

PROJECT UPDATES AND SUMMARIES

September 2009

Marina and Boatyard Repair Project

Project Managers:

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Background

The Marina and Boatyard Repair P2 project is designed to increase implementation of P2 strategies at boatyards and marinas thereby eliminating or reducing hazardous waste generation and VOC air emissions. The objective and outcomes for the Marina and Boatyard Pollution Prevention project have been updated to provide a focus on developing Best Management Practices (BMPs) for Boatyards and increase utilization of existing BMPs materials for Marinas. To achieve the project objective a program will be designed that will enable various government and business entities to educate boatyards and marinas in effective P2 strategies. The training program, which will consolidate information from existing training programs, the internet, industry associations, and high-performers in the boatyard and marina industry, will be designed for use by boatyard and marina managers and technicians. OPPGT will seek advice and input from representatives in the boatyard and marina industry and government agencies during program development to ensure that the program is designed to reach the target audience while addressing important environment, health and safety issues. Working with government agencies that have programs in-place that target the boatyard and marina industry and tapping existing programs for information and resources will enable OPPGT to develop a comprehensive training and outreach program that complements but does not duplicate the efforts of others.

Current Status

P2 staff made a presentation to the Interagency Coordinating Committee (IACC), Marinas and Recreational Boating Workgroup. The IACC provided information to the project team as to materials available on BMPs for Marinas developed by various members of the IACC. The DTSC project team is coordinating closely with the IACC to collaborate on the project and incorporate existing materials on Marina BMPs into the project while engaging in new research of BMPs at Boatyards.

Two projects that will feed into the Marina and Boatyards P2 Project are:

- 1) City of San Francisco research project which will focus on products that are used by boat owners and marina operators and research the product ingredients to determine the least toxic products and verify product claims as to their "green" claims,

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2) A U.S. EPA Grant to fund a research project that determines the best and most cost effective methods for applying non copper antifouling coatings to boat hulls.

Planned Activities

The next step will be to initiate a preliminary study of materials currently available for the industry.

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Auto Body and Paint Project

Project Manager:

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Industry Background and Project Scope

There are approximately 8,000 auto body and paint shops in the state of California.¹ Many of these shops do body work and refinishing, and produce repairs that are near factory-finish quality.

The most common hazardous waste generated at auto body shops is spent solvent mixed with paint waste. Used oil, antifreeze, lead-acid batteries, sanding dust, and solvent recycler still bottoms are also generated but in smaller quantities. In addition, spent paint booth filters are sometimes managed as hazardous waste; however, many shops have determined that their booth filters are non-hazardous and are disposing of these as non-hazardous waste. Some dusts generated from sanding operations are hazardous waste because they have been found to contain metals above California regulatory thresholds. Many shop owners and inspectors are unaware that their sanding dusts may be hazardous waste.

Air emissions from paint application and paint-gun cleaning present the greatest concerns. California's air districts have rules specifying the type of spray equipment that can be used and the amount of volatile organic compounds (VOCs) allowable in automotive refinishing coatings. A number of air districts, such as South Coast Air Quality Management District and San Joaquin Air Pollution Control District, have greatly restricted the VOC content in the base coat. This has required shops to implement the use of waterborne basecoats in place of the high VOC solvent base coats. Air districts also have rules limiting VOCs used in paint gun cleaning product, and require the use of enclosed gun washers.

Sewer and storm water discharges also present environmental concerns. Heavy metals from sanding operations, spilled or drained vehicle fluids, paints and solvents, and soaps from car washing all have the potential to contaminate surface waters and ground water.

Current Project Status

The Auto Body and Paint (AB&P) P2 project began in July 2004 and active promotion ended in December, 2008. The project goals were to increase adoption of pollution prevention strategies; reduce hazardous waste generation

¹ Source: infoUSA.com

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and VOC emissions at shops; and partner with local programs and associations that provide outreach to their businesses.

Outreach

Program partners have taken the lead role in promoting auto body pollution prevention through Green Business Programs and local agency outreach. The primary DTSC role in 2009 was to provide training materials to local agencies for their distribution and respond to requests for training. Staff conducted training at the CUPA conference, January 2009. The Spanish language version of the training video was completed in June 2009 and is available on-line.

Project Materials Development

- Staff drafted a “Green Station “checklist for auto body and paint shops based on the Vehicle Service and Repair Model Shop checklist to be used for auto body shops that pursue recognition through the BAR- DTSC Green Station Recognition Program. To date, one shop has completed the checklist and provided feedback as part of initial field testing of the draft checklist.
- The Institute for Research and Technical Assistance (IRTA) completed the DTSC funded project to identify, test and demonstrate low-VOC, low toxicity alternatives for the auto body industry. IRTA is a nonprofit organization established in 1989 to assist companies and whole industries in adopting low-VOC, low toxicity alternatives.

IRTA’s project report is reader friendly and includes cost analysis and examples of shops that successfully demonstrated alternative thinners and cleaners for traditional coatings, waterborne coatings, waterborne thinning and cleaning alternatives and sanding dust control equipment. The final report shows that shops can achieve excellent end results for their customers and remain cost effective when using safer alternatives. The report is posted on the DTSC web site and the information has been used in one training presentation, to date. The case studies would be used in future workshops and fact sheet(s) if the project continues.

- A draft poster with pictures and graphics showing spill prevention and waste control best management practices was developed. Comments from two green business program staff were received.

Potential Future Activities

If the project is selected for expansion, future project activities would include outreach and education to encourage auto body shops to use safer alternative products, implement best management practices, and source reduction methods

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and technologies that are cost effective. Methods of distribution and outreach would include:

- add the Auto Body and Paint sector to the Bureau of Automotive Repair's (BAR) Green Station Recognition Program that is now available to auto repair shops;
- distribute information and provide training, including to community colleges and trade schools, industry associations, local agencies, Environmental Training Center.

Task list

Materials development

- Distribute draft Green Station checklist to at least five more shops; solicit feedback on the checklist; revise as needed;
- Finalize Green Station checklist and distribute through BAR field representatives;
- Fact sheet from the IRTA report information;
- Case studies and success stories;
- Poster(s), pictures, graphic representations to show BMPs, proper waste management, and P2 measures visually
- On-line, e-mail, printed surveys to measure program effectiveness

Presentations and workshops

Use existing and new materials developed for the project:

- Hold workshops with green business programs, Environmental Training centers, community colleges, trade and technical schools
- Present project plans and information to CUPA and local agencies; community and environmental groups and request feedback.
- Distribute material to:
 - Green Business Programs, local regulatory agencies, assistance providers and other local partners
 - paint and equipment suppliers, trade and technical schools
- Participate in industry events.

Measurement:

Tracking and Outputs - Quantities

Staff will track numbers of trainings provided and participants; toolkits distributed; display events; web site visits; local agencies' workshops and distributions.

Program effectiveness

- Survey attendees to evaluate effectiveness of workshops (may include pre and post survey) for: delivery, topics, level of knowledge of audience, level of instruction given, location, and frequency.

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- Survey GBP and local agencies and record:
 - Usefulness of printed and video material content and format, ease of use
 - Web page accessibility, ease of use
 - Method used to distribute, i.e. site visits, workshops, group meetings
- On-line, e-mail, phone survey shop owner/operators to track effectiveness metrics (above)

Behavior changes

Collect implementation information from:

- Green Business program participants checklists;
- Previous industry contacts – owner/operators
- BAR/DTSC Green Station participant checklists
- Local agency, trade school, and industry partners incorporate training resources into their programs
- Data collection method: on-line, e-mail, phone surveys, site visits
 - 6 month, one year follow up, two year follow up surveys

Outcome measurement – quantification of reductions from participating auto body and paint shops and local green business programs

- Source Reduction
 - Quantities: toxic product use reductions; waste avoided, waste and materials managed properly; air and water emissions reductions
- Compliance Improvement- class and numbers of violations avoided, permit adherence, permit reduction, worker safety
- Energy use
- Water use and waste water disposal
- Cost comparisons: product, equipment, energy, waste and waste water disposal, permits
- Collect information from
 - Green Business program participants checklists;
 - Previous industry contacts – owner/operators
 - BAR/DTSC Green Station participant checklists

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Nail Salon Project

Project Managers:

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Background

The California Nail Salon Project is a cooperative project with the California Healthy Nail Salon Collaborative (Collaborative) working to promote a greener nail salon industry and protect the health and safety of low-income minority women in the industry. The Collaborative is an advocacy group promoting strategies to address the health and safety concerns of nail salon workers. The focus of this project is to help reduce consumer and occupational health hazards in nail salons from exposures to chemicals associated with nail polishes, adhesives and treatments. The nail salon industry employs over 115,000 low-income minority women in California: a considerable portion of these nail practitioners are of childbearing age.

DTSC recently participated in a conference: Framing a Research Agenda to Advance Worker Health and Safety in the Nail Salon and Cosmetology Communities sponsored by the Collaborative, which brought together industry, businesses, regulators and the community to discuss health issues related to nail salons. Additionally, DTSC and the Collaborative jointly visited nail salons, met with a variety of in-state, out-of-state, and federal government agencies, environmental organizations, and industry groups to discuss chemical use, databases, and data gaps. Specific goals include the following:

- Promote hazardous chemical source reduction by encouraging industry to develop safer product alternative and educating salons on best management practices.
- Promoting the use of Best Management Practices at nail salons.
- Develop voluntary Green Business Guidelines that demonstrate ways to reduce hazardous waste generation and promote pollution prevention and resource conservation.
- Provide hazard and health awareness and healthier choices among salon owners, practitioners, and customers through education and outreach.

Currently, DTSC is in the process of drafting Green Business Guidelines for the nail salon industry that will be available for comment by the end of this year.

Current Status

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DTSC and the Collaborative are currently working on the following activities:

- Green Business Guidelines: DTSC is in the process of drafting "Green Business Guidelines" for the nail salon industry.
- Meetings: DTSC and the Collaborative communicate via a monthly conference call. These meetings have expanded to include participants from the California Department of Public Health, US EPA Region IX, and Cal/EPA.
- Interagency Goals: Although a variety of federal and State agencies have authority over the nail salon industry, it remains one of the least regulated industries. To help advance our program objectives, DTSC is organizing an interagency meeting among the various federal and State agencies to discuss authority, ongoing work, and the DTSC Green Business Guidelines. The goal is to solicit participation, cooperation, and sharing among all of the involved agencies.
- DTSC staff is working with environmental organizations and the industry on chemical databases, hazard classification, data gaps, and product alternatives.
- DTSC staff is near completion of the Green Business Guidelines for the nail salon industry and it will be available for comment by the end of this year.

Planned Activities

2009-2010

- Finalize the Green Business Guidelines for the nail salon industry.
- Continue education and outreach efforts on promoting a greener nail salon industry.
- Work on a possible cooperative project as a result of the planned interagency meeting.

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Vehicle Service and Repair (VSR) Project

Project Manager:

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Background

The Vehicle Service and Repair (VSR) project provides free training and technical assistance to repair facilities throughout California to help reduce the use of hazardous materials and the amount of hazardous waste generated by the auto, truck, and construction equipment repair industry. The VSR project provides opportunities for VSR shops to reduce operational costs and minimize the potential for worker exposure to hazardous materials through environment-friendly best management practices. It emphasizes practical pollution prevention measures that are good for business, the public, and the environment.

The VSR project resulted in the development of “The Pollution Prevention Toolkit” for best environmental practices for auto repair and fleet maintenance. The “Toolkit” includes several fact sheets which describe different things VSR shop operators can do to protect the environment and minimize both their use of hazardous materials and their generation of hazardous waste. A company or business (fleet, auto repair shop, etc.) that adopts and incorporates the program’s best management practices into its pollution prevention program will receive formal recognition that it “meets the state of California’s standards for VSR Pollution Prevention (P2) practices,” and qualifies as a Pollution Prevention “Model Shop”. They will receive a letter to that effect, and accompanying certificate, suitable for framing, which they can display with pride.

In addition, the VSR project has effectively facilitated the expansion of its program within the pool of vehicle service and repair shops through an agreement reached with the California Bureau of Automotive Repair (BAR) regarding their “Green Station” program. The Bureau inspects all of California’s licensed repair shops (approximately 33,000), including smog shops, automotive repair shops, auto body shops, and combination shops. DTSC is coordinating with the BAR on this effort. The result of the agreement is that DTSC now evaluates, recognizes, and certifies qualifying applicant businesses as “Green Stations”. Thus, vehicle service and repair shops which are licensed by BAR may be recognized and certified as both VSR Model Shops, and as Green Stations. Those vehicle service and repair facilities not licensed by BAR, such as CALTRANS, Public Works, or other fleet maintenance and repair shops, may still qualify for recognition and certification as VSR Model Shops.

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Current Status

Number of Model Shops either Certified or Re-Certified so far for calendar year 2009: **32**

Number of Model Shops either Certified or Re-Certified total for calendar years 2002 - 2009: **125**

To track the efforts and accomplishments of new and re-certified P2 Model Shops and Green Stations, applicants are required to complete the "Summarize Your Environmental Benefits" form, available on the project website. This metrics tool services to provide data that quantifies the environmental outcomes of participation in the Model Shop Program.

Annual re-certification will continue for those applicants which were previously certified. The shops must submit an annual Environmental Benefits form and still meet the minimum 100-point requirement for VSR Model Shop or Green Station status to be re-certified.

Planned Activities

Efforts to quantify the results of the VSR Model Shop and Green Station program are ongoing. VSR Model Shop and Green Station applicants have submitted estimates of waste reductions they have achieved. Staff will continue to compile waste data and determine reductions in waste generation from reported baseline quantities.

DTSC has discussed implementing the VSR Model Shop program on a corporate level with two major fleet operations, Granite Construction and Waste Management, Inc. Granite Construction has already decided to implement our Model Shop program for all their shops in California, 12 of which we have certified as Model Shops. Seven of those are currently pending re-certification. Although nine of Waste Management Inc's shops in California have already been certified, it was not until recently that DTSC met with Waste Management, Inc. regarding implementation of our Model Shop program on a corporate level. They are interested, and additional meetings and discussions are anticipated.

DTSC will provide training to interested parties seeking further information as the need develops. DTSC will also continue to support local Green Business Program efforts, of which the vehicle service and repair industry is a major target audience. We are also planning on adding a few items to the checklist, such as: replacing lead weights with non-lead weights for balancing tires; recycling lead

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weights removed during tire changes; and involvement with an industry group or community outreach group promoting green practices.

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Fabricated Metals Industry Assessment

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Background

The fabricated metals industry is made up of facilities that generally perform two functions: (1) forming metal shapes, and (2) metal finishing operations, including surface preparation. SIC code 34 is composed of facilities that fabricate metal products and those that perform plating, polishing and other surface coating operations. This industry assessment included facilities in SIC codes 3411 (metal cans), 3412 (metal barrels, drums and pails), 3451 (screw machine bolts), 3452 (bolts, nuts, rivets and washers) and 3499 (fabricated metal products, not elsewhere classified). The assessment looked at source reduction accomplishments within this sector that occurred between 1999 and 2002 and projected source reduction activities from 2002 through 2005.

Surface preparation is performed by many of the reporting facilities in this assessment. Surface preparation includes anodizing, passivation, plating, and other related processes. Surface cleaning prior to applying the finish is critical for the adhesion and performance of the finish coating. If the surface is not properly cleaned, the final finish may not adhere.

Metal fabricating processes usually employ the use of cutting and cooling oils, as well as degreasers and cleaning solvents. The oils are used when forming and cutting metal to cool the work piece, and in tooling. Some facilities evaluated in this assessment use plasma cutting for accurate high-speed metal cutting, which does not require the use of combustible gases. In recent years, the industry has been switching from traditional chlorinated and halogenated solvents to aqueous-based cleaning. Metal finishing may include anodizing (converting the metal surface to an insoluble oxide coating), chemical conversion coating (including chromating, phosphating and passivation), electroplating and painting, along with other metal finishing techniques.

Forty-eight companies were reviewed as a part of this assessment. Specific profile information was included for thirty-four of the facilities.

Current Status

Based upon a detailed analysis of thirty-four facilities, aqueous waste generation decreased approximately 410 million pounds or about 51 percent from 1998 to 2002. Aqueous waste generation decreased approximately more than 72 million

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pounds or about 18 percent from 2002 to 2005. Non-aqueous manifested waste decreased by more than 5.8 million pounds from 1998 to 2002, equivalent to about a 47 percent decrease. However, this reduction in non-aqueous waste is overshadowed by an increase of almost 3 million pounds (approximately 40 percent) during the period from 2002 to 2005.

The 34 facilities included in this assessment produced 22 different major waste streams during 2002. Based on these 22 major waste streams, slightly more than 416 million pounds (51 percent) of the hazardous waste was reduced from the period of 1998 to 2002.

The seven largest-quantity reported waste streams, in descending order, were:

- Aqueous rinse water with metals
- Unspecified aqueous rinse water
- Aqueous solution with organic residue
- Waste aqueous solution pH < or = 2 (acid)
- Unspecified oil-containing waste
- Waste oil and mixed oil
- Unspecified solvent mixture

The total reduction (417,743,849 pounds) of the top seven waste streams is 99.82 percent of the total of all 22 waste streams generated by all reporting facilities.

Six of the 22 generated waste streams increased from 1998 to 2002:

- Floor sweep absorbents and rags,
- Paint related waste
- Other organic solids
- Oxygenated solvents
- Metal sludges
- Chrome bearing waters
- Oil with alkaline cleaner

Three of the 21 generated waste streams were newly-generated in 2002:

- Cyanide plating waste
- Alkaline solution without metals
- Liquids with chromium VI > or = 500 Mg/L

Planned Activities

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A "Pollution Prevention Toolkit" for best environmental practices, harvested from facility profiles, is proposed for development and distribution. The toolkit would include several fact sheets describing things businesses can do to reduce the use of hazardous materials, reduce the generation of hazardous wastes, protect the environment, save money, and increase worker safety and/or reduce worker exposure to chemicals, dusts, and harmful emissions. Metrics would also be developed to determine the environmental outcomes of implementation of best management practices.

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Aircraft Parts Manufacturer Industry Assessment

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Background

The Aircraft Parts Manufacturer industry is made up of facilities that perform a wide range of manufacturing processes; such as multi-axis high speed machining, sheet metal fabrication, thermal processing, stretch forming, tooling, welding, chemical milling, parts assembly and metal finishing operations, including surface preparation and cleaning operations. This industry is composed of facilities that manufacture aircraft hardware and components of metal, reinforced plastic, rubber, and composite products. This assessment is focused on identifying pollution prevention and green chemistry activities currently in place at the facilities and developing profiles/case studies of these activities and to highlight areas or activities in need of pollution prevention or green chemistry for future development.

Current Status

30 facility SB14 plans have been reviewed as a part of this assessment. Specific profile information is being collected during the review process.

A matrix of manufacturing processes and facility type is in development and will be used to identify overlapping processes, identify processes unique to this SIC code, and identify common processes applicable to other SIC codes.

Planned Activities

Facilities visits will be occurring once all SB14 plans have been reviewed.

Development of case studies or process profiles highlighting current pollution prevention and green chemistry activities at the facilities.

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Metal Finishing Team

Team Leader:

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Background

In 2007, DTSC commissioned a project focusing P2 staff resources on the Metal Finishing industry to achieve quantifiable source reduction this sector. The Metal Finishing sector P2 project goal is to produce a Source Reduction-based assessment of that sector's achievements and challenges.

In 2006-2009, DTSC's Metal Finishing Team has:

1. Provided Pollution Prevention (P2) outreach, including educational seminars, to more than 100 metal finishing businesses. Our focus on the metal finishing industrial sector is for three reasons:

- (a) This sector, by its very nature, generates an unusually large volume of hazardous waste and extremely hazardous waste, thus presenting great potential for source reduction. The sector is also an unusually large consumer of water and electricity, thus presenting significant potential for savings of those resources;

- (b) Because many metal finishers are located in socio-economically challenged communities, they can pose environmental risks to those communities.

2. Scheduled similar site visits of ten more facilities before the end of 2009. We plan 50 - 100 more engagements in the next two years.

3. For this Metal finishing P2 project, we've initiated a technical collaboration with three universities: Loyola Marymount University, San Diego State University, and San Francisco State University. It is hoped that the resources available for technical assessment and design of the alternative processes will benefit specific facilities and assist in producing graduates from science and engineering programs with real world experience in P2 practices and applications.