## A Regional Approach to Wastewater Pollution Prevention

Successes of the Bay Area Pollution Prevention Group

Karin North, City of Palo Alto Sharon Newton, City of San Jose



### **Presentation Overview**

- About the Bay Area Pollution Prevention Group (BAPPG)
- BAPPG Regional Projects
- Other Regional Collaborations
- Benefits of Regional P2 Approaches

### **About the BAPPG**

- A committee of the Bay Area Clean Water Agencies (BACWA)
- A coalition of 44 Northern California wastewater agencies
- Work together on common pollution issues of concern
- Our motto is "Reuse, recycle...don't reinvent the wheel!"

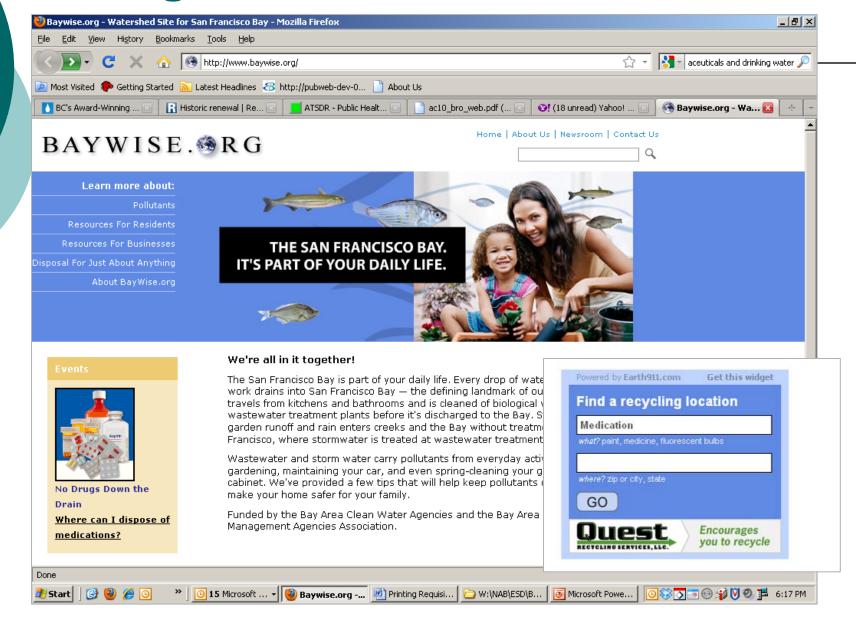
### **BAPPG Details**

- Members' annual dues total ~\$65K
- Member agencies provide leadership and project management
- Monthly Steering Committee and bimonthly Main Committee Meetings
- Pollutant prioritization exercise each September for next fiscal year priorities
  - BAPPG's work plan is developed around these priorities

## **2009-2010 Projects**

|  | Mercury          | Dental Mercury Program Training for Program Staff and Inspectors                                    |
|--|------------------|---|
|  | ilioi oui y      | Training & Outreach to Dental Hygienist and Dental Assistant Schools                                |
|  |                  | Fog Inspector Training  |
|  | FOG              | Spanish Radio Ads   |
|  |                  | Asian Radio & Newspaper Outreach  |
|  |                  | Holiday Turkey Fryer Stickers & Posters at OSH and Home Depot                                       |
|  | Pharmaceuticals  | Regional Pharmaceutical Collection Campaign   |
|  | Filarmaceuticais | Hospice Mail-back Pilot   |
|  | Dioxin           | Chlorine-free Purchasing Policy   |
|  | Copper           | Outreach and Presentations to Plumber Schools & Building Inspectors                                 |
|  | Cyanide          | Inspector Training: Industrial Sources of Cyanide   |
|  | Pesticides       | Funding for "Our Water Our World" Program   |
|  | P2 Week          | Agency Coordination and Production of P2 Week Poster  |
|  | BAPPG website    | Maintenance of BAPPG Website  |
|  | Unplanned issues | Pesticide Regulatory Assistance for Pyrethroids Re-evaluation & FIFRA-Clean Water Act Harmonization |
|  |                  | Social Media Training   |

## **Regional Website**



## Pharmaceutical Projects

- Regional medicine collection campaigns
  - Trainings how to conduct a one-day collection event or how to establish an ongoing collection program
  - Flyers, website, paid advertising & media relations
  - Results
    - 36 agencies participated
    - o 67 one-day or permanent collection sites
    - Collected 3,720 lb of pharmaceuticals
    - 5 print stories, 3 radio interviews and one TV news piece
    - 9 radio stations aired free PSAs
    - 400% increase in website hits during campaign



## **Pharmaceutical Projects**











#### Old Pills Piling Up?

Unused medicine that is flushed or put down the drain can end up in our waterways and pollute the environment. You can make a difference by properly disposing of your unused medications.

Prevent water pollution and protect the San Francisco Bay by bringing your enused or expired medicine to one of our drop-off sites.

For drop-off sites, visit www.baywise.org or call: 1-888-BAYWISE

(229-9473)















#### **Old Pills Piling Up?**

Prevent water pollution and protect the San Francisco Bay. Bring your unused or expired medicine to one of our drop-off sites. Visit:

#### www.baywise.org



National Pollution **Prevention Week** Sept. 21-27, 2009

BAY AREA POLLUTION
BAPPG PREVENTION GROUP

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Prevent water pollution and protect the San Francisco Bay. Bring your unused or expired medicine to one of our drop-off sites. Visit www.baywise.org







## Pharmaceutical Projects

- Hospice Medication Mail-Back Pilot
  - Funding to Teleosis Institute
  - Outreach to hospice and long-term care facilities
  - Provide pilot mailers for families to dispose of unwanted medication



## **Copper Project**

- Teach best plumbing practices that reduce the potential for copper discharges to the sewer
- Consultant provides presentations to plumbing apprenticeship programs throughout the Bay Area, outreach to building inspectors



## **Copper Project**

#### Preventing Corrosion Protects San Francisco Bay

A Fact Sheet for Designers

#### Copper Sources to the Bay

Like other heavy metals that accumulate in the Bay, econsider amounts of copper have a negative environmental impact. Copper enters the Bay via storm divines and discharge from wastewater treatment plants (see pix dust below). In South San Francisco Bay, about 77 percent of copper is from storm water sources, while 23 percent is from wastewater treatment plants. Of that westerwater component, 60 percents believed to be from copper pipe corosism.(1)

Typical Breakdown of Bay Copper Sources



wastewater: pipe corrosion
wastewater: all other sources

\*Calculations based and ata for South San Francisco Bay south of the Dumbarton Bridge.

#### Environmental Consequences

Copper is acutely toxic to plankton. Copper also accumulates in clam tissue, affecting reproduction, development, and growth. Because copper and other heavy metals affect these and other Bay species, they can upset the natural balance of species.

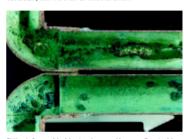
Wasternater Discharge Consequences
All Bay Area wasternater treatment plants receive
permits to discharge to the Bay. These permits strictly
limit copper in wasternater efficient. Many permits also
require industrial and commercial pollution prevention
programs to reduce copper discharges to the Bay.

#### Designers Are Part of the Solution!

Plumbing engineers and system designers can significantly added pipe corresion by making simple design adjustments. The techniques listed below reduce pipe corosion and help protect San Francisco Bay(1)

- 1. Minimize velocity
- 2. Minimize hot water temperature
- 3. Specify low-corrosivity water-flushable fluxes
- 4. Avoid stagnant sections
- 5. Minimize direction and size changes

For further details regarding design methods to reduce corresion, see the back of this fact sheet.



Pitting in 6-year-old cold water pipe assed by excess that at solder joint (2)

#### Less Corrosive Fluxes

The ASTM BB13 flux standard limbs the correstity and requires that the flux be water flux-able. While these are voluntary standards, the Copper Development Association encourages architects, engineers, contractors and building officials to specify and require the use of BB13 fluxes.

All flux manufacturers make a 8913 flux, 8813 fluxes commonly available in California include:

- Everflux
- Harris Bridget
- Starting
- · Fry's Fire Eater
- LaCo Ultimate BB13 Flux













- Dental Mercury
   Training for Program
   Staff & Inspectors
- Dental ProgramBrochure
- Dental AmalgamSeparator List
- Outreach to Bay Area
   Dental Hygienist &
   Assistant Schools





- Dental ProgramTraining
  - Program design
  - Permit examples & tracking
  - Dental Association outreach
  - Inspections & enforcement

### Dental Office Inspection Training

Learn how to inspect a dental office, training given by dental expert Tom Barron. Brief discussion on how to implement a successful dental amalgam program.

January 14th, 2009 9:00am—12:00pm



**CWEA Continuing Education Units** 

RWQCB Office Elihu Harris Building 1515 Clay Street 2nd Floor, Room #1 Oakland, CA 94612



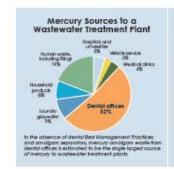
RSVP by January 5th to mike\_auer@unionsanitary.com





Dental Offices and Water Pollution Control

our vacuum lines, sinks, and tailets all lead to local sewer lines. Anything you pour down the drain goes to a wastewater treatment plant before being discharged to San Francisco Bay. Because these treatment facilities are not designed to remove metals like mercury and silver, wastewater treatment agencies seek your support to comply with regulatory permits. Protecting the Bay is important because of elevated mercury observed in fish.



#### Dental Amalgo A variety of amal

dental office:

- scrap ama
- used, leakir capsules
- amalgam and vacuu the traps a
- amalgam :
- "contact a with amala

#### X-Ray Fixer

Your x-ray fixer waste includes silver, another metal that can impact San Francisco Bay. Do not pour it down the drain. Collect and manage as a hazardous waste. (Details inside)

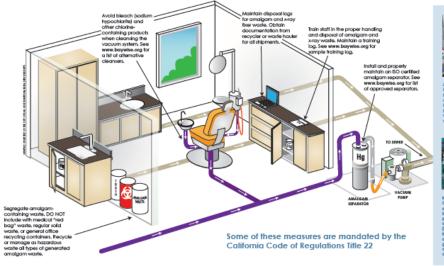
SEATH LIMIT PRODUCTION AND COMES, AND COMES IN SECURITION, AND PROJECTION PRODUCTION ENGINEERS FOR A REPORT, PROPERTY TO ADDRESS AND COMES AND COM

#### Best Management Practices (BMPs) in dental offices help protect San Francisco Bay











liore amalgam waste in air-light containers, following recycler's or waste hauter's instruction for separation contact and non-contact amalgam. Do not add water



Properly dispose of x-ray fixer, using licensed waste houser to recycle or dispose as hazardous waste. Due to the high silver content, never pour fixer down the

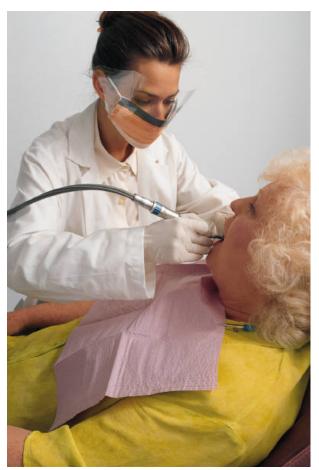


- Amalgam Separator List
  - Questionnaire
  - Lab Test Certificates
    - Testing within last 5 years
    - Removal efficiency ≥ 95% at empty & full conditions
  - Manufacturing Assurance
  - O&M Manual
  - Local Contact Info

|  | cin  |   |  | model of amalgam se<br>for the BAPPG appro   |     |
|--|--|---|--|--|-----|
| Section I - Company  | Information  |   |  |  |     |
| NAME OF BUSINESS   | Contact Person   |   |  |  |     |
| BUSINESS MAILING ADDRESS   |  |   |  |  |     |
| TELEPHONE  | FAX  |   | EMAIL  |  |     |
| Section II - Local Co  | ntact Information  | - San Franci  | sco Bay  | Area   |     |
| NAME OF LOCAL REPRESENTATI   | VE (if different from above)   | Contact Person  |  |  |     |
| BUSINESS MAILING ADDRESS   | 100 9995   | 1   |  |  |     |
| TELEPHONE  | FAX  | NO 00   | EMAIL  |  |     |
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IF YOU HAVE ANY QUESTIONS REGARDING THIS FORM, PLEASE CONTACT: Meg Gale (415) 695-7378 OR mgale@sfwater.org
MAIL THE COMPLETED FORM TO - Meg Gale, SF-PUC, 3801 Third Street (#600), San Francisco, CA 94124,

- Outreach to Bay Area
   Dental Hygienist &
   Assistant Schools
  - Dental offices as a potential source of mercury pollution
  - Best management practices
  - Local program information



- Regional Mercury Thermometer Exchange
  - Training for POTW staff
  - Group purchase of digital replacement thermometers
  - Developed regional flyers & outreach materials
  - Conducted regional media outreach



# Mercury Fever Thermometer Exchange

Bring us your glass mercury fever thermometer and exchange it for a digital thermometer.\*

ercury is toxic and can cause damage to the nervous system, brain, kidneys, liver, and immune systems in humans and animals. BE MERCURY-FREE.



Find a mercury thermometer exchange location near you by visiting www.BayWise.info or by calling 1-888-BayWise.

#### Participating Agencies

- Alameda Countywide Clean Water Program
- Bay Area Clean Water Agencies
- Bay Area Stormwater Management Agencies Assoc.
- Central Contra Costa Sanitary District
- · City of Livermore
- · City of Millbrae
- · City of Palo Alto

- City of Redwood City
- · City of San Jose
- · City of San Leandro
- · City of Santa Rosa
- · City of Saratoga Clean Water Program
- · City of South San Francisco
- · City of Sunnyvale

- East Bay Municipal Utility District
- · Russian River Watershed Association
- · San Francisco Department of the Environment
- Save The Bay
- · South Bay Sanitation Authority
- Union Sanitary District
- Vallejo Sanitation and Flood Control District

Bay Area Pollution
BAPPG Prevention Group

- Regional Mercury
   Thermometer Exchange
  - 2007 Results
    - 4,264 mercury thermometers
    - o 21 mercury thermostats
    - 16 lbs of bottled elemental mercury
    - Total of 9.43 kg mercury collected



## **FOG Projects**

- Spanish Radio Ads
  - Remind listeners about proper disposal of FOG during the holiday season
  - Partner with top Bay Area Spanish Radio Stations
  - 60 1-minute radio spots and ~50 PSAs



## **FOG Projects**

- Asian Radio Ads
  - 31 one-minute radio spots
  - 14 radio stations aired PSAs
  - 3 five-minute interviews on KEAR
  - 30-minute interview on Radio Disney
  - 2 newsprint stories



## **FOG Projects**

## AVOID PAIN IN THE Recycle turkey fryer oil and cooking grease. Find a location near you at www.baywise.org NO COOKING OIL OR GREASE DOWN THE DRAIN Cooking fats, oil and grease block drains and sewers. Recycle. Prevent raw sewage backups into your home, your streets and the bay. BAY AREA POLLUTION PREVENTION GROUP

- Turkey FryerOutreach
  - Remind users to properly dispose of cooking oil.
  - Stickers and posters
  - 42 Home Depot stores
  - 35 OSH stores

## Our water-Our world

- Regional project that promotes less toxic pest control practices
- Factsheets on specific pests and ways to manage without hazardous chemicals
- Website includes an "Ask the Expert" feature
- Store Partnership



## CONTROLLING IN YOUR HOUSE

he Atgentine ant is a frequent invader in California homes. Although they can be pests, ants provide an ecological cleansing and fertilization service of considerable importance. For example, they kill and eat many pest insects, aerate the soil, and recycle dead animal and vegetable material.

Because of these beneficial aspects, it is undesirable (and probably downright impossible) to eliminate ants from their outside habitat. The best approach to ant management is to try to keep them outdoors.

#### DETECTION

Look for individual "scouts" or long lines of ants in or around the house near food or water. Distinguish Argentine ants from Carpenter ants by site. Argentine ants are small (br.), and their queens are slightly larger. Carpenter ants are Vs. or largent carpenter ants are Vs. or largent from those listed below for Argentine ants.

#### LESS-TOXIC CONTROLS

#### INSIDE YOUR HOME

- Kill the scouts so they can't call in the hordes when they find a tasty tidbit.
- Use ant baits because they use a minimum of insecticide and confine it to a very small area (see "Tips for Using Ant Baits" on back).
- Use insecticidal dusts such as diatomaceous earth (DE) in wall voids and cracks before they are sealed.
   Use a hand duster to apply DE and wear a dust mask and goggles. DE has little toxicity to humans or pets, but kills insects by absorbing their outer waxy coating, causing dehydration and death.



Choose less toxic products for your home and garden. Look fo

## PESTICIDES AND WATER POLLUTION

ommonly used pesticides can be harmful to people, pets, and the environment. Part of the problem is the toxicity of some pesticides, but even more important is the sheer volume of pesticides used in this country every year. Much of it finds its way to our water, air, and soil. Studies show that the most commonly used pesticides are the ones most likely to cause water pollution.

Who applies all these chemicals? You might think that farmers are mainly responsible for pesticide problems, but more than half of California pesticide use is in urban areas — by residents, home gardeners, and pest control professionals in and around schools, businesses, and homes.

The Our Water, Our World program was developed in 1997 by clean water agencies in response to pollution problems caused by two of the most commonly used residential pesticides at that time—chloryprifos (Dursban) and diazinon. Both stormwater runoff and wastewater treatment plant discharges contained levels of these two pesticides that were high enough to kill aquatic organisms at the bottom of the food web. In fact, in1998 the U.S. Environmental Protection Agency (EPA) listed 85 California waterbodies as "impaired" due to diarinon.

And in 2000, because of growing concerns about the effects these chemicals have on human health, EPA announced an agreement with pesticide manufacturers to remove most products containing chlorpyrifos and diazinon from retail store shelves and to end most residential and professional uses by the end of 2004. Generally, since January 2005 professionals have virtually stopped using these two pesticides in residential areas. In spite of sales of these products being discontinued, residents may still be using old supplies — potentially causing the same problems that led to their removal from the market.

Water quality agencies urge the public not to use pesticides that contain chlorpyrifos (Dursban) or diazinon. Instead, dispose of them at a household hazardous waste facility (see below).

#### NEW THREATS TO WATER QUALITY

Chemical pesticides designed to replace these banned pesticides are available, but substituting another toxic chemical won't help the environment. With the phase-out of diazinon and chlorpyrifos, pesticide products have either been



Choose less toxic products for your home and garden. Look for

Place traps along the edges of walls, appliances, cupboards, etc., and not in the middle of the room. Sticky traps with a nontoxic "pheromone" attractant will catch more roaches. When you find out where roaches are hiding, you'll know where to concentrate your efforts.

**OUT OF YOUR HOUSE** 

COCK/ROACHES

#### LESS-TOXIC CONTROLS

lthough cockroaches

are useful outdoors.

where they help re-

cycle plant and animal wastes.

they are not welcome indoors.

Research clearly indicates that

roaches can carry disease-

causing organisms from sewers,

garbage cans, or bathrooms to

kitchen counters and human

food. Cockroaches can also

trigger allergic reactions in

Except for size and markings, all

cockroaches have a similar appear-

ance. These insects are dark in color.

oval-shaped, and have long antennae.

Roaches are mainly active at night and

generally remain hidden during the

day in cracks and crevices near their

· Use nontoxic sticky traps to locate

roach habitat. Roaches like to travel

by touching the edges of objects.

some people.

**DETECTION** 

- Use sticky traps for small infestations. If you only have a few roaches, you may be able to control the problem with sticky traps.
- Use a strong vacuum with a crevice attachment to pull roaches from their hiding places.
- Use insecticidal dusts such as distomaceous earth (DE) or boric acid in wall voids or cracks and crevices before you seal them, under large appliances, or in other prime habitats. One way to gain access to a wall void is to remove the cover plates on electrical outlets and switches. Always turn off the power before applying products near electrical outlets.

When properly used, DE has little toxicity to humans and pets, but kills insects by absorbing their outer waxy coating, causing dehydration and death. Use DE sold for pest control and not for pool filters.

Although boric acid has a low acute (immediate) toxicity for humans and pets, it should be handled carefully and kept out of the reach of children and pets. For roaches, boric acid is a slowacting but effective stomach poison. When applying these dusts, use a hand duster and wear a dust mask.

When applying these dusts, use a hand duster and wear a dust mask, gloves, and safety goggles. Apply a very light coating because roaches will avoid piles of dust.

 Use cockroach baits because they use minimal amounts of insecticide and confine the poison to a very small area (see Tips for Using Cockroach Baits on back).

#### **PREVENTION**

Prevent cockroach infestations by denying them access to your home and to the food, water, and shelter they need

- Store food in the refrigerator or in containers that seal tightly.
- Keep things clean and tidy. Thoroughly clean counters and vacuum or sweep floors daily in eating and food preparation areas. Don't leave dirty dishes out overnight, even in the dishwasher. Any garbage containing food scraps should be removed from the house nightly. Thoroughly clean recyclables before storing them. At right, place pet food and water bowls in a moat of soapy water. Reduce clutter in all rooms (it provides habitat for roaches).





Choose less toxic products for your home and garden. Look for this symbol before you buy.

## Other Regional Collaborations

- Training workshops
  - Cooling Tower P2
  - Cyanide Sources
  - Bringing P3S Home
- Group product buys
  - FOG scrapers
  - Digital thermometers
- Group print runs
  - FOG Restaurant posters
  - Grow It!/Clean It! guides







## Benefits of a Regional P2 Approach

- Sharing of information and ideas
  - "Don't reinvent the wheel!"
- Good value for the money
- Coordinated regional outreach messages increase impressions
- Agencies can include BAPPG activities in their P2 annual reports

## **Contact Information**

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