

**2011 Evaluation of the
Oregon Paint
Stewardship
Program**

**Promoting Environmental
Results Through
Evaluation**



Acknowledgements

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Executive Summary

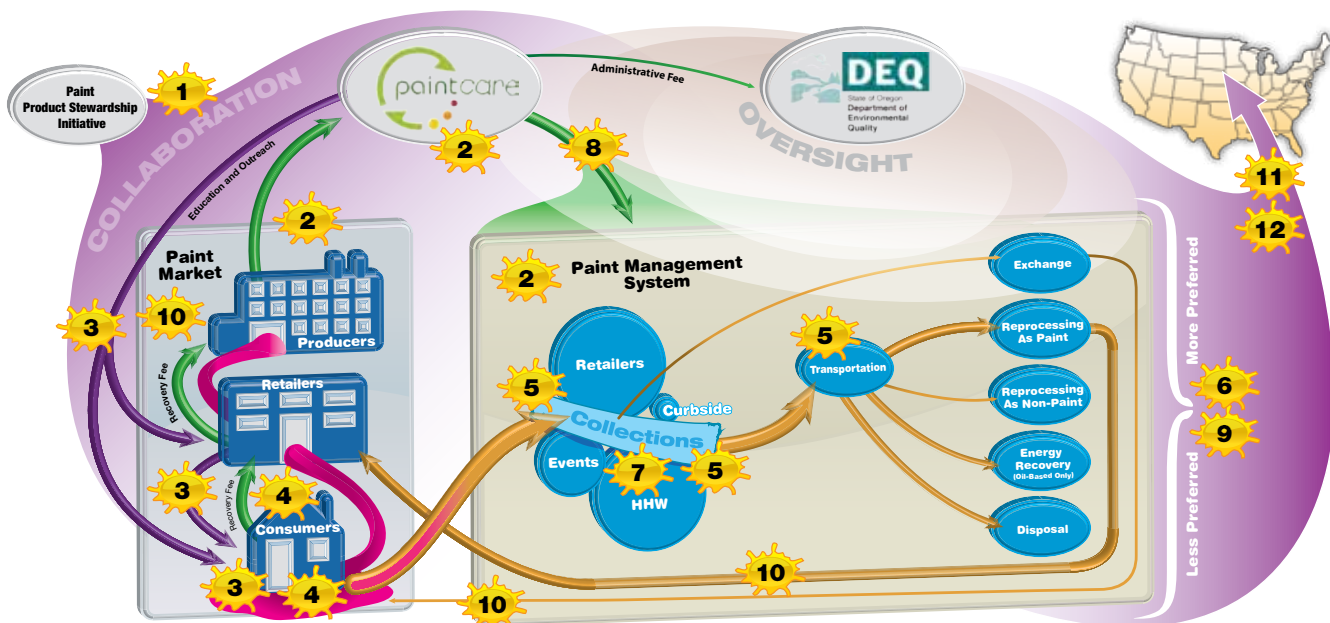
OVERVIEW

In 2002, a coalition of paint manufacturers, represented by American Coatings Association (ACA); local, state, and federal environmental agencies; retailers; and consumer and environmental agencies formed the Paint Product Stewardship Initiative (PPSI) and began negotiations facilitated by the Product Stewardship Institute (PSI) to create an industry-managed post-consumer paint management system. After seven years of negotiations, two Memoranda of Understanding (MOUs), and comprehensive PPSI-sponsored research of the paint industry and consumers, the state of Oregon became the first to enact a law establishing product stewardship as the preferred method for reducing the environmental impacts and costs associated with leftover paint. This report summarizes the results of the evaluation of the Oregon paint recycling program performed by the PPSI Evaluation Committee, which includes members representing the diversity of participants in the PPSI.

The Oregon program, depicted in Figure ES-1, is comprised of a diversity of interconnected systems, actors, and processes. The major components of the Oregon program include the Paint Stewardship Organization (PSO; PaintCare), the oversight of the Oregon Department of Environmental Quality (DEQ), the paint market (producers, retailers, and consumers), and the leftover paint management system (collection sites, processing, etc.). To fund the program, Oregon added an assessment fee onto the price of paint sold in the state. Full documentation of the details of the program appears in PaintCare’s Oregon Paint Stewardship Pilot Program Plan (PaintCare, 2010).

The evaluation addressed twelve questions and the information collected and presented is extensive and accessible in multiple formats to increase the evaluation’s utility for a diversity of audiences. As a companion to this report, the PPSI Evaluation Committee developed a website to organize and present the results from this evaluation - www.paintstewardshipprogram.com. The web site presents

Figure ES-1: The Oregon Paint Recycling Program



the key findings and learning from this evaluation in a dynamic, visual, and interactive manner that includes links to information and data sources used in this report. This executive summary presents some basic findings and learning from the evaluation for each of the 12 evaluation questions (see text box).

The evaluation was conducted between October 2009 and September 2011 by the PPSI Evaluation Team, a subgroup of the Evaluation Committee, which consisted of the U.S. Environmental Protection Agency (EPA) and its subcontractor Eastern Research Group, Inc. (ERG)¹ in partnership with academic researchers from Duke University, Georgia State University, and Tufts University. While integrating measurement and evaluation (M&E) into the design and implementation of the Oregon pilot program, the Evaluation Committee took a participatory approach to its work, emphasizing transparency and communications while incorporating aspects of developmental and participatory evaluation into the evaluation design to account for program complexity.

The Evaluation Team relied on three primary sources of data and information:

- Two surveys of consumers, one conducted in August 2010 just after the program began and another conducted in July 2011, provide key information for Evaluation Questions 3 and 4 and data for several other questions.
- In-person interviews and other personal communications with program stakeholders: the Evaluation Team conducted 21 interviews during the course of the evaluation; including seven interviews with HHW representatives, three interviews with retailers, and 11 interviews with key program stakeholders.
- Documents developed by PaintCare: the Evaluation Team drew heavily on the 2010 Oregon Paint Stewardship Pilot Program Plan (PaintCare, 2010) and the 2011 Annual Report (PaintCare, 2011b) to provide information on program design, implementation, and results.

¹ ERG's work was performed under subcontract to Industrial Economics, Inc. (IEc) under contract EP-W-07-028 between EPA and IEc.

1. **Collaboration:** To what degree was the pilot program, from planning to implementation, a collaborative process?
2. **Paint Stewardship Organization:** Describe the PSO, including its funding mechanism and infrastructure.
3. **Education and Outreach:** How did education materials and strategies affect consumer awareness and behavior? Which messages were most effective with which target audiences? What materials/strategies were developed and what were the goals and target audience of those materials/strategies? Did other factors besides the program influence consumer behavior and awareness? What are the lessons learned?
4. **Consumer Purchasing Decisions:** How has the program affected consumers' purchasing decisions and management of paint prior to drop-off at paint recycling facilities? How did the fee assessment affect consumer behavior?
5. **Collection of Post-Consumer Paint:** How has the program affected the collection of post-consumer paint in terms of volume, cost, environment, convenience, and infrastructure? What other factors have affected the amount of leftover paint?
6. **Paint Reprocessing, Recycling, and Energy Recovery:** How has the program affected used paint reprocessing, paint recycling, and paint-related energy recovery in terms of volume, infrastructure, and cost?
7. **Household Hazardous Waste Programs:** What was the impact of the program on the HHW facilities in terms of the types of paint collected, costs, and the way in which the facilities operate?
8. **Cost Effectiveness:** How cost effective is the program?
9. **Waste Hierarchy:** How was the program designed and implemented to move consumers up the waste hierarchy? With respect to moving customers up the waste hierarchy, what were the program's obstacles, opportunities, and decisions?
10. **Market for Post-Consumer Paint:** How has the market for post-consumer paint been affected by the program? What aspects of the program have had an impact on the market and how? What market and products represent potential opportunities for post-consumer paint products?
11. **Transferability:** Based on the Oregon experience, what implementation and outcome-related information is required for other states to develop and implement leftover paint management systems? To what extent are the performance measurement and evaluation systems transferable to other states? What are the best ways to communicate the results of the evaluation?
12. **Unexpected Results:** During the program and for each of its primary components, what were the primary external, unexpected and/or unintended influences and consequences?

We draw on information derived from these three sources, as well as a number of other sources tailored to specific evaluation questions.² Data sources, data collection instruments, the evaluation methodology and other relevant documentation can be accessed at www.paintstewardshipprogram.com.

1 COLLABORATION

A primary goal of the PPSI was that the pilot program, from planning to implementation, was to be a collaborative process. Most stakeholders (84 percent) involved in the PPSI agreed that the program development process was collaborative (Braunz et al., 2010). Stakeholders also pointed to break downs in collaboration when the program transitioned from designing and planning the PPSI pilot program to drafting Oregon legislation and planning and implementing the Oregon program. The level of importance and function of collaboration changed through the different stages of the program's development. To account for changes, process facilitators can better maintain appropriate levels of collaboration throughout the process by, at the beginning, coming to agreement on and documenting clear expectations for collaboration's role in each stage of the process.

2 PAINT STEWARDSHIP ORGANIZATION

A goal of the PPSI was for a pilot program to create a Paint Stewardship Organization (PSO) that would operate under the direction of the paint industry and this was achieved in the Oregon legislation that created the program. The PSO for the Oregon program, PaintCare, is a coalition of paint producers and is operated by the American Coatings Association (ACA), although membership in ACA is not required for a paint producer to be part of PaintCare. PaintCare is responsible for implementing and running the program in Oregon, a responsibility which they contracted out to Product Care Inc., which has run other stewardship programs. The PSO built the infrastructure (e.g., paint collection sites, logistics, and transportation) using

the existing infrastructure in the Portland metro area. Having this existing infrastructure offered significant advantages in implementing this program.

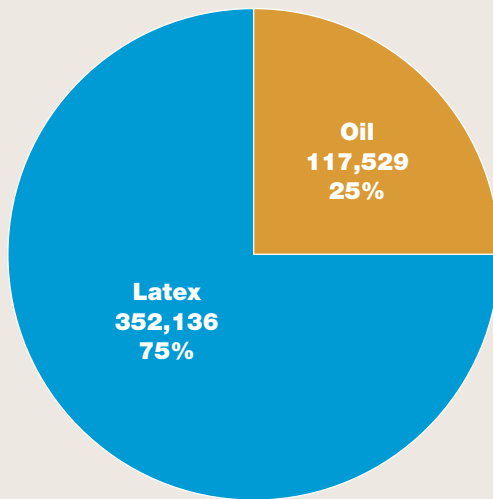
Though generally perceived as clearly defined and complete, the lack of detailed, accessible cost information reduced the transparency of the funding mechanism. Few Oregon residents (11 percent) that purchased paint in 2011 were aware that a fee was added to the cost of paint to pay for the program (PaintCare, 2011a).

3 EDUCATION AND OUTREACH

The Oregon program included an extensive education and outreach program which was another PPSI goal. The campaign consisted of a website, point of sale materials, radio and television advertising, press releases, direct mailings to contractors and retailers, an 800 number, and participation in trade shows. The education and outreach campaign used a broad approach to spreading its messages and did not strategically aim its messages at specific target audiences (consumers with the most paint, contractors, retailers, etc.) with specific means of communication (TV, website, social media, radio, etc.). Consumers of paint can be segmented into various groups (new versus long-time homeowners, homeowners versus contractors, age and other demographics). Opportunities to improve the effectiveness of education include identifying the desired changes in behavior that will accomplish program goals, designing specific messages to achieve those changes, (e.g., aligning the messages with the program's priorities on the waste hierarchy), prioritizing efforts allocated to specific messages, and more explicitly targeting those messages to the diversity of intended audiences (e.g., age groups, location, consumer vs. contractor). Overall, there was little evidence that education and outreach influenced consumer behavior. More useful evidence of the effectiveness of education initiatives requires more complete and transparent information such as data related to consumer exposure to messaging and consumer intentions and practices related to paint management (e.g. purchasing, reuse, recycling, disposal).

² For example, Evaluation Question 1 draws on a survey conducted by Duke University graduate students and Evaluation Question 2 draws on a set of interviews conducted by Georgia State University graduate students.

Collections by type of paint



469,665 total gallons collected

4 CONSUMER PURCHASING DECISIONS

A goal of the program was to encourage consumers to purchase the correct amount of paint thereby reducing the amount of leftover paint that must be managed. Consumers indicated that the program had little impact on their purchasing decisions. Most Oregon residents (93 percent) that purchased paint under the program indicated that the program had no effect on the amount of paint they purchased. PaintCare developed a “paint calculator” to help consumers determine the amount of paint that was needed for painting projects, but few consumers were aware of the tool and very few actually used it. Overall, the program focused less on the reduction of leftover paint and more on recycling leftover paint. To focus planning and implementation on reducing the generation of post-consumer architectural paint, paint management programs should more explicitly document the relative emphasis they place on aligning the paint management system with the existing waste hierarchy (reduce, reuse, recycle). A clear articulation of program priorities will provide a framework to organize and deploy outreach strategies, messages, materials, and effort.

In terms of the fee charged, 73 percent of Oregon residents felt that the fee was reasonable. Most

residents (92 percent) felt this type of program was “somewhat important” or “very important.” Oregon residents’ acceptance of the fee may be linked to the inherent value they place on the goals and services provided by recycling programs. The degree to which consumers value such programs can be used as an indicator of their willingness to pay a certain fee. This information may be used in refining fee structures within and across states. Documenting and communicating consumer attitudes may also be useful in navigating the legislative process necessary to create programs similar to Oregon’s.

5 COLLECTION OF POST-CONSUMER PAINT

The largest component of the program involved collecting and processing leftover paint in Oregon. In the first year of the program, PaintCare collected 469,665 gallons of paint. Of this total, 352,136 gallons (75 percent) were latex paint and 117,529 gallons (25 percent) were oil-based paint (PaintCare, 2011b). As of September 1, 2011, the program had 98 collection sites with 10 of these sites offering paint exchange. Sites are open to the public, on average, six days a week for a total of 58 hours per week (PaintCare, 2011b; Em2). Most Oregon residents (92 percent) live within a 15 mile drive of a paint drop off site (Strickland, 2011).

6 PAINT REPROCESSING, RECYCLING, AND ENERGY RECOVERY

In its first year, potential end-points for paint collected by the program included: recycling into another paint product, recycling as a non-paint product, energy recovery (oil-based paint), appropriate disposal and direct reuse by consumers. Table ES-1 summarizes the volume of paint diverted to each end-point.

7 HOUSEHOLD HAZARDOUS WASTE (HHW) PROGRAMS

HHWs are a key stakeholder in the paint management system. Prior to the program, HHWs would take in paint from consumers and process it for disposal. Under the program, HHWs collected and stored paint for eventual pick up by PaintCare’s transportation contractor. At the start of the program,

Table ES-1: Summary of Paint Endpoints

Endpoint	Latex (Percent of Total)	Oil-Based (Percent of Total)
Recycling to paint and paint reuse	211,281 (60%)	3,526 (3%)
Reprocessing into non-paint product	28,171 (8%)	-
Energy recovery	14,085 (4%)	114,003 (97%)
Disposal	98,598 (28%)	-
Totals	352,136	117,529

the amount of paint that HHWs collected increased and then settled back to pre-program levels. The initial bump in collections is attributed to consumers bringing in older paint stored in their homes. During the program, the proportion of latex paint collected by HHWs increased relative to oil-based paint. Some HHWs reported cost-savings resulting from avoided labor, disposal, and transportation costs associated with handling oil-based and unusable latex paints.

8 COST EFFECTIVENESS

The program processed paint at \$7.03 per gallon (PaintCare, 2011b), although that amount excludes costs incurred by HHWs to take in and handle the paint at their facilities. The \$7.03 per gallon value was lower than other estimates from other sources, although the other estimates were not purely comparable. The use of “processing cost per gallon” as a measure of cost-effectiveness is limiting. A more comprehensive measure would translate the gallons into environmental benefits and then also include other management options (e.g., reuse) as well as the cost-effectiveness of reducing leftover paint by increasing the proportion of consumers that “buy the right amount.”

9 WASTE HIERARCHY

The Evaluation Committee is still assessing how the program was designed and implemented to move consumers up the waste hierarchy. The Committee has partnered with a graduate student at Tufts University to investigate this evaluation question and results will be reported January 2012. The method for answering

this question will involve relating the components of the program to the categories of the waste hierarchy (reduce, reuse, and recycling) and then compiling information on the obstacles, opportunities, decisions, and relative emphasis related to each category of the waste hierarchy.

10 MARKET FOR POST-CONSUMER PAINT

To improve the management of leftover paint, the PPSI determined that the pilot program should explore means to expand the market for post-consumer paint products. If more consumers used post-consumer paint, then they would generate less waste because less new paint would be purchased (and ultimately need to be disposed). About half of the total volume of paint collected (217,157 gallons) under the program made it into the post-consumer paint market. For latex paint collected by the program, 60 percent was available to the post-consumer paint market. Very little oil-based paint (3 percent) was available to the post-consumer paint market.

11 TRANSFERABILITY

The Evaluation Committee identified several types of information that other states will need to collect in order to implement paint stewardship programs, including: volume data on paint, information on current infrastructure, a system map, cost information, and information on consumer awareness of infrastructure and consumer behavior and attitudes. The Committee also identified the aspects of the performance measurement system and evaluation that are



Looking at the Portland skyline from across the river.

transferable to other states, which included: the pilot program's evaluation questions (appropriately adapted to other states), matrix of performance measures and a web-based program model for communications with diverse audiences (see Figure ES-1). Oregon and other states can more systematically and consistently learn, improve and communicate about paint recycling programs and other product stewardship initiatives by: 1) using (and adapting) the program evaluation framework and methodology designed and implemented by the PPSI Evaluation Committee, and 2) collaborating to adopt common fundamental frameworks for ongoing performance management such as those developed by the Conservation Measures Partnership's (CMP's) Open Standards for the Practice of Conservation.³

12 UNEXPECTED RESULTS

The Evaluation Committee identified some key unintended effects and unexpected scenarios that significantly influenced program planning and implementation. Highlights include: (1) collaboration took more time, effort and resources than expected and levels of collaboration fluctuated significantly at different stages in the process; (2) paint legislation was vetoed twice in Minnesota which delayed implementation of a program by more than a year-and-a-half; eventually leading to implementation in Oregon; (3) though the program was originally intended to be voluntary, legislation was necessary to implement the program;⁴ (4) the PPSI had limited representation from retailers leading up to the program, but retailers became a critical component of Oregon paint collection; (5) the misalignment of the program's goals and the waste hierarchy model (reduce, reuse, recycle); and (6) that retailers serving as collection locations had a negative impact on the program's ability to divert high quality leftover paint for reuse.

³ www.conservationmeasures.org/wp-content/uploads/2010/04/CMP_Open_Standards_Version_2.0.pdf.

⁴ Legislation was needed to exempt the paint producers from anti-trust and collusion concerns. At the start, the idea of the program was to avoid having states pass legislation or rules to tell the private sector what to do – the program was supposed to be voluntary.