limits. Task Force recommendations #4 and #5 specifically address this issue. The primary focus of this project would be heavy metals. In general, the scope of work would include:

- Consultations with the wastewater treatment facilities to obtain information as to exact locations, amounts, and quality of material applied.
- Obtaining permission from the property owners to conduct this study and obtain any records regarding the application of fertilizers, use of irrigation, tillage practices, and crops grown.
- A sampling plan would be prepared based on parcel size, constituents analyzed, and the number of samples. Soil samples would be collected and prepared for laboratory analysis.
- Finally, summarize the analytical results.

The cost of the soil analysis is based on collecting 10 samples at each site (20 samples total) and analyzing them for 17 heavy metals. In addition, if possible, analyze for semi-volatile organic compounds. The cost for the soil data gathering project as outlined by Mr. Larson is approximately \$20,000. Again, if directed to pursue this course of action, the Public Health Department would develop a specific request for proposal and select a suitable contractor to

carry out the project. It is anticipated that this project would take about two months to complete once a contractor is selected.

### **Next Steps**

If directed by the Board, the Public Health Department, County Counsel, and other county departments will begin drafting the ordinance regulating the land application of biosolids. We will work with interested groups and individuals to review and refine the ordinance provisions. The Public Health Department will then present the ordinance to the Health and Planning Commissions for review and comment. We will work with the Planning Department to conduct appropriate reviews of the ordinance required by the California Environmental Quality Act (CEQA). We will hold appropriate public hearings with the Board of Supervisors for final adoption of the ordinance. In addition, we will encourage Cal Poly and UC Agricultural Extension Service to conduct some additional research on soils and sites where land application has occurred in the past.

### Other Agency Involvement/Impact:

Numerous state and local agencies as well as private citizens, non-profit agencies and other interested parties were involved in the Biosolids Task Force. They included the Public Health Department, Air Pollution Control District, Agriculture Department, Cal Poly, Ecoslo, Center for Sludge Information, Regional Water Quality Control Board, San Luis Obispo County Farm Bureau, City of San Luis Obispo Wastewater Treatment Facility, South County Wastewater Treatment Facility, University of California Cooperative Extension, San Luis Obispo County Health Commission, Sierra Club and other interested parties.

If directed by the Board, an ordinance will be developed with input from interested people and agencies for approval in October or November of 2002.

### Financial Considerations

If the recommendations of the Task Force are implemented, the cost of developing the ordinance would include the Environmental Health Services staff costs only. If the recommendations of the Planning Commission are added to the Task Force recommendations, then the cost would increase accordingly. Environmental Health Services has not budgeted for the below referenced costs in either the current budget or the budget for the FY 2002/2003. Therefore, the Public Health Department would need an increase in expense appropriation and corresponding revenue to offset this additional cost.

EHS staff costs:	\$12,500
Alternatives analysis:	\$ 8,000 to \$9,000
Soil data gathering:	<u>\$20,000</u>
Total:	\$40,500 to \$41,500

### Results

The results of approving the recommendations as outlined in the Biosolids Task Force Report would be to complete a County ordinance that allows for the recycling of a natural resource, is more restrictive than current federal regulations and protects the public health and the environment. Accumulation of soil pollutants (heavy metals) would be monitored and minimized. The ordinance would also allow for the notification of affected property owners and provide information as to the benefits and risks of land applying biosolids.