

Memorandum

TO: TRANSPORTATION AND
ENVIRONMENT COMMITTEE

FROM: John Stufflebean

SUBJECT: DENTAL AMALGAM PROGRAM

DATE: 12-15-08

Approved

Christine J. Shippy

Date

12-22-08

RECOMMENDATION

Accept this report and recommend that Council:

1. Approve the proposed Dental Amalgam Program; and
2. Direct the City Attorney's Office to draft an ordinance amending Chapter 15.14 of the San José Municipal Code to regulate dental practices under a Dental Wastewater Permit and require the installation of amalgam separators and implementation of Best Management Practices.

OUTCOME

The City Attorney's Office will return with an ordinance amending Municipal Code Chapter 15.14 requiring dental practices to obtain a Wastewater Discharge Permit and to control mercury amalgam discharges to the sanitary sewer system. The approved dental amalgam program will reduce mercury in wastewater discharged from dental offices and further reduce mercury in the effluent discharged to the Bay from the San Jose/Santa Clara Water Pollution Control Plant (Plant), as well as mercury in the Plant's biosolids.

BACKGROUND

The California Regional Water Quality Control Board (Regional Board) released Order No. R2-2007-007 – Waste Discharge Requirements for Municipal and Industrial Wastewater Discharges of Mercury to San Francisco Bay – for the purpose of implementing the San Francisco Bay Mercury Total Maximum Daily Load (TMDL) wasteload allocations. The Order stipulates implementation of a mercury reduction program by all Municipal and Industrial Wastewater Dischargers to San Francisco Bay and establishes a target to achieve an 85% participation rate among applicable dental offices within 5 years of the effective date of the Order. The requirement became effective February 2008 and will be included in the upcoming renewal of the Plant's National Pollutant Discharge Elimination System (NPDES) Permit.

Sources of mercury amalgam in dental wastewater include the placement of and removal of amalgam fillings (restorations). Of the dental amalgam constituents, mercury is of greatest concern to human

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health because it is a persistent bioaccumulative toxic chemical. The major route for human exposure to mercury in wastewater discharges is through the consumption of mercury-contaminated fish. Fish advisories have been issued for the San Francisco Bay and a study conducted by the San Francisco Estuary Institute found several types of fish to have levels of mercury that is of concern.

Agencies administering wastewater pretreatment programs at several Publically Owned Treatment Works (POTWs) in the Bay Area have implemented dental amalgam reduction programs similar to the program proposed by staff. These agencies include the San Francisco Public Utilities Commission, East Bay Municipal Utilities District, Regional Water Quality Control Plant in Palo Alto, Union Sanitary District, and the Central Contra Costa Sanitary District. Results from these programs show reductions of mercury in their influent and sizeable reductions of amalgam particulates in their sludge.

ANALYSIS

Although the amount of mercury used by dentists has decreased significantly during the past ten years, there is still a substantial legacy of amalgam fillings that will remain in the environment for the next several decades. The Environmental Protection Agency (EPA) report "Health Services Industry Detailed Study – Dental Amalgam, August 2008" states that while mercury used in dental offices accounts for only a small percentage of the total mercury discharged to air and waste each year, mercury in the form of dental amalgam is among the largest sources of mercury found in wastewater influent reaching POTWs. From late 2006 into early 2007, the Environmental Services Department collected wastewater samples as part of a sector loading study at residential, commercial, dental, and industrial dischargers. Samples were tested for total mercury and findings concluded that 61% of the mercury found was discharged from dental offices located in the Plant's tributary area.

The Plant is very effective at treating and removing pollutants from wastewater. It removes 99% of mercury from the wastewater before discharge to the Bay. However, virtually all the amalgam particulate received by the Plant in wastewater ends up in the biosolids. Studies have demonstrated that amalgam separator technology can remove 95% or more of the mercury amalgam particulates in dental process wastewater. Requiring amalgam separators at dental offices will further reduce the presence of mercury in the Plant's effluent and biosolids.

To meet the requirements of the Regional Board's Order, staff proposes that dental practices located within the Plant's treatment area be regulated under a five-year Dental Wastewater Discharge Permit. The Permit effective date for practices located within the City of San José is estimated to be September 2009 and April 2010 for those located within the other tributary cities. The proposed Dental Permit would have two primary requirements:

1. Equipment
 - Install an amalgam separator device by December 31, 2010.
2. Best Management Practices (BMPs)
 - Implement BMPs for Dentists, as suggested by the American Dental Association, within 90 days of the effective date of their permit.

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An exemption would be established for practices that place or remove dental amalgam fillings three days or fewer in a calendar year and specialties that do not remove or place amalgam fillings such as orthodontics, periodontics, and oral and maxillofacial surgery. There are approximately 1,500 licensed dentists in the Plant's service area with an estimated 500 dental practices. Through the permitting application process, staff will determine the actual number of dental practices that will be required to obtain a dental wastewater discharge permit.

Pending adoption of the proposed ordinance, staff would send a permit application packet to dental practices, beginning with those located in San José in July 2009. Packets would be sent to the balance of the practices in the Plant's tributary cities in January 2010. The following is the proposed permit application timeline:

Application packet sent to San José dentists	7/1/09
San José Dental Permits Issued	9/1/09
BMPs certification due	12/1/09
Proof of installation for San José practices	3/1/10
Application packet sent to Tributary Area dentists	1/1/10
Tributary Area Dental Permits Issued	4/1/10
BMPs certification due	7/1/10
Proof of installation due	10/1/10

City of San José Environmental Inspectors would inspect permitted dental practices no less than once during the five-year permit term. Scheduled inspections would be conducted to verify that a certified amalgam separator is installed correctly, proper maintenance and record keeping is occurring, and that BMPs are implemented.

An Enforcement Response Plan that outlines the procedures to be followed by the Dental Program inspection staff to identify, document, and respond to all program violations would be developed. Incorporated into the enforcement plan would be specific criteria by which staff can determine the enforcement action most appropriate to the nature of the violation. Enforcement actions would include verbal warnings, warning notices, notices of violation, administrative citations, and compliance meetings. Oversight of any enforcement action will be conducted by the supervisory staff.

Staff estimates that implementation of the required inspections will require one FTE, which will be managed within existing staffing in the Environmental Services Department. Additionally, staff is exploring whether the required inspections can be integrated into work already done by the City of San José Fire Safety group or the Santa Clara County Department of Environmental Health (SCCDEH). While it is possible that coordinating these inspections with an existing inspection program could be considered a more efficient approach for the City and the dental practices, constraints on how those entities operate may actually increase costs and limit the City's ability to manage program activities.

Estimated costs to dental offices include \$750-\$1,000 for the initial purchase and installation of an amalgam separator, and \$300 annually for maintenance and disposal of the amalgam. These estimated costs are based on averages from similar dental programs implemented by jurisdictions located in the Bay Area.

EVALUATION AND FOLLOW-UP

The Attorney's Office will return to Council in April 2009 with a draft ordinance amending Chap.15.14 of the Municipal Code. Staff will work concurrently with Treatment Plant Advisory Committee (TPAC) and tributary agencies on amendments to their ordinance and operational codes. Once the City approves the pretreatment program changes, existing inter-agency agreements require that they must also be adopted by all agencies discharging to the Plant. Results and progress will also be reported annually to the Regional Water Board as part of the Pollution Prevention Annual Report.

POLICY ALTERNATIVES

Alternative #1: Augment the recommendation by providing a financial incentive in the form of rebates to the first 100 dental practices to complete installation of an amalgam separator in San José; provide financial incentives in the form of rebates to first 100 dental practices to complete installation of amalgam separator in other tributary cities. This suggestion was offered by the Santa Clara Valley Dental Society to assist dentists with the financial burdens of meeting the new requirements.

Pros: Helps alleviate the costs to the dentists for the purchase and installation of an amalgam separator. Provides an incentive to comply with the permit requirements early.

Con: Extra cost to the City. No financial incentives for those practices that installed an amalgam separator prior to the program.

Reason for not recommending: In addition to the cost for the rebates themselves, the City would incur additional administrative costs to manage the rebates. The City and County of San Francisco has been the only jurisdiction in California to offer financial incentives for early adopters to their program. They gave \$200 to the first 100 dental practices to install separators as "early adopters" and \$400 to about 15 dental practices that provide free dental services to low-income populations as part of community service. Funding for the rebates came from a \$20,000 Source Reduction Grant from EPA Region 9 and from their operating budget.

PUBLIC OUTREACH/INTEREST

Staff has used direct correspondence and coordination through the Santa Clara County Dental Society to outreach to local dental practices. On August 29, 2008, staff conducted a general stakeholder workshop at City Hall attended by more than 50 dentists. This workshop was promoted via direct mail to all area dentists and through the Dental Society. Additional coordination with the Dental Society included two meetings with their Board of Directors to discuss the proposed program requirements and active participation in two general membership dinner meetings in September and October 2008.

Response from the dental community has been generally supportive. They are aware of the concerns of mercury in the environment and understand the regulatory issues driving the need to implement a dental amalgam program. However, they expressed concern about the costs the program is asking them to bear for the purchase, installation and maintenance of the separator units. They have asked that the City explore the feasibility of rebates to help offset these costs.

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A minimum of two workshops with vendor fairs are planned for Spring 2009. These workshops would include a review of the program requirements, training on the permit process, and guidance on the purchase and maintenance of an appropriate amalgam separator. Amalgam separator manufacturers and distributors would be invited to display their products as part of a vendor fair at the workshops.

- Criteria 1:** Requires Council action on the use of public funds equal to \$1 million or greater. **(Required: Website Posting)**
- Criteria 2:** Adoption of a new or revised policy that may have implications for public health, safety, quality of life, or financial/economic vitality of the City. **(Required: E-mail and Website Posting)**
- Criteria 3:** Consideration of proposed changes to service delivery, programs, staffing that may have impacts to community services and have been identified by staff, Council or a Community group that requires special outreach. **(Required: E-mail, Website Posting, Community Meetings, Notice in appropriate newspapers)**

This recommendation meets Criteria #2: This memorandum will be posted on the City's website for the January 2009 Transportation and Environment Committee Agenda.

COORDINATION

This memorandum has been coordinated with Mollie Dent, Senior Deputy City Attorney, City Attorney's Office and the City Manager's Budget Office.

FISCAL/POLICY ALIGNMENT

Not applicable

COST SUMMARY/IMPLICATIONS

Start-up of the program will continue until December 2010 and covers development and mailing of permit application packets, development of the database, processing of permits, and data entry. Non-personal start-up costs are estimated to not exceed \$50,000.

Ongoing program costs include inspections of dental practices, maintenance of the data base, enforcement, permitting new practices, and outreach.

Ongoing project costs and staffing for program operation are included within the existing staffing levels and base budget for the Pollution Prevention Program.

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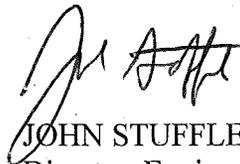
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BUDGET REFERENCE

Fund #	Appn #	Appn. Name	RC #	Total Appn	Amt. for Recommendation	2008-09 Proposed Operating Budget (Page)	Last Budget Action (Date, Ord. No.)
Remaining Project Costs							
513	0762	NP/Equip – Env. Svcs.	700725	\$32,009,421	\$50,000	VIII - 38	10/21/08, 28422
Total Funding for Projects							

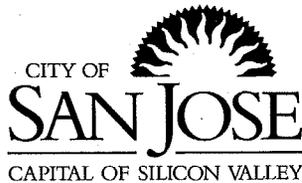
CEQA

Not a project.



JOHN STUFFLEBEAN
 Director, Environmental Services

For questions please contact Elaine Marshall, Environmental Services Program Manager, at 408-277-5697.



Memorandum

TO: TRANSPORTATION AND
ENVIRONMENT COMMITTEE

FROM: John Stufflebean

SUBJECT: FATS, OILS, AND GREASE CONTROL
PROGRAM ORDINANCE REVISIONS

DATE: 12-19-08

Approved

Christine J. Shipper

Date

12/22/08

RECOMMENDATION

Accept this report and recommend that it be placed on the Council Agenda for discussion, with the following recommendation:

- Direct the City Attorney's Office to draft an ordinance amending Chapter 15.14 of the San José Municipal Code to implement the enhanced FOG Control Program.

OUTCOME

The Municipal Code revisions will update the FOG Control Program and enable staff to more effectively administer the Program requirements. By making FOG requirements more explicit and enforceable, this recommendation will result in improved inspection efficiency and help to mitigate the impacts of grease on wastewater management, including reducing blockages in the sanitary sewer system, sanitary sewer overflows, collection system maintenance costs, and grease-related removal and disposal costs at the San Jose/Santa Clara Water Pollution Control Plant (Plant).

BACKGROUND

The US Environmental Protection Agency (EPA) has identified grease as a leading cause of blockages in sanitary sewer systems. These blockages can cause sanitary sewer overflows and endanger public health and pollute local rivers, creeks, and the South San Francisco Bay. The California State Water Resources Control Board released requirements for Sanitary Sewer Systems Water Quality Order No. 2006-0003, on May 2, 2006. This order requires collection systems to:

1. Develop and implement Sewer System Management Plans (SSMP), and
2. Report all sanitary sewer overflows to the State database.

The City Council approved the current SSMP on August 26, 2008. The FOG Control Program is element #7 of the SSMP and includes building design and construction standards, facility inspections, sewer investigations, and outreach.

There are approximately 4,500 food service establishments (FSEs) in San Jose and the tributary area to the Plant which prepare and/or sell food for consumption either on or off the premises or wash utensils or dishes on premises that would contribute grease to the sewer system. These establishments include but are not limited to restaurants, sandwich shops, delicatessens, bakeries, pizzerias, cafeterias, markets, bed and breakfast inns, motels, hotels, meeting halls, caterers, retirement, and nursing homes.

The City began FSE inspections in San Jose approximately six years ago focusing on compliance with stormwater permit requirements. Two years ago, the program was enhanced to also emphasize indoor inspection in order to comply with the State's SSMP requirements and to minimize FOG impacts on the collection system. A new inspection unit was created to expand the stormwater inspections of FSEs to include inspections of grease traps, interceptors, and maintenance records. These inspections have been heavily focused on educating these facilities on how to minimize their impacts on the storm and sanitary sewers by using Best Management Practices (BMPs). Facilities are inspected on a one- to three-year rotation based on issues identified at the facility. The program is currently being geographically expanded into the Plant's tributary area.

For the 2007 calendar year the City reported 189 sanitary sewer overflows to the State database. Of these 160 or 85% were caused by grease and the remainder by root intrusion. For the same year, the Plant removed and disposed of 639.5 tons of at a cost of \$24,978.

ANALYSIS

During development of the SSMP, staff evaluated the service area and inspection program performance and identified several opportunities to improve the program's effectiveness. U.S. EPA studies have shown that a strong FOG control program translates to less grease in the sewer system which results in lower maintenance costs and fewer sanitary system overflows. Specific opportunities for improvement identified include:

1. Codifying existing BMPs,
2. Clarifying and formalizing grease control requirements,
3. Additional outreach to FSEs, and
4. Additional focus on "hot spots" in the sanitary sewer system.

This recommendation addresses items 1 and 2 listed above. Outreach and hot spots are being addressed through program implementation. Current Municipal Code provisions related to FOG control are set forth in Attachment 1. These requirements have not been updated in approximately 20 years. Staff is proposing updates to the Code to clarify program requirements and formalize existing best practices.

Compliance with the FOG control program has been achieved predominately through education and training of FSE personnel through the use of BMPs. For FY 2007-08, the City issued 903 verbal warnings issued and identified 1,414 site issues at the 1,344 facilities inspected. Staff experience in the field has shown that formalization of these BMP requirements in Municipal Code would further clarify program requirements for the businesses thereby improving overall program compliance. For example, staff is proposing that cleaning frequencies for grease control devices, based on the BMP, be specified in the Municipal Code.

Several of the proposed changes would improve inspection efficiency. It is common that a single facility be visited multiple times to complete the inspection. Of the 1,344 facilities inspected, approximately 1,100 facilities required two or less inspections while 240 facilities required three or more inspections for completion. Modifying the Code provision to specify that maintenance documents must be kept on site would reduce some instances of required follow-up inspections. A full list of the proposed enhanced FOG Control Program modifications and additional requirements for implementation of BMPs is shown in Attachment 2.

Enforcement for the FOG Program will continue to follow the model of the City's other Environmental Enforcement programs. Staff employs a tiered, progressive enforcement response, depending on the severity and persistence of a violation. Education is used as a first tool; businesses are provided educational materials, which are routinely available in multiple languages, and given an opportunity to comply.

EVALUATION AND FOLLOW-UP

The Attorney's Office will return to Council in April 2009 with a draft ordinance amending Chapter 15.14 of the Municipal Code. San José will work concurrently with Treatment Plant Advisory Committee (TPAC) and tributary agencies on amendments to their ordinance and operational codes. Once San José approves the pretreatment changes, existing inter-agency agreements require that they must also be adopted by all agencies discharging to the Plant.

PUBLIC OUTREACH/INTEREST

Staff has used direct correspondence and coordination through business organizations such as the California Restaurant Association (CRA) to outreach to local restaurants. On November 6, 2008, staff conducted a general stakeholder workshop at City Hall attended by approximately 70 stakeholder representatives. A CRA representative provided opening remarks. Outreach for this

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December 19, 2008

Subject: **Fats, Oils, and Grease Ordinance Revisions**

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workshop was conducted via direct mail to approximately 4,500 facilities in the tributary area using the City's enforcement database. Workshop information was available in English, Spanish, and Vietnamese. Staff received minimal comments on the proposed ordinance changes, and provided clarifications to questions. The presentation, workshop questions, and answers were posted on the ESD web site.

- Criteria 1:** Requires Council action on the use of public funds equal to \$1 million or greater.
(Required: Website Posting)
- Criteria 2:** Adoption of a new or revised policy that may have implications for public health, safety, quality of life, or financial/economic vitality of the City.
(Required: E-mail and Website Posting)
- Criteria 3:** Consideration of proposed changes to service delivery, programs, staffing that may have impacts to community services and have been identified by staff, Council or a Community group that requires special outreach. **(Required: E-mail, Website Posting, Community Meetings, Notice in appropriate newspapers)**

This recommendation meets Criteria #2: This memorandum will be posted on the City's website for the January 2009 Transportation and Environment Committee Agenda.

COORDINATION

This memorandum has been coordinated with the City Attorney's Office, the Redevelopment Agency, and the Office of Economic Development, and is scheduled to be considered at the January 8, 2009 meeting of the Treatment Plant Advisory Committee.

CEQA

Not a project.



JOHN STUFFLEBEAN
Director, Environmental Services

For questions please contact John Mukhar, Environmental Services Program Manager, at 408-277-5696.

Attachments 1, 2

Attachment 1
Current Municipal Code Provisions Related to FOG Control

Municipal Code Section	Summary
15.14.305	Defines dispersed and floatable grease.
15.14.535	Requires property owners to take measures to prevent accidental discharges, reduce objectionable characteristics, contents or rate of discharge into the sanitary sewer system to prevent damage or interference with the system.
15,14.540	Allows ESD Director to require any user to install wastewater monitoring facilities.
15.14.550	Prohibits the direct or indirect discharge into the sanitary sewer system of substances that tend to obstruct or injure the sewer system or interfere with its proper operation and maintenance.
15.14.565	Prohibits the discharge of liquid or waste containing fats, oil or grease in excess of 150 parts per million by weight.
15.16.625	Requires food waste from homes, restaurants and eating establishments to be processed through a grinder or garbage disposal before discharge into sewer system.
15.14.630	Establishes requirements for grease removal devices at businesses or establishments where grease may be discharged into sewer, including maintenance requirements and record keeping.

Attachment 2
Summary of Proposed Modification of Existing Code Provisions and
New Requirements on FSEs for implementation of BMPs

Application of Requirement	Summary of Proposed Changes
Food Service Facilities with an interceptor	Required to pump out, clean and maintain the interceptor on at least a quarterly basis, and any time more than 25% of the interceptor's functional capacity is taken up by solids and grease
Food Service Facilities with a grease trap	Required to pump out, clean and maintain the trap on a monthly basis
All Food Service Facilities	Required to collect yellow grease for recycling and prohibit the discharge of yellow grease to the sewer system
All Food Service Facilities	Required to keep pumping and maintenance records on site for a three year period
All Food Service Facilities	Required to install or upgrade a grease removal device where FOG has caused or contributed to a sanitary sewer overflow, or a 25% or greater loss of sewer line capacity, in a line downstream of the facility,
All Food Service Facilities	Allowed to apply for and obtain alternative schedule for pumping and cleaning interceptors and grease traps upon showing, that an alternative schedule can maintain at least 75% the interceptor or trap functional capacity, based on the FSE's historic, current and planned operations.
All Food Service Facilities	All food grinders shall be removed from an existing FSE upon: (i) operational change to FSE resulting in a required plan check process; or (ii) any remodeling or construction valued at \$500 or more.
Property owner with a shared interceptor by multiple food service establishments	Will be required to operate and maintain this interceptor.