

2011

Oregon Paint Stewardship Pilot Program Annual Report

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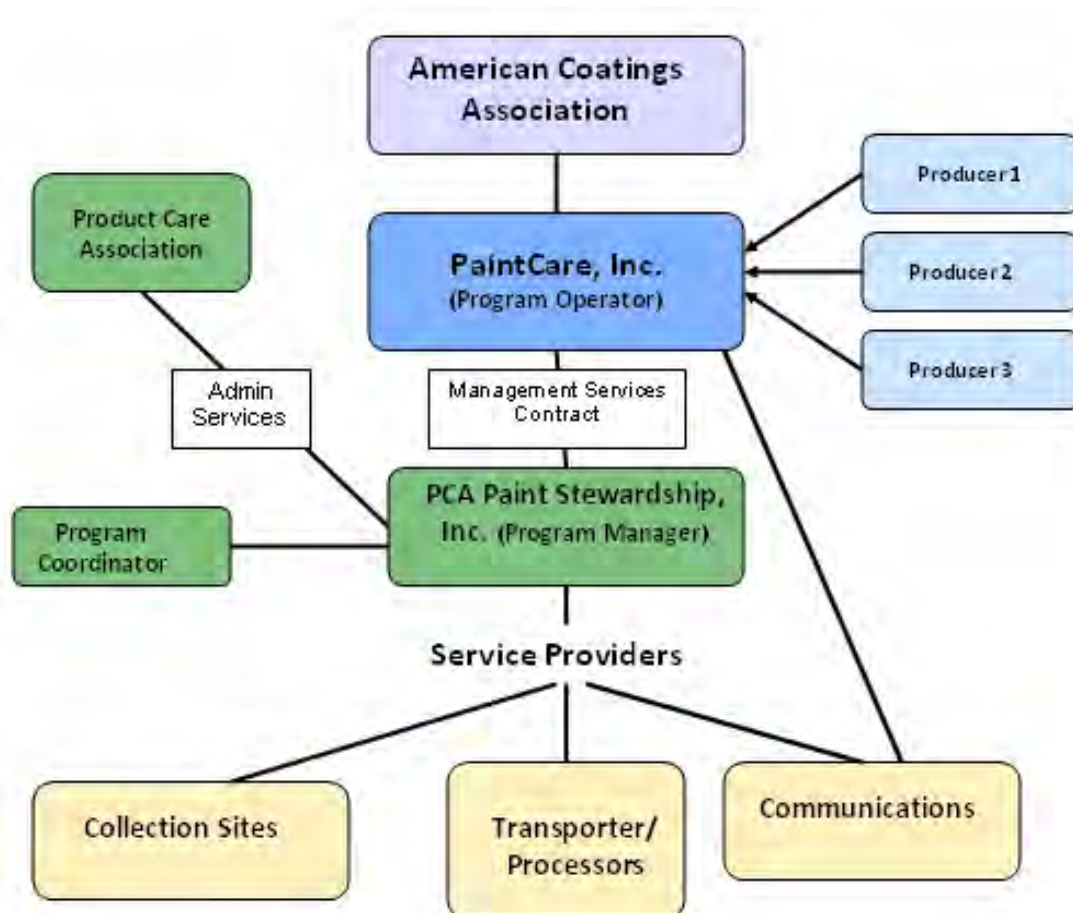


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Appendices

Appendix A - Program Organization Chart



Appendix B - PaintCare Collection Sites as of September 1, 2011

City/town	Facility Type	Store Name	Address	City Population	County	Hours of Operation
Albany	ReStore	Albany Area ReStore	1225 SE 6th Ave.	48,081	Linn	Monday- Saturday 9-4 -- Active
Albany	Sherwin Williams	Albany #8088	2945 SE Santiam Highway	48,081	Linn	Retail Hours
Aloha	Ace	Suburban Ace Hardware Inc	3470 SW 185th Avenue	47,000	Washington	Retail Hours
Ashland	Miller	Miller Paint -- Ashland	2205 Ashland St.	21,485	Jackson	Retail Hours
Astoria	Independent Retailer	Astoria Builder Supply	777 Marine Drive	9,851	Clatsop	Retail Hours
Baker City	Ace	Thatcher's Ace Hardware	2001 2nd Street	9,413	Baker	Retail Hours
Beaverton	Rodda	Rodda Paint - Progress	8614 SW Hall Blvd	86,205	Washington	Retail Hours
Bend	Rodda	Rodda Paint and Decor	63007 Layton Ave	77,181	Deschutes	Retail Hours -- Active
Bend	Benjamin Moore	Standard Paint and Abbey Carpet	253 NE Greenwood	77,181	Deschutes	Retail Hours
Bend	Permanent HHW Collection	Deschutes County	61050 SE 27th St.	77,181	Deschutes	2nd and 4th Saturday and Friday 9-3
Bend	Sherwin Williams	Bend #8603	125 NE Franklin Ave	77,181	Deschutes	Retail Hours
Bend	Rodda	Mitchell Hardware	660 NE 3rd	77,181	Deschutes	Retail Hours
Bend	Restore	Bend Restore	740 NE 1st Street	77,181	Deschutes	Tues -- Fri 9-6, Sat 10-4
Boardman				3,330	Morrow	
Brookings	Ace	Kerr Ace Hardware Building Center	711 Chetco Avenue	6,213	Curry	Retail Hours
Burns	Parr Lumber	Parr Lumber -- Burns	1 South Broadway	3,025	Harney	Retail Hours
Clackamas	Miller	Miller Paint -- Clackamas	10210 SE Highway 212	5,177	Clackamas	Retail Hours
Coos Bay	Benjamin Moore	Bayshore Paint	1026 N Bayshore Drive	15,665	Coos	Retail Hours
Coos Bay	SW Transfer Station	Beaver Hill Disposal Site	55722 Highway 101	15,665	Coos	Tuesday -Saturday 8-4:30
Corvallis	ReStore	Benton Restore	1327 NW 9th St	51,110	Benton	Tuesday -Saturday 9-4:30 -- Active
Corvallis	Sherwin Williams	Corvallis #8049	2495 NW 9th Street	51,110	Benton	Retail Hours
Cottage Grove	Do It Best	Cascade Home Center	120 South 5th Street	9,124	Lane	Retail Hours
Dallas				15,360	Polk	
Estacada	True Value	Estacada True Value Hardware	310 S Main St	2,558	Clackamas	Retail Hours
Eugene	Forrest Paint	Forrest Paint Retail Store	990 McKinley Street	150,104	Lane	Retail Hours -- Active (Forrest Products)

Eugene	Benjamin Moore	Tommy's Paint Pot	1000 Conger Street	150,104	Lane	Retail Hours
Eugene	Jerry's Home Centers	Jerry's Home Improvement Center	2600 Hwy. 99 N.	150,104	Lane	Retail Hours
Eugene	Permanent HHW Collection	Lane County	3100 E. 17th Ave.	150,104	Lane	Every Thurs and 2 Sat/Month by appointment -- Active
Enterprise				1,975	Wallowa	
Fossil				465	Wheeler	
Forest Grove	ReStore	West Tuality ReStore	4115 24th Ave	20,985	Washington	Weds to Sat 10 to 4 -- Active
Gearhart	Sherwin Williams	Gearhart #8275	3527 Highway 101 N	1,189	Clatsop	Retail Hours
Gold Beach				2,155	Curry	
Grants Pass	Sherwin Williams	Grants Pass #8192	1072 Rogue River Highway	32,260	Josephine	Retail Hours
Grants Pass	Akso-Nobel	Glidden Professional Paint Center	310 N.E. Beacon Street	32,260	Josephine	Retail Hours
Gresham	Miller	Gresham	1831 E Powell Boulevard	101,221	Multnomah	Retail Hours -- Active (needs fencing)
Hermiston				16,080	Umatilla	
Hood River	Permanent HHW Collection	Tri-County (Hood River/Wasco/Sherman Counties)	3440 Guignard Dr. Hood River	6,877	Hood River	3rd Fri & Sat of the Month 9- 2 -- Active
John Day	True Value	John Day True Value	161 E Main St	1,512	Grant	Retail Hours
Keizer	Sherwin Williams	Keizer #8609	4669 River Road North	36,150	Marion	Retail Hours
Klamath Falls	Sherwin Williams	Klamath Falls #8051	4525 S 6th Street	21,305	Klamath	Retail Hours
Lakeview				2,750	Lake	
La Pine	Ace	Lapine Ace Hardware & Building Supply	51615 Huntington Road	918	Deschutes	Retail Hours -- Active
Lagrande	Do It Best	Miller Home and Lumber Center	307 Greenwood St	12,935	Union	Retail Hours
Lake Oswego	Miller	Miller Paint -- Lake Oswego	544 North State St.	34,255	Clackamas	Retail Hours
Lebanon	ReStore	Lebanon ReStore	1055 W. Airway Rd.	15,397	Linn	Thurs 10 -2, Fri - Sat 9-4 -- Active
Lincoln City	SW Transfer Station	Lincoln County SW transfer station	288 S Anderson Creek Rd	8,066	Lincoln	Mon - Fri, 7:30 - 4:30 -- Active
Madras				6,640	Jefferson	
McMinnville	ReStore	McMinnville Area ReStore	1040 SE 1st St.	31,185	Yamhill	Tue- Sat 9-5 -- Active
McMinnville	Sherwin Williams	McMinnville #8085	570 N Highway 99W	31,185	Yamhill	Retail Hours
Medford	Sherwin Williams	Medford #8157	2560A Crater Lake HWY	73,212	Jackson	Retail Hours
Medford	Miller	Miller Paint --	803 S. Central	73,212	Jackson	Retail Hours

		Medford				
Molalla	True Value	Molalla True Value	114 Grange Avenue	7,263	Clackamas	Retail Hours
Myrtle Point	True Value	Myrtle Point True Value Hardware	427 Spruce St	2,442	Coos	Retail Hours
Newberg	Benjamin Moore	Newberg Hardware	2100 Portland Rd.	22,953	Yamhill	Retail Hours
Newport	SW Transfer Station	Lincoln County SW transfer station	8096 NE AVERY ST.	9,943	Lincoln	Tues - Sat, 9am - 5pm -- Active
Ontario	True Value	Kinney Bros & Keele T V Hardware	460 Saw 4th Ave	10,991	Malheur	Retail Hours
Oregon City	Permanent HHW Collection	Metro South	2001 Washington St.	31,404	Clackamas	Mon - Sat 9-4 -- Active
Pendleton	Sherwin Williams	Pendleton #8499	115 SE Emigrant Avenue	17,295	Umatilla	Retail Hours
Portland	Permanent HHW Collection	Metro Central	6161 NW 61st	557,706	Multnomah	Mon - Sat 9-4 -- Active
Portland	Ace	Powell Villa Ace Hardware	3660 SE 122nd Avenue	557,706	Multnomah	Retail Hours
Portland	Benjamin Moore	Kaleidoscope Paint	909 SE Salmon St.	557,706	Multnomah	Retail Hours
Portland	Sherwin Williams	Roosevelt # 8239	2246 NW Roosevelt	557,706	Multnomah	Retail Hours
Portland	True Value	Parkrose True Value Hardware	10625 NE Sandy Blvd	557,706	Multnomah	Retail Hours
Portland	ReStore	Portland ReStore	66 SE Morrison St.	557,706	Multnomah	Tues -- Sat 9aM -- 5PM -- Active
Portland	Rodda	Rodda Paint - Eastside	321 SE Taylor	557,706	Multnomah	Retail Hours
Portland	Kelly Moore	Kelly Moore -- 82nd	1414 Southeast 82nd Ave	557,706	Multnomah	Retail Hours
Portland	Miller	Miller Paint -- Beaverton Hillsdale	8703 SW Bvtn-Hillsdale Hwy	557,706	Washington	Retail Hours
Portland	Miller	Miller Paint -- Murray Road	1040 NW Murray Rd.	557,706	Washington	Retail Hours
Prineville	Parr Lumber	Parr Lumber -- Prineville	601 N Main Street	10,370	Crook	Retail Hours
Redmond	ReStore	Redmond Habitat ReStore	1789 SW Veterans Way	24,551	Deschutes	Tues - Sat, 9am - 5pm -- Active
Redmond	Sherwin Williams	Redmond #8261	2835 SW 17th Place	24,551	Deschutes	Retail Hours
Roseburg	Sherwin Williams	Roseburg #8118	287 NW Garden Valley	21,235	Douglas	Retail Hours
Salem	Permanent HHW Collection	Marion County	3250 Deer Park Dr, SE	153,435	Marion	Thurs, 1st and 3rd Saturdays 8-3:30. Also curb collection of 1 gallon of latex paint weekly from households -- Active

Salem	Sherwin Williams	Salem (North) #8014	1014 Lancaster Dr NE	153,435	Marion	Retail Hours
Salem	Sherwin Williams	Salem #8018	4596 Commercial St SE	153,435	Marion	Retail Hours
Salem	Benjamin Moore	Capital Paint	1080 Lancaster Drive NE	153,435	Marion	Retail Hours
Sisters	Ace	Lutton's Ace Hardware	373 E Hood Avenue P.O. Box 1240	1,642	Deschutes	Retail Hours -- Active
Springfield	Do It Best	Square Deal Lumber	4992 Main Street	57,224	Lane	Retail Hours
Springfield	Jerry's Home Centers	Jerry's Home Improvement Center	2525 Olympic St.	57,224	Lane	Retail Hours
St Helens	Permanent HHW Collection	Columbia County	1601 Railroad Ave.	12,510	Columbia	Mon - Fri 9-4, Sat-Sun 9 - 4 -- Active
Sweethome	True Value	Hoys True Value Hardware	3041 Main St	8,930	Linn	Retail Hours
The Dalles	Permanent HHW Collection	Tri-County (Hood River/Wasco/Sherman Counties)	1317 W. First St.	11,897	Wasco	3rd Fri & Sat of the Month 9- 2 -- Active
The Dalles	True Value	Sawyer's True Value	500 E 3rd St	11,897	Wasco	Retail Hours
Tillamook				4,700	Tillamook	
Toledo	SW Transfer Station	Lincoln County SW transfer station	5441 Hwy. 20	3,610	Lincoln	Mon - Sat 8:30 - 4:30 -- Active
Tualatin	Sherwin Williams	Commercial Location	19390 SW 90th Court	26,040	Washington	Retail Hours
Vernonia	Do It Best	Vernonia Hardware and Supply	1026 Bridge St	2,365	Columbia	Retail Hours
Waldport	SW Transfer Station	Lincoln County SW transfer station	3300 CRESTLINE DRIVE	2,025	Lincoln	Mon - Sat, 9am - 4pm -- Active
Winston	True Value	Harrison's Hardware True Value	124 Douglas	5,528	Douglas	Retail Hours
Woodburn	Rodda	GW Hardware	1525 N. Pacific Highway	22,728	Marion	Retail Hours

Appendix C1 - Pre-Program Oregon HHW Collection

Area Served	Hours/Days of Operation
Columbia County	Last Saturday of every month 8am-12pm
Deschutes County	2nd and 4th Friday and every Saturday 9am-3pm. CEG's--2nd and 4th Thursday pre-registration/appointment required.
Lane County	Every Thursday, and two Saturdays a month; typically the second and fourth. By appointment, from 8:00 - 12:00.
Marion and Polk Counties	Thurs 8am-3:30pm; 1st and 3rd Sat 8am-3:30pm
Clackamas, Multnomah, and Washington Counties	Mon-Sat 9am-4pm
Clackamas, Multnomah, and Washington Counties	Mon-Sat 9am-4pm
Hood River, Sherman and Wasco Counties	2nd Saturday of each month
Hood River, Sherman and Wasco Counties	2 nd Saturday of each month starting January 2011. On-going rural HHW events plus agricultural waste collection events.
Gilliam County	M-F 8am-4pm
	* Also conducts annual waste collection events
Josephine County	1 or 2 events per year planned
Albany	Annual event in October.
Yamhill County	Annual events in Newberg and McMinnville
Corvallis	Four events per year
Jackson County	Two events per year
Morrow County	
Polk County	With Marion County Facility
Lincoln Co.	Paint is collected at all county solid waste transfer stations.

Appendix C2 – Current DEQ and Local Government HHW Architectural Paint Quantities

Information provided by Oregon DEQ.

County	2007 Latex Paint-lbs	2007 Oil- based Paint-lbs*	2008 Latex Paint-lbs	2008 Oil-based Paint-lbs*
Columbia County	28,920	50,550	5,160	47,990
Deschutes County	23,742	38,748	204,000	66,850
Lane County	186,320	109,300	149,500	106,050
Marion County	305,740	75,620	342,900	69,500
Metro-South and Central	1,974,980	1,030,980	2,035,090	1,034,840
Gilliam County-Waste Management**	2,016		1,992	
Tri-County-Wasco/Hood River***		27,317		35,355
Tillamook County-Purchaser event	21,778	26,489	11,381	33,657
Allied Waste of Corvallis	72,000	16,975	86,900	21,720
Jackson County****	120,000		120,000	24,404
Allied Waste of Albany-Lebanon	26,400	19,600	38,400	25,200
Yamhill County	33,400	37,500	21,300	39,500
Morrow County-DEQ/Purchaser event	1,873	4,566	3,166	1,930
Polk County	7,000	7,250	3,950	8,500
Lincoln County-Purchaser event	1,933	3,514		9,023
Clatsop-DEQ event	6,950	3,674		
Klamath-DEQ event	21,262	56,262		
Columbia-Flood event	5,346	1,881		
Douglas County-DEQ event			1,698	1,631
Jefferson County-DEQ event			986	1,968
Josephine County-DEQ event			5,727	15,428
Linn County-DEQ event			195	381
Umatilla County-DEQ event			4,789	9,859
Total	2,839,660	1,510,226	3,023,739	1,524,519
Total for year	4,349,886		4,548,258	
	65%	35%	66%	34%

* Columbia, Deschutes, Jackson, Lane, Wasco and Yamhill Counties' numbers include paint related material/flammables

**Separate numbers for latex vs. oil-based paint not available. Paint estimated to be 60% of all HHW received

*** Tri-County HHW facility does not accept latex paint

**** 2009 oil-based paint received is 22,802lbs



Appendix D - Volume of Post-Consumer Paint Collected by Location

Collection Site Name	City/town	County	Total Tubs	Total Gallons
Millers Home Center and Lumber	Baker City	Baker	25	1,125
Thatcher's Ace Hardware	Baker City	Baker	13	585
ReStore - Corvallis Benton	Corvallis	Benton	78	3,510
Sherwin Williams - Corvallis #8049	Corvallis	Benton	45	2,025
Miller Paint - Clackamas	Clackamas	Clackamas	55	2,475
Estacada True Value	Estacada	Clackamas	15	675
Miller Paint - Lake Oswego	Lake Oswego	Clackamas	62	2,790
Molalla True Value	Molalla	Clackamas	7	315
Astoria Builders Supply	Astoria	Clatsop	73	3,285
City Lumber Company	Astoria	Clatsop	5	225
Gearhart Builders Supply	Gearhart	Clatsop	6	270
Sherwin Williams - Gearhart #8275	Gearhart	Clatsop	62	2,790
Columbia County	St Helens	Columbia	92	4,140
Vernonia Hardware and Supply	Vernonia	Columbia	20	900
Beaver Hill Disposal Site	Coos Bay	Coos	15	675
Benjamin Moore - Bayshore Paint	Coos Bay	Coos	61	2,745
Myrtle Pt True Value	Myrtle Point	Coos	4	180
Crook County Solid Waste	Prineville	Crook	4	188
Parr Lumber - 601 N Main Street	Prineville	Crook	34	1,530
Kerr Ace Hardware Building Center	Brookings	Curry	14	630
Gold Beach Lumber	Gold Beach	Curry	2	90
Deschutes County	Bend	Deschutes	453	20,375
Mitchell Hardware	Bend	Deschutes	2	90
ReStore Bend	Bend	Deschutes	10	450
Rodda Paint and Decor	Bend	Deschutes	34	1,530
Sherwin Williams - Bend #8554	Bend	Deschutes	93	4,185
Sherwin Williams - Bend #8603	Bend	Deschutes	11	495
Standard Paint and Abbey Carpet	Bend	Deschutes	25	1,125
Lapine Ace Hardware & Building Supply	La Pine	Deschutes	43	1,935
Redmond Habitat ReStore	Redmond	Deschutes	73	3,285
Sherwin Williams - Redmond #8261	Redmond	Deschutes	31	1,395
Lutton's Ace Hardware	Sisters	Deschutes	37	1,665
Heartwood Resources	Roseburg	Douglas	-	-
Sherwin Williams - Roseburg #8118	Roseburg	Douglas	78	3,510
Harrison's True Value Hardware	Winston	Douglas	13	585
John Day True Value	John Day	Grant	6	270
Parr Lumber - 1 South Broadway	Burns	Harney	4	180
Tri County - Hood River	Hood River	Hood River	64	2,880
Miller Paint - Ashland	Ashland	Jackson	70	3,150
Drake's Paint & Supply	Medford	Jackson	46	2,070
Medford School District	Medford	Jackson	3	135
Miller Paint Medford	Medford	Jackson	103	4,635
Parr Lumber - 1231 Disk Dr.	Medford	Jackson	2	90
Sherwin Williams - Medford #8157	Medford	Jackson	78	3,510
Glidden Professional Paint Center	Grants Pass	Josephine	32	1,440
Sherwin Williams - Grants Pass #8182	Grants Pass	Josephine	55	2,475
Sherwin Williams - Klamath Falls #8051	Klamath Falls	Klamath	42	1,890
Cascade Home Center	Cottage Grove	Lane	12	540
Forrest Paint Retail	Eugene	Lane	346	15,570
Lane County	Eugene	Lane	278	12,529
Sherwin Williams - Eugene #8623	Eugene	Lane	-	-
Tommy's Paint Pot	Eugene	Lane	88	3,960
Square Deal Lumber	Springfield	Lane	35	1,575
Lincoln County SW transfer station - Lincoln City	Lincoln City	Lincoln	16	720
Lincoln County SW transfer station - Newport	Newport	Lincoln	-	-
Sherwin Williams - Newport #8229	Newport	Lincoln	6	270
Thompson's Sanitary SVC	Newport	Lincoln	-	-
Dahl Disposal Service	Toledo	Lincoln	-	-
Lincoln County SW transfer station - Toledo	Toledo	Lincoln	-	-
Lincoln County SW transfer station - Waldport	Waldport	Lincoln	-	-
ReStore Albany Area	Albany	Linn	85	3,825
Sherwin Williams - Albany #8080	Albany	Linn	28	1,260
ReStore Lebanon	Lebanon	Linn	15	675
Hoys True Value Hardware	Sweethome	Linn	3	135
Kinney Bros & Keele True Value Hardware	Ontario	Malheur	13	585
Keizer #8609	Keizer	Marion	28	1,260



Collection Site Name	City/town	County	Total Tubs	Total Gallons
ReStore Mt. Angel	Mount Angel	Marion	-	-
Capital Paint	Salem	Marion	13	585
Marion County	Salem	Marion	66	2,970
Salem (North) #8014	Salem	Marion	-	-
Sherwin Williams - Salem #8014	Salem	Marion	26	1,170
Sherwin Williams - Salem #8018	Salem	Marion	36	1,620
GW Hardware	Woodburn	Marion	2	90
Rodda Paint-GW Hardware	Woodburn	Marion	5	225
Morrow County Public Works (Boardman)	Boardman	Morrow	-	-
Morrow County Public Works (Lexington)	Lexington	Morrow	-	-
Miller Paint - Gresham	Gresham	Multnomah	139	6,255
Kaleidoscope Paint	Portland	Multnomah	31	1,395
Kelly Moore 82nd Ave	Portland	Multnomah	71	3,195
Parkrose True Value Hardware	Portland	Multnomah	50	2,250
Powell Paint Center	Portland	Multnomah	-	-
Powell Villa Ace Hardware	Portland	Multnomah	-	-
ReStore Portland	Portland	Multnomah	67	3,015
Rodda Paint Eastside	Portland	Multnomah	43	1,935
Sherwin Williams - Roosevelt # 8239	Portland	Multnomah	55	2,475
Sherwin Williams - Pendleton #8499	Pendleton	Umatilla	37	1,665
Miller Home Center	La Grande	Union	14	630
Sawyer's True Value	The Dalles	Wasco	8	360
Tri County - The Dalles	The Dalles	Wasco	42	1,890
Suburban Ace Hardware Inc	Aloha	Washington	138	6,210
ReStore Beaverton	Beaverton	Washington	-	-
Rodda Paint Progress	Beaverton	Washington	84	3,780
Miller Paint - Portland (Beaverton)	Portland	Washington	46	2,070
Miller Paint - Portland (Murray Rd)	Portland	Washington	97	4,365
Sherwin Williams - Commercial Location Tualatin	Tualatin	Washington	150	6,750
McMinnville #8085	McMinnville	Yamhill	11	495
ReStore McMinnville	McMinnville	Yamhill	76	3,420
Newberg Hardware	Newberg	Yamhill	55	2,475
			4,415	198,692

Collection Site Name	City/town	County	Cages, Tubs & Pallets	Total Gallons
Metro Collection System (South/Central/Events)			3,457	236,726

**Note, the above does not include volumes from collection events or large volume direct pickups. Note all volumes are approximate as a conversion factor must be applied to convert not only the weight of the full collection containers to volumes but also to provide an estimate of the amount of paint in those containers (since not all collection containers are completely full.)*

Appendix E - Independent Financial Audit of the PaintCare Program

PAINTCARE, INC.
FINANCIAL STATEMENTS
Year Ended June 30, 2011



Mayer Hoffman McCann P.C.

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INDEPENDENT AUDITORS' REPORT

To the Board of Directors

PAINTCARE, INC.

We have audited the accompanying statement of financial position of PaintCare, Inc. as of June 30, 2011, and the related statements of activities and changes in net assets and cash flows for the year then ended. These financial statements are the responsibility of PaintCare's management. Our responsibility is to express an opinion on these financial statements based on our audit.

We conducted our audit in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of PaintCare, Inc. as of June 30, 2011, and the changes in its net assets and its cash flows for the year then ended in conformity with accounting principles generally accepted in the United States of America.

Bethesda, Maryland

August 26, 2011

PAINTCARE, INC.

STATEMENT OF FINANCIAL POSITION

June 30, 2011

ASSETS

CURRENT ASSETS

Cash	\$	435,421	
Accounts receivable		<u>504,763</u>	
TOTAL CURRENT ASSETS			<u>\$ 940,184</u>

TOTAL ASSETS			<u><u>\$ 940,184</u></u>
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LIABILITIES

CURRENT LIABILITIES

Accounts payable	\$	434,452	
Due to affiliate		<u>245,821</u>	
TOTAL CURRENT LIABILITIES			<u>\$ 680,273</u>

NET ASSETS

NET ASSETS

Unrestricted		<u>259,911</u>	
TOTAL NET ASSETS			<u>259,911</u>

TOTAL LIABILITIES AND NET ASSETS			<u><u>\$ 940,184</u></u>
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PAINTCARE, INC.

STATEMENT OF ACTIVITIES AND CHANGES IN NET ASSETS

(UNRESTRICTED)

Year Ended June 30, 2011

SUPPORT AND REVENUE	
Paint recovery fee revenue	<u>\$ 4,021,565</u>
EXPENSES	
Program/delivery expenses	
Collection support	7,590
Transportation and processing	2,389,721
Communications	<u>324,796</u>
Total program/delivery expenses	<u>2,722,107</u>
Administrative expenses	
Management fees	273,476
Legal and bank fees	132,899
Program insurance	68,171
Advanced development costs	<u>105,324</u>
Total administrative expenses	<u>579,870</u>
TOTAL EXPENSES	<u>3,301,977</u>
CHANGE IN NET ASSETS	719,588
NET ASSETS, BEGINNING OF YEAR	<u>(459,677)</u>
NET ASSETS, END OF YEAR	<u><u>\$ 259,911</u></u>

PAINTCARE, INC.

STATEMENT OF CASH FLOWS

Year Ended June 30, 2011

CASH FLOWS FROM OPERATING ACTIVITIES

Change in net assets	\$ 719,588
Adjustments to reconcile change in net assets to net cash flows from operating activities	
(Increase) in operating assets	
Accounts receivable	(504,763)
Increase (decrease) in operating liabilities	
Accounts payable	253,809
Due to affiliate	<u>(33,213)</u>
NET CASH FLOWS FROM OPERATING ACTIVITIES	<u>435,421</u>

NET INCREASE IN CASH 435,421

CASH, BEGINNING OF YEAR -

CASH, END OF YEAR \$ 435,421

PAINTCARE, INC.

NOTES TO FINANCIAL STATEMENTS

(1) Summary of significant accounting policies

Organization – PaintCare, Inc. (“PaintCare”), a not-for-profit 501(c)(3) organization, was created in October 2009 by the American Coatings Association (“ACA”), who, working with state and local government stakeholders, passed the first ever paint product stewardship law in the United States in the state of Oregon in 2009. The legislation pilots an industry-lead end-of-life management program for post-consumer paint, which PaintCare operates. The PaintCare Board is made up of architectural paint manufacturers and participation in PaintCare is not limited to ACA members, but open to all architectural paint manufacturers. There are no dues or registration fees associated with PaintCare. ACA is the sole member of PaintCare.

Financial statement presentation – In June 2009, the Financial Accounting Standards Board (“FASB”) issued the FASB Accounting Standards Codification (“ASC”) as the source of authoritative accounting principles recognized by the FASB to be applied to nongovernmental entities in the preparation of financial statements in conformity with generally accepted accounting principles (“GAAP”). The ASC is effective for interim and annual periods ending after September 15, 2009. PaintCare has adopted the ASC when referring to GAAP in this report.

PaintCare follows the requirements of ASC 958-205-05 concerning the presentation of financial statements for not-for-profit entities. These standards require that PaintCare report contributions and program grants as support in the period received or when an unconditional promise to give has been made.

PaintCare is required to report information regarding its financial position and activities according to three classes of net assets: permanently restricted (net assets which cannot be spent due to donor-imposed permanent restrictions on the use of funds), temporarily restricted (net assets which can be expended but only in accordance with donor-imposed restrictions), or unrestricted (net assets which may be spent pursuant to the direction of the Board of Directors). As of June 30, 2011, PaintCare had unrestricted net assets of \$259,911.

Basis of presentation – PaintCare’s financial statements have been prepared on the accrual basis of accounting.

Use of estimates – The preparation of financial statements in conformity with U.S. generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements, and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

PAINTCARE, INC.

NOTES TO FINANCIAL STATEMENTS

(1) Summary of significant accounting policies (continued)

Revenue recognition – Revenue from post-consumer paint recovery fees is recognized at the time architectural paint product is sold by a manufacturer participant of the paint product stewardship program. Manufacturer participants in the program pay the PaintCare recovery fee to PaintCare based on the amount of program products they sell in or into Oregon on a monthly basis. Program participants report their monthly unit sales of paint through a secure, HTTPS online system using their unique User ID and Password. The participant must pay a paint recovery fee per unit sold according to the following fee schedule:

1/2 pint container or less	No Charge
more than 1/2 pint to 1 gallon	\$0.35
1 gallon container	\$0.75
more than 1 gallon to 5 gallons	\$1.60

As the PaintCare recovery fee is added to the wholesale price of paint and passed through uniformly to the retail purchase price of paint, so that the manufacturer, distributor, and/or retailer is made whole, in some cases distributors or retailers have elected to undertake the obligation of the manufacturer for these fees. Thus, PaintCare has allowed remitter agreements in the program, whereby a distributor or retailer reports and remits directly to PaintCare on behalf of a participant manufacturer's brand or brands. Reports and payment are due by the end of the month following the end of the reporting period.

Accounts receivable – Accounts receivable consists of amounts due from program participants. The Organization provides an allowance for accounts receivable deemed to be uncollectible. At the statement of financial position date, management is of the opinion that all accounts are collectible.

Income taxes – PaintCare is generally exempt from federal income taxes under the provisions of Section 501(c)(3) of the Internal Revenue Code (IRC). In addition, PaintCare qualifies for charitable contribution deductions and has been classified as an organization that is not a private foundation. Income which is not related to exempt purposes, less applicable deductions, is subject to federal and state income taxes. PaintCare has not had any net unrelated business income in 2010 or 2009.

Accounting for Uncertainty in Income Taxes – PaintCare has adopted ASC Topic 740-1- (formerly Interpretation No. 48, "*Accounting for Uncertainty in Income Taxes*") which prescribes measurement and disclosure requirements for current and deferred income tax provisions. The interpretation provides for a consistent approach in identifying and reporting uncertain tax provisions. It is management's belief that PaintCare does not hold any uncertain tax positions. PaintCare's returns for 2010 and 2009 are subject to examination by the IRS generally for three years after they were filed.

PAINTCARE, INC.

NOTES TO FINANCIAL STATEMENTS

(1) Summary of significant accounting policies (continued)

Subsequent events – Management has evaluated subsequent events through August 26, 2011, the date on which the financial statements were available to be issued.

Functional allocation of expenses – The costs of providing the various program and supporting services of PaintCare have been summarized on a functional basis in the financial statements. Accordingly, certain costs have been allocated among the program and supporting services benefited.

Communications costs - PaintCare holds communications-related contracts for advertising, marketing, and consumer awareness. Communications costs are charged to operations when incurred or on a quarterly basis depending on contract terms. Communications expense was \$324,796 for the year ended June 30, 2011.

(2) Commitments / contractual obligations

American Coatings Association – American Coatings Association, a related party, is a separate, voluntary, 501(c)(6) non-profit organization working to advance the needs of the paint and coatings industry and the professionals who work in it. Through advocacy of the industry and its positions on legislative, regulatory, and judicial issues at the federal, state, and local levels, it acts as an effective ally ensuring that the industry is represented and fairly considered. ACA also devotes itself to advancing industry efforts with regard to product stewardship, through its signature Coating Care® resources, and focuses on advancements in science and technology through its technical conferences and journals, as well as online training opportunities. ACA incorporated PaintCare for the sole purpose of implementing programs for post-consumer architectural paint. ACA appoints the Board of Directors of PaintCare. From inception through June 30, 2011, ACA has advanced startup and organizational costs for PaintCare totaling \$384,358. At June 30, 2011, \$192,279 is outstanding and included in due to affiliate.

In February 2011, ACA and PaintCare entered into an affiliation agreement whereby ACA will provide staffing, office space, office equipment and furniture, supplies, and other administrative support services. The term of the agreement is for one year and automatically renews for one year terms unless canceled by either party. For the year ended June 30, 2011, administrative service fees totaled \$128,542, of which \$53,542 is outstanding and included in due to affiliate at June 30, 2011.

PCA Paint Stewardship, Inc. – Product Care Association (“PCA”) is a Canadian non-profit industry association that manages product stewardship programs for household hazardous and special waste on behalf of its members across Canada. PCA incorporated PCA Paint Stewardship, Inc. (“PCA-USA”) as a not-for-profit organization in order to expand its work in managing product stewardship programs into the United States. PCA is the sole member of PCA-USA. From inception through June 30, 2010, PCA-USA had advanced startup and organizational costs for PaintCare totaling \$180,643. At June 30, 2011, \$106,420 is outstanding and included in accounts payable.

PAINTCARE, INC.

NOTES TO FINANCIAL STATEMENTS

(2) Commitments / contractual obligations (continued)

On April 1, 2010, PaintCare contracted with PCA-USA as program manager of the PaintCare Oregon stewardship program. The agreement calls for a monthly management fee until the earlier of June 30, 2014 or the termination of the contract within 30 days of month end.

Under provisions of the agreement, PCA-USA contracts with independent subcontractors to perform the collection, transportation, processing, and recycling services of post-consumer paint at pre-determined rate schedules. Contracts with the two largest subcontractors extend through December 31, 2011 with one-year renewal options. PCA-USA invoices PaintCare on a monthly basis to recover the payments made by PCA-USA to the subcontractors. Expenses related to the subcontractor activity are recorded in program/delivery expenses. For the year ended June 30, 2011, expenses related to the subcontractor activity were approximately \$2,397,311.

(3) Functional classification of expense

Expenses of PaintCare are functionally classified as follows:

Program	\$ 2,722,107
General and administrative	<u>579,870</u>
Total expenses	<u><u>\$ 3,301,977</u></u>

(4) Concentrations of credit risk


Financial instruments which potentially subject the Company to concentrations of credit risk consist of cash from one account held at a commercial bank. The account is non-interest bearing and temporarily fully-insured by the Federal Deposit Insurance Corporation through December 31, 2012. Management believes there is no significant concentration of credit risk.

(5) Major customers and vendors

Three customers accounted for approximately 46% of PaintCare's revenue for the year ended June 30, 2011. Two of these customers and a separate third customer accounted for 44% of PaintCare's accounts receivable at June 30, 2011. Purchases made through PCA-USA's largest subcontractors (see Note 2) made up 38% and 36% of total purchases for the year ended June 30, 2011, and 31% and 49% of total accounts payable at June 30, 2011.

Appendix F - Samples of Education and Outreach Material


Appendix F1 - PaintCare.org Website



buy right. reuse. recycle.

LOCATE A COLLECTION CENTER (National Search)

Zip

Powered by:  **Earth911.com**

SAVE MONEY

By purchasing the correct volume of paint for your project, you're not just saving time and storage space, you're also saving money.

SAVE THE ENVIRONMENT

The less paint you have leftover, the less likely it is to find its way into a landfill. So purchase only what you need. And if you do have leftover paint, learn how to store or recycle it properly.

SAVE STORAGE SPACE

The shelves in your garage or storage shed were intended for better things than old paint cans. So buy only the paint you need. And give yourself more room for important stuff, like your golf clubs.

SAVE EXPOSURE TO HAZARDOUS MATERIALS

Solvent-based paints are ignitable and present particular hazards for children, so they require special disposal practices. So use them up or store them properly for reuse or recycling through a PaintCare collection center and give your old paint new life.

OREGON PILOT

ABOUT PAINTCARE

CONTACT US

PARTNERS

GIVE YOUR OLD PAINT NEW LIFE with PaintCare, a new non-profit program established to manage the reuse, recycling and proper disposal of unused paint. Follow PaintCare's 5-point plan and save money, save the environment, and save storage space:

- Buy the right amount**

Be a wise consumer and buy only what you need. Check with your local paint dealer for instructions on how to determine the correct volume of paint required for your project. When you purchase the right volume of paint, it eliminates the need to store or dispose/recycle paint when the project is finished, and it might even save you a bit of money. When your painting project is complete, take a look in the can. If there is only a small quantity of paint left, use it up. Paint out the last inch-or-two of paint in the bottom of the can.
- Store properly**

If your project is complete and you still have a fair amount of paint leftover, be sure to correctly store the paint. Proper paint storage will eliminate safety concerns and keep your paint fresh for touch-ups or future projects. For best results, cover the opening of the paint can with plastic wrap and securely seal the lid. When you are sure the lid is leak-proof, turn the can upside down and store it in a place with a moderate room temperature to avoid freezing. Be sure to choose a safe location that is out of the reach of children and pets.
- Reuse/Donate**

Now that you have safely stored your leftover paint, don't forget about it. Leftover paint can be used for touch-ups or for smaller projects. Record the room name on the lid for future touch ups. You can blend and mix smaller quantities of latex paint to use as a base coat on larger jobs. Perhaps, you know a neighbor or relative who could use your leftover paint; now, that's being environmentally friendly!
- Recycle**

If you can't make use of the paint yourself, donate your useable leftover paint to a worthwhile community association, theatre company, church group or other local organizations that may be in need of good paint. Perhaps, your community offers a paint exchange event or a special paint collection program. Many communities collect paint for reuse, recycling or as a last resort, proper disposal through local Household Hazardous Waste (HHW) collection programs. Check the Earth 911 website, Earth911.com or 1-800-CLEANUP, to learn about reuse, recycling and HHW collection programs that may be available in your community.
- Dispose Properly**

If there is not a leftover paint collection program available in your area, you may need to dispose of leftover latex paint yourself. Air-drying of liquid alkyd or oil based paint is not considered safe. In regions that allow it, let your latex paint air dry in a safe location away from children and pets. A small amount of paint, less than 1/2 inch, in the bottom of a paint can is easily dried out by leaving the lid off. Once the paint is hard, discard the paint can with the lid off, preferably in a metal recycling program. If metal recycling is not available or the paint container is plastic, dispose of the container in the garbage. Larger volumes of latex paint can be dried in a box with absorbent material such as shredded paper or kitty litter. Recycle the empty can with the lid off and dispose of the dried out latex paint as garbage. If the paint in the can is solidified all the way through, it may be disposed of as garbage with the lid off to prevent the build up of pressure in the can.

PaintCare Collection Sites

Map **Satellite** **Terrain**

Zip Code:

or

Select Your City :

or

[List all locations](#)


Map data ©2011 Europa Technologies, Google - [Terms of Use](#)


[Back to Oregon Home](#)

Appendix F1 - PaintCare.org Website

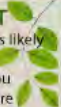
**LOCATE A COLLECTION CENTER
(National Search)**

Zip


Powered by:  **Earth911.com**

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By purchasing the correct volume of paint for your project, you're not just saving time and storage space, you're also saving money.

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The less paint you have leftover, the less likely it is to find its way into a landfill. So purchase only what you need. And if you do have leftover paint, learn how to store or recycle it properly.

**SAVE STORAGE SPACE**

The shelves in your garage or storage shed were intended for better things than old paint cans. So buy only the paint you need. And give yourself more room for important stuff, like your golf clubs.

**SAVE EXPOSURE TO
HAZARDOUS MATERIALS**

Solvent-based paints are ignitable and present particular hazards for children, so they require special disposal practices. So use them up or store them properly for reuse or recycling through a PaintCare collection center and give your old paint new life.

OREGON PILOT

ABOUT PAINTCARE

CONTACT US

PARTNERS

Contact Us

PaintCare

Alison Keane, Executive Director
1500 Rhode Island Ave., NW
Washington, DC 20005
202-719-3703
akeane@paint.org

Product Care


Product Care is a not-for-profit industry sponsored association that manages product stewardship programs for household hazardous and special waste on behalf of its members across Canada. PaintCare has partnered with Product Care's US subsidiary, PCA Product Stewardship, Inc. to assist us in implementing the program in Oregon.

Product Care Association
12337 82A Avenue
Surrey, B.C. V3W 0L5
Phone: (604) 592-2972
Fax: (604) 592-2982

Mark Kurschner, President
(604) 592-2972 ext 201
mark@productcare.org

Mannie Cheung, Director, Technical Services
(604) 592-2972 ext 203
mannie@productcare.org

Rick Volpel, OR Program Coordinator
(503) 406-2590 (work)
(503) 351-5263 (cell)
rick@productcare.org





Why Everyone Should Get With the Program.

Protecting the environment. Eliminating storage and hazards where you live. And preserving valuable resources. Sounds like something we can all get behind, right?

Well, that's exactly what the PaintCare program is. A non-profit organization created and managed by paint manufacturers that makes it easy for everyone to recycle and properly dispose of every can of unused paint.

And, perhaps best of all, there is no cost to you for dropping your paint off at one of our many participating locations throughout Oregon. And that's a program worth getting with.

For more information, visit us at www.paintcare.org



You Have Questions, We Have Answers.

Q: What does this program cost the consumer? How is the program funded?

A: The program is funded through a nominal PaintCare recovery fee which is added to the purchase price of all new paint sold in Oregon. Architectural paint manufacturers pay this fee based on their sales in the state and it is passed through to the consumer. The money is then used to fund the management of PaintCare, including administration, transportation, recycling and disposal services, and education and outreach.

Q: What was the need for PaintCare when there are other paint recycling programs in Oregon?

A: Local governments can no longer afford to offer recycling and proper disposal options under current economic conditions. PaintCare is unique in that the producers and consumers of the product take responsibility for its end-of-life management instead of relying solely on government programs. In doing so, PaintCare provides more locations to drop-off unused, unwanted paint and ensures that there is a sustainable financing mechanism to pay for its recycling or proper disposal.

Q: Where does the paint go once it's collected?

A: Once the paint is collected at one of the drop-off sites throughout the state of Oregon, it is transferred to an authorized recycling facility where it is properly disposed of or recycled.

Q: Is there a limit to how much paint someone can drop-off? Does it cost anything to drop-off?

A: Depending on the collection location and their storage capacity, there may be a limit as to how much paint you can drop off at any one time. For larger volumes, please call ahead to ensure capacity. There is no fee or cost for dropping off your unused, leftover paint. For collection locations near you visit www.paintcare.org.

Q: What are the accepted paint products that can be turned in through the PaintCare program?

A: Interior or exterior architectural coatings in 5 gallon containers or less are accepted. For a detailed list of products accepted and products not accepted, please visit www.paintcare.org.

Recycle your paint here.

Name of Drop Off Site
1234 Street Address Here
City Name, State 00000
000.000.0000

Name of Drop Off Site
1234 Street Address Here
City Name, State 00000
000.000.0000

Name of Drop Off Site
1234 Street Address Here
City Name, State 00000
000.000.0000

Name of Drop Off Site
1234 Street Address Here
City Name, State 00000
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000.000.0000

Name of Drop Off Site
1234 Street Address Here
City Name, State 00000
000.000.0000

Name of Drop Off Site
1234 Street Address Here
City Name, State 00000
000.000.0000

Give your old paint new life with PaintCare, a new non-profit program established to manage the reuse, recycling and proper disposal of unused paint. These stores are proud partners, helping to provide more convenient opportunities to recycle and properly dispose of your leftover paint. Please join us in protecting the environment and preserving our valuable resources through recycling and proper disposal.

To learn what products are accepted by the program, call **1.800.CLEANUP** or visit **www.paintcare.org**





Take the guesswork out of buying paint.

THE PAINT CALCULATOR

	Wall Length (in feet)												
	6	8	10	12	14	16	18	20	22	24	26		
6	1	1	1	1	1	1	1	1	1	1	1		
8	1	1	1	1	1	1	1	1	1	1	1		
10	1	1	1	1	1	1	1	1	1	1	1		
12	1	1	1	1	1	1	1	1	1	1	1		
14	1	1	1	1	1	1	1	1	1	1	1		
16	1	1	1	1	1	1	1	1	1	1	1		
18	1	1	1	1	1	1	1	1	1	1	1		
20	1	1	1	1	1	1	1	1	1	1	1		
22	1	1	1	1	1	1	1	1	1	1	1		
24	1	1	1	1	1	1	1	1	1	1	1		
26	1	1	1	1	1	1	1	1	1	1	1		

1 Gallon
 1.5 Gallons
 2 Gallons
 2.5 Gallons

With our handy paint calculator, buying the right amount of paint for your next project has never been easier. Find the right amount in just two easy steps:
 1. Measure the height and width of your space
 2. Locate the correlating values on the chart

Measuring before you buy will help you save money, the environment and the space needed to store your unused paint.

For more information please call **1.800.CLEANUP** or visit www.paintcare.org



buy right. reuse. recycle.



THE COUNTRY'S FIRST PAINT STEWARDSHIP PROGRAM.

The Oregon Pilot Paint Recovery Program is doing what no other paint program has done - it has established a successful paint industry program to improve collection and increase recycling and proper disposal of leftover paint.

The program is being implemented by PaintCare, a non-profit organization created and managed by paint manufacturers. Working with state and local governments, as well as the Oregon consumer, the paint industry has taken ownership of the end-of-life management for their paint products.

Paint Program Highlights

- Launched in July 2010
- The first program of its kind in the nation
- Creating a model for a national program
- A cooperative program between business and government
- Cost-effective and environmentally beneficial
- Providing increased and more convenient collection for consumers
- Reduces the burden on local governments for paint disposal

For more information visit:



GOOD
for our government.

GOOD
for our economy.

GOOD
for our environment.

Oregon Pilot Paint Recovery Program



HERE'S HOW IT WORKS.

1. Customers purchase paint
2. Pay small recovery fee
3. Use paint
4. Take remaining paint to one of over 75 collection sites
5. Contractors then pick up the leftover paint
6. Paint is delivered to an authorized recycling/reuse facility

Using the Paint Recovery Program is simple. As are the results.

A LOW COST SOLUTION:



- Program is self-sufficient
- Operates without state funds
- PaintCare provides consumers the opportunity to reuse/recycle paint where they had none before
- Program oversees the collection, transport and processing of returned paint
- Saves local governments money
- Educates the consumer on the issue

This program doesn't cost the state a dime and saves at least one regional government organization more than one million dollars annually.

IT'S WORKING GREAT. LET'S KEEP IT GOING.

"As our HHW program previously did not accept latex paint, with the PaintCare program we're now able to provide local residents with a greater level of service at no additional cost...as well as savings to our program on the disposal of oil-based products that are now covered under PaintCare."

- Cindy Brown, Coordinator

"The PaintCare program works well in our area because it intertwines seamlessly with all of our existing hazardous waste collection events. As a product stewardship initiative, PaintCare is supposed to expand local paint collection options while simultaneously shift collection costs away from local government. That is our experience."

- David Skakel, Solid Waste Specialist

"Columbia Co. has seen a positive impact to the community and our HHW Program since the introduction of the PaintCare Product Stewardship Program last July 2010."

- Roy Weedman, Solid Waste Coordinator





RECYCLE YOUR PAINT HERE.

Give your old paint new life with PaintCare, a new non-profit program established to manage the reuse, recycling and proper disposal of unused paint. This store is a proud partner, helping to provide more convenient opportunities to recycle and properly dispose of your leftover paint. Please join us in protecting the environment and preserving our valuable resources through recycling and proper disposal.

To learn what products are accepted by the program either ask your sales associate, call **1.800.CLEANUP** or visit www.paintcare.org



buy right. reuse. recycle.



66

Appendix F7 - Tradeshows





1500 Rhode Island Ave., NW
Washington, DC 20005
202-462-6272
202-462-8549 (fax)

New Paint Product Stewardship Pilot Program in Oregon

The American Coatings Association (ACA) has worked over the last number of years with various stakeholders interested in the management of post-consumer paint to develop and implement an industry led Paint Stewardship Pilot Program in the US. With the successful passage of legislation in Oregon this year enabling such a pilot, ACA, and its new non-profit stewardship organization – PaintCare – is now in the process of implementing the Program.

As a Retailer – What do I need to know?

As of the program start date, a PaintCare Recovery Fee must be added by the manufacturers to the cost of all architectural paint for sale in Oregon. This Recovery Fee will fund the collection, transportation, recycling and proper disposal of architectural paint in the state and distributors and retailers will see this fee on their invoices for Program Products. The legislation also provides that “....each Oregon retailer or distributor shall add the assessment to the purchase price of all architectural paint sold in [Oregon]”. Therefore the Recovery Fee must be added by the retailer to the final purchase price of Program Products and retailers have the option of displaying it separately on consumer receipts. The recovery fee paid to the retailer by the consumer offsets the recovery fee charged to the retailer by the manufacturer or distributor.

What Products are covered by the Program?

Architectural paint is defined under the Program as interior and exterior architectural coatings sold in containers of five gallons or less. It does not include industrial, original equipment or specialty coatings. Examples of Program Products versus Non-Program Products are provided below:

Program Products

(maximum container size of 5 gallons):

- Interior and Exterior Architectural Paints: Latex, acrylic, water-based, alkyd, oil-based, enamel (all types of finishes and sheens, including textured coatings)
- Deck coatings and floor paints (including elastomeric)
- Waterproofing concrete/masonry/wood sealers and repellents (not-tar-based or bitumen-based)
- Melamine, metal and rust preventative
- Primers, undercoaters and sealers
- Stains and Shellacs
- Swimming Pool Paints (single component)
- Varnishes and urethanes (single component)
- Lacquers, Lacquer Sanding Sealers, and Lacquer Stains
- Wood Coatings (containing no pesticides)

Non-Program Products

(regardless of container size):

- Industrial Maintenance Coatings
- OEM and Industrial surface coating (shop application) paints and finishes
- Aerosol Paints
- Automotive Paints
- Marine Paints
- Craft Paints
- Caulking Compounds, epoxies, glues or adhesives
- Colorants and tints
- Resins
- Paint Thinners, mineral spirits or solvents
- Paint Additives
- Pesticide containing products
- Roof patch or repair
- Tar-based or bitumen based products
- 2-Component Coatings
- Deck Cleaners
- Traffic Paints

How much is the PaintCare Recovery Fee?

The Recovery Fee is based on container size as follows:

<i>1/2 pint container or less</i>	No Charge
<i>more than 1/2 pint to 1 gallon</i>	\$ 0.35
<i>1 gallon container</i>	\$ 0.75
<i>more than 1 gallon to 5 gallon</i>	\$ 1.60

What are my obligations under the Program?

In addition to adding the PaintCare Recovery Fee to Program Products that you sell in Oregon, you are required to ensure that the manufacturers of any Program Products you are selling in the state have or are participating in the Program – otherwise the products can not be sold. Retailers will access this information on Oregon's Department of Environmental Quality's (DEQ) web site. Also, you are required to provide information about the Program to consumers – information that will be provided to you by PaintCare. Lastly, while not required to do so, you may volunteer to be a collection site for Program Products at no cost to you.

Is this a Government program?

No – the Program is mandated by law, but it is being implemented by PaintCare, which is an industry association run by architectural paint manufacturers. The Program is entirely funded by the PaintCare Recovery Fee, which is paid to PaintCare by the manufacturers based on their architectural paint sales in Oregon. PaintCare engages and manages all contracts for collection, transportation, recycling, and proper disposal of the Program Products. PaintCare submitted a Program Plan for approved by the DEQ and will submit reports on the Program on an annual basis.

Who is Product Care?

PaintCare has engaged Product Care to develop, implement and manage the Oregon paint stewardship pilot program including contracts for collection, transportation, recycling, and proper disposal of the Program Products. Product Care has incorporated an Oregon non-profit called PCA Paint Stewardship Inc. for this purpose. Product Care is a not-for-profit industry sponsored association that manages product stewardship programs for paint and for other household hazardous and special waste on behalf of its members across Canada.

For Further Information visit www.paintcare.org, or contact:

Alison Keane
ACA and PaintCare
202-719-3703
akeane@paint.org
www.paintcare.org

Rick Volpel
Product Care
503-406-2590
rick@productcare.org
www.productcare.org



1500 Rhode Island Ave., NW
Washington, DC 20005
202-462-6272
202-462-8549 (fax)

New Paint Product Stewardship Pilot Program in Oregon

The American Coatings Association (ACA) has worked over the last number of years with various stakeholders interested in the management of post-consumer paint to develop and implement an industry led Paint Stewardship Pilot Program in the US. With the successful passage of legislation in Oregon this year enabling such a pilot, ACA, and its new non-profit stewardship organization – PaintCare – is now in the process of implementing the Program.

As a Manufacturer – What do I need to know?

As of the start date of the program if you are not participating in PaintCare, or implementing your own paint stewardship program as approved by the Oregon Department of Environmental Quality, you will not be permitted to sell architectural paint in the state of Oregon. If you are participating in the PaintCare program, you will fulfill your obligations by remitting payment of a PaintCare Recovery Fee on all architectural paint you offer for sale in Oregon. The Recovery Fee will fund the collection, transportation, recycling and proper disposal of architectural paint in the state as well as education and outreach activities. The Recovery Fee must be added to your invoices for architectural paint to your distributors and retailers and those distributors and retailers must add it to the final purchase price of architectural paint sold to Oregon consumers.

What Products are covered by the Program?

Architectural paint is defined under the Program as interior and exterior architectural coatings sold in containers of five gallons or less. It does not include industrial, original equipment or specialty coatings. Examples of Program Products versus Non-Program Products are provided below:

Program Products (maximum container size of 5 gallons):

- Interior and Exterior Architectural Paints: Latex, acrylic, water-based, alkyd, oil-based, enamel (all types of finishes and sheens, including textured coatings)
- Deck coatings and floor paints (including elastomeric)
- Waterproofing concrete/masonry/wood sealers and repellents (not-tar-based or bitumen-based)
- Melamine, metal and rust preventative
- Primers, undercoaters and sealers
- Stains and Shellacs
- Swimming Pool Paints (single component)
- Varnishes and urethanes (single component)
- Lacquers, Lacquer Sanding Sealers, and Lacquer Stains
- Wood Coatings (containing no pesticides)

Non-Program Products (regardless of container size):

- Industrial Maintenance Coatings
- OEM and Industrial surface coating (shop application) paints and finishes
- Aerosol Paints
- Automotive Paints
- Marine Paints
- Craft Paints
- Caulking Compounds, epoxies, glues or adhesives
- Colorants and tints
- Resins
- Paint Thinners, mineral spirits or solvents
- Paint Additives
- Pesticide containing products
- Roof patch or repair
- Tar-based or bitumen based products
- 2-Component Coatings
- Deck Cleaners
- Traffic Paints

How much is the PaintCare Recovery Fee?

The Recovery Fee is based on container size as follows:

<i>1/2 pint container or less</i>	No Charge
<i>more than 1/2 pint to 1 gallon</i>	\$ 0.35
<i>1 gallon container</i>	\$ 0.75
<i>more than 1 gallon to 5 gallon</i>	\$ 1.60

How do I become a Participant in PaintCare?

Please contact us using the contact information below. You must register with PaintCare and provide the Program with a point of contact and a list of brands of Program Products you offer for sale in Oregon. Participants will report quantities sold of Program Products and pay the PaintCare Recovery Fee on a monthly basis. Participants will report the number or units of Program Products in each container size range and the type of paint – alkyd or latex. PaintCare will undertake all other obligations on behalf of participants including education and outreach for the program, management of the Program Products from collection through end-of-life disposition and reporting requirements.

Is this a Government program?

No – the Program is mandated by law, but it is being implemented by PaintCare, which is an industry association run by architectural paint manufacturers. The Program is entirely funded by the PaintCare Recovery Fee, which is paid to PaintCare by the manufacturers based on their architectural paint sales in Oregon. PaintCare engages and manages all contracts for collection, transportation, recycling, and proper disposal of the Program Products. PaintCare submitted a Program Plan for approved by the DEQ and will submit reports on the Program on an annual basis.

Who is Product Care?

PaintCare has engaged Product Care to develop, implement and manage the Oregon paint stewardship pilot program including contracts for collection, transportation, recycling, and proper disposal of the Program Products. Product Care has incorporated an Oregon non-profit called PCA Paint Stewardship Inc. for this purpose. Product Care is a not-for-profit industry sponsored association that manages product stewardship programs for paint and for other household hazardous and special waste on behalf of its members across Canada.

FOR FURTHER INFORMATION – PLEASE CONTACT:

Alison Keane
ACA and PaintCare
202-719-3703
akeane@paint.org
www.paintcare.org

Rick Volpel
Product Care
503-406-2590
rick@productcare.org
www.productcare.org



1500 Rhode Island Ave., NW
Washington, DC 20005
202-462-6272
202-462-8549 (fax)

New Paint Product Stewardship Pilot Program in Oregon

The American Coatings Association (ACA) has worked over the last number of years with various stakeholders interested in the management of post-consumer paint to develop and implement an industry led Paint Stewardship Pilot Program in the US. With the successful passage of legislation in Oregon this year enabling such a pilot, ACA, and its new non-profit stewardship organization – PaintCare – is now in the process of implementing the Program.

As a Trade Painter – What do I need to know?

As of the start date of the program a PaintCare Recovery Fee will be added to the cost of all architectural paint sold in Oregon. This Recovery Fee will fund the collection, transportation, recycling and proper disposal of architectural paint in the state. The fee will be paid at the point of sale and commercial painters may see this fee on their invoices for Program Products. Please note that paint producers, retailers and distributors must charge the PaintCare Recovery Fee and it is expected that trade painters will in-turn charge their customers in order to recoup this cost. Trade painters, however, will no longer be charged to dispose of their leftover paint at the point of collection. Painters that are small or large quantity hazardous waste generators will not be able to manage their leftover alkyd paint using this program.

What Products are covered by the Program?

Architectural paint is defined under the Program as interior and exterior architectural coatings sold in containers of five gallons or less. It does not include industrial, original equipment or specialty coatings. Examples of Program Products versus Non-Program Products are provided below:

Program Products (maximum container size of 5 gallons):

- Interior and Exterior Architectural Paints: Latex, acrylic, water-based, alkyd, oil-based, enamel (all types of finishes and sheens, including textured coatings)
- Deck coatings and floor paints (including elastomeric)
- Waterproofing concrete/masonry/wood sealers and repellents (not-tar-based or bitumen-based)
- Melamine, metal and rust preventative
- Primers, undercoaters and sealers
- Stains and Shellacs
- Swimming Pool Paints (single component)
- Varnishes and urethanes (single component)
- Lacquers, Lacquer Sanding Sealers, and Lacquer Stains
- Wood Coatings (containing no pesticides)

Non-Program Products (regardless of container size):

- Industrial Maintenance Coatings
- OEM and Industrial surface coating (shop application) paints and finishes
- Aerosol Paints
- Automotive Paints
- Marine Paints
- Craft Paints
- Caulking Compounds, epoxies, glues or adhesives
- Colorants and tints
- Resins
- Paint Thinners, mineral spirits or solvents
- Paint Additives
- Pesticide containing products
- Roof patch or repair
- Tar-based or bitumen based products
- 2-Component Coatings
- Deck Cleaners
- Traffic Paints

How much is the PaintCare Recovery Fee?

The Recovery Fee is based on container size as follows:

<i>1/2 pint container or less</i>	No Charge
<i>more than 1/2 pint to 1 gallon</i>	\$ 0.35
<i>1 gallon container</i>	\$ 0.75
<i>more than 1 gallon to 5 gallon</i>	\$ 1.60

Where can I bring my leftover Program Products?

There will be various collection sites around Oregon, including current municipal sites and new retail and other sites. Please visit www.paintcare.org for a listing by zip code for available collection sites and their hours of operation. Program Products must be in their original and labeled containers, maximum container size of 5 gallons, and must be properly sealed. Please note that municipal sites are better equipped for larger quantities of Program Products than other collection locations.

Is this a Government program?

No – the Program is mandated by law, but it is being implemented by PaintCare, which is an industry association run by architectural paint manufacturers. The Program is entirely funded by the PaintCare Recovery Fee, which is paid to PaintCare by the manufacturers based on their architectural paint sales in Oregon. PaintCare engages and manages all contracts for collection, transportation, recycling, and proper disposal of the Program Products. PaintCare submitted a Program Plan for approval by Oregon's Department of Environmental Quality and will submit annual reports once the Program has been fully implemented.

Who is Product Care?

PaintCare has engaged Product Care to develop, implement and manage the Oregon paint stewardship pilot program including contracts for collection, transportation, recycling, and proper disposal of the Program Products. Product Care has incorporated an Oregon non-profit called PCA Paint Stewardship Inc. for this purpose. Product Care is a not-for-profit industry sponsored association that manages product stewardship programs for paint and for other household hazardous and special waste on behalf of its members across Canada.

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www.paintcare.org

Rick Volpel
Product Care
503-406-2590
rick@productcare.org
www.productcare.org

Appendix G - Press Coverage

Appendix G1 - 2010 PaintCare Media Summary

Paint Care
2010 Media

		JAN				FEB				MAR				APR				MAY					JUN				JUL				AUG				SEP				OCT					NOV				DEC								
		4	11	18	25	1	8	15	22	1	8	15	22	29	5	12	19	26	3	10	17	24	31	7	14	21	28	5	12	19	26	2	9	16	23	30	6	13	20	27	4	11	18	25	1	8	15	22	29	6	13	20				
TRADE SHOWS																																																								
Portland	Better Living Show																																																							
Redmond	Central Oregon Home Show																	4/30-5/3																																						
Central Pt.	Southern Oregon Home Show																																				9/17-19																			
Portland	Home Improvement Show																																					9/24 -27																		
Portland	Home & Garden Show																																					10/1-4																		
Eugene	Lane County Home Show																																							10/9-11																
Redmond	Home Show & Living Green																																								10/16-18															
Salem	Home Show																																																							
RADIO - :30 radio																																																								
Market	Station																																																							
Astoria	KAST																																																							
Baker	KBKR																																																							
Bend	KBND																																																							
Coos Bay	KWRO																																																							
Corvallis	KLOO																																																							
Enterprise	KWVR																																																							
Eugene	KPNW																																																							
Klamath Falls	KFLS																																																							
LaGrande	KLBM																																																							
Lincoln City	KBCH																																																							
Medford	KMED																																																							
Newport	KNPT																																																							
Pendleton	KUMA																																																							

Appendix G2 - 2011 PaintCare Media Summary

Paint Care 2011 Jan-Jun Media Schedule

		Jan				Feb				MAR				APR				MAY				JUN				
		3	10	17	24	31	7	14	21	28	7	14	21	28	4	11	18	25	2	9	16	23	30	6	13	20
NEWSPAPER	Collection Ads																									
Market	Newspaper																									
Albany	Democrat Herald																									
Astoria	Daily Astorian																									
Baker City	Baker City Herald																									
Bend	Bulletin																									
Brookings	Curry Coastal Pilot																									
Burns	Times Herald																									
Corvallis	Gazette Times																									
Coos Bay	The World																									
Gold Beach	Curry County Reporter																									
Eugene	Register Guard																									
Grants Pass	Daily Courier																									
Hood River	Hood River News																									
John Day	Blue Mountain Eagle																									
Klamath Falls	Herald and News																									
LaGrande	Observer																									
Lincoln City	News Guard																									
McMinnville	Yamhill Valley News-Register																									
Medford	Mail Tribune																									
Newberg	Newberg Graphic																									
Newport	News Times																									
Ontario	Argus Observer																									
Pendleton	East Oregonian																									
Portland	Portland Tribune																									
Portland	Oregonian																									
Roseburg	News Review																									
Salem	Statesman Journal																									
The Dalles	Dalles Chronicle																									
Vernonia	Vernonia Voice																									
NEWSPAPER	Event Ads																									
Condon	Times Journal																									
Spray	Wheeler County News																									
RADIO																										
Market	Station																									
Astoria	KAST																									
Baker	KBKR																									
Bend	KBND																									
Coos Bay	KWRO																									
Corvallis	KLOO																									
Enterprise	KWVR																									
Eugene	KPNW																									
Klamath Falls	KFLS																									
LaGrande	KLBM																									
Lincoln City	KBCH																									
Medford	KMED																									
Newport	KNPT																									
Pendleton	KUMA																									
Portland	KXL																									
Portland	KINK																									
Portland	KWJL																									
Portland	KRSK																									
Portland	KGON																									
Portland	KFXS																									
Portland	KNRK																									
Portland	KYCH																									
Roseburg	KQEN																									
Tillamook	KMBD																									
The Dalles	KACI																									
Natural Awakenings - full page 4 color																										
TRADE SHOWS																										
Portland	Build Remodel Show	1/7-9																								
Central Pt.	Southern Oregon Home Show					2/11-13																				
Portland	Spring Home & Garden Show							2/23-27																		
Roseburg	Umpqua Valley Show									3/4-6																
Klamath Falls	Spring Home Show										3/11-13															
Portland	Better Living Show												3/25-27													
Redmond	Central Oregon Home & Garden																			5/6-8						

CITY OF
PORTLAND

Appendix G3 - Mayor of Portland Paint Recycling Proclamation

Whereas, April 22nd is National Paint Recycling Day; and

Whereas, all citizens are encouraged to reuse, recycle and properly dispose of unused paint because it is environmentally sound and cost effective. It is estimated that the lack of national awareness about proper paint storing and disposal will result in 75 million gallons of paint being disposed of in landfills; and

Whereas, proper storage and disposal of paint prevents harmful chemicals from entering the environment through hazardous emissions called Volatile Organic Compounds (VOCs). VOCs have been associated with adverse effects on human health and the environment; and

Whereas, reusing, recycling or donating unused paint also alleviates the risk of harm to children or animals due to the ingestion of improperly stored paint; and

Whereas, local nonprofit organizations such as PaintCare provide Portlanders access to resources to learn how to dispose of paint properly;

Now, therefore, I, Sam Adams, Mayor of the City of Portland, Oregon, the "City of Roses," do hereby proclaim April 22, 2011 to be

Paint Recycling Day

in Portland, and encourage all residents to observe this day.



Appendix G4 - Gazette Times Article

gazettetimes.com

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Oregon program recycles, reuses old paint

Story Discussion

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Associated Press | Posted: Wednesday, July 20, 2011 11:57 am | Loading...

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Oregon's first-in-the-nation environmental plan for recycling paint is 1 year old, and its proponents are claiming success.

PaintCare, a paint recycling program that launched its pilot project in Oregon, collected more than 284,000 gallons of paint in its first eight months, The Eugene Register-Guard reported.

Since its start in July 2010, the program has recycled more than half of the latex paint it collected and returned it to store shelves. The majority of oil-based paint was processed and used in fuel blending. The program has 90 collection sites statewide.

"We really want the paint to be on the wall, not in the waste stream," said Alison Keane, executive director for PaintCare. "Paint has always been the No. 1 product in cost and amount for hazardous waste (disposal)."

The Legislature passed the paint "take back" program in 2009 after similar measures failed in Vermont and Connecticut. The program is funded by a deposit with no return value that changes based on the amount of paint purchased.

One quart to one gallon of paint now costs an additional 75 cents, and anything more than one gallon increased by \$1.60.

The program governs the recycling of architectural paint, the oil-based and latex paints sold in containers of 5 gallons or less used on the interior and exterior of buildings. It also includes deck coatings, primers, varnishes and wood coatings. The paint is collected at drop-off centers, reprocessed and then sold.

The program is part of a larger push toward "product stewardship," the idea that manufacturers should take responsibility for what they produce after consumers are done with them.

PaintCare hopes to pass similar legislation in Washington state.

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Appendix G5 - USA Today Article

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Paint Recycling Day Set For Friday

12h 26m ago

PORTLAND, Ore. -- Friday is National Paint Recycling Day. Portland Mayor Sam Adams declared the day in honor of Earth Day and Oregon's PaintCare program, the only state program of its kind. PaintCare is a nonprofit organization that requires paint manufa

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Appendix G6 - Oregon State News Article



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Paint Recycling Day Set For Friday

Oregon State News.Net
Tuesday 19th April, 2011 (Source: Fox 12)

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PORTLAND, Ore. -- Friday is National Paint Recycling Day. Portland Mayor Sam Adams declared the day in honor of Earth Day and Oregon's PaintCare program, the only state program of its kind. PaintCare is a nonprofit organization that requires paint manufacturers to safely manage unwanted paint. Go to ...

Read the full story at **Fox 12**

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In Oregon's Take on Earth Day, Paint Recycling Gets Marquee Billing

Tuesday, April 19, 2011

[More items for Coatings Technology](#)

On Earth Day, April 22, the residents of Portland, Ore., will also observe a new green-flavored event—National Paint Recycling Day.

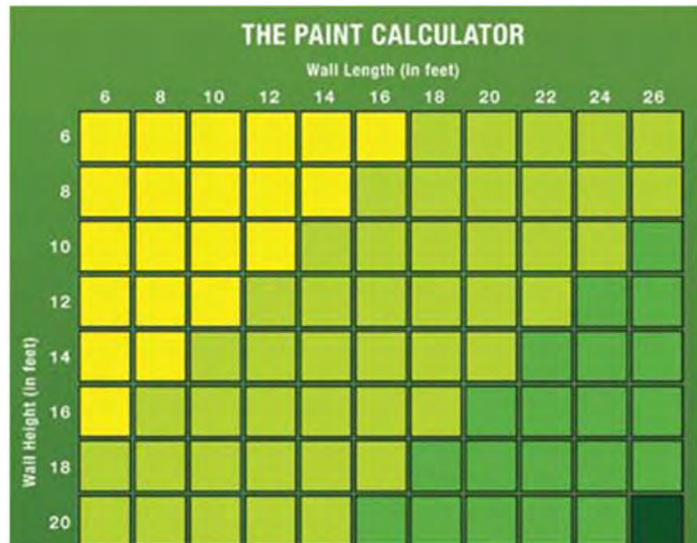
Perhaps the idea and location shouldn't come as a total surprise, since Oregon has built a reputation as a leader in paint-recycling and other environmentally conscious initiatives.

Portland Mayor Sam Adams declared April 22 as National Paint Recycling Day in recognition of the considerable environmental benefits of paint recycling, the mayor's office announced.

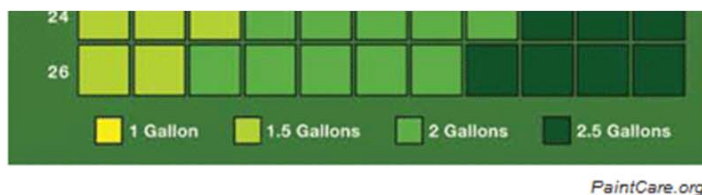
"Paint recycling is not only the right thing to do, but it has become increasingly convenient to drop off unwanted paint with expanded paint-recycling options," Adams said in issuing the Paint Recycling Day proclamation. "We hope Paint Recycling Day will increase the community's awareness of these local solutions."

Recycling Targets Waste Issue

In a 2007 report, the EPA estimated that "66 to 69 million gallons of post-consumer architectural paint is disposed or incinerated annually in the U.S." Proper storage and disposal of paint prevents harmful chemicals from entering the environment and the release of VOC emissions, which have been associated with adverse effects on human health and the environment.



Appendix G7 - Durability and Design Article, page 2



A paint calculator tool issued by Oregon's PaintCare organization helps users find the proper amount of paint in two steps. 1) Measure the height and width of your space. 2) Locate the correlating values on the chart.

An estimated 10% of the more than 750 million gallons of architectural paint sold each year in the U.S. is unused, the Oregon Department of Environmental Quality's website says.

Statewide PaintCare Program

In Oregon, paint manufacturers are required to safely manage leftover latex and oil-based paint from consumer and contractor painting projects, under the state's paint-recycling legislation passed in 2009 (see [Oregon Paint 'Take-Back' Program Begins Operation](#)).

The American Coatings Association implemented PaintCare, a non-profit organization in charge of administrating the state-legislated recycling program, in 2010. The program is one of the only of its kind in the country thus far and is funded by paint and coatings manufacturers.



An estimated 10% of the more than 750 million gallons of architectural paint sold each year in the U.S. is unused, the Oregon Department of Environmental Quality's website says.

Oregon's program is estimated to properly manage 800,000 gallons of leftover paint each year. The public can bring leftover paint to a network of paint-collection sites around the state for recycling, reuse and energy recovery.

PaintCare also provides education to consumers on the importance of buying the correct amount of paint, the reuse and proper management of useable paint, and proper disposal of remaining unusable paint.

Spreading the Word

Oregon may have been the first state to enact paint-recycling legislation, but others are not far behind; California approved similar legislation in 2010 (see [California Enacts Leftover Paint](#)).



Paint Recycling Day in Oregon



In honor of Earth Day and the nation's first paint recycling program, Mayor Sam Adams declared April 22nd National Paint Recycling Day. The mayor's office supports the declaration of Paint Recycling Day due to the myriad of benefits that paint recycling provides for the environment.

It is estimated that the lack of national awareness about proper paint storage and disposal will result in 75 million gallons of paint being disposed of in landfills.

PaintCare, a non-profit organization, was established to be in charge of administering the state legislated paint recycling program that is currently unique to Oregon and requires paint manufacturers to safely manage leftover latex and oil-based paint from consumer and contractor painting projects.

The program also educates consumers on the importance of buying the correct amount of paint, increasing reuse and proper management of useable paint, and proper disposal of remaining unusable paint.

Ace Hardware Reports Finances

Ace Hardware Corporation, the largest retailer-owned hardware cooperative in the industry, today reported total revenues of \$854.0 million for the first quarter of 2011, an increase of \$23.4 million or 2.8 percent from 2010. Net income was \$6.8 million for the first quarter of 2011, a decrease of \$5.0 million or 42.4 percent, compared to \$11.8 million in 2010.

"Our first quarter sales reflect our fourth consecutive quarter of year-over-year positive growth in merchandise sales," said Ray Griffith, Ace president and chief executive officer. "While there is still uncertainty in the overall economic environment, we will continue to provide our retailers with the products and services they need to drive further growth as the economy stabilizes."



Valspar Meets SafeWorld

The Valspar Corporation, one of the largest paint and coatings companies in the world, has chosen to offer SafeWorld's new CanGun 1 premium ergonomic aerosol spray can tool under Valspar's brand name "The Easiest Spray Gun Available."

"After more than 10 years of purchasing the original CanGun, we're now excited to offer Valspar's branded "The Easiest Spray Gun Available" as the premium spray can tool to our domestic and global customers," said Jane Ryder, Valspar's Category Manager. "It offers our customers more features, benefits and increased satisfaction, while providing professional results at a value price."

"We are very proud and excited that they have chosen SafeWorld's spray can tool as their premium offering to their domestic and global customers," said Ken Becker, President of SafeWorld and inventor of CanGun1.



Peter Gee Appointed National Sales Manager for Ecobond® Products

MT2 has appointed Peter K. Gee as national sales manager for its patented Ecobond® line of coatings, which take the hazards out of lead based paint.

(www.ecobondibp.com).

Gee, 50, has two decades of experience in environmental regulatory affairs and government projects. As a specialist with the U.S. EPA, Gee performed field investigations of complex air, water, and hazardous waste pollution sources suspected to be in violation of applicable federal and state regulations. While with Raytheon on Johnston Atoll, Gee was the first environmental coordinator, drafting the initial operational environmental compliance policies and procedures and providing the leadership in implementing them.

CPS Acquires Lenteq

CPS Color Group Oy, a global leader in integrated paint tinting solutions, has acquired Lenteq Industries B.V., a specialist provider of dispensing and mixing equipment based in Lissebroek, Netherlands.

Lenteq's strengths in innovative piston pump technology are set to enhance and complete CPS Color's product portfolio. CPS Color is the only supplier to offer end-to-end tinting solutions including colorants (liquid pigments), dispensing and mixing equipment, software and color marketing tools, as well as a global sales and support network. Through its network, CPS Color is set to expand the sales of the Lenteq technology further.

The paint tinting industry is currently experiencing substantial growth, and is expected to exceed Gross Domestic Product (GDP) growth rates over the foreseeable future. While paint consumption in general is correlated to GDP, the increasing penetration of point-of-sales tinting is expected to further fuel growth.

There are better locations to dispose of paint than a landfill.

Albany Area ReStore
1225 SE 6th St.
Albany, OR
Mon.-Fri. 9-5, Sat. 9-4

Albany Sherwin Williams #8080
2945 SE Santiam Highway
Albany, OR
Mon.-Fri. 7-7, Sat. 8-6, Sun. 10-6

Lebanon Area ReStore
1055 Airway Rd.
Lebanon, OR
Wed.-Thurs. 10-2, Fri.-Sat. 9-4

Hoy's True Value Hardware
3041 Main St.
Sweet Home, OR
Mon.-Fri. 8-7, Sat. 9-6, Sun. 10-5

Recycling your old paint is simple and something that everyone can do. More importantly, protecting our environment is something we should all want to do. That's why the PaintCare program was created to make it easy for everyone to recycle and properly dispose of every can of unused paint.



Here's how it works. Purchase paint, pay a small recovery fee with purchase, then with whatever paint you want to recycle, simply drop it off at the collection site for no extra charge. You're done. We'll take it from there.

To learn more, visit us at www.paintcare.org



Do your spring cleaning and protect the environment all at the same time.



Right now is a great time to not only get into the cleaning mode (it's Spring, remember?), but also do a whole lot more. Like eliminating storage and environmental hazards where you live as well as preserving valuable resources. It's possible through the PaintCare program. • PaintCare is a non-profit organization created and managed by paint manufacturers that makes it easy for everyone to recycle and properly dispose of every can of unused paint. • How does it work?

Purchase paint, pay a small recovery fee with purchase, then with whatever paint you want to recycle, simply drop it off at a collection site for no extra charge. You're done. We'll take it from there. Again, there is no collection cost to you for dropping your paint off at one of our many participating locations throughout Oregon. It's a spring cleaning program worth getting into.

Learn more by visiting us at www.paintcare.org



There are better locations to dispose of paint than a landfill.

Please join us at the
Fossil Paint Collection Event
Saturday, June 25th, 9-2pm
701 Adams
Fossil, Oregon
(behind the courthouse)

Recycling your old paint is simple and something that everyone can do. More importantly, protecting our environment is something we should all want to do. That's why the PaintCare program was created to make it easy for everyone to recycle and properly dispose of every can of unused paint.

Here's how the program works:
A portion of the purchase price of all new paint sales is being used to cover recycling and disposal costs for leftover, unwanted paint. So, if you have any paint you want to recycle, simply drop it off at any collection site for no additional charge. You're done. We'll take it from there.

To learn more, visit us at
www.paintcare.org



AUGUST 19, 2010



BRADSHAW ADVERTISING

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EXECUTIVE OVERVIEW

- Just over one-fifth of Oregon households (22%) are now *aware* of the new Oregon state law that provides a statewide system for managing leftover paint. (Q2)
 - Respondents in Central/Eastern Oregon and those over the age of 65 indicated the highest levels of awareness (32% and 28%, respectively).
- When asked how respondents would currently likely dispose of unneeded paint, about one-third would *call a garbage or recycling organization*, one-third *would take the paint to a government recycler*, and one-third would *store the paint for future use*. (Q1)
- Of those who indicated an awareness of the PaintCare program, *newspapers* were the most frequently mentioned source of the information, followed by *word-of-mouth*, *TV news stories*, and *Radio news stories*. (Q3)
- Respondents felt that it was *important* to have a program in place that accepts unneeded paint, with 61% saying it is *very important*, 31% saying it is *somewhat important* and just 8% saying it is *not important*. (Q4)
 - Residents of Southern Oregon and females were most likely to answer *very important* (72% and 68%, respectively).
- A vast majority of respondents believe that the consumer fees per-can of paint are *reasonable*, with 33% calling them *very reasonable*, and 40% calling them *somewhat reasonable*. About one-quarter (23%) consider the fees *unreasonable*. (Q5)
 - Those ages 35-44 and female respondents were most likely to find the fees *reasonable* (81% and 79%, respectively).
- Those who were *aware* of PaintCare were asked where they would like to currently be able to take their paint for proper management. Many said they can take their paint to *government facilities* (41%) or to *Metro* (21%). (Q6a)
 - Among those in the Portland area, 63% cited Metro (the regional government entity).
- Those who were *unaware* of PaintCare were asked where they would like to be able to take their unneeded paint. The most common responses included *government facilities* (24%), *Metro* (21%), *paint stores* (20%), and *“big box” stores* (18%). (Q6b)

- When asked if the new PaintCare program would encourage them to recycle their paint, over half

said they would be *more likely* (56%), while 41% said it would *make no difference*, and *virtually no one* said it would *make them less likely* (1%). (Q7)

INTRODUCTION

Bradshaw Advertising was interested in assessing public awareness of a recent Oregon state law titled PaintCare. PaintCare provides for a statewide system to properly manage and recycle left-over and unneeded paint. To gather insights into awareness, Riley Research conducted a statewide telephone poll.

METHODOLOGY

A total of 409 interviews were conducted among Oregon statewide homeowners, providing a margin of error of +/- 4.8%, at a 95% level of confidence. Interviews were conducted between the hours of 5pm and 9pm, from August 4th through 10th, 2010.

Quotas were set with regards to age, to ensure that the target population was reached in the survey. As such, respondents' age was monitored to ensure that a minimum of 80% of the respondents were between the ages of 25 and 64; with no more than 10% between the ages of 18 and 24, and no more than 10% over the age of 65. In the final sample, 88% of the respondents were between the ages of 25 and 64.

Regional breakouts were defined for cross tabulations. The counties were classified into the following regions:

- Portland Metro: Clackamas, Columbia, Multnomah, Washington
- Willamette Valley: Benton, Lane, Linn, Marion, Polk, Yamhill
- Southern: Douglas, Jackson, Josephine
- Central / Eastern: Baker, Crook, Deschutes, Gilliam, Grant, Harney, Hood River, Jefferson, Klamath, Lake, Malheur, Morrow, Sherman, Umatilla, Union, Wasco, Wallowa, Wheeler
- Coast: Clatsop, Coos, Curry, Lincoln, Tillamook

The Executive Overview is followed by question-by-question cross-tabulations. The language in the cross tab question headings is the exact language used in the survey.

RESULTS

Q1. If and when you found yourself with leftover, unneeded paint, how would you most likely dispose of that paint? (Unaided, Multiple Responses)

	GENDER			AGE					REGION					AWARENESS OF NEW LAW			RECYCLING LIKLIHOOD	
	Total	MALE	FE MALE	18-34	35-44	45-54	55-64	65+	PDX MTRO	WLLA METT VLLY	CENT RAL/EAST	SOU THRN	CO AST	VERY AWRE	SOME WHAT AWRE	NOT AWRE	MORE LKLY	NO DIFF
Total Participants	409	211	198	22	37	103	189	50	171	123	50	43	22	27	61	319	229	168
		52%	48%	5%	9%	25%	46%	12%	42%	30%	12%	11%	5%	7%	15%	78%	56%	41%
Call garbage/recycling/disposal co/org	31%	30%	31%	41%	30%	39%	29%	24%	31%	33%	22%	28%	45%	11%	31%	32%	30%	33%
Take to government recycler	31	36	25	14	35	28	32	34	41	25	18	30	14	26	31	31	29	35
Storage/Save for future use	29	26	32	32	46	30	28	18	26	27	40	33	32	37	28	29	27	30
Put in garbage	10	9	11	14	5	10	11	10	8	12	16	2	14	7	10	10	12	7
Take to garbage/recycling/disposal co/org	4	5	3	5	8	1	4	2	1	9	2	5	-	11	3	3	5	2
Dump/Recycler - Once/yr or designated recycle days	4	5	3	-	-	4	6	-	1	5	6	7	5	4	3	4	3	4
Take to retailer	3	3	4	-	5	2	4	4	4	4	2	5	-	4	11	2	4	2
Let dry/take to landfill/trash	3	3	3	-	3	4	3	-	1	3	6	7	-	4	2	3	3	1
Pour down sewer/sink drain	0	-	1	-	3	-	-	-	-	1	-	-	-	4	-	-	0	-
Miscellaneous	5	2	7	5	-	8	3	10	4	5	8	2	9	11	2	5	5	4
Don't know	2	3	2	5	5	1	1	6	4	-	6	2	-	4	3	2	3	1
Chi Square		15.64				51.63				62.18				40.63			15.02	
		.110				.103				.014				.004			.131	

Q2. Are you aware of a recent Oregon state law that provides for a statewide system to manage left-over paint through an organization called PaintCare? (If Aware) Is that very or somewhat aware?

	GENDER			AGE					REGION					AWARENESS OF NEW LAW			RECYCLING LIKLIHOOD	
	Total	MALE	FE MALE	18-34	35-44	45-54	55-64	65+	PDX MTRO	WLLA METT VLLY	CENT RAL/EAST	SOU THRN	CO AST	VERY AWRE	SOME WHAT AWRE	NOT AWRE	MORE LKLY	NO DIFF
Total Participants	409	211	198	22	37	103	189	50	171	123	50	43	22	27	61	319	229	168
		52%	48%	5%	9%	25%	46%	12%	42%	30%	12%	11%	5%	7%	15%	78%	56%	41%
Very aware	7%	9%	5%	5%	8%	6%	6%	10%	5%	8%	12%	5%	5%	100%	-	-	5%	8%
Somewhat aware	15	15	15	18	14	12	15	18	13	18	20	9	14	-	100	-	17	12
Not aware at all	78	76	80	73	78	83	79	70	82	73	68	86	82	-	-	100	76	80
Refused / Don't know	0	-	1	5	-	-	-	2	1	1	-	-	-	-	-	-	1	-
Chi Square		4.77				14.61				9.59				814.00			5.01	
		.190				.263				.652				.001			.171	

Q3. How did you learn about the PaintCare program? (Unaided, Multiple Responses)

	GENDER			AGE					REGION					AWARENESS OF NEW LAW			RECYCLING LIKLIHOOD	
	Total	MALE	FE MALE	18-34	35-44	45-54	55-64	65+	PDX MTRO	WLLA METT VLLY	CENT RAL/EAST	SOU THRN	CO AST	VERY AWRE	SOME WHAT AWRE	NOT AWRE	MORE LKLY	NO DIFF
Total Participants	88	50	38	5	8	18	40	14	30	32	16	6	4	27	61	0	52	34
		57%	43%	6%	9%	20%	45%	16%	34%	36%	18%	7%	5%	31%	69%	0%	59%	39%
Newspaper / News story	30%	32%	26%	20%	25%	17%	38%	36%	23%	34%	25%	33%	50%	33%	28%	-	29%	32%
Word-of-mouth	20	20	21	20	25	39	18	7	27	19	25	-	-	19	21	-	21	21
TV / News story	14	14	13	-	13	11	15	21	7	22	13	17	-	7	16	-	17	9
Radio / News story	10	12	8	20	13	22	8	-	10	13	13	-	-	15	8	-	12	9
Retail Employee	7	6	8	-	-	6	8	14	3	6	13	17	-	11	5	-	6	9
Newspaper / Ad	5	4	5	-	-	6	5	7	10	-	-	17	-	4	5	-	6	3
Retail Poster (at store)	3	4	3	20	13	-	-	-	-	3	6	17	-	4	3	-	4	3
Retail Rack Card	3	2	5	-	-	6	3	7	3	-	13	-	-	7	2	-	2	6
TV / Ad	3	4	3	-	-	-	3	7	7	-	-	17	-	4	3	-	4	3
Internet	1	2	-	-	-	6	-	-	3	-	-	-	-	-	2	-	2	-
Miscellaneous	5	2	8	-	13	-	3	7	7	3	-	-	25	4	5	-	4	6
Refused / don't know	6	4	8	20	-	-	8	7	7	3	6	-	25	4	7	-	4	3
Chi Square		4.68				41.17					42.97			5.71			3.79	
		.945				.594					.516			.892			.976	

Q4. How important is it to have a program in place that accepts unneeded, leftover paint for reuse, recycling and proper disposal? Would you say such a program is... (Aided):

	GENDER			AGE					REGION					AWARENESS OF NEW LAW			RECYCLING LIKLIHOOD	
	Total	MALE	FE MALE	18-34	35-44	45-54	55-64	65+	PDX MTRO	WLLA METT VLLY	CENT RAL/EAST	SOU THRN	CO AST	VERY AWRE	SOME WHAT AWRE	NOT AWRE	MORE LKLY	NO DIFF
Total Participants	409	211	198	22	37	103	189	50	171	123	50	43	22	27	61	319	229	168
		52%	48%	5%	9%	25%	46%	12%	42%	30%	12%	11%	5%	7%	15%	78%	56%	41%
Very important	61%	55%	68%	36%	62%	60%	66%	58%	61%	60%	58%	72%	50%	70%	74%	58%	68%	53%
Somewhat important	31	36	25	45	30	31	28	32	31	33	32	19	45	19	23	34	29	33
Not important at all	8	9	7	14	8	9	6	10	8	7	8	9	5	7	3	8	3	14
Refused	0	0	1	5	-	-	1	-	-	1	2	-	-	4	-	0	-	1
Chi Square		7.59				15.50					9.58			13.88			19.66	
		.055				.215					.653			.031			.001	

Q5. If I told you that the consumer cost for such a program was an added fee per container of paint sold, based on 35 cents for pints and quarts, 75 cents for a gallon and \$1.60 for 5 gallons of paint, would you say those fees are... (Aided):

	GENDER			AGE					REGION					AWARENESS OF NEW LAW			RECYCLING LIKLIHOOD	
	Total	MALE	FE MALE	18-34	35-44	45-54	55-64	65+	PDX MTRO	WLLA METT VLLY	CENT RAL/EAST	SOU THRN	CO AST	VERY AWRE	SOME WHAT AWRE	NOT AWRE	MORE LKLY	NO DIFF
Total Participants	409	211	198	22	37	103	189	50	171	123	50	43	22	27	61	319	229	168
		52%	48%	5%	9%	25%	46%	12%	42%	30%	12%	11%	5%	7%	15%	78%	56%	41%
Very reasonable	33%	29%	37%	41%	35%	35%	28%	46%	33%	31%	38%	33%	36%	41%	43%	30%	44%	20%
Somewhat reasonable	40	38	42	36	46	38	47	22	41	42	36	40	36	26	33	43	42	39
Not reasonable at all	23	28	18	18	16	22	24	28	23	25	22	26	14	26	23	24	12	37
Refused / don't know	3	4	3	5	3	5	2	4	3	2	4	2	14	7	2	3	2	4
Chi Square		7.24		14.68					11.02					7.98			43.30	
		.065		.259					.528					.239			.001	

Q6a. [We talked about ways you might dispose of your extra paint, but] if you were going to take your paint somewhere for collection and proper management, can you tell me any of the places or types of places where you can currently take your paint? (Unaided, Multiple Responses)

	GENDER			AGE					REGION					AWARENESS OF NEW LAW			RECYCLING LIKLIHOOD	
	Total	MALE	FE MALE	18-34	35-44	45-54	55-64	65+	PDX MTRO	WLLA METT VLLY	CENT RAL/EAST	SOU THRN	CO AST	VERY AWRE	SOME WHAT AWRE	NOT AWRE	MORE LKLY	NO DIFF
Total Participants	88	50	38	5	8	18	40	14	30	32	16	6	4	27	61	0	52	34
		57%	43%	6%	9%	20%	45%	16%	34%	36%	18%	7%	5%	31%	69%	0%	59%	39%
Government facilities	41%	44%	37%	40%	25%	33%	40%	57%	23%	53%	50%	33%	50%	52%	36%	-	46%	35%
Metro (Portland area)	27	28	26	40	25	22	30	29	63	9	6	17	-	15	33	-	25	29
Recycling Centers - yearly cleanup/drives	11	16	5	-	-	17	13	14	3	16	13	33	-	11	11	-	13	9
Paint Stores in general	7	10	3	-	13	-	10	7	7	6	-	17	25	4	8	-	8	6
Big Box Stores	5	2	8	20	13	-	3	-	7	3	-	-	25	-	7	-	6	3
Miscellaneous	22	22	21	-	25	33	25	7	10	19	38	33	50	30	18	-	17	29
Refused / don't know	8	2	16	20	25	11	3	7	7	3	13	17	25	7	8	-	10	3
Chi Square		11.02		22.59					44.66					6.91			4.14	
		.088		.544					.006					.329			.658	

**Q6b. Can you tell me what places or types of places you would want to be able to take your unneeded, leftover paint for collection and proper management?
(Unaided, Multiple Responses)**

	Total	GENDER		AGE					REGION					AWARENESS OF NEW LAW			RECYCLING LIKLIHOOD	
		MALE	FE MALE	18-34	35-44	45-54	55-64	65+	PDX MTRO	WLLA METT VLLY	CENT RAL/ EAST	SOU THRN	CO AST	VERY AWRE	SOME WHAT AWRE	NOT AWRE	MORE LKLY	NO DIFF
Total Participants	321	161	160	17	29	85	149	36	141	91	34	37	18	0	0	319	177	134
		50%	50%	5%	9%	26%	46%	11%	44%	28%	11%	12%	6%	0%	0%	99%	55%	42%
Government facilities	24%	28%	19%	24%	28%	26%	20%	33%	11%	29%	32%	43%	39%	-	-	24%	24%	23%
Metro (Portland area)	21	22	19	6	24	26	20	8	37	7	6	5	22	-	-	21	20	22
Paint Stores in general	20	16	24	29	52	15	17	14	21	22	24	8	17	-	-	20	21	18
Big Box Stores	18	13	23	41	38	15	15	11	23	16	9	14	11	-	-	18	21	14
Curbside pick-up	9	9	9	-	7	12	9	6	11	9	6	3	6	-	-	9	10	8
Somewhere close to home	8	11	6	-	3	8	11	-	12	3	6	11	6	-	-	8	5	13
Local recycling center	7	7	8	-	3	9	8	6	7	9	6	11	-	-	-	8	7	9
Dump/landfill	6	6	5	12	-	9	5	-	1	13	6	5	-	-	-	6	5	6
Dedication collection center	3	3	4	-	3	4	3	8	3	3	3	5	6	-	-	3	5	1
Donate	3	3	3	-	-	4	4	-	1	5	3	5	-	-	-	3	3	2
Miscellaneous	9	8	11	12	10	7	11	8	7	10	18	8	11	-	-	9	6	13
Refused / don't know	8	7	9	6	3	9	5	22	10	5	12	3	11	-	-	8	9	7
Chi Square		12.77			72.11					100.57				0.00			16.16	
		.308			.005					.001				.999			.135	

Q7. Now that a program is in place in Oregon for providing options for the management of leftover paint are you more likely to recycle your paint, less likely, or does it make no difference?

	Total	GENDER		AGE					REGION					AWARENESS OF NEW LAW			RECYCLING LIKLIHOOD	
		MALE	FE MALE	18-34	35-44	45-54	55-64	65+	PDX MTRO	WLLA METT VLLY	CENT RAL/ EAST	SOU THRN	CO AST	VERY AWRE	SOME WHAT AWRE	NOT AWRE	MORE LKLY	NO DIFF
Total Participants	409	211	198	22	37	103	189	50	171	123	50	43	22	27	61	319	229	168
		52%	48%	5%	9%	25%	46%	12%	42%	30%	12%	11%	5%	7%	15%	78%	56%	41%
More likely	56%	51%	61%	59%	68%	50%	55%	62%	51%	59%	58%	60%	59%	44%	66%	55%	100%	-
Less likely	1	1	2	-	-	-	2	2	2	-	2	-	5	-	2	1	-	-
No difference	41	46	36	36	32	49	42	34	46	40	34	37	36	52	33	42	-	100
Refused / don't know	2	2	2	5	-	2	1	2	1	1	6	2	-	4	-	2	-	-
Chi Square		4.70			10.62					14.27				5.69			397.00	
		.195			.562					.284				.459			.001	

Which of the following categories includes your age? (Aided)

	GENDER			AGE					REGION					AWARENESS OF NEW LAW			RECYCLING LIKLIHOOD	
	Total	MALE	FE MALE	18-34	35-44	45-54	55-64	65+	PDX MTRO	WLLA METT VLLY	CENT RAL/EAST	SOU THRN	CO AST	VERY AWRE	SOME WHAT AWRE	NOT AWRE	MORE LKLY	NO DIFF
Total Participants	409	211	198	22	37	103	189	50	171	123	50	43	22	27	61	319	229	168
		52%	48%	5%	9%	25%	46%	12%	42%	30%	12%	11%	5%	7%	15%	78%	56%	41%
18-24	0%	0%	-	5%	-	-	-	-	-	-	2%	-	-	4%	-	-	-	-
25-34	5	3	7	95	-	-	-	-	5	7	4	2	5	-	7	5	6	5
35-44	9	7	12	-	100	-	-	-	12	4	12	7	9	11	8	9	11	7
45-54	25	27	24	-	-	100	-	-	23	29	28	26	9	22	20	27	22	30
55-64	46	48	44	-	-	-	100	-	46	50	36	47	45	41	48	47	45	47
65+	12	12	13	-	-	-	-	100	11	9	14	16	32	19	15	11	14	10
Refused	2	3	1	-	-	-	-	-	2	1	4	2	-	4	3	2	2	1
Chi Square			11.30			1000+					31.11				20.04		5.30	
			.079			.001					.151				.066		.505	

Gender

	GENDER			AGE					REGION					AWARENESS OF NEW LAW			RECYCLING LIKLIHOOD	
	Total	MALE	FE MALE	18-34	35-44	45-54	55-64	65+	PDX MTRO	WLLA METT VLLY	CENT RAL/EAST	SOU THRN	CO AST	VERY AWRE	SOME WHAT AWRE	NOT AWRE	MORE LKLY	NO DIFF
Total Participants	409	211	198	22	37	103	189	50	171	123	50	43	22	27	61	319	229	168
		52%	48%	5%	9%	25%	46%	12%	42%	30%	12%	11%	5%	7%	15%	78%	56%	41%
Male	52%	100%	-	36%	38%	54%	53%	50%	48%	60%	52%	44%	45%	67%	52%	50%	47%	58%
Female	48	-	100	64	62	46	47	50	52	40	48	56	55	33	48	50	53	42
Chi Square			409.00			5.39					5.80				2.63		4.34	
			.001			.250					.214				.269		.037	

Region

	GENDER			AGE					REGION					AWARENESS OF NEW LAW			RECYCLING LIKLIHOOD	
	Total	MALE	FE MALE	18-34	35-44	45-54	55-64	65+	PDX MTRO	WLLA METT VLLY	CENT RAL/EAST	SOU THRN	CO AST	VERY AWRE	SOME WHAT AWRE	NOT AWRE	MORE LKLY	NO DIFF
Total Participants	409	211	198	22	37	103	189	50	171	123	50	43	22	27	61	319	229	168
		52%	48%	5%	9%	25%	46%	12%	42%	30%	12%	11%	5%	7%	15%	78%	56%	41%
Portland Metro	42%	39%	45%	41%	57%	39%	42%	36%	100%	-	-	-	-	30%	36%	44%	38%	46%
Willamette Valley	30	35	25	36	14	35	33	22	-	100	-	-	-	37	36	28	32	29
Central/Eastern	12	12	12	14	16	14	10	14	-	-	100	-	-	22	16	11	13	10
Southern	11	9	12	5	8	11	11	14	-	-	-	100	-	7	7	12	11	10
Coast	5	5	6	5	5	2	5	14	-	-	-	-	100	4	5	6	6	5
Chi Square			5.80			21.06					1000+				8.71		2.72	
			.214			.176					.001				.367		.606	

Appendix I2 - PaintCare Awareness Survey of Oregon Residents 2011



PaintCareTM Awareness Survey of Oregon Residents

July 2011

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Overview

This was an online survey targeting residents of Oregon who have purchased paint in the last year (July 1, 2010 to June 30, 2011). In addition, however, respondents that have not purchase paint in the last year were still asked about basic awareness of the program. The following summary includes combined results from those who purchased paint (n=235), have not purchased paint (n=742), and those who paint for pay on either a part-time or full-time basis. (n=87). See Appendix 1 for individualized results.

- With regard to seeing or hearing any advertisements about the PaintCare™ program, an average of 27% of all survey respondents (n=1,064) recall advertisements – or in other words, are aware of the program. There was no difference in program awareness between males and females. Respondents most likely to be aware:
 - Are aged over 65, (36% are aware)
 - Are residents of Portland Metro (35%), compared to residents of Eastern Oregon, who were least likely (12%).
 - Have an income over \$50,000 per year (29%)
 - Are college graduates or higher (37%)
- In terms of awareness of the PaintCare Recovery Fee, over 10% of all survey respondents (n=1,064) were aware of the fee. Females were slightly less aware (10%), compared to males at (13%). Residents most likely to be aware of fees:
 - Are residents of the Oregon Coast (17%), compared to residents of Southern Oregon who were least likely (8%).
 - Are those aged over 65, with an income over \$50,000 per year and are college graduates or higher.
- Out of those who are aware of the program (n=287), newspapers and television were the most often cited sources of information (48% and 37%, respectively). Retail posters were cited at 5% and retail rack cards were the lowest, at 1%. Note: amongst those who paint for pay, radios were cited more often than newspapers (46% and 42%, respectively).

The following summary only includes respondents who purchased paint.

- Respondents most frequently purchased their paint at:
 - home centers, 39%
 - paint stores, 20%
 - mass merchants, 19%
- The overwhelming majority (93%) of respondents answered that the fee did *not* have any impact on the quantity of paint they purchased most recently. Similarly, the vast majority (93%) of respondents said that the information they have seen or heard about the Oregon paint recycling program had no effect on the amount of paint they purchased or planned to purchase.
- About one third (31%) of respondents are aware of established drop off locations to collect leftover paint. The residents most likely to be aware live in Central Oregon and Portland Metro (47% and 41%, respectively). The least likely live on the Oregon Coast (16%).
 - 61% of residents who are aware of the program were also aware of a drop-off location.
- 45% of respondents live within 1-5 miles from the nearest drop-off location.
 - 63% of the respondents consider the drop-off locations to be convenient.
- 18% of respondents recall seeing a “paint calculator” during their most recent paint purchase.
 - Of that group, the vast majority (80%) did not use the “paint calculator” to help them decide how much paint they should purchase.
- Almost three quarters (72%) of respondents stored the paint from their most recent paint project for later projects or touch-ups. No one said that they recycled or donated paint from their paint purchase in the last year.

Methodology

A total of 1064 surveys were conducted, providing a margin of error of +/- 3%, at 95% level of confidence. Interviews were conducted between July 7, 2011 and July 12, 2011.

Ages were monitored to ensure that no respondents were under the age of 18.

Survey Demographics:

Age	Under 18 0%	18-24 4%	25-34 6%	35-44 14%	45-54 22%	55-65 30%	Over 65 23%
Gender	Male 32%	Female 68%					
Region*	Coast 8%	Portland Metro 41%	Central 7%	Willamette Valley 28%	Southern 12%	Eastern 3%	
Income	Under \$25,000 18%	\$25,000 - \$50,000 27%	\$50,000 - \$100,000 25%	Over \$100,000 8%			
Education	Less than High school 1%	High school graduate 15%	Some college or Associate's Degree 39%	College Graduate 17%	Post-graduate study/degree 10%		

*Respondents were asked to select in which of the following Oregon regions they lived:

Coast	Astoria, Florence, etc
Portland Metro	Multnomah, Columbia, Clackamas, Washington, etc
Central	Columbia River Gorge, the Dalles, Bend, etc
Willamette Valley	Salem, Eugene, etc
Southern	Ashland, Medford, Klamath Falls, etc
Eastern	Pendleton, Ontario, etc

Results: All respondents (who have and have not purchased paint, and those who paint for pay)

Note: Percentages are calculated based on demographic categories by columns.

11. During the past year, do you recall seeing or hearing any advertisements describing a program to collect leftover paint in Oregon?

		AGE						GENDER		REGION						INCOME				Pref no answr	Less Hgh Schl	Hgh Schl Grad	Collg/ Assts Deg	Collg Grad	Post-grad	Pref no answr
	Total	18-24	25-34	35-44	45-54	55-65	>65	Male	Fem	Coast	Metro	Centrl	Willmtt Valley	Sthrn	Eastrn	<\$25k	\$25k- \$50k	\$50k- \$100k	>\$100k							
	1064	39	65	154	234	321	249	340	724	88	440	78	295	129	34	188	284	261	85	72	15	164	416	186	104	5
		4%	6%	14%	22%	30%	23%	32%	68%	8%	41%	7%	28%	12%	3%	18%	27%	25%	8%	7%	1%	15%	39%	17%	10%	0%
Yes	287	5	6	24	63	99	90	95	192	14	152	24	68	25	4	46	68	72	29	24	2	26	100	57	51	3
	27%	13%	9%	16%	27%	31%	36%	28%	27%	16%	35%	31%	23%	19%	12%	24%	24%	28%	34%	33%	13%	16%	24%	31%	49%	60%
No	777	34	59	130	171	222	159	245	532	74	288	54	227	104	30	142	216	189	56	48	13	138	316	129	53	2
	73%	87%	91%	84%	73%	69%	64%	72%	73%	84%	65%	69%	77%	81%	88%	76%	76%	72%	66%	67%	87%	84%	76%	69%	51%	40%

12. Where do you recall seeing advertisements or other information about the program to collect leftover paint in Oregon (select all that apply*)?

		AGE						GENDER		REGION						INCOME				Pref no answr	Less Hgh Schl	Hgh Schl Grad	Collg/ Assts Deg	Collg Grad	Post-grad	Pref no answr
	Total	18-24	25-34	35-44	45-54	55-65	>65	Male	Fem	Coast	Metro	Centrl	Willmtt Valley	Sthrn	Eastrn	<\$25k	\$25k- \$50k	\$50k- \$100k	>\$100k							
	287	5	6	24	63	99	90	95	192	14	152	24	68	25	4	46	68	72	29	24	2	26	100	57	51	3
		2%	2%	8%	22%	34%	31%	33%	67%	5%	53%	8%	24%	9%	1%	16%	24%	25%	10%	8%	1%	9%	35%	20%	18%	1%
Newspaper	137	2	2	3	24	48	58	44	93	9	69	13	28	16	2	18	29	40	21	9	2	12	41	36	25	1
	48%	40%	33%	13%	38%	48%	64%	46%	48%	64%	45%	54%	41%	64%	50%	39%	43%	56%	72%	38%	100%	46%	41%	63%	49%	33%
TV	107	1	2	10	17	41	36	41	66	4	52	11	26	13	1	23	25	23	8	12	2	7	41	21	20	0
	37%	20%	33%	42%	27%	41%	40%	43%	34%	29%	34%	46%	38%	52%	25%	50%	37%	32%	28%	50%	100%	27%	41%	37%	39%	0%
Radio	75	1	1	5	32	26	10	17	58	7	34	3	22	8	1	11	15	16	5	6	0	5	34	6	7	1
	26%	20%	17%	21%	51%	26%	11%	18%	30%	50%	22%	13%	32%	32%	25%	24%	22%	22%	17%	25%	0%	19%	34%	11%	14%	33%
Retail poster	15	0	0	0	4	8	3	6	9	0	8	0	5	1	1	3	2	7	0	1	0	2	6	3	2	0
	5%	0%	0%	0%	6%	8%	3%	6%	5%	0%	5%	0%	7%	4%	25%	7%	3%	10%	0%	4%	0%	8%	6%	5%	4%	0%
Retail Rack Card	4	0	0	0	0	3	1	3	1	0	4	0	0	0	0	1	0	0	1	0	0	0	0	1	1	0
	1%	0%	0%	0%	0%	3%	1%	3%	1%	0%	3%	0%	0%	0%	0%	2%	0%	0%	3%	0%	0%	0%	0%	2%	2%	0%
Internet	16	4	2	0	2	4	4	6	10	1	9	1	3	2	0	3	5	6	0	2	0	0	8	4	3	1
	6%	80%	33%	0%	3%	4%	4%	6%	5%	7%	6%	4%	4%	8%	0%	7%	7%	8%	0%	8%	0%	0%	8%	7%	6%	33%
Home Improvement Show	8	0	0	1	0	1	6	4	4	0	4	1	3	0	0	2	1	2	2	1	0	2	3	1	2	0
	3%	0%	0%	0%	0%	0%	2%	1%	1%	0%	1%	0%	1%	0%	0%	1%	0%	1%	1%	0%	0%	1%	0%	1%	0%	0%
Other, please specify	45	1	2	7	12	11	12	8	37	0	31	1	8	4	1	7	14	12	3	5	0	9	9	8	15	0
	16%	20%	33%	29%	19%	11%	13%	8%	19%	0%	20%	4%	12%	16%	25%	15%	21%	17%	10%	21%	0%	35%	9%	14%	29%	0%

*Percentages may exceed 100% in some cases where respondents were permitted to select more than one response.

13. Recent Oregon legislation established a fee of between \$0.35 and \$1.60 (based on container size) and directed retailers to begin collecting this fee beginning in July 2010. Were you aware that such a fee is added to paint purchases?

		AGE						GENDER		REGION						INCOME				Pref no answr	Less Hgh Schl	Hgh Schl Grad	Collg/ Assts Deg	Collg Grad	Post-grad	Pref no answr
	Total	18-24	25-34	35-44	45-54	55-65	>65	Male	Fem	Coast	Metro	Centrl	Willmtt Valley	Sthrn	Eastrn	<\$25k	\$25k- \$50k	\$50k- \$100k	>\$100k							
	1058	39	65	152	234	320	248	339	721	87	439	78	295	127	34	187	284	260	85	72	15	164	414	186	104	5
		4%	6%	14%	22%	30%	23%	32%	68%	8%	41%	7%	28%	12%	3%	18%	27%	25%	8%	7%	1%	16%	39%	18%	10%	0%
Yes	112	3	5	17	24	35	29	43	70	15	43	9	32	10	4	13	31	28	17	10	0	16	48	16	15	4
	11%	8%	8%	11%	10%	11%	12%	13%	10%	17%	10%	12%	11%	8%	12%	7%	11%	11%	20%	14%	0%	10%	12%	9%	14%	80%
No	944	36	60	135	210	285	219	296	651	72	396	69	263	117	30	174	253	232	68	62	15	148	366	170	89	1
	89%	92%	92%	89%	90%	89%	88%	87%	90%	83%	90%	88%	89%	92%	88%	93%	89%	89%	80%	86%	100%	90%	88%	91%	86%	20%

Results: Respondents who have purchased paint only

10. At which retail outlet(s) have you purchased paint in the past year (select all that apply*)?

Paint Store	48	20%
Home Center	91	39%
Lumber Yard/Building Supply Store	25	11%
Mass merchant	44	19%
Hardware Store	41	17%
Other, please specify	20	9%

*Percentages may exceed 100% in some cases where respondents were permitted to select more than one response.

14. Thinking about your most recent paint purchase, did the fee have any impact on the quantity of paint you purchased?

		AGE						GENDER		REGION						INCOME					Pref no	EDUCATION						Pref no
	Total	18-24	25-34	35-44	45-54	55-65	>65	Male	Fem	Coast	PrtInd	Metro	Centrl	Willmtt	Valley	Sthrn	Eastrn	<\$25k	\$25k- \$50k	\$50k- \$100k	>\$100k	answr	Less Hgh Schl	Hgh Schl Grad	Collg/ Assts Deg	Collg Grad	Post- grad	answr
	61	1	1	14	11	20	14	22	39	8	25	5	14	6	3			5	21	15	15	5	0	8	31	9	11	2
		2%	2%	23%	18%	33%	23%	36%	64%	13%	41%	8%	23%	10%	5%			8%	34%	25%	25%	8%	0%	13%	51%	15%	18%	3%
No, I purchased the same amount of paint.	57	1	1	13	10	18	14	19	38	8	23	4	13	6	3			5	19	14	14	5	0	8	28	9	11	1
	93%	100%	100%	93%	91%	90%	100%	86%	97%	100%	92%	80%	93%	100%	100%			100%	90%	93%	93%	100%	0%	100%	90%	100%	100%	50%
Yes, I purchased less paint.	4	0	0	1	1	2	0	3	1	0	2	1	1	0	0			0	2	1	1	0	0	0	3	0	0	1
	7%	0%	0%	8%	10%	11%	0%	16%	3%	0%	9%	25%	8%	0%	0%			0%	11%	7%	7%	0%	0%	0%	11%	0%	0%	100%
Yes, I traveled outside Oregon to purchase paint.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			0	0	0	0	0	0	0	0	0	0	0
	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%			0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Other, please specify.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			0	0	0	0	0	0	0	0	0	0	0
	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%			0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

15. Based on your understanding of the information you have seen on the Oregon program, does the program cover the following types of paint products?

	Yes		Not sure
	Yes	No	
Oil-based paint (cleans up with mineral spirits or paint thinner)	34	3	24
	56%	5%	39%
Latex (cleans up with water)	49	1	11
	80%	2%	18%
Paint thinner	15	8	37
	25%	13%	62%
Paints in containers of 5 gallons or larger	26	6	29
	43%	10%	48%

16. Are you aware of any drop-off locations that have been established to collect leftover paint?

	Total	AGE						GENDER		REGION						INCOME					EDUCATION						
		18-24	25-34	35-44	45-54	55-65	>65			Coast	PrtInd	Metro	Centrl	Willmtt Valley	Sthrn	Eastrn	<\$25k	\$25k-\$50k	\$50k-\$100k	>\$100k	Pref no answr	Less Hgh Schl	Hgh Schl Grad	Collg/ Assts Deg	Collg Grad	Post-grad	Pref no answr
		235	4	17	36	52	72	54	85	150	25	90	15	63	35	7	30	69	79	36	21	1	34	114	49	35	2
		2%	7%	15%	22%	31%	23%	36%	64%	11%	38%	6%	27%	15%	3%	13%	29%	34%	15%	9%	0	14%	49%	21%	15%	1%	
Yes	73	1	2	5	17	27	21	31	42	4	37	7	15	8	2	10	17	27	15	4	1	7	34	14	15	2	
	31%	25%	12%	14%	33%	38%	39%	36%	28%	16%	41%	47%	24%	23%	29%	33%	25%	34%	42%	19%	100%	21%	30%	29%	43%	100%	
No	162	3	15	31	35	45	33	54	108	21	53	8	48	27	5	20	52	52	21	17	0	27	80	35	20	0	
	69%	75%	88%	86%	67%	63%	61%	64%	72%	84%	59%	53%	76%	77%	71%	67%	75%	66%	58%	81%	0%	79%	70%	71%	57%	0%	

17. Thinking of the closest drop-off location, approximately how far is it located from your home or painting project?

Less than 1 mile	1	1%
1-5 miles	33	45%
5-10 miles	13	18%
10-25 miles	17	23%
Over 25 miles	4	5%
Not sure	5	7%
Total	73	100%

18. Do you consider that to be a convenient location for you to drop off leftover paint?

Yes	43	63%
No	25	37%
Total	68	100%

19. Thinking of your most recent paint purchase, do you recall seeing a “paint calculator” or other tool designed to help customers estimate the quantity of paint needed for their project?

Yes	15	18%
No	69	82%
Total	84	100%

20. Did you use the paint calculator or other tool help you decide how much paint to purchase for that project?

Yes	3	20%
No	12	80%
Total	15	100%

22. Did any information you may have seen or heard about the Oregon paint recycling program influence the amount of paint you purchased or planned to purchase?

	Total	AGE						GENDER		REGION						INCOME					Pref no answr	EDUCATION						Pref no answr
		18-24	25-34	35-44	45-54	55-65	>65	Male	Fem	Coast	PrtInd Metro	Centrl	Willmtt Valley	Sthrn	Eastn	<\$25k	\$25k- \$50k	\$50k- \$100k	>\$100k	Less Hgh Schl		Hgh Schl Grad	Collg/ Assts Deg	Collg Grad	Post-grad			
		69	1	2	6	15	23	22	27	42	5	36	5	12	9	2	11	15	21	15		7	1	5	29	16	17	
		1%	3%	9%	22%	33%	32%	39%	61%	7%	52%	7%	17%	13%	3%	16%	22%	30%	22%	10%	1%	7%	42%	23%	25%	1%		
Had no effect	64 93%	1 100%	1 50%	6 100%	14 93%	22 96%	20 91%	25 93%	39 93%	5 100%	35 97%	5 100%	11 92%	6 67%	2 100%	11 100%	12 80%	20 95%	15 100%	6 86%	1 100%	5 100%	26 90%	15 94%	16 94%	1 100%		
I purchased fewer containers of paint	2 3%	0 0%	0 0%	0 0%	1 7%	1 4%	0 0%	1 4%	1 2%	0 0%	0 0%	0 0%	1 8%	1 11%	0 0%	0 0%	1 7%	0 0%	0 0%	1 14%	0 0%	0 0%	1 3%	1 6%	0 0%	0 0%		
I purchased a smaller sized container	1 1%	0 0%	0 0%	0 0%	0 0%	0 0%	1 5%	0 0%	1 2%	0 0%	0 0%	0 0%	0 0%	1 11%	0 0%	0 0%	0 5%	1 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 6%	1 0%	0 0%		
Other, please specify	2 3%	0 0%	1 50%	0 0%	0 0%	0 0%	1 5%	1 4%	1 2%	0 0%	1 3%	0 0%	0 0%	1 11%	0 0%	0 0%	2 13%	0 0%	0 0%	0 0%	0 0%	0 0%	2 7%	0 0%	0 0%	0 0%		

23. Thinking of your most recent painting project, what did you do with the leftover paint?

	Total	AGE						GENDER		REGION						INCOME					EDUCATION					
		18-24	25-34	35-44	45-54	55-65	>65	Male	Fem	Coast	Metro	Centrl	Willmtt Valley	Sthrn	Eastrn	<\$25k	\$25k-\$50k	\$50k-\$100k	>\$100k	Pref no answr	Less Hgh Schl	Hgh Schl Grad	Collg/ Assts Deg	Collg Grad	Post-grad	Pref no answr
	235	4	17	36	52	72	54	85	150	25	90	15	63	35	7	30	69	79	36	21	1	34	114	49	35	2
		2%	7%	15%	22%	31%	23%	36%	64%	11%	38%	6%	27%	15%	3%	13%	29%	34%	15%	9%	0%	14%	49%	21%	15%	1%
I didn't have any leftover paint/haven't completed the project.	45	0	2	8	13	12	10	18	27	11	14	4	8	7	1	1	12	19	7	6	0	6	21	9	9	0
	19%	0%	12%	22%	25%	17%	19%	21%	18%	44%	16%	27%	13%	20%	14%	3%	17%	24%	19%	29%	0%	18%	18%	18%	26%	0%
I used the leftover paint for another project.	17	1	1	2	3	5	5	5	12	1	7	1	5	2	1	5	3	7	2	0	0	3	6	6	2	0
	7%	25%	6%	6%	6%	7%	9%	6%	8%	4%	8%	7%	8%	6%	14%	17%	4%	9%	6%	0%	0%	9%	5%	12%	6%	0%
I disposed of the paint.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
I stored the paint for later projects or touch-ups.	170	3	13	26	34	55	39	62	108	13	66	10	50	26	5	24	52	52	27	15	1	25	85	34	23	2
	72%	75%	76%	72%	65%	76%	72%	73%	72%	52%	73%	67%	79%	74%	71%	80%	75%	66%	75%	71%	100%	74%	75%	69%	66%	100%
I recycled or donated the paint.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
I don't know/remember.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Other, please specify	1	0	0	0	1	0	0	0	1	0	1	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0
	0%	0%	0%	0%	2%	0%	0%	0%	1%	0%	1%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	1%	0%	0%	0%

Appendices

Appendix 1

Q. 11. During the past year do you recall seeing or hearing any ads describing a program to collect leftover paint in Oregon?

Amongst Individuals Who Purchased Paint:

36% of respondents recall seeing or hearing PaintCare ads (i.e. are *aware* of the program). There was no difference in awareness between male and female respondents. Portland Metro residents were most likely to be aware (50%). Oregon Coast residents were the least likely (20%).

Amongst Individuals Who Have Not Purchased Paint:

Around one quarter (25%) of respondents recall seeing or hearing PaintCare ads. There was no difference in awareness between male and female respondents. Portland Metro residents were most likely to be aware (30%). Oregon Coast residents were the least likely (8%).

Amongst Individuals Who Paint for Pay:

28% of paint for pay respondents recalled seeing or hearing PaintCare ads. Male paint for pay respondents were most likely to be aware of the program (32%), compared to females (25%).

Q. 12. Where do you recall seeing ads or other information about the program to collect leftover paint in Oregon (select all that apply)?

Amongst Individuals Who Purchased Paint:

Newspapers (56%) were the most frequently cited source of information, followed by television (37%). Retail posters received 7% and retail rack cards were the least cited source of information at 1%. Internet cited at 5%.

Amongst Individuals Who Have Not Purchased Paint:

Newspapers (45%) were the most frequently cited source of information, followed by television (38%). Retail posters received 5% and retail rack cards were the least cited source of information at 1%. Internet cited at 7%.

Amongst Individuals Who Paint for Pay:

Radios (46%) then newspapers (42%) were the most frequently cited sources of information. Both retail posters and rack cards were cited at 4% each. Internet cited at 0%.

Other sources of information cited: Metro Recycling Flyer, municipal newsletter.

Q. 13. Recent Oregon legislation established a fee of between \$0.35 and \$1.60 (based on container size) and required paint manufacturers to begin adding this fee to the price of new paint beginning in July 2010. Are you aware that such a fee is added to the paint purchases?

Amongst Individuals Who Purchased Paint: One quarter (26%) of respondents is aware that such a fee is added to paint purchases. There was no difference in awareness between male and female respondents.

Amongst Individuals Who Have Not Purchased Paint:

Only 6% of respondents are aware that such a fee is added to paint purchases. There was no difference in awareness between male and female respondents.

Amongst Individuals Who Paint for Pay:

Only 8% of respondents are aware that such a fee is added to paint purchases. Males were more likely to be aware (18%), compared to females (3%).

Appendix J - DEC 2009 LCA Partial Report

IMPORTANT NOTICE

March 11, 2010

TO: PPSI Participants and Other Interested Parties

RE: Leftover Paint Management Life Cycle Assessment (LCA) Report

The following draft report was prepared by ERG/Franklin Associates under a contract with the National Paint and Coatings Association, Inc. (NPCA, now the American Coatings Association) working in cooperation with the Paint Product Stewardship Initiative and its participants. The report describes the results of an expanded life-cycle assessment (LCA) of six pure and six modified leftover paint management methods, looking at fifteen different environmental impact measures.

The final scope of work for the LCA was developed in cooperation with PPSI representatives and integrated critical modeling assumptions that attempt to understand the relative environmental impacts that may be realized with changes in paint waste management practices to achieve increased collection and expanded resource recovery.

ACA is providing the draft report to inform PPSI participants and other interested parties of the LCA results. No summary interpretation of the report's findings (beyond the author's stated conclusions) is being offered at this time, and ACA's contract with ERG/Franklin Associates has been concluded. The draft report, however, has reinforced the importance of key input assumptions on LCA outcome measures of environmental impacts, most notably the need for viable markets for recycled paint products that displace sales of new paint.

As ACA moves forward with the Oregon Pilot Project establishing industry-funded operations for managing leftover paint in that state, an extensive EPA-funded program evaluation will be collecting and analyzing additional field data, including costs and consumer/convenience measures, which will allow for refinement of assumptions in future LCA and/or Cost-benefit Analyses (CBA).

Should you have any questions about the report or information contained in it, please send them to:

Steve Sides
Vice President
Science, Technology and Environmental Policy
American Coatings Association
1500 Rhode Island Ave. NW
Washington, DC 20005
202-462-6272 Tel
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REVIEW DRAFT:

**LIFE CYCLE ASSESSMENT MODELING INFORMATION FOR
SIX METHODS FOR MANAGING LEFTOVER PAINT**

Prepared for:

The Paint Product Stewardship Initiative

Acknowledgement:

This work was funded by
The National Paint and Coatings Association

Prepared and Submitted Jointly By:

Team F²

Franklin Associates,
A Division of ERG
Prairie Village, KS

Four Elements Consulting, LLC
Portland, OR

December 1, 2009

1. INTRODUCTION

This Life Cycle Assessment (LCA) was conducted as part of the second phase of a two-stage project aimed at evaluating the environmental and cost implications of different methods for managing leftover architectural latex paint. The first phase of the project consisted of scoping the studies. A detailed description of the scope and boundaries can be found in the LCA scoping document, available at the Product Stewardship Institute paint project website.¹

The paint management methods selected for evaluation are summarized briefly below:

1. Consumer-based reuse, in which a consumer transports leftover paint directly to a secondary user for the leftover paint
2. Consumer-based dry/stabilize and dispose, in which a consumer dries or stabilizes leftover paint (with or without an additive) at home, then disposes of the paint
3. Collection-based reuse, in which paint collected at a collection facility or via curbside collection is made available for pickup and use by a secondary user
4. Collection-based consolidation, in which paint collected at a collection facility or via curbside collection is consolidated (i.e., blended with less than 5% virgin additives) into a paint product for use by a consumer
5. Collection-based reprocessing, in which paint collected at a collection facility or via curbside collection is reprocessed (i.e., blended with more than 5% virgin additives) into a paint product for use by a consumer
6. Collection-based disposal, in which paint collected at a collection facility or via curbside collection is disposed as a waste, with or without additional processing, by landfilling or some form of incineration.

Each method is first evaluated as a “pure” method, based on 1,000 gallons of leftover latex paint being managed by the defined method. In reality, some percentage of the leftover paint supply will be unsuitable for management by Methods 1, 3, 4, and 5. Therefore, “modified” versions of these methods are also evaluated, taking into account disposal of the fraction of the leftover latex paint supply that is unsuitable for the intended management method.

Pure and modified method results are presented for two infrastructure scenarios: a limited infrastructure scenario and an expanded infrastructure scenario. In the limited infrastructure scenario, leftover paint is collected via consumer dropoff at household hazardous waste (HHW) facilities or HHW collection events. Collected paint may be taken to a swap shop (Method 3), consolidated at the HHW facility or at a large processor (Method 4), or reprocessed with virgin additives at a large processor (Method 5). The limited infrastructure model is based largely on an LCA survey of facilities managing leftover paint, including HHW facilities, paint consolidation facilities, and paint reprocessors. The LCA survey is described in sections 3 and 4.

In the expanded infrastructure scenario, additional urban dropoff points have been added, shortening dropoff distances and making it more convenient for consumers to drop off leftover paint while running other errands. Collection trucks periodically pick up paint from the dropoff points and deliver it to a location where the paint is aggregated for shipment to large processors.

¹ <http://www.productstewardship.us/displayPage.php?pageid=205>

Paint from rural consumers is periodically collected via mobile collection events, with trucks making stops in small communities to pick up paint and take it to an urban aggregation facility for shipment to large processors. The expanded infrastructure is described in more detail in Section 8 of this report.

This report describes the process used to develop the LCA models for the pure methods and modified methods. In addition to the six pure and six modified methods evaluated for both the limited and infrastructure scenarios (a total of 24 scenarios), several additional scenarios are evaluated for different percentages of consolidated and reprocessed paint that are used domestically or exported. Additionally, each method that involves output of a useful paint product has the potential to avoid production of some quantity of virgin paint, based on the percentage of recycled paint that is used by consumers who would otherwise purchase virgin paint. (Some consumers may use recycled paint as an alternative to not painting; for these situations, no credit is given for avoiding virgin paint production.) Recycled paint systems are evaluated at several levels of offset credit for avoiding production and use of a corresponding quantity of virgin paint, as described later in the results section.

2. OVERALL MODELING INFORMATION

Much of the data used in modeling the paint management methods, particularly the collection-based methods, were developed through a survey of paint management facilities described in Sections 2 and 3 of this report. Other data were developed from a variety of published sources, including work products prepared under other tasks of the Paint Product Stewardship Initiative (PPSI). In particular, the transportation modeling for paint after collection is based largely on the Infrastructure Report.² The average transportation distances from the compiled LCA survey responses included a mix of urban and rural distances that could not readily be separated. Therefore, some adjustments were made so that the limited infrastructure transportation modeling would use be consistent with the approach used for modeling the expanded infrastructure transportation. Transportation modeling for the limited and expanded infrastructure scenarios is described in Section 8.

Life cycle models for the process steps in each paint management method were constructed in SimaPro, a commercial LCA software product.³ This software contains U.S. and European databases on a wide variety of materials, as well as several impact assessment methodologies, including U.S. EPA's TRACI (Tool for the Reduction and Assessment of Chemical and other environmental Impacts), the primary impact assessment method selected in the scoping phase for this analysis.

The following sections describe modeling issues that are relevant to all the paint management methods.

² Paint Product Stewardship Initiative Infrastructure Report. Prepared by SCS Engineers, Reston, VA, and Cascadia Consulting Group, Inc., Seattle, WA. March 15, 2007. Accessible at <http://www.productstewardship.us/displaycommon.cfm?an=1&subarticlenbr=128>

³ PRé Consultants: *SimaPro 7.0 LCA Software*. 2006. The Netherlands.

2.1 Leftover Paint Generation Per Household

The draft report calculations are based on annual leftover latex paint generation of 0.33 gallons/year/household.⁴ All transportation burdens were based on 6 years' accumulation of paint being dropped off whenever a consumer delivers paint to a dropoff location or collection event.

2.2 Transportation of Paint, Containers, and Materials to Facilities

The LCA survey forms requested information on the sources of incoming paint as well as the transportation modes and distances. All survey respondents reported that paint was brought to their facilities by consumers in personal vehicles and/or brought in by truck (some from painting contractors, but the majority from HHW collection events or from waste management contractors). None of the facilities reported any paint collected from curbside collection programs.

The limited infrastructure scenario uses the average consumer transport distance to drop off leftover paint that was derived from the LCA survey; however, subsequent transportation of the collected paint to HHW facilities and large processors are based largely on distances from the Infrastructure Report (IR). Because the IR distances were based on the locations of processing facilities across the entire country, they are believed to provide a better representation for national modeling than the LCA survey results, which represent 25 HHW facilities and several independent processors.

The environmental burdens for driving personal vehicles are dominated by the weight of the vehicle rather than by the weight of the persons or materials transported. Thus, for paint dropped off by consumers, it was necessary to determine how much of the environmental burdens for the vehicle trip should be allocated to dropping off paint. Allocation factors were developed based on assumptions about the types of locations where paint is dropped off, the percentage of the population using each type of facility, the types of materials dropped off by consumers on trips to each facility, and the percentage of trips that included errands other than paint dropoff.⁵ For the limited infrastructure, the overall percentages of trip burdens allocated to dropping off latex paint were 17.0% for Method 3 and 25.9% for Methods 4-6. For the expanded infrastructure, the overall trip allocation factors were 21.9% for Method 3 and 37.5% for Methods 4-6. The allocation tables detailing the underlying assumptions are provided in Appendix A of this report.

For paint brought in by truck from HHW collection events, modeling included the personal vehicle mileage required for consumers to bring their paint to the collection event.

⁴ Correspondence between Peter Erickson, Cascadia Consulting, and Amy Stillings, ERG, regarding PPSI Infrastructure project data, August 1, 2006.

⁵ Allocation calculations developed by David Allaway, Oregon DEQ, lead member of PPSI LCA government work group, April 22, 2008.

2.2.1 Curbside Collection of Latex Paint

Although no facilities reported receiving latex paint collected via curbside programs, some small percentage of U.S. households currently have access to curbside pickup of latex paint. Collection of leftover latex paint has several similarities to collection of used motor oil, e.g., material is collected in liquid form, generated occasionally rather than regularly, collected from households in rigid packaging, and transferred from household container to bulk container off-route. Thus, the government workgroup suggested that the percent of U.S. households with curbside collection of latex paint could be estimated as comparable to the percent of U.S. households with curbside collection of used motor oil, which is currently estimated to be about 6%. (Note: The percentage of household with curbside motor oil collection is much higher in California and Oregon – approximately 30% and 50%, respectively – but much lower for other states.)

No further analysis or modeling of curbside collection of paint for recycling is provided in this report, as the decision was made in the scoping phase of the analysis to exclude curbside paint collection from the scope of this analysis.

2.2.2 Weights of Paints and Containers to Collection Facilities

In making weight-to-volume conversions for liquid and dried paint reported in the surveys, liquid paint density was assumed to be 11.2 lbs per gallon⁶ for all the paints considered in this study. Paint density of dried paint was assumed to be 7 lbs per gallon.⁷

The Oregon Metro paint recycling facility provided weight data on 3 wire cages of received cans of leftover paint, for use in developing profiles of can fullness and weights of steel and plastic containers per 1,000 gallons of paint collected. The cages contained a total of 440 gallon cans (337 steel and 102 plastic) and 636 quart cans (545 steel and 91 plastic) which were weighed before and after emptying. To represent the profile of leftover paint cans in consumers' homes, the number of cans less than 25 percent full was doubled, to account for the likelihood that many consumers will discard nearly empty cans rather than drop them off for paint recycling. Metro also reported receiving paint in 5-gallon plastic containers that are on average 40 to 50 percent full. The average container weight and fullness for each size of can derived from the three sample cages of cans were multiplied by the overall percentages of cans of each size (quart, gallon, and 5-gallon) collected at Metro in 2007 and normalized to the basis of 1,000 gallons of leftover paint. Overall, 874 pounds of steel containers and 569 pounds of HDPE plastic containers were collected to obtain 1,000 gallons of leftover paint (11,200 pounds of paint). The can profile data are presented in Table 1.

⁶ Agreed upon in June 19, 2006 conference call between Team F2 and PPSI workgroup. Decision is documented in call minutes sent out July 21, 2006 by Scott Cassel, PSI.

⁷ Metro Paint facility, Portland, Oregon, 2006.

Table 1. Paint Container Profile Based on Metro Data

	Cans by Size Received in 2007	Adjustments Using Cage Tally Can Type & Fullness				Total Pounds of Containers
		Cans by Type	With <25% Full Doubled	Total Gal Paint in Cans	Wt of One Empty Container (lb)	
5-gal Plastic	44,900	44,900	44,900	101,025	2.50	112,250
Gallon cans	336,200					
Steel		257,499	323,210	151,016	0.78	252,104
Plastic		78,701	99,332	44,353	0.69	68,539
Quart cans	149,600					
Steel		128,195	133,605	26,122	0.25	33,401
Plastic		21,405	23,522	4,309	0.22	5,202
	<u>530,700</u>	<u>530,700</u>	<u>624,569</u>	<u>326,826</u>		<u>471,496</u>
Total lb containers collected						471,496
Total gal paint in containers						326,826
Total lb containers per 1,000 gallons paint collected						1,443
Steel						874
Plastic						569

2.3 Material Inputs

Inputs used in the paint methods, including virgin paint constituents, packaging materials, and stabilizing agents for leftover paint were included as part of the life cycle system. The data for materials came largely from the U.S. LCI database and elements of the SimaPro database.

Production burdens were included for cat litter and sawdust that are used in stabilized drying of larger quantities of paint. The analysis also models production of the containers used to package consolidated and reprocessed paint, as described in Section 2.10.

2.4 Primary and Secondary Data

Both primary and secondary data are used in modeling the paint management methods analyzed in this study. Primary data (collected directly from facilities that conduct the processes being studied) are the preferred, highest quality data for life cycle modeling. However, from a practical standpoint it is impossible to collect actual process data for each of the hundreds or thousands of unit processes included in a complete life cycle model. In this study primary data were gathered for the collection-based management methods (methods 3 through 6) through a survey process described later in this report.

The use of secondary, or publicly-available, data for production of material inputs is normal and necessary in an LCI. Secondary data are also used in modeling the production and combustion of fuels used for process energy and transportation energy. Because the quality of secondary data is not as good as primary data, the use of secondary data becomes an inherent limitation to the study. Data for upstream materials is usually from secondary sources and may cover a broad

range of technologies, time periods, and geographical locations. Despite this, Team F2 used the best data that was available, much of which was comprised of U.S.-based, recent data from the U.S. LCI database.

2.5 Energy Modeling

For electricity used in paint methods, the U.S. average electricity grid mix shown in Table 2 was applied and includes the following mix of fuels.

Table 2. Electricity grid mix of fuels (U.S. average)

	Coal	Natural Gas	Fuel Oil	Nuclear	Hydropower	Other Renewables
U.S. average	58%	18%	3%	10%	8%	5%

The average U.S. grid mix, data to produce electricity, and any fuel use (in boilers and/or mobile equipment) came from the U.S. LCI database.⁸

2.6 Water Used

Water was reported mostly by sorting and consolidation facilities for rinsing of the can openers, crushers and paint bulking containers. Only net consumption of water was reported and modeled, and not, for example, any water used in a closed loop (i.e., recycled) at the facility.

2.7 Air Emissions and Water Effluents

The LCA survey form contained sections for reporting data on air emissions, wastewater, and water effluents generated at sorting and paint processing facilities. No responding facility provided this requested data, either because most of these facilities are exempt from reporting rules or because data was simply not available. In a few cases, facilities reported the permit levels under which they were operating but did not report actual emissions.

VOC emissions during paint use and the drying management methods were included in the systems. The VOC content of consolidated and reprocessed paint produced from older paint was modeled as 150 g/liter, while the VOC content of new virgin paint was modeled as 125 g/liter. Table 3 presents the VOC emissions modeled for the relevant paint drying steps in each method.

⁸ National Renewable Energy Laboratory (NREL): *U.S. Life-Cycle Inventory Database*. 2005. Golden, CO. Electric grid mix of fuel is based on early 2000s mix. Found at: <http://www.nrel.gov/lci/database>

Table 3. VOC Emissions for Paint Management Methods

	grams/liter	grams/gallon
Methods 1 and 3 (use of leftover paint "swapped")	150	568
Method 4 (use of consolidated paint)	150	568
Method 5 (use of reprocessed paint)	150	568
Virgin paint use displaced by leftover paint (Methods 1,3,4, & 5)	125	568
Methods 2 and 6 (paint drying with no stabilizer)	150	568
Methods 2 and 6 (paint drying <u>with</u> stabilizers)	75	284
Method 6 (paint spread on a landfill)	150	568

2.8 Materials Recycled at the End of Life

The surveyed facilities reported recycling some of the leftover paint containers. Because the containers were manufactured for the virgin paint application (outside the scope of the leftover paint analysis), production of these containers is not included in the analysis. However, recycling credit was given for the amount of steel and plastic paint containers that the paint management facilities reported sending to recyclers, since recycling of the containers occurs as a result of the paint management system, i.e., the containers would have been disposed had the containers of paint not been collected for management.

The percentages of cans that are recycled and the percentages that are disposed by landfill and combustion are based on the weights of steel and plastic containers that HHWs and large paint processors in the LCA survey reported managing by each method:

- For steel cans that are emptied at HHWs, 70% are recycled and the other 30% are managed by the national average split of 79.8% to landfill and 20.2% to WTE combustion. For plastic cans emptied at HHWs, 10% are recycled, 15% are burned with energy recovery, and the remaining 75% are managed by the national average split of landfill and WTE combustion.
- For cans that are emptied at large processing facilities, all the steel is recycled. Of the plastic cans, 10% are recycled and the rest are managed by the national average split of landfill and WTE combustion.

Some facilities reported that steel drums were used to transport bulked leftover paint to reprocessing facilities, and the drums were then recycled. In this case there was no net consumption of steel, so it was not necessary to include production or recycling of the drums in the system modeling. However, where drums are used for transporting paint, the transportation fuel modeling does include the weight of the drums in the calculation of weight-based vehicle fuel consumption.

2.9 Waste and Materials Disposed

Paint management waste materials included paint (dried or residual, in the paint cans themselves), containers, and MSW disposed in landfills, at waste-to-energy (WTE) plants, and

incinerators. Transportation of all waste materials to their final destination was included in the modeling.

The materials sent to a landfill were modeled solely as waste placed into a landfill, with no further modeling of any sludge, water effluents, air emissions, or other outputs that might then be generated within the landfill, e.g., from decomposition or reactions of these materials in the landfill. VOCs from the residual paint disposed with the containers were not accounted for due to the small quantity of paint being disposed in the landfill and the uncertainty of the amount of VOCs that might be released from the landfill. VOC emissions were included for liquid paint that facilities reported as being disposed under Method 6 by spreading on landfill.

Materials sent to incinerators and WTE plants were modeled as being combusted in the incinerator and WTE on a weighted basis, based on reported data. The electricity generated from a WTE plant was taken into account for the plastic containers and the resin portion of the paint that was sent to the WTE plant. Incinerator and WTE data were based on data from the SimaPro database.

2.10 Steel and Plastic for Packaging Recycled Paint

The aggregated data for consolidation and reprocessing took into account the weighted average use of steel and high density polyethylene (HDPE) containers to package the consolidated and reprocessed paints, respectively.

2.11 Exported Paint

Some consolidated and reprocessed paint is sold domestically, and some is exported. Several levels of domestic/export sales are modeled in this analysis. Transportation modes and distances for exported paint is modeled based on 2006 data provided by NPCA. The sales-weighted average transportation distance for paint exported to markets in Central America and offshore countries was 1,149 miles by truck and 4,601 miles by ocean.

3. DATA COLLECTION AND AGGREGATION PROCESS

It was not possible to locate good published data for many of the aspects of paint management processes required to model the defined paint management methods. Therefore, Team F2 undertook an extensive survey of a variety of facilities involved in managing leftover latex paint. The steps involved in conducting the survey and processing the responses are described in the following sections.

3.1 Survey Production

Surveys were developed in Excel format and covered all life cycle aspects of leftover paint management, specifically:

- Profile and transportation of incoming paint and original containers to facilities
- Sorting materials, energy, emissions, and waste
- Fate of the paint and containers sorted

- Consolidation materials, energy, emissions, and waste
- Reprocessing materials, energy, emissions, and waste
- Materials used to dry and stabilize paint
- Transportation of bulked paint, paint in original containers, and general waste materials from the facility to their destination; and
- Qualitative data quality information, including technology coverage, time and geographical coverage of the data reported, and the method of data collection (measured, use utility records, allocation to only latex operations, etc.)

Surveys were sent to government sorting facilities, government-based paint consolidators, and private consolidated and reprocessed paint producers. The initial list of facilities and organizations contacted for the survey was developed by members of the PPSI work group. These were largely government sorting facilities (e.g., household hazardous waste (HHW) processing facilities) and covered a wide spectrum of paint management options, including swap programs, on-site consolidation, shipment of usable paint to off-site consolidators and reprocessors, and a variety of disposal methods. Surveys were also sent to paint consolidators and reprocessors listed on the Product Stewardship Institute's recycled paint website.⁹ During the survey process, some additional contacts were identified by sorting facilities reporting where they sent their usable and unusable paint and by processors reporting their sources of incoming recovered paint.

3.2 Preliminary Survey Check

As surveys were returned, they were checked for overall completeness, from both a quantitative and qualitative perspective. Team F2 worked during this early phase to locate and correct possible discrepancies, errors, or data gaps within each data set before averaging individual survey data with other facilities' data. Where there were any gaps in the data or obvious discrepancies, Team F2 contacted the facility to validate or correct the data.

The followup process required to resolve survey data completeness issues was very labor intensive. Nearly every survey received required at least one followup call and/or e-mail to validate respondents' calculations or numbers reported or to acquire key missing data. Several facilities with more complicated processes involved complex calculations to track the flows of paint and containers and required more extensive followup effort.

3.3 Normalizing Facility Data and Aggregating into Summary Tables

Elements of the completed surveys were categorized into main unit process stages used as the building blocks for the LCA model, and include:

- Sorting at government facilities;
- Sorting at large processing facilities;
- Paint consolidation process;
- Paint reprocessing; and

⁹ <http://www.productstewardship.us/displayPage.php?pageid=75>

- Various paint management and disposal methods

Different facilities reported many different methods of managing leftover paint for disposal. These were grouped into three main subcategories: stabilize and dispose, spread on landfill, and incinerate. In addition, some facilities reported sending unusable paint to Amazon to be processed into a cement additive (processed latex pigment, or “PLP”). Paint disposal methods are discussed in more detail in a later section.

Each unit process stage was normalized to one gallon of leftover paint, i.e., one gallon of leftover paint sorted at the facility, one gallon of leftover paint used in reprocessed paint, one gallon of leftover paint stabilized and landfilled, etc. Then, all facility data for each unit process stage was placed into the appropriate unit process summary/aggregation table and was averaged on a weighted basis. The weighted average is based on each facility’s share of the total gallons of paint processed by all reporting facilities, as shown under each facility heading in Table 4. For example, the 280,139 gallons of paint processed by Facility 1 accounts for 22% of the total quantity of paint sorted by all the sorting facilities surveyed (not all data columns and rows are shown in this example table, so the gallon percentages do not add to 100%).

Table 4. Sample Survey Aggregation Data

					Facility 1	Facility 2	Facility 3
					-----total gal sorted-----		
SORTING - PER 1 GAL LATEX PAINT IN					280139	6600	27759
Name of flow	unit	weighted average	Min reported	Max reported	22%	1%	2%
latex paint in	gal	1	1	1	1	1	1
transport to facility (TRUCK)	mi	98	5	180	35	10	10
transport to facility (CAR)	mi	9.4	3.5	15	7	8	12
electricity used	kWh	0.33	0	0.59	0.46	0.59	0.51

Complete aggregation tables for sorting, consolidation, reprocessing, and disposal processes are presented and discussed in Section 4. First, some general description of the aggregation tables is provided.

3.4 Weighted Average

As shown in the figure, a weighted average was taken for each flow category or line item. Two types of weighted averages were made: a weighted average of all of the sites surveyed, or a weighted average of only the sites that reported the flow (designated as “Average type: only” in the actual aggregation tables). The reasoning for this important difference is based on different representation in the industry. When flows are averaged over all facilities, this implies that these flows are not necessarily found at all of the facilities. One example is cat litter used to absorb paint and water on the floor of sorting facilities. The cat litter is not used at all facilities during sorting and therefore needs to be averaged across all facilities so as not to over-represent its industry average use. On the other hand, electricity use was not reported by all facilities, but some amount of electricity is expected to be used at all facilities that consolidate paint.

Therefore, electricity use was averaged across only the set of facilities that reported it so as not to under-represent its industry average use.

3.5 Minimum and Maximum Values

The aggregation tables included the minimum and maximum data values to indicate the variability in each data category, as a means of checking the precision of the data. Data outliers were identified by project team members, and facilities were contacted for validation and confirmation that the data point is (or is not) valid. Any number that could not be explained or validated was not used in the aggregation calculation.

3.6 Number of Sites, Percent of Total Sites

The aggregation data tables show the number of sites within each process category (e.g., sorting facilities, consolidation facilities, etc.) that reported data for each flow. The number of sites reporting a flow is also shown as a percent of total sites in that process category. This provides an indication of data gaps as well as how representative that specific flow is in the industry (for flows like clay or cat litter used to stabilize and landfill paint).

4. AGGREGATED LCA SURVEY DATA FOR COLLECTION-BASED METHODS 3 THROUGH 6

Each aggregated summary table represents a unit process in the management of leftover paint. The unit processes were used as building blocks to assemble the models of the collection-based paint management methods 3-6. The diagrams provided in this section illustrate the steps involved in each paint management method, as well as identifying which unit process aggregation table contains data for that step.

As noted earlier, some facilities manage leftover paint that they cannot use by sending it to Amazon, where it may be processed into a consolidated earth-tone bulk paint or into PLP, a cement additive. Communication with Amazon indicated that the majority of paint sent to Amazon from sorting facilities is suitable only for PLP. Table 5 shows the quantities and percentages of disposed paint by each management method reported by surveyed facilities, with and without PLP processing.

Table 5. Unusable Paint Management Methods Reported in Surveys

Management type	gallons managed	% of total with PLP	% of total without PLP
Stabilize and landfill	259,538	13%	54%
Spread on landfill	114,703	6%	24%
Incinerate	105,060	5%	22%
Amazon (unknown or PLP)	1,453,187	75%	
Total including PLP	1,932,487	100%	100%
Total without PLP	479,301		

PLP production is a useful management method for paint that is not suitable for further use as paint; however, this management method is not included here, for several reasons:

1. Processing into PLP is outside the defined scope of the project.
2. PLP is an alternative useful non-paint product rather than a disposal method.
3. Data for the PLP process are proprietary to Amazon and cannot be shown as a separate unit process.

Thus, although PLP production is shown in the diagrams to reflect disposition reported by facilities, it is not included in the methods modeled.

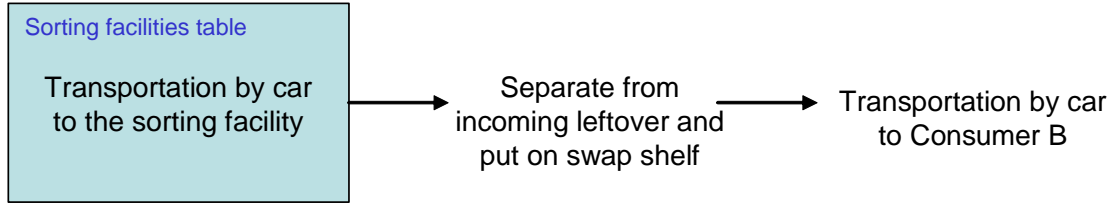
The following sections present aggregated survey data for each of the following unit processes:

- Sorting at government facilities;
- Sorting at large processing facilities;
- Paint consolidation;
- Paint reprocessing;
- Paint disposal via stabilize and landfill;
- Paint disposal via spread on landfill;
- Paint disposal via incineration; and
- Composite of the three paint disposal methods

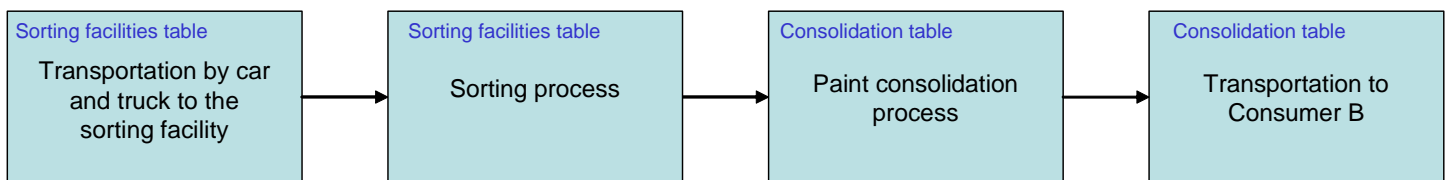
Weighted average data and issues relating to data gaps, incompleteness, uncertainties, and wide ranges are discussed for each aggregated data table.

All aggregated survey tables (Tables 6 through 12) are presented at the beginning of this section, with discussion on the following pages. **It is important to note that not all of the data presented in the aggregated survey tables are used in the LCA modeling.** In particular, some transportation data in the LCA survey did not align with the expanded infrastructure modeling, so it was necessary to make some adjustments to the limited infrastructure transportation distances. Transportation modeling for the limited and expanded infrastructure scenarios is described in Section 8.

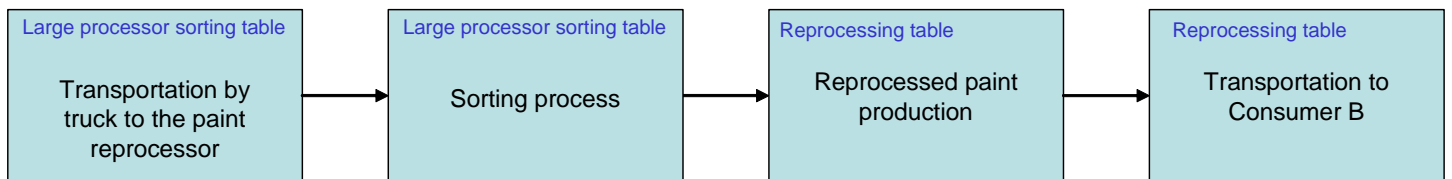
Swap Program (Method 3):



Consolidation (Method 4):



Reprocessing (Method 5):



Management by Disposal (Method 6):

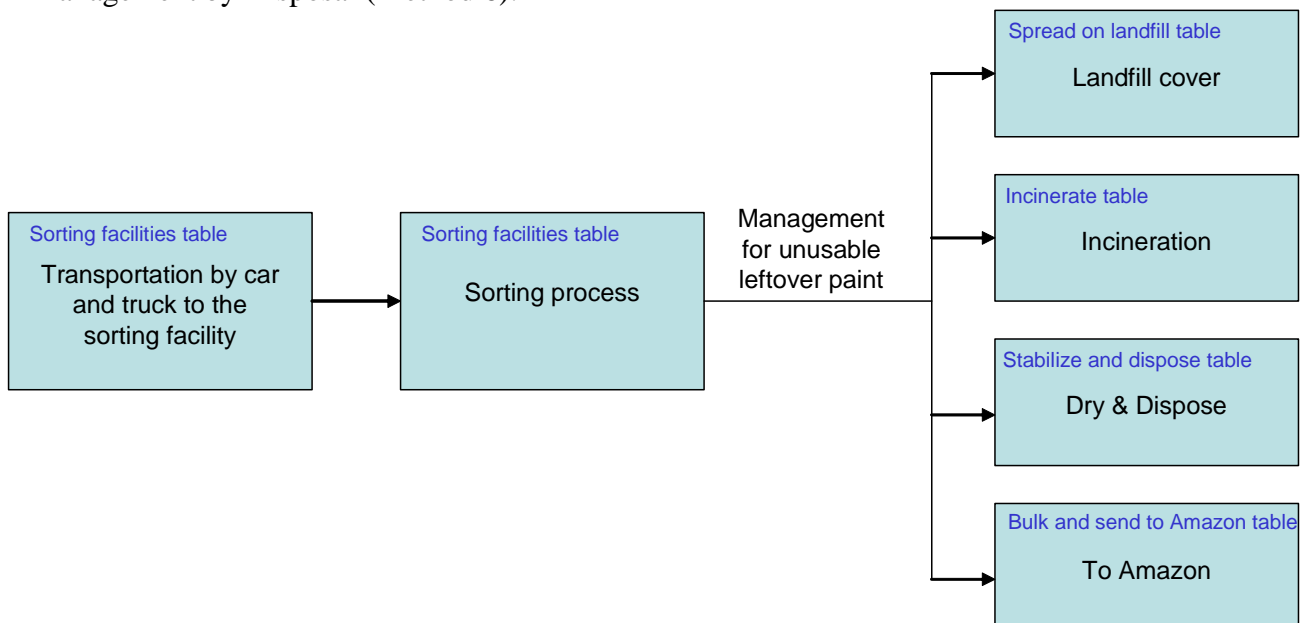


Table 6. SORTING AT SORTING FACILITIES (HHW FACILITIES)
(aggregated data per 1,000 gallons leftover latex paint sorted)

INPUTS	Name of flow	unit	weighted average	Min	Max	Average type: only	# sites reported	% of sites
				reported value	reported value			
Inputs to facility	latex paint in	gal	1,000	1,000	1,000		27	100%
	transport to facility (TRUCK)	mi	97.7	5.00	180	only	7	26%
	transport to facility (CAR)	mi	9.37	3.50	15.0	only	23	85%
	transport to facility (TRUCK) (T.Station or HHW program)	mi	115	10.0	900	only	10	37%
	Total mass of materials to facility	lbs	14,001	12,000	23,675		26	96%
	Car transport to facility %	%	40%	10%	100%		22	81%
	Truck transport to facility %	%	4%	5%	100%		9	33%
	Truck via HHW program, collection program or transfer station %	%	56%	1%	100%		13	48%
Inputs: materials	water used	gal	220	0	1,363	only	9	33%
	cat litter (used to absorb the paint on floor)	lb	2.43	60.0	60.0		1	4%
Inputs: energy	electricity	kWh	327	0	591	only	8	30%
	NG process fuel	cf	14.9	4.74	165		2	7%
	diesel-powered mobile equipment	gal	0.91	0.30	2.94	avgd over sites that reported use of mobile equipment	2	7%
	NG-powered mobile equipment	gal	0.26	4.11	14.3		2	7%
	propane-powered mobile equipment	gal	4.50	1.79	8.71		7	26%
	Gasoline-powered mobile	gal	0.18	0.48	0.97		2	7%
	used oil	gal	1.04	24.1	122		2	7%
OUTPUTS								
Paint and container disposal (residual paint from emptied containers, dry)								
	paint to LF disposed (w/ container)	lb	75.8	19.0	311		15	56%
	steel to LF	lb	215	30.8	4,196		12	44%
	plastic to LF	lb	352	145	1,514		14	52%
	distance to LF	mi	78.2	0	175	only	19	70%
	paint to WTE disposed (w/ container)	lb	9.93	22.9	492		2	7%
	steel to WTE	lb	2.86	176	176		1	4%
	plastic to WTE	lb	66.8	64.2	716		3	11%
	distance to WTE	mi	446	13.5	1,835	only	5	19%
	paint to recycler disposed (w/ container)	lb	9.10	68.6	1,547		2	7%
	steel to recycler	lb	514	131	2,845		9	33%
	plastic to recycler	lb	39.6	324	2,604		2	7%
	distance to recycler	mi	9.19	6.00	30.0	only	5	19%
Other sorting outputs	unspecified solid waste to LF	lb	788	25.6	7,513		7	26%
	unspecified solid waste to incin	lb	24.8	1,528	1,528		1	4%
	unspecified solid waste to WTE	lb	40.2	31.2	2,400		2	7%
Swap Shelf	Distance to user by CAR All swap shelf paint to consumer B was transported by car	mi	5.83	1.00	21.0	only	22	81%
Note: Because weighted averages are being made, mass balance in/out may not be 0.								

Table 7. SORTING AT LARGE INDEPENDENT PROCESSING FACILITIES
(aggregated data per 1,000 gallons leftover latex paint sorted)

INPUTS	Name of flow	unit	weighted average	Min reported value	Max reported value	Average type: only	# sites reported	% of sites
Inputs to facility	latex paint in	gal	1,000	1,000	1,000		5	100%
	transport to facility (TRUCK)	mi	146	25.0	150	only	2	40%
	transport to facility (TRUCK) (T.Station or HHW program) - need to add car transport upstream	mi	604	90.0	1,253	only	5	100%
	Total mass of materials to facility	lbs	11,664	11,463	14,769		5	100%
	Truck transport to facility %	%	13%	2%	35%		4	80%
	Truck via HHW program, collection program or transfer station %	%	87%	65%	100%		5	100%
Inputs: materials	water used	gal	565	44.3	1,162	only	2	40%
Inputs: energy	electricity	kWh	106	106	106	only	1	20%
	propane-powered mobile equipment	gal	2.25	2.25	2.25	only	1	20%
	Gasoline-powered mobile	gal	0.90	0.90	0.90	only	1	20%
OUTPUTS								
Paint and container disposal (residual paint from emptied containers, dry)								
	paint to LF disposed (w/ container)	lb	0.91	17.5	17.5		1	20%
	plastic to LF	lb	220	240	892		3	60%
	distance to LF	mi	20.0	20.0	20.0	only	1	20%
	steel to recycler	lb	706	76.5	2,677		5	100%
	plastic to recycler	lb	26.0	14.7	957		2	40%
	distance to recycler	mi	28.7	10.0	30.0	only	2	40%
Other sorting outputs	unspecified solid waste to LF	lb	66.9	93.4	93.4		1	20%
Note: Because weighted averages are being made, mass balance in/out may not be 0.								

Table 8. CONSOLIDATION
(aggregated data per 1,000 gallons consolidated paint produced)

(aggregated data per 1,000 gallons consolidated paint produced)								
INPUTS	Name of flow	unit	weighted average	Min reported value	Max reported value	Average type: only	# sites reported	% of sites
Inputs to facility	latex paint in	gal	984	951	1,000		14	100%
	distance transported to facility	mi	0	0	0		13	93%
Inputs: materials	water used	gal	68.5	47.0	150	only	4	29%
	Troysan preservative	lb	8.37	20.0	20.0		1	7%
	acrysol-biocide (Kathon)	lb	31.2	19.0	112		2	14%
	unspecified (may include pigments, thickeners, preservatives, anti-foaming agents)	lb	15.6	112	112		1	7%
	resin	lb	31.2	112	112		1	7%
	Bentone	lb	31.2	112	112		1	7%
	anti-skinning (exkin)	lb	31.2	112	112		1	7%
Inputs: energy	electricity	kWh	576	0.47	1,022	only	6	43%
	NG process fuel	cf	2.48	33.8	33.8		1	7%
	diesel-powered mobile equipment	gal	2.39	7.00	7.00	only	1	7%
	propane	gal	7.30	4.69	8.71	only	3	21%
OUTPUTS								
	consolidated latex	gal	1,000	1,000	1,000		14	100%
	density	lb/gal	11.2	11.2	11.2		14	100%
	VOC content	g/l	115	90.0	150	only	5	36%
	solids content	%	51%	45%	52%	only	3	21%
	post-consumer paint content	%	99%	96%	100%		14	100%
	plastic packaging (HDPE)	lb	402	465	3,333	only	13	93%
	steel packaging	lb	815	54.6	1,418	only	3	21%
	% of consolidated paint getting to endusers by car	%	26%					
	distance to end user (car)	mi	6.19	2.00	12.0	only	7	50%
	% of consolidated paint getting to endusers by truck	%	74%					
	distance to end user (truck)	mi	134	10.0	150	only	3	21%
	solid waste to WTE	lb	0.072	35.3	35.3		1	7%
	distance to WTE	mi	1,400	1,400	1,400		1	7%
	No paint is disposed							
Note: Because weighted averages are being made, mass balance in/out may not be 0.								

Table 9. REPROCESSING
(aggregated data per 1,000 gallons consolidated paint produced)

(Aggregated data per 1,000 gallons concentrated paint processed)								
INPUTS				Min	Max			
	Name of flow	unit	weighted average	reported value	reported value	Average type: only	# sites reported	% of sites
Inputs to facility	latex paint in	gal	755	549	926		3	100%
	distance transported to facility	mi	0	0	0		3	100%
Inputs: materials	Troysan preservative	lb	14.3	20.0	20.0		1	33%
	Rovac 9165 resin	lb	1,606	2,240	2,240		1	33%
	Virgin inputs (assume the variety of virgin inputs)	lb	190	451	826		2	67%
Inputs: energy	electricity	kWh	337	337	337	only	1	33%
OUTPUTS								
Fate of latex	Reprocessed latex	gal	1,000	1,000	1,000		3	100%
	density	lb/gal	11.2	11.2	11.2		3	100%
	VOC content	g/l	98.5	90.0	150	only	2	67%
	solids content	%	40%	40%	40%	only	1	33%
	post-consumer paint content	%	76%	55%	93%		3	100%
	plastic packaging (HDPE)	lb	471	465	475	only	2	67%
	steel packaging	lb	45.5	39.0	54.6	only	2	67%
	distance to end user (car)	mi	6.00	6.00	6.00	only	3	100%
	distance to end user (truck)	mi	51.9	50.0	60.0	only	2	67%
	No other outputs							
Note: Because weighted averages are being made, mass balance in/out may not be 0.								

Table 10. MANAGEMENT BY STABILIZE AND LANDFILL
(aggregated data per 1,000 gallons leftover latex paint disposed)

INPUTS	Name of flow	unit	weighted average	Min	Max	Average type: only	# sites reported	% of sites
				reported value	reported value			
Inputs to facility	latex paint in	gal	1,000	1,000	1,000		9	100%
	transported quantity	lbs	16,339	11,200	19,500		9	100%
	distance transported to landfill	mi	146	0	788		9	100%
Inputs: materials	clay / cat litter	lb	302	2,800	6,288		3	33%
	sawdust	lb	2,185	463	2,671		4	44%
	Steel drums	lb	256	546	670		5	56%
Inputs: energy	No energy reported							
OUTPUTS	Paint Disposed to LF	lb	11,200	11,200	11,200		9	100%
	VOCs from drying (high value)	gram	284					
	steel to LF	lb	255	546	667		5	56%
	solid waste to LF	lb	1,612	463	6,288		6	67%
	steel to recycler	lb	12.0	636	636		1	11%
	distance to recycling	mi	28.0	28.0	28.0	only	1	11%
Note: Because weighted averages are being made, mass balance in/out may not be 0.								

Table 11. MANAGEMENT BY SPREAD ON LANDFILL
(aggregated data per 1,000 gallons leftover latex paint disposed)

				Min	Max			
INPUTS	Name of flow	unit	weighted average	reported value	reported value	Average type: only	# sites reported	% of sites
Inputs to facility	latex paint in	gal	1,000	1,000	1,000		7	100%
	transported quantity	lbs	14,490	11,305	19,473		7	100%
	distance transported to landfill	mi	10.4	0	25.0	only	7	100%
Inputs: materials	No material inputs reported							
Inputs: energy	diesel-powered mobile equipment	gal	0.34	5.72	5.72	only	1	14%
OUTPUTS								
Management method	Paint Disposed to LF	lb	11,200	11,200	11,200		7	100%
	steel to LF	lb	536	58.1	2,769		6	86%
	plastic to LF	lb	212	46.8	1,032		5	71%
	steel to recycler	lb	345	636	636		2	29%
	distance to recycler	mi	150	150	150	only	1	14%
Other outputs	Water effluent to WWTP	gal	314	1,000	1,000		1	14%
Note: Because weighted averages are being made, mass balance in/out may not be 0.								

Table 12. MANAGEMENT BY INCINERATION
(aggregated data per 1,000 gallons leftover latex paint disposed)

INPUTS	Name of flow	unit	weighted average	Min	Max reported value	Average type: only	# sites reported	% of sites
				reported value				
Inputs to facility	latex paint in	gal	1,000	1,000	1,000		4	100%
	transported quantity	lbs	12,189	11,836	12,657		4	100%
Inputs: materials	Steel drums	lb	223	630	636		2	50%
OUTPUTS	Paint to incineration/WTE	lb	11,200	11,200	11,200		4	100%
	% going to Incineration	%	35%					
	% going to WTE	%	65%					
	steel to incinerator	lb	306	636	1,273		2	50%
	distance to incinerator	mi	25.0	25.0	25.0	only	2	50%
	steel to recycler	lb	568	541	1,258		2	50%
	distance to recycler	mi	30.0	0	30.0	only	2	50%
	plastic to WTE	lb	60.5	199	199		1	25%
	distance to WTE plant	mi	9.41	0	20.0	only	2	50%
	Other outputs No other outputs reported							

Note: Because weighted averages are being made, mass balance in/out may not be 0.

4.1 Aggregation Tables for Sorting

Transportation of incoming paint, sorting of received paint, and disposal of sorting wastes are all covered in the sorting process tables, which are normalized on the basis of 1,000 gallons of paint sorted. The sorting modules serve as the first step for all the collection-based methods.

Paint receipt and sorting occurs at two main types of facilities: “sorting” facilities (HHW processing facilities) and large independent paint processing facilities. Some of the sorted paint is then consolidated at HHW processing facilities, and some is sent off to large independent processing facilities for consolidation or reprocessing. Of the leftover paint managed by surveyed facilities, 66% of the leftover paint was received and sorted at large independent processors, and 34% was received and sorted at HHW facilities.

All Method 3 paint reuse (swap programs) occurs out of HHWs. Because swap cans are not opened and emptied at the HHW, the sorting energy and wastes do not apply to Method 3. All paint reprocessing (Method 5) occurs at large processing facilities, so the paint supply coming into reprocessing is modeled based entirely on the Independent Processor sorting data. Consolidation (Method 4) occurs both at HHWs and at large processing facilities, so the paint supply coming into consolidation is modeled using the composite sorting profile (66% independent processor sorting, 34% HHW sorting).

In the survey data aggregation tables, waste categories were identified as:

- Steel (containers) sent to landfill, incineration, WTE, or recycler;
- Plastic (containers) sent to landfill, incineration, WTE, or recycler;
- Paint (residual amount left in containers) sent to landfill, incineration or WTE; and
- General municipal solid waste (MSW) sent to landfill, incineration or WTE. (This category included miscellaneous wastes associated with managing paint, such as disposable gloves or other personal protective equipment, paint screens and filters, stirring sticks, etc.)

In tracking the flows and fates of paint and emptied containers at sorting, residual paint presented a particular challenge. There were three general categories of residual paint: solidified paint that was removed from containers, solidified paint that was not removed from containers, and the residual film of dried or liquid paint remaining in an emptied can. Removable solidified paint could be managed separately (typically either by landfilling or sending to Amazon for PLP). Unremovable solidified paint most often resulted in the paint and container together being landfilled, while a film of dried or liquid paint generally did not inhibit recycling of the container. Aggregated data reflected the types and amounts of residual paint and disposition reported by individual facilities.

4.1.1 Sorting at Sorting Facilities

Twenty-seven sorting facilities responded to the survey. As shown in Table 6, the weighted average incoming paint transportation profile shows 40% of incoming paint brought in by consumers in personal vehicles, 4% incoming directly to the facility by truck (e.g., by a contractor), and 56% brought in from HHW collection events via truck. (In the modeling, a consumer transport step is added for getting the paint to the HHW collection event.) For each of these three sources of leftover paint, there was at least one facility that reported receiving 100% of incoming paint from that individual source.

The aggregation data show a wide range in incoming transportation distances by truck. For incoming direct truck transport from contractors, most distances reported fell in the range of 10 to 40 miles; however, a high value of 180 miles raised the weighted average to 97 miles (note that this only applies to the 4% of paint received by direct truck transport). Similarly, for incoming truck transport from HHW collection events or transfer stations, two high values out of seven reported raised the weighted average transportation distance, which was generally in the 10 to 40 mile range. As would be expected, incoming transport by car (personal vehicle) was much lower, with a weighted average of less than 10 miles.

The weight per 1,000 gallons of incoming paint includes not only the weight of paint (at 11.2 pounds per gallon liquid or 7 pounds per gallon solid) but also the weight of the paint containers. These values generally fell in the 12,000 to 14,000 lb range, with a few lower and higher values. (A higher value reflects a higher can-to-paint weight ratio, which indicates that the incoming cans are not very full and/or more of the paint received is lower density dried paint). Because the surveyed facilities could not provide detailed profiles of can sizes, types, and fullness, the can profile used in the LCA modeling was based on the Metro cage data described in Section 2.2.2.

In the material inputs section, only one of the responding facilities reported using cat litter (to absorb spilled paint), while one-third of the facilities reported using water, an average of around 220 gallons per 1,000 gallons of paint sorted. Water use was reported primarily for equipment cleaning.

Eight of the 27 facilities reported using electricity, ranging from zero (all manual operations) to 591 kWh per 1,000 gallons of paint sorted. Many facilities rely almost entirely on manual operations, while some are more highly mechanized, utilizing equipment for opening cans, mixing, pumping, and filtering paint, and crushing cans. Only two facilities reported fuel use for seasonal facility heating.

In the aggregated outputs section, container disposition output data was averaged over all facilities. On a weighted average, less than 10 pounds of residual paint were disposed with containers going to WTE or recycling, although about 76 pounds of residual paint were landfilled with containers. The majority of emptied steel containers were recycled, while landfill was the leading disposal method for plastic containers.

Distances to landfill are generally in the range of 25 miles, although four confirmed distances greater than 50 miles raised the weighted average to 78 miles. For recycling, the survey data suggest that sorting facilities recycle containers if there are local recycling opportunities

(distances reported ranged from 6 to 30 miles). Although incineration would generally not be chosen as a disposal option unless locally available, the WTE distance is raised by two confirmed long haul distances to hazardous waste incinerators from HHWs in California. These particular facilities dispose of quart cans of latex paint together with other co-collected HHW wastes that are truly classified as hazardous. Thus, the long hauls to incineration are a result of managing latex paint at facilities that also collect and manage other HHWs. Followup correspondence with the state of California by a member of the government group confirmed that leftover paint is considered presumed hazardous waste (although the letter also noted that modern latex paint is generally believed to be non-hazardous).¹⁰ Because paint wastes from HHW facilities are considered presumed hazardous wastes in California, and California accounts for 12 percent of the U.S. population, the longer transportation distances were retained when calculating the weighted average transportation distance to incineration.

The category of unspecified solid waste was not well documented; it is expected that some portion of these wastes are related to other HHWs co-managed at the sorting facilities, in addition to legitimate paint management wastes such as gloves and other personal protective items, filters, etc.

4.1.2 Sorting at Independent Processors

Five independent processors accounted for 66% of the total paint managed by surveyed facilities; thus, the data reported by each processor plays a large role in the weighted average calculations.

The survey data shown in Table 7 indicate that the large leftover paint processing facilities receive 87% of their paint trucked in from HHW programs. The weighted average incoming distance was approximately 600 miles. This value was strongly influenced by a high transportation distance reported by a Canadian processor that receives household paint that is routed through a series of collection and distribution centers. Incoming transportation distances reported by the other large independent processors ranged from 90 to 500 miles. Transport modeling for this paint includes addition of consumer transport to the HHW program.

The remaining 13% of paint shown as trucked an average of 146 miles (one way) directly from leftover paint generators is likely to include paint from HHW programs that contract with waste management contractors. The mass of materials transported is lower because some of the paint received has been consolidated into drums, with a lower container-to-paint weight ratio.

Only one processor reported electricity use, which was considerably lower than the weighted average reported for HHW sorting facilities. However, this seems reasonable considering that large processors devoted to paint processing are likely to have more efficient systems for sorting paint.

Like HHW facilities, large processors reported sending the majority of steel containers to recyclers and most plastic containers to landfill. Average transportation distances to recyclers were low.

¹⁰ Letter from Linda S. Adams, California EPA Secretary for Environmental Protection, to David Allaway, OR DEQ, dated June 13, 2007.

4.2 Aggregation Tables for Recycled Paint Production

Because all paint reprocessing occurs at facilities for which paint incoming transportation and sorting have already been characterized (in the Sorting Facility and Independent Processor sorting tables), no incoming transportation is reported in the Consolidation table.

Data for paint recycling facilities is normalized on the basis of 1,000 gallons of recycled paint **output**. Because the recycled content of the paint produced is less than 100%, less than 1,000 gallons of leftover paint is required to produce 1,000 gallons of output paint, due to the addition of virgin inputs. (For the same reason, in the modeling and results, which are based on 1,000 gallons of leftover paint **input managed**, 1,000 gallons of leftover paint **entering** into the process will result in more than 1,000 gallons of **output** paint.)

In the input sections of the Consolidation and Reprocessing tables, readers may notice that the total of the weighted averages of virgin inputs do not match the percentage virgin inputs that would add to 100% with the weighted average postconsumer content. Virgin inputs were reported by facilities on a volume percentage basis for the paint produced. Mass balances were conducted on each individual facility spreadsheet; however, because the weighted average is also based on the quantity of paint processed by each facility, the weighted averages for postconsumer content and content of individual virgin constituents do not add up to 100%. In the modeling, the quantity of virgin constituents was adjusted to add to 100% with the weighted average postconsumer content.

4.2.1 Consolidation

Fourteen facilities reported consolidating leftover paint into a recycled paint product. The data shown in Table 8 include both HHW facilities and large independent processors. Inputs of leftover paint per 1,000 gallons of consolidated paint produced range from 950 gallons (95% postconsumer content, 5% virgin inputs) to 1,000 gallons (100% postconsumer content).

Virgin inputs to consolidated paint were reported by four facilities, but different facilities reported different inputs. All inputs were reported as being added at a volume percentage of 1% or less of the volume of paint produced.

The majority of HHW facilities reported packaging consolidated paint in 5 gallon plastic containers, while independent consolidators used a mix of gallon steel containers and 5 gallon plastic. Consolidated paint produced at HHWs is typically picked up by consumers (the average transportation distance reported in the survey was 6 miles), while much of the consolidated paint produced by large processors is distributed by truck (average reported distance 134 miles). It should be noted that this shipping distance reflects adjustment of raw data to represent “local” domestic markets for consolidated paint. Raw data reported by consolidators contained two shipping distances of 1,000 miles or greater; the weighted average distance including this data was 1,126 miles. Information provided by these two consolidators indicated that the long haul distances were for occasional shipments of consolidated paint to Mexico or other countries. Since consolidators do not control the color distribution of leftover paint received, the distribution of consolidated paint colors produced reflect the distribution of colors received. The

long haul distances are likely to reflect the production of consolidated paint in colors for which local/domestic demand is insufficient to keep up with production.

The quantities of plastic and steel output represents packaging used for the consolidated paint produced (disposal of emptied incoming containers is included in the sorting modules).

Only one HHW consolidation facility reported sending waste a very long distances to a hazardous waste incinerator. This distance was from an HHW facility in California, where leftover paint is considered a presumed hazardous waste. Because of California's large population (and corresponding share of the U.S. leftover paint supply), this long distance was retained when calculating the weighted average distance to an incinerator. However, because the quantity of waste shipped is so small, this has negligible effect on the results.

4.2.2 Reprocessing

Only three facilities, all large independent processors, reported data for production of reprocessed paint. Table 9 shows that inputs of leftover paint per 1,000 gallons of reprocessed paint produced range from 549 gallons (55% postconsumer content) to 926 gallons (93% postconsumer content).

One reprocessor reported quantities of specific additives, while the others reported only the total quantity of virgin additives. Thus, the virgin inputs to reprocessed paint were modeled the same as the BEES inputs to virgin paint, described later in this report.

As with consolidated paint, the outgoing truck transportation of reprocessed paint reflects adjustment to represent "local" markets. One reprocessor reported a much longer truck transportation distance than the others; however, it is not known whether this is because of lack of local demand for the reprocessed paint or because this reprocessor simply serves a larger market area. Because reprocessors add more virgin constituents to their paint, they have more control over the characteristics of the reprocessed paint produced.

4.3 Aggregation Tables for Paint Disposal

Different facilities reported many different variations on methods for managing leftover paint for disposal. These were grouped into three main subcategories: stabilize and dispose, spread on landfill, and incinerate. Within these three general categories, however, there was no consistent practice reported by a majority of facilities. Some used no additive to dry or stabilize the paint, while others added various types and quantities of materials. Some facilities processed their paint on-site to prepare it for disposal; others utilized waste management contractors to transport the waste paint to a different site for processing and/or disposal. Some HHW facilities were co-located with municipal landfills or incinerators, while others transported waste long distances to the ultimate disposal site. Some facilities disposed of paint in the condition received (liquid or solid); others only disposed of paint after it had been partially or completely solidified. The following sections present aggregated data for each of the three main categories of disposal. Within each table, the data reflect the mix of practices reported by responding facilities.

4.3.1 Management by Stabilize and Landfill

As shown in Table 10, nine facilities reported disposing of paint by methods that can be classified as “stabilize and landfill.” Three of the facilities reported using clay-based materials as a stabilizing additive, four reported using sawdust, and two reported no additive. Five of the facilities transported the paint bulked in steel drums and landfilled the drums together with the stabilized paint. None of the facilities reported using any process energy.

There is a large range in distance for transporting the paint to landfill. Some facilities are located at or very near a landfill, while some facilities that disposed of paint by stabilize and landfill use waste contractors who haul paint to one location for stabilization, then to another location for landfilling. The weighted average is thus believed to be an accurate representation of the mix of practices.

4.3.2 Management by Spread on Landfill

Seven facilities reported disposing of paint by methods that can be classified as “spread on landfill.” Aggregated data for these facilities is shown in Table 11. Several of these facilities reported disposing of the paint in closed original containers in the condition received (liquid or solid), while at least one other facility combined opened containers of paint with other wastes being co-disposed. Most of the facilities did not clearly define whether paint is bulked and poured out on the landfill or whether the paint is “spread” when landfill equipment runs over paint containers and crushes out the paint. The large variation in weights of steel and plastic disposed reflect the variation in facilities disposing of paint in original containers or bulking paint in drums for disposal. Facilities managing paint by “spread on landfill” all reported transportation distances of 25 miles or less for taking the paint to the landfill.

4.3.3 Management by Incineration

Table 12 presents aggregated data for four facilities that reported disposing of paint by incineration. Two of these facilities (accounting for 65% of the paint disposed by incineration) reported incineration with energy recovery. The modeling includes an energy credit for paint resins and plastic paint containers that go to WTE incinerators. Facilities that send paint to incineration in steel containers reported that steel paint containers are recovered from incinerator residue and recycled. As with “spread on landfill”, a distance of 25 miles was modeled for transporting the paint to the disposal site.

5. DATA FOR CONSUMER-BASED METHODS 1 AND 2

The data used to model the consumer-based management methods (Methods 1 and 2) were based largely on data obtained from public sources or agreed upon in discussions with the PPSI work group.

5.1 Method 1 – Consumer-based Reuse

This method requires very little in the way of modeling, as it consists of the consumer transporting leftover paint directly to a secondary user. Transportation burdens were based on a consumer delivering paint to another consumer on a 10 mile round trip in a personal vehicle. It is assumed that consumers would not make a trip solely for the purpose of delivering paint, so half the fuel use for the trip is allocated to delivering paint. The burdens for Method 3 also include drying emissions from use of the paint by the secondary user, and disposal of empty cans.

5.2 Method 2 – Consumer-based Dry and Dispose

In this method, the consumer removes the lid from the paint can and allows the paint to air dry in the original paint container, then disposes of the paint and container together with other household wastes. It is assumed that cat litter is added to cans that are more than 25% full to help stabilize the paint during drying. The density of dried paint is modeled as 7 pounds per gallon. Emissions released from the paint during drying are modeled as 568 grams VOC released per gallon (150 g/liter) for drying without additive, representing release of all VOC content of the paint. For cans more than 25% full that have cat litter added when drying, 50% of the VOC content is assumed to be released in drying, with the remainder bound up in the additive.

In the U.S., 84% of households are served by curbside waste collection programs, while 16% of households self-haul their waste.¹¹ For the 84% of households with curbside pickup, the paint is assumed to be picked up curbside and transported by the packer truck to a landfill or incinerator. Transportation distance to landfill and incinerator are modeled based on the distance in the aggregated sorting facility summary. Fuel use for the packer truck depends on the weight of the material hauled, so the weight of paint transported is allocated a share of the fuel use for packer truck transport. For the 16% of households that self-haul their solid waste using a personal vehicle, paint represents an incremental contribution to the total quantity of household waste, and thus no transportation burdens are allocated to the paint.

Overall, 79.8% of municipal solid waste in the U.S. that is disposed is landfilled, and the remaining 20.2% is burned in waste-to-energy (WTE) incinerator.¹² These percentages were used to model the fate of disposed paint and containers, including energy recovery from WTE combustion of paint resins and plastic paint containers.

6. VIRGIN PAINT MODELING

It was necessary to include modeling of virgin latex paint in this analysis for two reasons:

1. The output of reused or recycled paint (from management methods 1, 3, 4, and 5) can be used by a consumer in place of using virgin paint, in which case the

¹¹ Based on MSW composition surveys for four states (CA, WI, MA, KY) reporting a range of 11% to 30% self-haul.

¹² U.S. EPA. Municipal Solid Waste in the United States: 2003 Data Tables. April 2005. Table 24. Available at <http://www.epa.gov/epaoswer/non-hw/muncpl/msw99.htm>

- leftover paint system is credited with avoided burdens for the production and use of the displaced virgin paint.
2. Reprocessed paint contains more than 5% virgin inputs, requiring the modeling of the same materials that are used in virgin paint.

The following modeling and assumptions were used to model generic/average virgin latex paint for this study, and are derived from the BEES building product software.¹³

6.1 Upstream Material Inputs

The average composition of the generic virgin latex paint system modeled in BEES is listed in Table 13.

Table 13. Virgin Latex Paint and Primer Constituents

<i>Constituent</i>	<i>(Mass Fraction %)</i>
Resin	25
Titanium dioxide	12.5
Limestone	12.5
Water	50

Table 14 displays the market shares for the resins and their components as modeled in BEES, and used for this study.

Table 14. Market Shares of Resins

<i>Resin type</i>	<i>Market share (%)</i>	<i>Components (Mass Fraction)</i>
Vinyl Acrylic	40	Vinyl acetate (80-95 %), Butyl acrylate (5-20 %)
Polyvinyl Acetate	40	Vinyl acetate (100 %)
Styrene Acrylic	20	Styrene (50 %), Butyl acrylate (50 %)

The materials were modeled based on data from the U.S. LCI database and the SimaPro database.

6.2 Transportation to Manufacturing

Diesel truck transportation of raw materials to the paint manufacturing site is assumed to average 402 km (250 mi) for limestone, 2400 km (1500 mi) for titanium dioxide, and 80 km (50 mi) for the resins. All transportation data was based on the U.S. LCI database.

¹³ National Institute of Standards and Technology (U.S. Department of Commerce), Building for Environmental and Economic Sustainability building product software, version 4.

6.3 Manufacturing

Virgin latex paint blending is assumed to require 1.25 kWh of purchased electricity per gallon of paint blended and 7 MJ of additional energy per gallon.¹⁴ No data were provided as to the source of the “additional energy” required, so it is assumed to be natural gas. Emissions associated with paint and paint manufacturing, such as particulates to the air, are based on AP-42 emission factors.

6.4 Use Phase

There are two general use scenarios for reused/recycled paint:

1. Reused/recycled paint is used as a substitute for virgin paint, and a credit is applied for avoiding production and use of the virgin paint displaced.
2. Reused/recycled paint is used as a substitute for not painting, so no credit is given for avoiding virgin paint production and use. (This scenario applies to users who would not paint unless reused/recycled paint is available for free or at a very low cost.)

Methods involving an output of useful paint (methods 1, 3, 4, and 5) are evaluated at varying levels of virgin paint displacement. In each case, the impacts associated with the defined level of virgin paint displacement are subtracted from the impacts incurred for paint collection, transport, processing, and use. Displacement levels of 0%, 25%, 50%, 75%, and 100% are evaluated.

The application rate for virgin paint is modeled as 400 square feet of coverage per gallon of paint. When displacement credit is applied, it is based on equivalent coverage rates, so that one gallon of consolidated or reprocessed paint is credited for displacing one gallon of an equivalent grade of virgin paint. VOC content of paint and drying emissions are discussed in section 2.6.

The LCA modeling includes fuel use by consumers traveling to an HHW to pick up swap paint or traveling to a sales location to purchase recycled paint. Paint pickup burdens are only applied to reused/recycled paint that is purchased by consumers who would not otherwise have purchased virgin paint. For reused/recycled paint that is used in place of virgin paint, there is no net added trip, since the consumer would have made a trip to purchase virgin paint.

Burdens for consumer trips to pick up paint are based on purchasing 3 gallons of paint on a trip. Half of the trips to pick up paint are modeled as single-purpose trips and half as dual-purpose trips, for a trip allocation factor of 0.75. The distance driven by a consumer to pick up paint is modeled the same as the average distance to drop off paint, 9.37 miles one-way. For consolidated and reprocessed paint produced at large independent facilities, transport of recycled paint to the sales location is modeled based on the return distance from a processor to an urban area.

¹⁴ Based on the amount of purchased electricity reported in US Department of Commerce, "2002 Census Report: Paint and Coating Manufacturing 2002", based on 1.3 billion gallons of all paints and coatings produced in 2002.

Paint offset credits, purchasing trips, and use phase emissions are only modeled for paint that is used domestically. For paint that is exported, transportation burdens to the destination market are included. No projections are made about use of the paint in the destination country. Export percentages of 25%, 50%, and 75% are evaluated.

6.5 Density

A density of 11.2 gal is used for both virgin and postconsumer paints, including reused, consolidated, and reprocessed paint.

7. DATA QUALITY REQUIREMENTS AND EVALUATION

This study adheres to the ISO standards on data quality to help ensure consistency, reliability, and clear-cut evaluation of the results. The data quality section evaluates the representativeness of the data in the study, which is defined by ISO to be a qualitative assessment of degree to which the data set reflects the true population of interest.¹⁵

The following fall under data representativeness:

- Time/temporal coverage – describes the age of data and the minimum length of time (e.g., one year) over which data should be collected;
- Geographical coverage – describes the geographical area from which data for unit processes are collected to satisfy the goal of the study; and
- Technological coverage (or the technology mix) – This may include weighted average of the actual process mix, best available technology, or worst operating unit.

ISO 14041 Section 5.3.6 highlights additional data quality requirements, depending on the extent of data collection for a particular study and on the goal and scope defined for a study. These include:

- Consistency – the qualitative assessment of how uniformly the study methodology is applied to the various components of the analysis;
- Reproducibility – the qualitative assessment of the extent to which information about the methodology and data values allows an independent practitioner to reproduce the results reported in the study;
- Precision – the measure of the variability of the data values for each data category expressed;
- Completeness – the percentage of locations reporting primary data from the potential number in existence for each data category in a unit process.

¹⁵ ISO 14041, Section 5.3.6

7.1 Representativeness

Table 15 presents the temporal, technological, and geographical coverage for the modeling parameters from the LCA survey and supplemental data from other sources. Most of this data was reported directly by facility staff in the surveys.

7.2 Geographical Representation

The following represents the number of facilities that contributed the data produced for each unit process stage:

- Sorting: 35
- Consolidation: 14
- Reprocessing: 3
- Leftover paint management by stabilize and dispose in landfill: 9
- Leftover paint management by incineration: 4
- Leftover paint management by drying on a landfill: 7
- Leftover paint management by sending to Amazon: 11

The LCA survey results represent input from 25 HHW facilities and several independent processors. These facilities span 12 states that cover all regions of the U.S. Data for a couple of the facilities came from Canada.

In some cases, transportation distances reported by the LCA survey participants did not correspond with distances reported in the PPSI Infrastructure Report, which was based on the locations of processing facilities across the entire country. In such cases, the Infrastructure Report data are used, as they are believed to provide a better representation for national modeling.

7.3 Completeness

ISO 14041 defines completeness as the “percentage of locations reporting primary data from the potential number in existence for each data category in a unit process.”¹⁶ Under this definition, an analysis on completeness could not be performed without access to information on the number of leftover latex paint collection and processing facilities in the United States and the volume of paint managed by each facility. This data was not available for this study.

¹⁶ ISO 14041:1998, Section 5.3.6.

Table 15. Temporal, Technological, and Geographical Coverage

	Data Quality Indicators and Comments				
	Temporal information	Technological coverage	Type of data	Geographical coverage of the data	Source of data
Method 1 – Consumer based reuse	Current practices	N/A	Primary	U.S. average	Transportation distance of consumer A to B based on estimate
Method 2 – Consumer based dry and dispose	Current practices	N/A	Method info determined by the Workgroup	U.S. average	LCA survey and published data sources
Method 3 – Swap program	Current practices	N/A	Primary	U.S. average	Transportation distances of consumer to swap shed based on LCA survey.
Methods 3 to 6 – Sorting, swap program, consolidation, reprocessing, and management	Data primarily from 2005	Sorting facilities range in age from 1-15 years old. Technologies are generally modern and/or state of the art; some facilities do only manual sorting	Primary	U.S., a few facilities in Canada	LCA survey and Infrastructure Report
Energy and electricity reported in the surveys	Data primarily from 2005	Current mobile equipment, other energy sources	Primary; data were measured (e.g., from electricity meters), estimated, and calculated	U.S. average	LCA survey
Production of electricity and energy	Data from late 1990s to early 2000s.	The most representative technologies	Publicly-available	U.S. average data	U.S. LCI database

Production of materials reported in the surveys	Data sets range primarily from mid-1990s to mid 2000s. Data sets are updated as better and/or more recent data become available. No data older than 1990 are used.	For generic materials, the most representative technology was used wherever possible.	Publicly-available	U.S. average data (preferably). Where U.S. data were not available, European average data was used.	U.S. LCI database, elements of the SimaPro database
Air Emissions	No air emissions reported in surveys. VOC emissions due to paint use and paint drying were based on assumptions about the VOC content of generic paint. New virgin paint was modeled based on a VOC content of 125 g/liter, and the VOC content of average consolidated and reprocessed paint produced from older paint was modeled as 150 g/liter.				
Water Effluents	No water effluents reported in surveys				
Waste	Primarily 2005 data	N/A	Primary; data on waste production was estimated	U.S. average	LCA survey
Transportation of paint and containers to sorting facilities, waste to EOL	Current transportation distances	N/A	Primary; distances were estimated and calculated	U.S. average	LCA survey
Packaging of recycled paint produced	2005 mix of steel and plastic	N/A	N/A	U.S. average	LCA survey
Virgin paint life cycle data	2005	Assumption of average technologies	Literature, industry validation	U.S. average	BEES v. 4 ¹⁷

¹⁷ National Institute of Standards and Technology (U.S. Department of Commerce), Building for Environmental and Economic Sustainability building product software, version 4.

7.4 Consistency

Consistency is a qualitative understanding of how uniformly the study methodology is applied to the various components of the study. This quality of measure is one of the most important aspects for such a large-scale study, due to the level of detail in the questionnaires as well as the need to model the Methods consistently across the board.

Consistency was maintained in the handling of surveys in order for the many individuals completing it to provide the best data possible in the most appropriate manner. The surveys were distributed in electronic format. Team F2 communicated directly with the sites and with each other to be sure any data issues were resolved and any aggregation was done consistently.

When completed surveys were returned and rigorous data checking was completed, the data was linked to aggregation tables for further data processing and checking. A single person at Team F2 managed this entire process to treat the data in a consistent manner, and other team members performed the DQ/DC, offering new sets of eyes. With a common approach to data collection from the sites, communication with the sites, data handling, and data aggregation, overall consistency was maintained.

8. EXPANDED INFRASTRUCTURE

The expanded infrastructure modeling utilizes many of the same data sources and assumptions as the limited infrastructure modeling. For example, the same can profile is used, and the same facility energy use is modeled for sorting and processing operations. The main differences between the limited and expanded infrastructure scenarios are related to the logistics and transportation distances for collection and transport of leftover paint. Before describing the expanded infrastructure logistics and transportation distances, it is useful to summarize the transportation modeling for the limited infrastructure, particularly adjustments made to the data from the LCA survey.

8.1 Limited Infrastructure Transportation Summary

8.1.1 Consumer Dropoff at HHW or Collection Event

The weighted average consumer transport distance from the LCA survey was 9.37 miles one-way. In the LCA model, this distance is doubled to account for a round trip and multiplied by the appropriate trip allocation factor (see trip allocation factors described in Section 2.2). HHWs do not commonly track information on distances that consumers travel to drop off paint at a collection event. It was assumed that consumers would travel a similar distance to a collection event, so the same distance modeling was used for consumer dropoff at an HHW collection event.

8.1.2 Contractor Dropoff at HHW or Collection Event

The weighted average distance for contractor paint dropoff at an HHW was 97.7 miles; however, this was strongly influenced by a long distance reported by a Canadian sorting facility. The workgroup proposed using a contractor dropoff distance twice as long as consumer dropoff. A

round-trip distance of 37.48 miles was used for contractor dropoff at HHWs or at collection events. It is assumed that all contractor dropoff trips are dual-purpose trips, so that the allocation factor applied to the miles traveled by the contractor is 0.5 (ERG estimate).

8.1.3 Transport from Collection Event to HHW

The LCA survey did not distinguish between paint transported from rural collection events and from urban/suburban collection events. The weighted average distance from the LCA survey was 115 miles; however, this was strongly influenced by a very high distance reported by one HHW. The majority of the distances reported by HHW respondents in the LCA survey were within 20 miles, suggesting that most of the facilities were reporting distances for paint received from urban/suburban collection events.

In the Infrastructure Report, 20 million U.S. residents (7% of the population) are categorized as very rural. Transportation costs for paint from very rural areas were calculated in the IR based on delivery within 250 miles to an urban area for aggregation with other collected paint (IR Section 7). This distance is used for 7% of the paint from HHW collection events; the remainder was modeled as urban/suburban paint transported 20 miles from the collection event to the HHW.

8.1.4 Transport from HHW to Independent Processor

In the LCA survey, the weighted average distance reported by independent paint processors for paint received from HHW programs was 604 miles. Excluding a very high distance reported by a Canadian processor, other responses ranged from 90 to 500 miles. According to the IR report contractor, the weighted average distance from a U.S. metropolitan or micropolitan statistical area to a paint processing facility is 147 miles, based on the U.S. population distribution and the locations of existing large independent reproprocessors. Therefore, a transportation distance of 147 miles was used for paint collected in urban areas and transported to independent processors for consolidation or reprocessing. The same distance from HHW to processor was added to the transportation requirements for paint that is collected in very rural areas and transported to the nearest HHW for aggregated shipment to an independent processor.

8.1.5 Contractor Dropoff at Independent Processor

The weighted average transportation distance in the LCA survey reported by independent processors for paint from commercial/industrial contractors was 146 miles. This is almost identical to the IR weighted average distance from an urban area to a large processor. Therefore, the distance for direct transport from a contractor to an independent processor is modeled using the LCA survey average of 146 miles (292 miles round-trip).

8.2 Expanded Infrastructure Transportation

As described in the Infrastructure Report (IR), “the three primary possibilities for leftover paint collection from metropolitan areas and isolated cities include dedicated facilities, co-located drop-off points, and curbside collection.” The IR also states that “Leftover paint collection from rural areas will consist of mobile collection events.” Curbside collection of leftover paint is excluded from the scope of this LCA.

8.2.1 Dedicated Facilities

The IR defines a dedicated facility as a facility with one of its primary purposes being “to accept leftover paint from the public. Existing HHW facilities are examples of such dedicated facilities.” In the LCA, the consumer miles traveled from an urban household to a dedicated facility in the Expanded Infrastructure scenario is modeled the same as the distance to an HHW facility in the Limited scenario, 9.37 miles one way.

8.2.2 Co-located Facilities

As described in the IR, “co-located facilities could be sited at various existing businesses or institutions. Drop-off points could consist of a simple cage into which users can set their leftover paint cans or could accept paint at a staffed counter as a service to the community.” An example is given of the network of paint drop-off points operated by Product Care in British Columbia that are co-located with bottle recycling centers. The IR goes on to note, “One additional option that may offer significant promise is collecting leftover paint at existing paint retailers. Some retailers may be interested in collecting leftover paint as a service to the community and to increase their customer base. Furthermore, retailers are well-distributed throughout the country and could provide a comprehensive collection infrastructure.”

In the LCA, the transportation distance from an urban household to a co-located dropoff point is modeled as 20% shorter than the distance to a dedicated facility (ERG estimate). This is based on the assumption that co-located dropoff points such as recycling centers, retail stores, etc., will be more conveniently located so that consumers will not need to drive as far to drop off paint at one of these locations compared to a dedicated facility.

As described in the IR, most co-located collection points will not have adequate space to accumulate enough cans to fill a long-haul trucking trailer for transport to a paint processor; therefore, paint dropped off at co-located facilities will need to be periodically collected and transported to an aggregation point. The LCA modeling is based on the collection system described in the IR of operating a 24-foot box van in a “milk run” route to collect paint from individual co-located facilities and transport the cans to a small stand-alone aggregation facility in a warehouse in the metropolitan area. According to the IR, “each Metropolitan Statistical Area will require at least one aggregation point, resulting in over 350 aggregation points in the U.S.” The round-trip route distance for the local truck servicing the collection points is modeled as 100 miles (ERG estimate).

8.2.3 Rural Collection

According to the IR, “It is assumed that mobile collections will be the method to collect leftover paint from very rural areas. Municipalities or other organizations will promote the collection event and inform users about what kinds of paint products will be collected. These mobile collections will consist of a 24- or 30-foot truck making a number of stops at promoted collection events to collect paint. Paint cans will be put into a gaylord box and transported to the nearest metropolitan area or isolated city for aggregation into their paint collection system.” In the IR, 7% of the U.S. population is categorized as rural. Half of rural paint is assumed to be from HHW

collection events and half from paint collection events. For paint collected via paint collection events, the LCA models collection transportation based on consumer dropoff at a rural collection event, transport from the collection event to an aggregation facility in the nearest metropolitan area, and transport from the aggregation facility to a paint reprocessor. Paint collected from HHW collection events is transported to an HHW facility for separation from other HHWs, then the paint is sent to a paint reprocessor.

8.2.4 Distance to Reprocessor

As described in the Limited Infrastructure Transportation section, the weighted average distance that paint is transported from a metropolitan or micropolitan collection point to a large reprocessor is 147 miles, based on the locations of existing paint reprocessing facilities. The Expanded Infrastructure scenario assumes that a limited number of new paint processing facilities will be added in regions of the country where additional paint processing capacity is most needed (in the South, East, and Southeast, according to the IR Exhibit 4), reducing the composite average U.S. distance from an urban aggregation facility to a reprocessor by 20% (ERG estimate).

Overall, the data from the LCA survey indicated that 12 percent of leftover paint was collected from painting contractors, and the remaining 88 percent was from consumers. For the expanded infrastructure modeling, the same leftover paint generation split was used. For each method, the percentages collected at HHWs and co-located dropoff points for each method were calculated based on the collection logistics described above. Not all collection pathways are relevant for all methods. For example, swap shops are only located at HHW facilities, so the percentages calculated for Method 3 are based only on paint that is collected at or routed through HHW facilities. All liquid paint that is collected with the intent of disposing of the paint will be managed through HHWs, so the collection modeling for Method 6 is the same as for Method 3.

Table 16 summarizes the transportation distances and fuel consumption (in vehicle miles for personal vehicle transport, and in ton-miles for truck transport) for the pathways that are relevant for each method under the two infrastructure scenarios. Results are shown for collection of 1,000 gallons of leftover paint by each separate pathway. Table 17 shows the percentages of paint from each pathway for each method and calculates the weighted average transportation burdens for each method that are used in the LCA modeling.

Table 16. Pathways for Paint Management Methods

		Personal vehicle to HHW, event, or dropoff					Event to HHW		HHW to Processor		Dropoff to Agg		Rural to Agg		Agg to Processor	
		mi/ round trip	trips to deliver 1000 gal	unalloc mi/ 1000 gal	trip alloc factor	alloc pers veh miles/ 1000 gal	mi/ one-way trip	ton-mi/ 1000 gal (adj for backhaul)	mi/ one-way trip	ton-mi semi truck/ 1000 gal (adj for backhaul)	mi/ round trip	ton-mi single-unit truck/ 1000 gal	mi/ one-way trip	ton-mi semi truck/ 1000 gal (adj for backhaul)	mi/ one-way trip	ton-mi semi truck/ 1000 gal (adj for backhaul)
Limited Infrastructure Pathways (data for 1,000 gal by each pathway)																
Method 3 - Lim Swap Shop	contractor to HHW	37.5	100	3,748	50%	1,874										
	urban to HHW	18.7	505	9,465	17%	1,606										
	urban to urban coll event, to HHW	18.7	505	9,465	17%	1,606	20	219								
	rural to HHW coll event, to HHW	18.7	505	9,465	17%	1,606	250	2,738								
	rural to paint coll event, to HHW	18.7	505	9,465	17%	1,606	250	2,738								
Method 4 - Lim Consolidated at HHW	contractor to HHW	37.5	100	3,748	50%	1,874										
	urban to HHW	18.7	505	9,465	22%	2,071										
	urban to urban coll event, to HHW	18.7	505	9,465	22%	2,071	20	219								
	rural to paint coll event, to HHW	18.7	505	9,465	22%	2,071	250	2,738								
	rural to HHW coll event, to HHW	18.7	505	9,465	22%	2,071	250	2,738								
Method 4 - Lim Consolidated at Independent Processor	large contractor direct to processor	292	20	5,836	50%	2,918				147	1,610					
	contractor to HHW, to processor	37.5	100	3,748	50%	1,874				147	1,610					
	urban to HHW, to processor	18.7	505	9,465	22%	2,071				147	1,610					
	urban to urban coll event, to HHW, to processor	18.7	505	9,465	22%	2,071	20	219		147	1,610					
	rural to paint coll event, to HHW, to processor	18.7	505	9,465	22%	2,071	250	2,738		147	1,610					
	rural to HHW coll event, to HHW	18.7	505	9,465	22%	2,071	250	2,738		147	1,610					
Method 5 - Lim Reprocessed at Independent Reprocessor	large contractor direct to processor	292	20	5,836	50%	2,918										
	contractor to HHW, to processor	37.5	100	3,748	50%	1,874				147	1,610					
	urban to HHW, to processor	18.7	505	9,465	22%	2,071				147	1,610					
	urban to urban coll event, to HHW to processor	18.7	505	9,465	22%	2,071	20	219		147	1,610					
	rural to paint coll event, to HHW, to processor	18.7	505	9,465	22%	2,071	250	2,738		147	1,610					
	rural to HHW coll event, to HHW	18.7	505	9,465	22%	2,071	250	2,738		147	1,610					
Expanded Infrastructure Pathways																
Method 3 - Exp Swap Shop	contractor to HHW	37.5	100	3,748	50%	1,874										
	urban to HHW	18.7	505	9,465	26%	2,447										
	rural to HHW coll event, to HHW	18.7	505	9,465	26%	2,447	250	2,738								
Method 4 - Exp Consolidated at HHW	contractor to HHW	37.5	100	3,748	50%	1,874										
	urban to HHW	18.7	505	9,465	37%	3,546										
	rural to HHW coll event, to HHW	18.7	505	9,465	37%	3,546	250	2,738								
Method 4 - Exp Consolidated at Independent Processor	contractor to HHW, to processor	37.5	100	3,748	50%	1,874				118	1,288					
	contractor to dropoff, to agg, to processor	30.0	100	2,998	50%	1,499					100	632				118 1,288
	urban to HHW, to processor	18.7	505	9,465	37%	3,546				118	1,288					
	urban to dropoff, to agg, to reprocessor	15.0	505	7,572	37%	2,837					100	632				118 1,288
	rural to HHW coll event, to HHW, to reprocessor	18.7	505	9,465	37%	3,546	250	2,738		118	1,288					118 1,288
	rural to paint coll event, to agg, to reprocessor	18.7	505	9,465	37%	3,546							250	2,738		118 1,288
Method 5 - Exp Reprocessed at Independent Reprocessor	contractor to HHW, to processor	37.5	100	3,748	50%	1,874				118	1,288					
	contractor to dropoff, to agg, to processor	30.0	100	2,998	50%	1,499					100	632				118 1,288
	urban to HHW, to processor	18.7	505	9,465	37%	3,546				118	1,288					
	urban to dropoff, to agg, to reprocessor	15.0	505	7,572	37%	2,837					100	632				118 1,288
	rural to HHW coll event, to HHW, to reprocessor	18.7	505	9,465	37%	3,546	250	2,738		118	1,288					118 1,288
	rural to paint coll event, to agg, to reprocessor	18.7	505	9,465	37%	3,546							250	2,738		118 1,288

Table 17. Weighted Average Transportation for Paint Management Methods

		Total for 1,000 Gallons by Each Pathway				
Limited Infrastructure Pathways (data for 1,000 gal by each pathway)		Percent by Pathway	total pers veh mi	total single-unit truck ton-mi	total semi truck ton-mi to agg or HHW	total semi truck ton-mi to processor
Method 3 - Lim Swap Shop	contractor to HHW	4.0%	1,874	-	-	-
	urban to HHW	40.0%	1,606	-	-	-
	urban to urban coll event, to HHW	49.3%	1,606	-	219	-
	rural to HHW coll event, to HHW	5.4%	1,606	-	2,738	-
	rural to paint coll event, to HHW	1.3%	1,606	-	2,738	-
	Weighted Average for Method 3 Limited	100.0%	1,617	-	292	-
Method 4 - Lim Consolidated at HHW	contractor to HHW	0.2%	1,874	-	-	-
	urban to HHW	2.4%	2,071	-	-	-
	urban to urban coll event, to HHW	3.0%	2,071	-	219	-
	rural to paint coll event, to HHW	0.1%	2,071	-	2,738	-
	rural to HHW coll event, to HHW	0.3%	2,071	-	2,738	-
	Method 4 - Lim Consolidated at Independent Processor	large contractor direct to processor	12.2%	2,918	-	-
contractor to HHW, to processor		3.3%	1,874	-	-	1,610
urban to HHW, to processor		32.7%	2,071	-	-	1,610
urban to urban coll event, to HHW, to processor		40.3%	2,071	-	219	1,610
rural to paint coll event, to HHW, to processor		1.1%	2,071	-	2,738	1,610
rural to HHW coll event, to HHW		4.4%	2,071	-	2,738	1,610
Weighted Average for Method 4 Limited		100.0%	2,168	-	256	1,513
Method 5 - Lim Reprocessed at Independent Reprocessor		large contractor direct to processor	13.0%	2,918	-	-
	contractor to HHW, to processor	3.5%	1,874	-	-	1,610
	urban to HHW, to processor	34.8%	2,071	-	-	1,610
	urban to urban coll event, to HHW to processor	42.9%	2,071	-	219	1,610
	rural to paint coll event, to HHW, to processor	1.2%	2,071	-	2,738	1,610
	rural to HHW coll event, to HHW	4.7%	2,071	-	2,738	1,610
	Weighted Average for Method 5 Limited	100.0%	2,174	-	254	1,401
Expanded Infrastructure Pathways						
Method 3 - Exp Swap Shop	contractor to HHW	11.6%	1,874	-	-	-
	urban to HHW	82.5%	2,447	-	-	-
	rural to HHW coll event, to HHW	5.8%	2,447	-	2,738	-
	Weighted Average for Method 3 Expanded	100.0%	2,381	-	160	-
Method 4 - Exp Consolidated at HHW	contractor to HHW	0.3%	1,874	-	-	-
	urban to HHW	2.5%	3,546	-	-	-
	rural to HHW coll event, to HHW	0.2%	3,546	-	2,738	-
Method 4 - Exp Consolidated at Independent Processor	contractor to HHW, to processor	5.8%	1,874	-	-	1,288
	contractor to dropoff, to agg, to processor	6.1%	1,499	632	-	1,288
	urban to HHW, to processor	40.8%	3,546	-	-	1,288
	urban to dropoff, to agg, to reprocessor	38.2%	2,837	632	-	1,288
	rural to HHW coll event, to HHW, to reprocessor	3.1%	3,546	-	2,738	2,576
	rural to paint coll event, to agg, to reprocessor	3.1%	3,546	-	2,738	1,288
	Weighted Average for Method 4 Expanded	100.0%	3,048	280	173	1,289
Method 5 - Exp Reprocessed at Independent Reprocessor	contractor to HHW, to processor	6.1%	1,874	-	-	1,288
	contractor to dropoff, to agg, to processor	6.1%	1,499	632	-	1,288
	urban to HHW, to processor	43.4%	3,546	-	-	1,288
	urban to dropoff, to agg, to reprocessor	38.2%	2,837	632	-	1,288
	rural to HHW coll event, to HHW, to reprocessor	3.1%	3,546	-	2,738	1,288
	rural to paint coll event, to agg, to reprocessor	3.1%	3,546	-	2,738	1,288
Weighted Average for Method 5 Expanded	100.0%	3,048	280	168	1,288	

9. MODIFIED METHODS

The “pure” methods described in the preceding sections represent a hypothetical case where 1,000 gallons of the collected paint is managed as intended by each method, with no paint unsuitable for the intended management method. In reality, some percentage of the leftover paint supply will be unsuitable for management by methods 1, 3, 4, and 5. Therefore, “modified” versions of these methods are also evaluated, taking into account disposal of the fraction of the leftover latex paint supply that is unsuitable for the intended management method.

The data in the LCA surveys, together with followup correspondence with survey respondents, were used to evaluate the percentage of the leftover paint received by each facility that is of suitable quality for further use in consolidated or reprocessed paint. The amount of paint suitable for reuse (Method 3) is lower than the percent suitable for consolidation/reprocessing, because suitability for direct reuse depends not only on the condition of the paint in the container but also on the quantity of paint in the container. From a practical standpoint, there must be enough leftover paint in the container for a secondary user to be able to complete the desired painting task. Some percent of paint is unsuitable for Method 2 disposal (consumer-based dry and dispose) because some consumers do not have a place where open paint containers can be left to air dry (e.g., apartment dwellers).

There was a very wide range in the percentages of paint suitable for consolidation or reprocessing as reported by individual facilities in the LCA survey. With the exception of two southern HHWs, the facilities reporting the lowest percentages of paint suitable for use were located in northern regions. These facilities reported that much of the paint they receive has been frozen during storage in unheated garages and sheds. The facilities reporting the highest percentages of paint suitable for use tended to be large processors that have stringent requirements for the paint that they accept. At least one processor reported that unacceptable paint is returned to the shipper at the shipper’s expense.

Table 18 presents the percentages of paint suitable for each intended management method used in the LCA for the limited and expanded infrastructure scenarios.¹⁸

Table 18. Paint Suitable for Intended Management Method

	Percent of Paint Suitable for Intended Method		Mgmt of Unsuitable Paint
	Limited	Expanded	
Method 1 consumer-based reuse	5%	10%	Method 2
Method 2 consumer-based dry and dispose	80%	80%	Method 6
Method 3 collection-based reuse	20%	20%	Method 6
Method 4 collection-based consolidation	75%	75%	Method 6
Method 5 collection-based reprocessing	50%	60%	Method 6
Method 6 collection-based disposal	100%	100%	

¹⁸ Consensus values agreed to by the government and industry workgroups, as documented in a March 2008 memo from the workgroup to ERG.

APPENDIX A: TRIP ALLOCATION CALCULATIONS

Table A-1. Trip Allocation Calculations for Method 3: Collection-Based Reuse (Limited Infrastructure)
(page 1 of 2)

	Urban (100% of households) (note 1)			Rural (0% of households) (note 1)	
	"Dedicated Facility" (100% of households)		"Co-Located Drop-off" (0% of households)		
	Full HHW facility	Paint only, co-located w/waste	Paint only, stand alone	Co-located w/ recycling center	Not co-located w/ recycling center
Distribution of Population					
<u>Deliveries</u> (note 3a)					
% latex only	28%	81%			
% latex + oil paint	19%	19%			
% latex + HHW, no oil paint	53%	0%			
<u>Co-Deliveries of Waste</u> (note 4)					
% delivering other recyclables/waste	58%	58%			
% not delivering other recyclables/waste	42%	42%			
<u>Trip-Chaining</u> (note 5)					
% single-purpose trip	50%	50%			
% multi-purpose trip	50%	50%			
Allocations					
<u>Deliveries</u> (note 3b)					
% latex + no HHW	100%	100%			
% latex + oil paint	0%	0%			
% latex + HHW, no oil paint	17%	17%			
<u>Co-Deliveries of Waste</u> (note 6)					
% delivering other recyclables/waste	22%	22%			
% not delivering other recyclables/waste	100%	100%			
<u>Trip-Chaining</u> (note 5)					
% single-purpose trip	100%	100%			
% multi-purpose trip	50%	50%			

Table A-1. Trip Allocation Calculations for Method 3: Collection-Based Reuse (Limited Infrastructure)
(page 2 of 2)

Calculation of Allocation Factors

(latex only)x(recyc/waste)x(single purpose)	1.8%	5.2%	0.0%	0.0%	0.0%	0.0%	0.0%
(latex only)x(recyc/waste)x(multi purpose)	0.9%	2.6%	0.0%	0.0%	0.0%	0.0%	0.0%
(latex only)x(no recyc/waste)x(single purpose)	5.9%	17.0%	0.0%	0.0%	0.0%	0.0%	0.0%
(latex only)x(no recyc/waste)x(multi purpose)	2.9%	8.5%	0.0%	0.0%	0.0%	0.0%	0.0%
(latex+oil)x(recyc/waste)x(single purpose)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
(latex+oil)x(recyc/waste)x(multi purpose)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
(latex+oil)x(no recyc/waste)x(single purpose)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
(latex+oil)x(no recyc/waste)x(multi purpose)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
(latex+other HHW)x(recyc/waste)x(single purpose)	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
(latex+other HHW)x(recyc/waste)x(multi purpose)	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
(latex+other HHW)x(no recyc/waste)x(single purpose)	1.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
(latex+other HHW)x(no recyc/waste)x(multi purpose)	0.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Population-Weighted Allocation Factor (by column)	15.2%	33.3%	0.0%	0.0%	0.0%	0.0%	0.0%
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Percent of Population Served (note 2):	90.0%	10.0%	0.0%	0.0%	0.0%	0.0%	0.0%
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Net Allocation Factor	13.6%	3.3%	0.0%	0.0%	0.0%	0.0%	0.0%
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Total
17.0%

Notes

1. For modeling purposes, assume that paint swap only occurs at solid waste/HHW facilities and model these as "urban, dedicated facilities" only.

2. Assumption for modeling purposes.

3a. Distribution of population from a variety of programs in Oregon, Minnesota, and Florida. See Section 2.2 of "Draft Report: Life Cycle Assessment Results for Six 'Pure' Methods for Managing Leftover Paint", 9/1/06.

3b. Allocation factor for latex+oil paint is 0% to latex, consistent with the treatment of latex collection costs as marginal to oil-based paint collection costs. Allocation factor for latex+HHW (no oil paint) represents a simple average of 1) a mass-based allocation factor and 2) a hazard-based allocation factor. The mass-based allocation factor is 33%, based on data from 7 HHW collection events sponsored by OrDEQ in 2005, where 79,172 pounds of latex, 53,141 pounds of oil based paint, and 163,038 of other HHW was collected (33% = 79,172 divided by (79,172 + 163,038)). The hazard-based allocation factor is 1%. It is calculated based on latex paint's hazardousness relative to HHW. Per-pound disposal costs are used as a proxy for the hazardousness of latex vs. HHW. Additional details regarding this approach are available but are not provided here in the interest of time; please contact David Allaway of the OrDEQ at (503) 229-5479.

4. These values assume 16% of US households have no curbside garbage collection (see Section 5.2 of 9/1/06 ERG report; this assumes that the distribution of vehicles at permanent facilities will match the distribution of households nationwide with and without curbside garbage collection). It is assumed that 100% of households without curbside garbage collection will co-deliver latex and garbage/recyclables - since garbage is putrescible and must be removed frequently, it seems unlikely that a household routinely hauling putrescible waste for disposal (lacking at-home garbage collection) would make a special trip to a solid waste facility to deliver latex paint without bringing in other waste. It is assumed that 50% of the remaining 84% of households with curbside garbage collection will also co-deliver latex and garbage/recyclables. It is worth mentioning a 1998 survey of private users of Portland Metro's transfer stations which found that 96% of users also had at-home garbage collection. Clearly, a significant number of households make trips to the transfer stations to drop off wastes (typically large, bulky items that won't fit in the curbside container) even if they are served with curbside

5. Assume that 50% of trips to a paint/HHW/waste facility are "dedicated" trips and that the other 50% co-allocate transportation burdens with one other, non-related trip.

6. Portland Metro has estimated the average mass delivered to its transfer station in "small loads" (net weight delivered 240 pounds or less) to be 155 pounds. Assuming that the average household discards their paint once every eight years, then an average delivery of paint will consist of 2.64 gallons (0.33 gallons/year x 8 years), with a mass of 29.6 pounds (2.64 gallons @ 11.2 pounds/gallon), plus packaging. Assuming 34 pounds of paint and packaging, and that latex is included in these "average" loads, then 22% of the mass delivered (34 pounds divided by 155 pounds) would be latex paint (the remainder would be other wastes). Thus, if impacts are allocated on a mass basis, only 22% of the impacts of this "latex + garbage" delivery would be allocated to latex paint, assuming no other destinations and no other materials delivered (no oil based paint or other HHW).

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Table A-2. Trip Allocation Calculations for Methods 4 - 6: Collection Based Recycling and/or Disposal (Limited Infrastructure)
(page 1 of 2)

	Urban (93% of households) (note 1)					Rural (7% of households) (note 1)	
	"Dedicated Facility" (90% of households) (note 2)			"Co-Located Drop-off" (10% of households) (note 2)		Full HHW event	Paint only event
	Full HHW facility	Paint only, co-located w/waste	Paint only, stand alone	Co-located w/ recycling center	Not co-located w/ recycling center		
Distribution of Population							
<u>Deliveries</u> (note 4a)							
% latex only	28%	81%	81%	81%	81%	28%	81%
% latex + oil paint	19%	19%	19%	19%	19%	19%	19%
% latex + HHW, no oil paint	53%	0%	0%	0%	0%	53%	0%
<u>Co-Deliveries of Waste</u> (note 5)							
% delivering other recyclables/waste	55%	55%	0%	55%	0%	0%	0%
% not delivering other recyclables/waste	45%	45%	100%	45%	100%	100%	100%
<u>Trip-Chaining</u> (note 6)							
% single-purpose trip	50%	50%	50%	50%	50%	50%	50%
% multi-purpose trip	50%	50%	50%	50%	50%	50%	50%
Allocations							
<u>Deliveries</u> (note 4b)							
% latex + no HHW	100%	100%	100%	100%	100%	100%	100%
% latex + oil paint	0%	0%	0%	0%	0%	0%	0%
% latex + HHW, no oil paint	17%	17%	17%	17%	17%	17%	17%
<u>Co-Deliveries of Waste</u> (note 7)							
% delivering other recyclables/waste	22%	22%	0%	65%	0%	0%	0%
% not delivering other recyclables/waste	100%	100%	100%	100%	100%	100%	100%
<u>Trip-Chaining</u> (note 6)							
% single-purpose trip	100%	100%	100%	100%	100%	100%	100%
% multi-purpose trip	50%	50%	50%	50%	50%	50%	50%

Table A-2. Trip Allocation Calculations for Methods 4 - 6: Collection Based Recycling and/or Disposal (Limited Infrastructure)
(page 2 of 2)

Calculation of Allocation Factors

(latex only)x(recyc/waste)x(single purpose)	1.7%	4.9%	0.0%	14.5%	0.0%	0.0%	0.0%
(latex only)x(recyc/waste)x(multi purpose)	0.8%	2.5%	0.0%	7.2%	0.0%	0.0%	0.0%
(latex only)x(no recyc/waste)x(single purpose)	6.3%	18.2%	40.5%	18.2%	40.5%	14.0%	40.5%
(latex only)x(no recyc/waste)x(multi purpose)	3.2%	9.1%	20.3%	9.1%	20.3%	7.0%	20.3%
(latex+oil)x(recyc/waste)x(single purpose)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
(latex+oil)x(recyc/waste)x(multi purpose)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
(latex+oil)x(no recyc/waste)x(single purpose)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
(latex+oil)x(no recyc/waste)x(multi purpose)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
(latex+other HHW)x(recyc/waste)x(single purpose)	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
(latex+other HHW)x(recyc/waste)x(multi purpose)	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
(latex+other HHW)x(no recyc/waste)x(single purpose)	2.0%	0.0%	0.0%	0.0%	0.0%	4.5%	0.0%
(latex+other HHW)x(no recyc/waste)x(multi purpose)	1.0%	0.0%	0.0%	0.0%	0.0%	2.2%	0.0%
Population-Weighted Allocation Factor (by column)	15.8%	34.7%	60.8%	49.1%	60.8%	27.7%	60.8%
Percent of U.S. Population Served (note 3):	75.3%	8.4%	0.0%	8.4%	0.9%	5.6%	1.4%
Net Allocation Factor	11.9%	2.9%	0.0%	4.1%	0.6%	1.6%	0.9%

Total
21.9%

Notes

1. 93% and 7% derived from Exhibit 6 of 11/9/06 Infrastructure Report.
2. For LCA/CBA modeling, we assume 90% of urban paint is/will be collected at dedicated facilities and 10% at co-located drop-off facilities, under a limited infrastructure.
3. For LCA/CBA modeling, assume that 90% of paint collected at dedicated facilities is via full HHW facilities, and that the remaining 10% is collected via paint only facilities co-located with solid waste facilities. For LCA/CBA modeling, assume that 90% other urban collections are co-located with recycling facilities, and the remaining 10% of other urban collections are co-located with other facilities (fire stations, retailers, etc.). For LCA/CBA modeling, assume that rural collections under a limited infrastructure are 80% full HHW and 20% paint only.
- 4a. Distribution of population from a variety of programs in Oregon, Minnesota, and Florida. See Section 2.2 of "Draft Report: Life Cycle Assessment Results for Six 'Pure' Methods for Managing Leftover Paint", 9/1/06.
- 4b. Allocation factor for latex+oil paint is 0% to latex, consistent with the treatment of latex collection costs as marginal to oil-based paint collection costs. Allocation factor for latex+HHW (no oil paint) represents a simple average of 1) a mass-based allocation factor and 2) a hazard-based allocation factor. The mass-based allocation factor is 33%, based on data from 7 HHW collection events sponsored by OrDEQ in 2005, where 79,172 pounds of latex, 53,141 pounds of oil based paint, and 163,038 of other HHW was collected ($33\% = 79,172 \text{ divided by } (79,172 + 163,038)$). The hazard-based allocation factor is 1%. It is calculated based on latex paint's hazardousness relative to HHW. Per-pound disposal costs are used as a proxy for the hazardousness of latex vs. HHW. Additional details regarding this approach are available but are not provided here in the interest of time; please contact David Allaway of the OrDEQ at (503) 229-5479.
5. These values assume that no rural residents have curbside garbage collection; therefore of the 16% of US households without curbside garbage collection, rural (see note 1) contribute 7% and urban contribute 9% (the 16% assumption is explained in note #4 of "Limited Infrastructure - Method 3"). Thus, among the 93% "urban residents", 10% (9%/93%) lack curbside service while 90% ((93% - 9%)/93%) have curbside service. Rural residents are served by HHW/paint events only, and thus have no opportunity to co-deliver other wastes. For urban residents, 55% co-deliver other recyclables/wastes, assuming that 100% of the 10% of urban residents without curbside will co-deliver latex and garbage/recyclables, and 50% of the 90% of urban residents with curbside will co-deliver latex and garbage/recyclables. Please refer to Note #4 for "Limited Infrastructure - Method 3" for additional details on these assumptions.
6. Assume that 50% of trips to a paint/HHW/waste facility are "dedicated" trips and that the other 50% co-allocate transportation burdens with one other, non-related trip.
7. For derivation of the 22% for co-delivery of wastes to HHW and paint-only dedicated facilities, please refer to Note #6 for "Limited Infrastructure - Method 3". The 65% value for co-located drop-off at recycling center is derived from an identical methodology, but assumes that without garbage (recycling only), the average delivery is 2/3 less (52 pounds instead of 155 pounds). 34 pounds (paint) equates to 65% of 52 pounds, so paint is assigned 65% of the allocation burden.

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4/22/2008

Table A-3. Trip Allocation Calculations for Method 3: Collection-Based Reuse (Expanded Infrastructure)
(page 1 of 2)

	Urban (100% of households) (note 1)			Rural (0% of households) (note 1)	
	"Dedicated Facility" (100% of households)			"Co-Located Drop-off" (0% of households)	
	Full HHW facility	Paint only, co-located w/waste	Paint only, stand alone	Co-located w/ recycling center	Not co-located w/ recycling center
Distribution of Population					
<u>Deliveries</u> (note 3a)					
% latex only	28%	81%	81%		
% latex + oil paint	19%	19%	19%		
% latex + HHW, no oil paint	53%	0%	0%		
<u>Co-Deliveries of Waste</u> (note 4)					
% delivering other recyclables/waste	58%	58%	0%		
% not delivering other recyclables/waste	42%	42%	100%		
<u>Trip-Chaining</u> (note 5)					
% single-purpose trip	50%	50%	50%		
% multi-purpose trip	50%	50%	50%		
Allocations					
<u>Deliveries</u> (note 3b)					
% latex + no HHW	100%	100%	100%		
% latex + oil paint	0%	0%	0%		
% latex + HHW, no oil paint	17%	17%	17%		
<u>Co-Deliveries of Waste</u> (note 6)					
% delivering other recyclables/waste	17%	17%	0%		
% not delivering other recyclables/waste	100%	100%	100%		
<u>Trip-Chaining</u> (note 5)					
% single-purpose trip	100%	100%	100%		
% multi-purpose trip	50%	50%	50%		

Table A-3. Trip Allocation Calculations for Method 3: Collection-Based Reuse (Expanded Infrastructure)
(page 2 of 2)

Calculation of Allocation Factors

(latex only)x(recyc/waste)x(single purpose)	1.4%	4.0%	0.0%	0.0%	0.0%	0.0%	0.0%
(latex only)x(recyc/waste)x(multi purpose)	0.7%	2.0%	0.0%	0.0%	0.0%	0.0%	0.0%
(latex only)x(no recyc/waste)x(single purpose)	5.9%	17.0%	40.5%	0.0%	0.0%	0.0%	0.0%
(latex only)x(no recyc/waste)x(multi purpose)	2.9%	8.5%	20.3%	0.0%	0.0%	0.0%	0.0%
(latex+oil)x(recyc/waste)x(single purpose)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
(latex+oil)x(recyc/waste)x(multi purpose)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
(latex+oil)x(no recyc/waste)x(single purpose)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
(latex+oil)x(no recyc/waste)x(multi purpose)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
(latex+other HHW)x(recyc/waste)x(single purpose)	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
(latex+other HHW)x(recyc/waste)x(multi purpose)	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
(latex+other HHW)x(no recyc/waste)x(single purpose)	1.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
(latex+other HHW)x(no recyc/waste)x(multi purpose)	0.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Population-Weighted Allocation Factor (by column)	14.4%	31.5%	60.8%	0.0%	0.0%	0.0%	0.0%
Percent of Population Served (note 2):	50.0%	40.0%	10.0%	0.0%	0.0%	0.0%	0.0%
Net Allocation Factor	7.2%	12.6%	6.1%	0.0%	0.0%	0.0%	0.0%

Total
25.9%

Notes

1. For modeling purposes, assume that paint swap only occurs at solid waste/HHW facilities and model these as "urban, dedicated facilities" only.
2. The Infrastructure Report is silent on how many dedicated facilities will be full HHW facilities vs. paint-only facilities co-located with solid waste facilities vs. paint-only facilities that stand alone; for modeling purposes we assume 50%/40%/10%.
- 3a. Distribution of population from a variety of programs in Oregon, Minnesota, and Florida. See Section 2.2 of "Draft Report: Life Cycle Assessment Results for Six 'Pure' Methods for Managing Leftover Paint", 9/1/06.
- 3b. Allocation factor for latex+oil paint is 0% to latex, consistent with the treatment of latex collection costs as marginal to oil-based paint collection costs. Allocation factor for latex+HHW (no oil paint) represents a simple average of 1) a mass-based allocation factor and 2) a hazard-based allocation factor. The mass-based allocation factor is 33%, based on data from 7 HHW collection events sponsored by OrDEQ in 2005, where 79,172 pounds of latex, 53,141 pounds of oil based paint, and 163,038 of other HHW was collected (33% = 79,172 divided by (79,172 + 163,038)). The hazard-based allocation factor is 1%. It is calculated based on latex paint's hazardousness relative to HHW. Per-pound disposal costs are used as a proxy for the hazardousness of latex vs. HHW. Additional details regarding this approach are available but are not provided here in the interest of time; please contact David Allaway of the OrDEQ at (503) 229-5479.
4. These values assume 16% of US households have no curbside garbage collection (see Section 5.2 of 9/1/06 ERG report; this assumes that the distribution of vehicles at permanent facilities will match the distribution of households nationwide with and without curbside garbage collection). It is assumed that 100% of households without curbside garbage collection will co-deliver latex and garbage/recyclables - since garbage is putrescible and must be removed frequently, it seems unlikely that a household routinely hauling putrescible waste for disposal (lacking at-home garbage collection) would make a special trip to a solid waste facility to deliver latex paint without bringing in other waste. It is assumed that 50% of the remaining 84% of households with curbside garbage collection will also co-deliver latex and garbage/recyclables. It is worth mentioning a 1998 survey of private users of Portland Metro's transfer stations which found that 96% of users also had at-home garbage collection. Clearly, a significant number of households make trips to the transfer stations to drop off wastes (typically large, bulky items that won't fit in the curbside container) even if they are served with curbside service.
5. Assume that 50% of trips to a paint/HHW/waste facility are "dedicated" trips and that the other 50% co-allocate transportation burdens with one other, non-related trip.
6. Portland Metro has estimated the average mass delivered to its transfer station in "small loads" (net weight delivered 240 pounds or less) to be 155 pounds. Assuming that the average household discards their paint once every six years, then an average delivery of paint will consist of 1.98 gallons (0.33 gallons/year x 6 years), with a mass of 22.2 pounds (1.98 gallons @ 11.2 pounds/gallon), plus packaging. Assuming 26 pounds of paint and packaging, and that latex is included in these "average" loads, then 17% of the mass delivered (26 pounds divided by 155 pounds) would be latex paint (the remainder would be other wastes). Thus, if impacts are allocated on a mass basis, only 17% of the impacts of this "latex + garbage" delivery would be allocated to latex paint, assuming no other destinations and no other materials delivered (no oil based paint or other HHW).

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4/22/2008

Table A-4. Trip Allocation Calculations for Methods 4 - 6: Collection Based Recycling and/or Disposal (Expanded Infrastructure)
(page 1 of 2)

	Urban (93% of households) (note 1)					Rural (7% of households) (note 1)	
	"Dedicated Facility" (52.6% of households) (note 2)			"Co-Located Drop-off" (47.4% of households) (note 2)		Full HHW event	Paint only event
	Full HHW facility	Paint only, co-located w/waste	Paint only, stand alone	Co-located w/ recycling center	Not co-located w/ recycling center		
Distribution of Population							
<u>Deliveries</u> (note 4a)							
% latex only	28%	81%	81%	81%	81%	28%	81%
% latex + oil paint	19%	19%	19%	19%	19%	19%	19%
% latex + HHW, no oil paint	53%	0%	0%	0%	0%	53%	0%
<u>Co-Deliveries of Waste</u> (note 5)							
% delivering other recyclables/waste	55%	55%	0%	55%	0%	0%	0%
% not delivering other recyclables/waste	45%	45%	100%	45%	100%	100%	100%
<u>Trip-Chaining</u> (note 6)							
% single-purpose trip	50%	50%	50%	50%	50%	50%	50%
% multi-purpose trip	50%	50%	50%	50%	50%	50%	50%
Allocations							
<u>Deliveries</u> (note 4b)							
% latex + no HHW	100%	100%	100%	100%	100%	100%	100%
% latex + oil paint	0%	0%	0%	0%	0%	0%	0%
% latex + HHW, no oil paint	17%	17%	17%	17%	17%	17%	17%
<u>Co-Deliveries of Waste</u> (note 7)							
% delivering other recyclables/waste	17%	17%	0%	50%	0%	0%	0%
% not delivering other recyclables/waste	100%	100%	100%	100%	100%	100%	100%
<u>Trip-Chaining</u> (note 6)							
% single-purpose trip	100%	100%	100%	100%	100%	100%	100%
% multi-purpose trip	50%	50%	50%	50%	50%	50%	50%

Table A-4. Trip Allocation Calculations for Methods 4 - 6: Collection Based Recycling and/or Disposal (Expanded Infrastructure)
(page 2 of 2)

Calculation of Allocation Factors

(latex only)x(recyc/waste)x(single purpose)	1.3%	3.8%	0.0%	11.1%	0.0%	0.0%	0.0%
(latex only)x(recyc/waste)x(multi purpose)	0.7%	1.9%	0.0%	5.6%	0.0%	0.0%	0.0%
(latex only)x(no recyc/waste)x(single purpose)	6.3%	18.2%	40.5%	18.2%	40.5%	14.0%	40.5%
(latex only)x(no recyc/waste)x(multi purpose)	3.2%	9.1%	20.3%	9.1%	20.3%	7.0%	20.3%
(latex+oil)x(recyc/waste)x(single purpose)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
(latex+oil)x(recyc/waste)x(multi purpose)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
(latex+oil)x(no recyc/waste)x(single purpose)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
(latex+oil)x(no recyc/waste)x(multi purpose)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
(latex+other HHW)x(recyc/waste)x(single purpose)	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
(latex+other HHW)x(recyc/waste)x(multi purpose)	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
(latex+other HHW)x(no recyc/waste)x(single purpose)	2.0%	0.0%	0.0%	0.0%	0.0%	4.5%	0.0%
(latex+other HHW)x(no recyc/waste)x(multi purpose)	1.0%	0.0%	0.0%	0.0%	0.0%	2.2%	0.0%

Population-Weighted Allocation Factor (by column)	15.0%	33.0%	60.8%	44.0%	60.8%	27.7%	60.8%
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Percent of U.S. Population Served (note 3):	24.5%	19.6%	4.9%	33.1%	11.0%	3.5%	3.5%
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Net Allocation Factor	3.7%	6.5%	3.0%	14.6%	6.7%	1.0%	2.1%
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Total
37.5%

Notes

- 93% and 7% derived from Exhibit 6 of 11/9/06 Infrastructure Report.
- Exhibit 21 of the 11/9/06 Infrastructure Report states that for urban residents, 50% of collection is through "dedicated facilities", 45% is through "co-located drop-off" and 5% is through curbside. For LCA/CBA modeling, we assume 52.6% dedicated facilities and 47.4% co-located drop-off.
- The Infrastructure Report is silent on how many dedicated facilities will be full HHW facilities vs. paint-only facilities co-located with solid waste facilities vs. paint-only facilities that stand alone; for modeling purposes we assume 50%/40%/10%. The Infrastructure Report is silent on how many co-located facilities will be co-located with recycling facilities vs. other facilities (fire stations, retailers, etc.); for modeling purposes we assume 75%/25%. The Infrastructure Report is silent on what percentage of rural collection events will be full HHW vs. paint only; for modeling purposes we assume 50%/50%.
- Distribution of population from a variety of programs in Oregon, Minnesota, and Florida. See Section 2.2 of "Draft Report: Life Cycle Assessment Results for Six 'Pure' Methods for Managing Leftover Paint", 9/1/06.
- Allocation factor for latex+oil paint is 0% to latex, consistent with the treatment of latex collection costs as marginal to oil-based paint collection costs. Allocation factor for latex+HHW (no oil paint) represents a simple average of 1) a mass-based allocation factor and 2) a hazard-based allocation factor. The mass-based allocation factor is 33%, based on data from 7 HHW collection events sponsored by OrDEQ in 2005, where 79,172 pounds of latex, 53,141 pounds of oil based paint, and 163,038 of other HHW was collected (33% = 79,172 divided by (79,172 + 163,038)). The hazard-based allocation factor is 1%. It is calculated based on latex paint's hazardousness relative to HHW. Per-pound disposal costs are used as a proxy for the hazardousness of latex vs. HHW. Additional details regarding this approach are available but are not provided here in the interest of time; please contact David Allaway of the OrDEQ at (503) 229-5479.
- These values assume that no rural residents have curbside garbage collection; therefore of the 16% of US households without curbside garbage collection, rural (see note 1) contribute 7% and urban contribute 9% (the 16% assumption is explained in note #4 of "Limited Infrastructure - Method 3"). Thus, among the 93% "urban residents", 10% (9%/93%) lack curbside service while 90% ((93% - 9%)/93%) have curbside service. Rural residents are served by HHW/paint events only, and thus have no opportunity to co-deliver other wastes. For urban residents, 55% co-deliver other recyclables/wastes, assuming that 100% of the 10% of urban residents without curbside will co-deliver latex and garbage/recyclables, and 50% of the 90% of urban residents with curbside will co-deliver latex and garbage/recyclables. Please refer to Note #4 for "Limited Infrastructure - Method 3" for additional details on these assumptions.
- Assume that 50% of trips to a paint/HHW/waste facility are "dedicated" trips and that the other 50% co-allocate transportation burdens with one other, non-related trip.
- For derivation of the 17% for co-delivery of wastes to HHW and paint-only dedicated facilities, please refer to Note #6 for "Expanded Infrastructure - Method 3". The 50% value for co-located drop-off at recycling center is derived from an identical methodology, but assumes that without garbage (recycling only), the average delivery is 2/3 less (52 pounds instead of 155 pounds). 26 pounds (paint) equates to 50% of 52 pounds, so paint is assigned 50% of the allocation burden.

David Allaway, Oregon DEQ
4/22/2008

**RESULTS TABLES FOR PURE METHODS – LIMITED INFRASTRUCTURE
WITH DETAIL BY LIFE CYCLE STAGE**

**Individual tables for
0% Displacement, 25% Export
50% Displacement, 25% Export
100% Displacement, 25% Export**

Results for Pure Methods under Limited Infrastructure for 0% displacement (recycled paint does not replace purchase of virgin paint)

"Transport & use recycled paint" based on 75% of recycled paint going to domestic users and 25% to export markets.

Results per 1000 Gallons of Leftover Paint Managed	Global Warming Potential kg CO2 eq	Acidification Potential kg H+ mol eq	HH - Carcinogenics Potential kg benzene eq	HH - Non carcinogenics Potential kg toluene eq	Respiratory Effects Potential kg PM2.5 eq	Eutrophication Potential kg N eq	Ozone Depletion Potential kg CFC-11 eq	Ecotoxicity Potential kg 2,4-D eq	Smog Formation Potential kg NOx eq	Total Water Use liters	Fossil Fuel Depletion Surplus MJ	Total Energy MJ	Total Fuel Energy MJ	Mineral Extraction Surplus MJ	Total Unspecified VOCs kg
PM1-Lim															
Collection & transport to sorting/aggreg	930	146	0.50	7,131	0.43	0.12	2.9E-09	237	2.14	0	1,730	13,158	1,626	0	0
Sorting															
Transp from sorting/aggreg to processor															
Processing & packaging															
Waste mgmt (includes transp & WTE)	107	-20.2	1.02	1,133	-0.093	-1.4E-04	4.8E-07	-0.32	8.6E-04	50.8	-23.5	-705	-704	2.0E-07	0
Empty can recycling credit															
Transport & use recycled paint	0	0	0	0	0	0	0	0	443	0	0	0	0	0	568
Virgin paint credit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1,037	125	1.53	8,264	0.34	0.12	4.8E-07	236	446	50.8	1,707	12,453	922	2.0E-07	568
PM2-Lim															
Collection & transport to sorting/aggreg															
Sorting															
Transp from sorting/aggreg to processor															
Processing & packaging	140	40.4	0.092	978	0.51	0.0043	1.5E-08	343	246	119	132	1,870	1,867	0.047	315
Waste mgmt (includes transp & WTE)	169	-15.8	1.04	1,551	-0.072	0.0016	4.8E-07	11.2	0.0064	50.8	85.2	100	101	2.0E-07	0
Empty can recycling credit															
Transport & use recycled paint															
Virgin paint credit															
Total	310	24.5	1.14	2,529	0.44	0.0059	4.9E-07	355	246	169	217	1,970	1,969	0.047	315
PM3-Lim															
Collection & transport to sorting/aggreg	636	96.0	0.34	4,831	0.29	0.079	2.0E-09	159	1.38	0	1,177	8,937	1,552	0	0
Sorting	308	102	0.20	721	0.47	0.0036	2.1E-08	14.3	0.012	832	271	4,181	4,177	1.3E-05	0
Transp from sorting/aggreg to processor															
Processing & packaging															
Waste mgmt (includes transp & WTE)	106	-20.3	1.02	1,129	-0.093	-1.5E-04	4.8E-07	-0.44	7.6E-04	50.8	-24.6	-714	-713	2.0E-07	0
Empty can recycling credit															
Transport & use recycled paint	1,726	270	0.93	13,229	0.80	0.23	5.4E-09	439	447	0	3,210	24,412	3,017	0	568
Virgin paint credit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	2,776	448	2.49	19,910	1.46	0.31	5.0E-07	611	449	883	4,633	36,815	8,032	1.3E-05	568
PM4-Lim															
Collection & transport to sorting/aggreg	834	127	0.44	6,354	0.38	0.11	2.6E-09	209	1.84	0	1,546	11,744	1,844	0	0
Sorting	174	57.7	0.11	423	0.27	0.0021	1.1E-08	8.34	0.010	1,695	159	2,383	2,381	4.4E-06	0
Transp from sorting/aggreg to processor	207	14.5	0.065	1,374	0.068	0.0056	6.0E-10	38.0	0.015	0	358	2,647	2,647	0	0
Processing & packaging	1,204	846	0.92	11,893	3.98	0.054	5.4E-06	220	6.48	822	4,236	34,433	16,863	0.039	6.80
Waste mgmt (includes transp & WTE)	116	-22.4	1.13	1,238	-0.10	-1.9E-04	5.3E-07	-0.62	7.7E-04	55.9	-28.4	-796	-795	2.2E-07	0
Empty can recycling credit	-410	-113	-0.23	-4,990	-0.53	-0.051	-4.1E-11	-61.6	-0.036	-1,232	-673	-7,721	-6,152	-2.69	0
Transport & use recycled paint	1,698	232	0.83	12,620	0.73	0.18	5.2E-09	404	453	0	3,108	23,497	7,220	0	576
Virgin paint credit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	3,824	1,142	3.27	28,911	4.79	0.30	6.0E-06	818	461	1,341	8,705	66,187	24,008	-2.65	583
PM5-Lim															
Collection & transport to sorting/aggreg	836	128	0.44	6,371	0.38	0.11	2.6E-09	210	1.85	0	1,550	11,775	1,844	0	0
Sorting	105	34.9	0.066	269	0.16	0.0013	6.7E-09	5.29	0.010	2,140	101	1,456	1,455	0	0
Transp from sorting/aggreg to processor	192	13.4	0.060	1,271	0.063	0.0052	5.6E-10	35.2	0.014	0	331	2,450	2,450	0	0
Processing & packaging	5,797	2,620	4.81	81,048	12.3	0.26	1.3E-04	1,349	144	12,968	18,813	143,162	74,536	1.23	153
Waste mgmt (includes transp & WTE)	96.1	-18.2	0.92	1,019	-0.084	-1.3E-04	4.3E-07	-0.32	7.0E-04	45.7	-21.5	-637	-637	1.8E-07	0
Empty can recycling credit	-444	-118	-0.25	-5,384	-0.55	-0.056	-4.1E-11	-66.0	-0.038	-1,346	-706	-8,229	-6,661	-2.94	0
Transport & use recycled paint	2,335	312	1.12	17,258	1.00	0.24	7.2E-09	550	591	0	4,261	32,184	10,941	0	752
Virgin paint credit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	8,918	2,972	7.18	101,852	13.2	0.56	1.3E-04	2,083	737	13,808	24,328	182,161	83,930	-1.71	905
PM6-Lim															
Collection & transport to sorting/aggreg	636	96.0	0.34	4,831	0.29	0.079	2.0E-09	159	1.38	0	1,177	8,937	1,552	0	0
Sorting															
Transp from sorting/aggreg to processor															
Processing & packaging	182	42.0	0.16	1,378	0.20	0.15	3.8E-09	26.1	0.023	433	247	14,326	4,211	0.47	0
Waste mgmt (includes transp & WTE)	931	-73.8	6.33	7,941	-0.34	0.0037	2.9E-06	25.9	171	308	157	-1,065	-1,061	1.2E-06	219
Empty can recycling credit	-104	-15.0	-0.054	-1,211	-0.070	-0.014	0	-13.6	-0.0084	-352	-103	-1,564	-1,564	-0.77	0
Transport & use recycled paint															
Virgin paint credit															
Total	1,645	49.3	6.78	12,939	0.082	0.22	2.9E-06	197	173	389	1,478	20,634	3,137	-0.29	219

Results for Pure Methods under Limited Infrastructure for 50% displacement (50% of recycled paint replaces purchase of equivalent amount of virgin paint)

"Transport & use recycled paint" based on 75% of recycled paint going to domestic users and 25% to export markets.

Results per 1000 Gallons of Leftover Paint Managed	Global Warming Potential kg CO2 eq	Acidification Potential kg H+ mol eq	HH - Carcinogenics Potential kg benzene eq	HH - Non carcinogenics Potential kg toluene eq	Respiratory Effects Potential kg PM2.5 eq	Eutrophication Potential kg N eq	Ozone Depletion Potential kg CFC-11 eq	Ecotoxicity Potential kg 2,4-D eq	Smog Formation Potential kg NOx eq	Total Water Use liters	Fossil Fuel Depletion Surplus MJ	Total Energy MJ	Total Fuel Energy MJ	Mineral Extraction Surplus MJ	Total Unspecified VOCs kg
PM1-Lim															
Collection & transport to sorting/aggreg	930	146	0.50	7,131	0.43	0.12	2.9E-09	237	2.14	0	1,730	13,158	1,626	0	0
Sorting															
Transp from sorting/aggreg to processor															
Processing & packaging															
Waste mgmt (includes transp & WTE)	107	-20.2	1.02	1,133	-0.093	-1.4E-04	4.8E-07	-0.32	8.6E-04	50.8	-23.5	-705	-704	2.0E-07	0
Empty can recycling credit															
Transport & use recycled paint	0	0	0	0	0	0	0	0	443	0	0	0	0	0	568
Virgin paint credit	-3,138	-999	-2.44	-40,019	-4.64	-0.13	-6.5E-05	-683	-222	-14,534	-8,737	-68,710	-48,535	-1.33	-237
Total	-2,101	-874	-0.92	-31,755	-4.31	-0.0076	-6.5E-05	-446	223	-14,483	-7,030	-56,257	-47,613	-1.33	331
PM2-Lim															
Collection & transport to sorting/aggreg															
Sorting															
Transp from sorting/aggreg to processor															
Processing & packaging	140	40.4	0.092	978	0.51	0.0043	1.5E-08	343	246	119	132	1,870	1,867	0.047	315
Waste mgmt (includes transp & WTE)	169	-15.8	1.04	1,551	-0.072	0.0016	4.8E-07	11.2	0.0064	50.8	85.2	100	101	2.0E-07	0
Empty can recycling credit															
Transport & use recycled paint															
Virgin paint credit															
Total	310	24.5	1.14	2,529	0.44	0.0059	4.9E-07	355	246	169	217	1,970	1,969	0.047	315
PM3-Lim															
Collection & transport to sorting/aggreg	636	96.0	0.34	4,831	0.29	0.079	2.0E-09	159	1.38	0	1,177	8,937	1,552	0	0
Sorting	308	102	0.20	721	0.47	0.0036	2.1E-08	14.3	0.012	832	271	4,181	4,177	1.3E-05	0
Transp from sorting/aggreg to processor															
Processing & packaging															
Waste mgmt (includes transp & WTE)	106	-20.3	1.02	1,129	-0.093	-1.5E-04	4.8E-07	-0.44	7.6E-04	50.8	-24.6	-714	-713	2.0E-07	0
Empty can recycling credit															
Transport & use recycled paint	863	135	0.47	6,615	0.40	0.11	2.7E-09	219	445	0	1,605	12,206	1,508	0	568
Virgin paint credit	-3,138	-999	-2.44	-40,019	-4.64	-0.13	-6.5E-05	-683	-222	-14,534	-8,737	-68,710	-48,535	-1.33	-237
Total	-1,225	-686	-0.42	-26,723	-3.58	0.066	-6.5E-05	-291	225	-13,651	-5,709	-44,101	-42,010	-1.33	331
PM4-Lim															
Collection & transport to sorting/aggreg	834	127	0.44	6,354	0.38	0.11	2.6E-09	209	1.84	0	1,546	11,744	1,844	0	0
Sorting	174	57.7	0.11	423	0.27	0.0021	1.1E-08	8.34	0.010	1,695	159	2,383	2,381	4.4E-06	0
Transp from sorting/aggreg to processor	207	14.5	0.065	1,374	0.068	0.0056	6.0E-10	38.0	0.015	0	358	2,647	2,647	0	0
Processing & packaging	1,204	846	0.92	11,893	3.98	0.054	5.4E-06	220	6.48	822	4,236	34,433	16,863	0.039	6.80
Waste mgmt (includes transp & WTE)	116	-22.4	1.13	1,238	-0.10	-1.9E-04	5.3E-07	-0.62	7.7E-04	55.9	-28.4	-796	-795	2.2E-07	0
Empty can recycling credit	-410	-113	-0.23	-4,990	-0.53	-0.051	-4.1E-11	-61.6	-0.036	-1,232	-673	-7,721	-6,152	-2.69	0
Transport & use recycled paint	1,041	130	0.48	7,588	0.43	0.096	3.2E-09	238	451	0	1,886	14,211	6,072	0	576
Virgin paint credit	-3,183	-1,013	-2.48	-40,594	-4.71	-0.13	-6.6E-05	-692	-225	-14,743	-8,863	-69,698	-49,232	-1.35	-240
Total	-15.4	26.2	0.43	-16,715	-0.22	0.080	-6.0E-05	-41.0	234	-13,402	-1,379	-12,797	-26,372	-4.00	343
PMS-Lim															
Collection & transport to sorting/aggreg	836	128	0.44	6,371	0.38	0.11	2.6E-09	210	1.85	0	1,550	11,775	1,844	0	0
Sorting	105	34.9	0.066	269	0.16	0.0013	6.7E-09	5.29	0.010	2,140	101	1,456	1,455	0	0
Transp from sorting/aggreg to processor	192	13.4	0.060	1,271	0.063	0.0052	5.6E-10	35.2	0.014	0	331	2,450	2,450	0	0
Processing & packaging	5,797	2,620	4.81	81,048	12.3	0.26	1.3E-04	1,349	144	12,968	18,813	143,162	74,536	1.23	153
Waste mgmt (includes transp & WTE)	96.1	-18.2	0.92	1,019	-0.084	-1.3E-04	4.3E-07	-0.32	7.0E-04	45.7	-21.5	-637	-637	1.8E-07	0
Empty can recycling credit	-444	-118	-0.25	-5,384	-0.55	-0.056	-4.1E-11	-66.0	-0.038	-1,346	-706	-8,229	-6,661	-2.94	0
Transport & use recycled paint	1,478	178	0.66	10,691	0.60	0.13	4.5E-09	332	589	0	2,667	20,065	9,443	0	752
Virgin paint credit	-4,154	-1,323	-3.24	-52,977	-6.15	-0.17	-8.6E-05	-904	-294	-19,240	-11,567	-90,959	-64,251	-1.76	-313
Total	3,907	1,515	3.48	42,307	6.68	0.28	4.0E-05	961	441	-5,432	11,168	79,083	18,182	-3.47	592
PM6-Lim															
Collection & transport to sorting/aggreg	636	96.0	0.34	4,831	0.29	0.079	2.0E-09	159	1.38	0	1,177	8,937	1,552	0	0
Sorting															
Transp from sorting/aggreg to processor															
Processing & packaging	182	42.0	0.16	1,378	0.20	0.15	3.8E-09	26.1	0.023	433	247	14,326	4,211	0.47	0
Waste mgmt (includes transp & WTE)	931	-73.8	6.33	7,941	-0.34	0.0037	2.9E-06	25.9	171	308	157	-1,065	-1,061	1.2E-06	219
Empty can recycling credit	-104	-15.0	-0.054	-1,211	-0.070	-0.014	0	-13.6	-0.0084	-352	-103	-1,564	-1,564	-0.77	0
Transport & use recycled paint															
Virgin paint credit															
Total	1,645	49.3	6.78	12,939	0.082	0.22	2.9E-06	197	173	389	1,478	20,634	3,137	-0.29	219

Results for Pure Methods under Limited Infrastructure for 100% displacement (100% of recycled paint replaces purchase of equivalent amount of virgin paint)

"Transport & use recycled paint" based on 75% of recycled paint going to domestic users and 25% to export markets.

Results per 1000 Gallons of Leftover Paint Managed	Global Warming Potential kg CO2 eq	Acidification Potential kg H+ mol eq	HH - Carcinogenics Potential kg benzene eq	HH - Non carcinogenics Potential kg toluene eq	Respiratory Effects Potential kg PM2.5 eq	Eutrophication Potential kg N eq	Ozone Depletion Potential kg CFC-11 eq	Ecotoxicity Potential kg 2,4-D eq	Smog Formation Potential kg NOx eq	Total Water Use liters	Fossil Fuel Depletion Surplus MJ	Total Energy MJ	Total Fuel Energy MJ	Mineral Extraction Surplus MJ	Total Unspecified VOCs kg
PM1-Lim															
Collection & transport to sorting/aggreg	930	146	0.50	7,131	0.43	0.12	2.9E-09	237	2.14	0	1,730	13,158	1,626	0	0
Sorting															
Transp from sorting/aggreg to processor															
Processing & packaging															
Waste mgmt (includes transp & WTE)	107	-20.2	1.02	1,133	-0.093	-1.4E-04	4.8E-07	-0.32	8.6E-04	50.8	-23.5	-705	-704	2.0E-07	0
Empty can recycling credit	0	0	0	0	0	0	0	0	443	0	0	0	0	0	568
Transport & use recycled paint	-6,276	-1,998	-4.89	-80,038	-9.29	-0.26	-1.3E-04	-1,365	-445	-29,067	-17,475	-137,420	-97,069	-2.66	-473
Virgin paint credit															
Total	-5,239	-1,873	-3.36	-71,774	-8.95	-0.14	-1.3E-04	-1,129	1.02	-29,017	-15,768	-124,968	-96,148	-2.66	94.9
PM2-Lim															
Collection & transport to sorting/aggreg															
Sorting															
Transp from sorting/aggreg to processor															
Processing & packaging	140	40.4	0.092	978	0.51	0.0043	1.5E-08	343	246	119	132	1,870	1,867	0.047	315
Waste mgmt (includes transp & WTE)	169	-15.8	1.04	1,551	-0.072	0.0016	4.8E-07	11.2	0.0064	50.8	85.2	100	101	2.0E-07	0
Empty can recycling credit															
Transport & use recycled paint															
Virgin paint credit															
Total	310	24.5	1.14	2,529	0.44	0.0059	4.9E-07	355	246	169	217	1,970	1,969	0.047	315
PM3-Lim															
Collection & transport to sorting/aggreg	636	96.0	0.34	4,831	0.29	0.079	2.0E-09	159	1.38	0	1,177	8,937	1,552	0	0
Sorting	308	102	0.20	721	0.47	0.0036	2.1E-08	14.3	0.012	832	271	4,181	4,177	1.3E-05	0
Transp from sorting/aggreg to processor															
Processing & packaging															
Waste mgmt (includes transp & WTE)	106	-20.3	1.02	1,129	-0.093	-1.5E-04	4.8E-07	-0.44	7.6E-04	50.8	-24.6	-714	-713	2.0E-07	0
Empty can recycling credit	0	0	0	0	0	0	0	0	443	0	0	0	0	0	568
Transport & use recycled paint	-6,276	-1,998	-4.89	-80,038	-9.29	-0.26	-1.3E-04	-1,365	-445	-29,067	-17,475	-137,420	-97,069	-2.66	-473
Virgin paint credit															
Total	-5,226	-1,820	-3.33	-73,356	-8.62	-0.18	-1.3E-04	-1,192	0.26	-28,185	-16,052	-125,017	-92,053	-2.66	94.9
PM4-Lim															
Collection & transport to sorting/aggreg	834	127	0.44	6,354	0.38	0.11	2.6E-09	209	1.84	0	1,546	11,744	1,844	0	0
Sorting	174	57.7	0.11	423	0.27	0.0021	1.1E-08	8.34	0.010	1,695	159	2,383	2,381	4.4E-06	0
Transp from sorting/aggreg to processor	207	14.5	0.065	1,374	0.068	0.0056	6.0E-10	38.0	0.015	0	358	2,647	2,647	0	0
Processing & packaging	1,204	846	0.92	11,893	3.98	0.054	5.4E-06	220	6.48	822	4,236	34,433	16,863	0.039	6.80
Waste mgmt (includes transp & WTE)	116	-22.4	1.13	1,238	-0.10	-1.9E-04	5.3E-07	-0.62	7.7E-04	55.9	-28.4	-796	-795	2.2E-07	0
Empty can recycling credit	-410	-113	-0.23	-4,990	-0.53	-0.051	-4.1E-11	-61.6	-0.036	-1,232	-673	-7,721	-6,152	-2.69	0
Transport & use recycled paint	385	26.9	0.12	2,556	0.13	0.010	1.1E-09	70.7	450	0	665	4,925	4,925	0	576
Virgin paint credit	-6,366	-2,027	-4.96	-81,188	-9.42	-0.26	-1.3E-04	-1,385	-451	-29,485	-17,726	-139,396	-98,464	-2.70	-480
Total	-3,855	-1,090	-2.40	-62,341	-5.23	-0.14	-1.3E-04	-900	7.20	-28,144	-11,463	-91,781	-76,752	-5.35	103
PM5-Lim															
Collection & transport to sorting/aggreg	836	128	0.44	6,371	0.38	0.11	2.6E-09	210	1.85	0	1,550	11,775	1,844	0	0
Sorting	105	34.9	0.066	269	0.16	0.0013	6.7E-09	5.29	0.010	2,140	101	1,456	1,455	0	0
Transp from sorting/aggreg to processor	192	13.4	0.060	1,271	0.063	0.0052	5.6E-10	35.2	0.014	0	331	2,450	2,450	0	0
Processing & packaging	5,797	2,620	4.81	81,048	12.3	0.26	1.3E-04	1,349	144	12,968	18,813	143,162	74,536	1.23	153
Waste mgmt (includes transp & WTE)	96.1	-18.2	0.92	1,019	-0.084	-1.3E-04	4.3E-07	-0.32	7.0E-04	45.7	-21.5	-637	-637	1.8E-07	0
Empty can recycling credit	-444	-118	-0.25	-5,384	-0.55	-0.056	-4.1E-11	-66.0	-0.038	-1,346	-706	-8,229	-6,661	-2.94	0
Transport & use recycled paint	621	43.5	0.19	4,123	0.20	0.017	1.8E-09	114	587	0	1,073	7,946	7,946	0	752
Virgin paint credit	-8,308	-2,645	-6.47	-105,955	-12.3	-0.34	-1.7E-04	-1,807	-588	-38,480	-23,133	-181,919	-128,501	-3.52	-626
Total	-1,104	58.3	-0.22	-17,237	0.14	-0.0072	-4.6E-05	-160	145	-24,672	-1,992	-23,996	-47,567	-5.24	279
PM6-Lim															
Collection & transport to sorting/aggreg	636	96.0	0.34	4,831	0.29	0.079	2.0E-09	159	1.38	0	1,177	8,937	1,552	0	0
Sorting															
Transp from sorting/aggreg to processor															
Processing & packaging	182	42.0	0.16	1,378	0.20	0.15	3.8E-09	26.1	0.023	433	247	14,326	4,211	0.47	0
Waste mgmt (includes transp & WTE)	931	-73.8	6.33	7,941	-0.34	0.0037	2.9E-06	25.9	171	308	157	-1,065	-1,061	1.2E-06	219
Empty can recycling credit	-104	-15.0	-0.054	-1,211	-0.070	-0.014	0	-13.6	-0.0084	-352	-103	-1,564	-1,564	-0.77	0
Transport & use recycled paint															
Virgin paint credit															
Total	1,645	49.3	6.78	12,939	0.082	0.22	2.9E-06	197	173	389	1,478	20,634	3,137	-0.29	219

**RESULTS TABLES FOR PURE METHODS – EXPANDED INFRASTRUCTURE
WITH DETAIL BY LIFE CYCLE STAGE**

**Individual tables for
0% Displacement, 25% Export
50% Displacement, 25% Export
100% Displacement, 25% Export**

Results for Pure Methods under Expanded Infrastructure for 0% displacement (recycled paint does not replace purchase of virgin paint)

"Transport & use recycled paint" based on 75% of recycled paint going to domestic users and 25% to export markets.

Results per 1000 Gallons of Leftover Paint Managed	Global Warming Potential kg CO2 eq	Acidification Potential kg H+ mol eq	HH - Carcinogenics Potential kg benzene eq	HH - Non carcinogenics Potential kg toluene eq	Respiratory Effects Potential kg PM2.5 eq	Eutrophication Potential kg N eq	Ozone Depletion Potential kg CFC-11 eq	Ecotoxicity Potential kg 2,4-D eq	Smog Formation Potential kg NOx eq	Total Water Use liters	Fossil Fuel Depletion Surplus MJ	Total Energy MJ	Total Fuel Energy MJ	Mineral Extraction Surplus MJ	Total Unspecified VOCs kg
PM1-Exp															
Collection & transport to sorting/aggreg	930	146	0.50	7,131	0.43	0.12	2.9E-09	237	2.14	0	1,730	13,158	1,626	0	0
Sorting															
Transp from sorting/aggreg to processor															
Processing & packaging															
Waste mgmt (includes transp & WTE)	107	-20.2	1.02	1,133	-0.093	-1.4E-04	4.8E-07	-0.32	8.6E-04	50.8	-23.5	-705	-704	2.0E-07	0
Empty can recycling credit															
Transport & use recycled paint	0	0	0	0	0	0	0	0	443	0	0	0	0	0	568
Virgin paint credit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1,037	125	1.53	8,264	0.34	0.12	4.8E-07	236	446	50.8	1,707	12,453	922	2.0E-07	568
PM2-Exp															
Collection & transport to sorting/aggreg															
Sorting															
Transp from sorting/aggreg to processor															
Processing & packaging	140	40.4	0.092	978	0.51	0.0043	1.5E-08	343	246	119	132	1,870	1,867	0.047	315
Waste mgmt (includes transp & WTE)	169	-15.8	1.04	1,551	-0.072	0.0016	4.8E-07	11.2	0.0064	50.8	85.2	100	101	2.0E-07	0
Empty can recycling credit															
Transport & use recycled paint															
Virgin paint credit															
Total	310	24.5	1.14	2,529	0.44	0.0059	4.9E-07	355	246	169	217	1,970	1,969	0.047	315
PM3-Exp															
Collection & transport to sorting/aggreg	899	139	0.48	6,867	0.41	0.12	2.8E-09	227	2.02	0	1,669	12,684	1,812	0	0
Sorting	308	102	0.20	721	0.47	0.0036	2.1E-08	14.3	0.012	832	271	4,181	4,177	1.3E-05	0
Transp from sorting/aggreg to processor															
Processing & packaging															
Waste mgmt (includes transp & WTE)	106	-20.3	1.02	1,129	-0.093	-1.5E-04	4.8E-07	-0.44	7.6E-04	50.8	-24.6	-714	-713	2.0E-07	0
Empty can recycling credit															
Transport & use recycled paint	1,726	270	0.93	13,229	0.80	0.23	5.4E-09	439	447	0	3,210	24,412	3,017	0	568
Virgin paint credit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	3,040	491	2.64	21,947	1.59	0.34	5.1E-07	680	449	883	5,125	40,563	8,293	1.3E-05	568
PM4-Exp															
Collection & transport to sorting/aggreg	1,229	183	0.64	9,309	0.55	0.15	3.8E-09	305	2.60	0	2,271	17,236	3,318	0	0
Sorting	212	70.2	0.13	507	0.32	0.0025	1.4E-08	10.0	0.011	1,451	190	2,890	2,888	6.7E-06	0
Transp from sorting/aggreg to processor	177	12.3	0.055	1,170	0.058	0.0048	5.1E-10	32.3	0.012	0	305	2,255	2,255	0	0
Processing & packaging	1,225	852	0.93	11,993	4.01	0.054	5.5E-06	222	6.49	826	4,261	34,740	17,126	0.039	6.80
Waste mgmt (includes transp & WTE)	128	-24.7	1.24	1,359	-0.11	-2.2E-04	5.8E-07	-0.79	8.0E-04	61.5	-32.2	-883	-881	2.4E-07	0
Empty can recycling credit	-391	-110	-0.22	-4,775	-0.52	-0.049	-4.1E-11	-59.2	-0.034	-1,169	-655	-7,443	-5,874	-2.55	0
Transport & use recycled paint	1,698	232	0.83	12,620	0.73	0.18	5.2E-09	404	453	0	3,108	23,497	7,220	0	576
Virgin paint credit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	4,277	1,215	3.62	32,183	5.05	0.34	6.1E-06	914	462	1,170	9,448	72,293	26,050	-2.52	583
PM5-Exp															
Collection & transport to sorting/aggreg	1,229	183	0.64	9,305	0.55	0.15	3.8E-09	305	2.60	0	2,270	17,228	3,309	0	0
Sorting	105	34.9	0.066	269	0.16	0.0013	6.7E-09	5.29	0.010	2,140	101	1,456	1,455	0	0
Transp from sorting/aggreg to processor	177	12.3	0.055	1,169	0.058	0.0048	5.1E-10	32.3	0.012	0	304	2,253	2,253	0	0
Processing & packaging	5,797	2,620	4.81	81,048	12.3	0.26	1.3E-04	1,349	144	12,968	18,813	143,162	74,536	1.23	153
Waste mgmt (includes transp & WTE)	90.8	-18.6	0.92	983	-0.085	-2.7E-04	4.3E-07	-1.30	3.3E-04	45.7	-30.6	-705	-704	1.8E-07	0
Empty can recycling credit	-444	-118	-0.25	-5,384	-0.55	-0.056	-4.1E-11	-66.0	-0.038	-1,346	-706	-8,229	-6,661	-2.94	0
Transport & use recycled paint	2,311	310	1.11	17,100	0.99	0.24	7.1E-09	545	591	0	4,220	31,880	10,637	0	752
Virgin paint credit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	9,266	3,024	7.36	104,491	13.4	0.60	1.3E-04	2,169	738	13,808	24,972	187,045	84,826	-1.71	905
PM6-Exp															
Collection & transport to sorting/aggreg	899	139	0.48	6,867	0.41	0.12	2.8E-09	227	2.02	0	1,669	12,684	1,812	0	0
Sorting															
Transp from sorting/aggreg to processor															
Processing & packaging	182	42.0	0.16	1,378	0.20	0.15	3.8E-09	26.1	0.023	433	247	14,326	4,211	0.47	0
Waste mgmt (includes transp & WTE)	931	-73.8	6.33	7,941	-0.34	0.0037	2.9E-06	25.9	171	308	157	-1,065	-1,061	1.2E-06	219
Empty can recycling credit	-104	-15.0	-0.054	-1,211	-0.070	-0.014	0	-13.6	-0.0084	-352	-103	-1,564	-1,564	-0.77	0
Transport & use recycled paint															
Virgin paint credit															
Total	1,908	92.0	6.93	14,975	0.21	0.25	2.9E-06	265	173	389	1,970	24,382	3,398	-0.29	219

Results for Pure Methods under Expanded Infrastructure for 50% displacement (50% of recycled paint replaces purchase of equivalent amount of virgin paint)
 "Transport & use recycled paint" based on 75% of recycled paint going to domestic users and 25% to export markets.

Results per 1000 Gallons of Leftover Paint Managed	Global Warming Potential kg CO2 eq	Acidification Potential kg H+ mol eq	HH - Carcinogenics Potential kg benzene eq	HH - Non carcinogenics Potential kg toluene eq	Respiratory Effects Potential kg PM2.5 eq	Eutrophication Potential kg N eq	Ozone Depletion Potential kg CFC-11 eq	Ecotoxicity Potential kg 2,4-D eq	Smog Formation Potential kg NOx eq	Total Water Use liters	Fossil Fuel Depletion Surplus MJ	Total Energy MJ	Total Fuel Energy MJ	Mineral Extraction Surplus MJ	Total Unspecified VOCs kg
PM1-Exp															
Collection & transport to sorting/aggreg	930	146	0.50	7,131	0.43	0.12	2.9E-09	237	2.14	0	1,730	13,158	1,626	0	0
Sorting															
Transp from sorting/aggreg to processor															
Processing & packaging															
Waste mgmt (includes transp & WTE)	107	-20.2	1.02	1,133	-0.093	-1.4E-04	4.8E-07	-0.32	8.6E-04	50.8	-23.5	-705	-704	2.0E-07	0
Empty can recycling credit															
Transport & use recycled paint	0	0	0	0	0	0	0	0	443	0	0	0	0	0	568
Virgin paint credit	-3,138	-999	-2.44	-40,019	-4.64	-0.13	-6.5E-05	-683	-222	-14,534	-8,737	-68,710	-48,535	-1.33	-237
Total	-2,101	-874	-0.92	-31,755	-4.31	-0.0076	-6.5E-05	-446	223	-14,483	-7,030	-56,257	-47,613	-1.33	331
PM2-Exp															
Collection & transport to sorting/aggreg															
Sorting															
Transp from sorting/aggreg to processor															
Processing & packaging	140	40.4	0.092	978	0.51	0.0043	1.5E-08	343	246	119	132	1,870	1,867	0.047	315
Waste mgmt (includes transp & WTE)	169	-15.8	1.04	1,551	-0.072	0.0016	4.8E-07	11.2	0.0064	50.8	85.2	100	101	2.0E-07	0
Empty can recycling credit															
Transport & use recycled paint															
Virgin paint credit															
Total	310	24.5	1.14	2,529	0.44	0.0059	4.9E-07	355	246	169	217	1,970	1,969	0.047	315
PM3-Exp															
Collection & transport to sorting/aggreg	899	139	0.48	6,867	0.41	0.12	2.8E-09	227	2.02	0	1,669	12,684	1,812	0	0
Sorting	308	102	0.20	721	0.47	0.0036	2.1E-08	14.3	0.012	832	271	4,181	4,177	1.3E-05	0
Transp from sorting/aggreg to processor															
Processing & packaging															
Waste mgmt (includes transp & WTE)	106	-20.3	1.02	1,129	-0.093	-1.5E-04	4.8E-07	-0.44	7.6E-04	50.8	-24.6	-714	-713	2.0E-07	0
Empty can recycling credit															
Transport & use recycled paint	863	135	0.47	6,615	0.40	0.11	2.7E-09	219	445	0	1,605	12,206	1,508	0	568
Virgin paint credit	-3,138	-999	-2.44	-40,019	-4.64	-0.13	-6.5E-05	-683	-222	-14,534	-8,737	-68,710	-48,535	-1.33	-237
Total	-962	-644	-0.27	-24,687	-3.45	0.10	-6.5E-05	-222	225	-13,651	-5,217	-40,353	-41,750	-1.33	331
PM4-Exp															
Collection & transport to sorting/aggreg	1,229	183	0.64	9,309	0.55	0.15	3.8E-09	305	2.60	0	2,271	17,236	3,318	0	0
Sorting	212	70.2	0.13	507	0.32	0.0025	1.4E-08	10.0	0.011	1,451	190	2,890	2,888	6.7E-06	0
Transp from sorting/aggreg to processor	177	12.3	0.055	1,170	0.058	0.0048	5.1E-10	32.3	0.012	0	305	2,255	2,255	0	0
Processing & packaging	1,225	852	0.93	11,993	4.01	0.054	5.5E-06	222	6.49	826	4,261	34,740	17,126	0.039	6.80
Waste mgmt (includes transp & WTE)	128	-24.7	1.24	1,359	-0.11	-2.2E-04	5.8E-07	-0.79	8.0E-04	61.5	-32.2	-883	-881	2.4E-07	0
Empty can recycling credit	-391	-110	-0.22	-4,775	-0.52	-0.049	-4.1E-11	-59.2	-0.034	-1,169	-655	-7,443	-5,874	-2.55	0
Transport & use recycled paint	1,041	130	0.48	7,588	0.43	0.096	3.2E-09	238	451	0	1,886	14,211	6,072	0	576
Virgin paint credit	-3,183	-1,013	-2.48	-40,594	-4.71	-0.13	-6.6E-05	-692	-225	-14,743	-8,863	-69,698	-49,232	-1.35	-240
Total	437	99.1	0.78	-13,443	0.033	0.13	-6.0E-05	54.5	235	-13,573	-636	-6,691	-24,329	-3.86	343
PM5-Exp															
Collection & transport to sorting/aggreg	1,229	183	0.64	9,305	0.55	0.15	3.8E-09	305	2.60	0	2,270	17,228	3,309	0	0
Sorting	105	34.9	0.066	269	0.16	0.0013	6.7E-09	5.29	0.010	2,140	101	1,456	1,455	0	0
Transp from sorting/aggreg to processor	177	12.3	0.055	1,169	0.058	0.0048	5.1E-10	32.3	0.012	0	304	2,253	2,253	0	0
Processing & packaging	5,797	2,620	4.81	81,048	12.3	0.26	1.3E-04	1,349	144	12,968	18,813	143,162	74,536	1.23	153
Waste mgmt (includes transp & WTE)	90.8	-18.6	0.92	983	-0.085	-2.7E-04	4.3E-07	-1.30	3.3E-04	45.7	-30.6	-705	-704	1.8E-07	0
Empty can recycling credit	-444	-118	-0.25	-5,384	-0.55	-0.056	-4.1E-11	-66.0	-0.038	-1,346	-706	-8,229	-6,661	-2.94	0
Transport & use recycled paint	1,454	176	0.65	10,533	0.59	0.13	4.4E-09	327	589	0	2,626	19,761	9,140	0	752
Virgin paint credit	-4,154	-1,323	-3.24	-52,977	-6.15	-0.17	-8.6E-05	-904	-294	-19,240	-11,567	-90,959	-64,251	-1.76	-313
Total	4,255	1,567	3.66	44,947	6.84	0.32	4.0E-05	1,048	442	-5,432	11,811	83,967	19,078	-3.47	592
PM6-Exp															
Collection & transport to sorting/aggreg	899	139	0.48	6,867	0.41	0.12	2.8E-09	227	2.02	0	1,669	12,684	1,812	0	0
Sorting															
Transp from sorting/aggreg to processor															
Processing & packaging	182	42.0	0.16	1,378	0.20	0.15	3.8E-09	26.1	0.023	433	247	14,326	4,211	0.47	0
Waste mgmt (includes transp & WTE)	931	-73.8	6.33	7,941	-0.34	0.0037	2.9E-06	25.9	171	308	157	-1,065	-1,061	1.2E-06	219
Empty can recycling credit	-104	-15.0	-0.054	-1,211	-0.070	-0.014	0	-13.6	-0.0084	-352	-103	-1,564	-1,564	-0.77	0
Transport & use recycled paint															
Virgin paint credit															
Total	1,908	92.0	6.93	14,975	0.21	0.25	2.9E-06	265	173	389	1,970	24,382	3,398	-0.29	219

Results for Pure Methods under Expanded Infrastructure for 100% displacement (100% of recycled paint replaces purchase of equivalent amount of virgin paint)
 "Transport & use recycled paint" based on 75% of recycled paint going to domestic users and 25% to export markets.

Results per 1000 Gallons of Leftover Paint Managed	Global Warming Potential kg CO2 eq	Acidification Potential kg H+ mol eq	HH - Carcinogenics Potential kg benzene eq	HH - Non carcinogenics Potential kg toluene eq	Respiratory Effects Potential kg PM2.5 eq	Eutrophication Potential kg N eq	Ozone Depletion Potential kg CFC-11 eq	Ecotoxicity Potential kg 2,4-D eq	Smog Formation Potential kg NOx eq	Total Water Use liters	Fossil Fuel Depletion Surplus MJ	Total Energy MJ	Total Fuel Energy MJ	Mineral Extraction Surplus MJ	Total Unspecified VOCs kg
PM1-Exp															
Collection & transport to sorting/aggreg	930	146	0.50	7,131	0.43	0.12	2.9E-09	237	2.14	0	1,730	13,158	1,626	0	0
Sorting															
Transp from sorting/aggreg to processor															
Processing & packaging															
Waste mgmt (includes transp & WTE)	107	-20.2	1.02	1,133	-0.093	-1.4E-04	4.8E-07	-0.32	8.6E-04	50.8	-23.5	-705	-704	2.0E-07	0
Empty can recycling credit	0	0	0	0	0	0	0	0	443	0	0	0	0	0	568
Transport & use recycled paint	-6,276	-1,998	-4.89	-80,038	-9.29	-0.26	-1.3E-04	-1,365	-445	-29,067	-17,475	-137,420	-97,069	-2.66	-473
Virgin paint credit															
Total	-5,239	-1,873	-3.36	-71,774	-8.95	-0.14	-1.3E-04	-1,129	1.02	-29,017	-15,768	-124,968	-96,148	-2.66	94.9
PM2-Exp															
Collection & transport to sorting/aggreg															
Sorting															
Transp from sorting/aggreg to processor															
Processing & packaging	140	40.4	0.092	978	0.51	0.0043	1.5E-08	343	246	119	132	1,870	1,867	0.047	315
Waste mgmt (includes transp & WTE)	169	-15.8	1.04	1,551	-0.072	0.0016	4.8E-07	11.2	0.0064	50.8	85.2	100	101	2.0E-07	0
Empty can recycling credit															
Transport & use recycled paint															
Virgin paint credit															
Total	310	24.5	1.14	2,529	0.44	0.0059	4.9E-07	355	246	169	217	1,970	1,969	0.047	315
PM3-Exp															
Collection & transport to sorting/aggreg	899	139	0.48	6,867	0.41	0.12	2.8E-09	227	2.02	0	1,669	12,684	1,812	0	0
Sorting	308	102	0.20	721	0.47	0.0036	2.1E-08	14.3	0.012	832	271	4,181	4,177	1.3E-05	0
Transp from sorting/aggreg to processor															
Processing & packaging															
Waste mgmt (includes transp & WTE)	106	-20.3	1.02	1,129	-0.093	-1.5E-04	4.8E-07	-0.44	7.6E-04	50.8	-24.6	-714	-713	2.0E-07	0
Empty can recycling credit	0	0	0	0	0	0	0	0	443	0	0	0	0	0	568
Transport & use recycled paint	-6,276	-1,998	-4.89	-80,038	-9.29	-0.26	-1.3E-04	-1,365	-445	-29,067	-17,475	-137,420	-97,069	-2.66	-473
Virgin paint credit															
Total	-4,963	-1,778	-3.19	-71,320	-8.50	-0.14	-1.3E-04	-1,124	0.91	-28,185	-15,560	-121,269	-91,793	-2.66	94.9
PM4-Exp															
Collection & transport to sorting/aggreg	1,229	183	0.64	9,309	0.55	0.15	3.8E-09	305	2.60	0	2,271	17,236	3,318	0	0
Sorting	212	70.2	0.13	507	0.32	0.0025	1.4E-08	10.0	0.011	1,451	190	2,890	2,888	6.7E-06	0
Transp from sorting/aggreg to processor	177	12.3	0.055	1,170	0.058	0.0048	5.1E-10	32.3	0.012	0	305	2,255	2,255	0	0
Processing & packaging	1,225	852	0.93	11,993	4.01	0.054	5.5E-06	222	6.49	826	4,261	34,740	17,126	0.039	6.80
Waste mgmt (includes transp & WTE)	128	-24.7	1.24	1,359	-0.11	-2.2E-04	5.8E-07	-0.79	8.0E-04	61.5	-32.2	-883	-881	2.4E-07	0
Empty can recycling credit	-391	-110	-0.22	-4,775	-0.52	-0.049	-4.1E-11	-59.2	-0.034	-1,169	-655	-7,443	-5,874	-2.55	0
Transport & use recycled paint	385	26.9	0.12	2,556	0.13	0.010	1.1E-09	70.7	450	0	665	4,925	4,925	0	576
Virgin paint credit	-6,366	-2,027	-4.96	-81,188	-9.42	-0.26	-1.3E-04	-1,385	-451	-29,485	-17,726	-139,396	-98,464	-2.70	-480
Total	-3,403	-1,017	-2.05	-59,069	-4.98	-0.089	-1.3E-04	-805	7.96	-28,315	-10,720	-85,675	-74,709	-5.21	103
PM5-Exp															
Collection & transport to sorting/aggreg	1,229	183	0.64	9,305	0.55	0.15	3.8E-09	305	2.60	0	2,270	17,228	3,309	0	0
Sorting	105	34.9	0.066	269	0.16	0.0013	6.7E-09	5.29	0.010	2,140	101	1,456	1,455	0	0
Transp from sorting/aggreg to processor	177	12.3	0.055	1,169	0.058	0.0048	5.1E-10	32.3	0.012	0	304	2,253	2,253	0	0
Processing & packaging	5,797	2,620	4.81	81,048	12.3	0.26	1.3E-04	1,349	144	12,968	18,813	143,162	74,536	1.23	153
Waste mgmt (includes transp & WTE)	90.8	-18.6	0.92	983	-0.085	-2.7E-04	4.3E-07	-1.30	3.3E-04	45.7	-30.6	-705	-704	1.8E-07	0
Empty can recycling credit	-444	-118	-0.25	-5,384	-0.55	-0.056	-4.1E-11	-66.0	-0.038	-1,346	-706	-8,229	-6,661	-2.94	0
Transport & use recycled paint	597	41.8	0.19	3,966	0.20	0.016	1.7E-09	110	587	0	1,032	7,642	7,642	0	752
Virgin paint credit	-8,308	-2,645	-6.47	-105,955	-12.3	-0.34	-1.7E-04	-1,807	-588	-38,480	-23,133	-181,919	-128,501	-3.52	-626
Total	-756	110	-0.039	-14,598	0.30	0.035	-4.6E-05	-73.6	145	-24,672	-1,349	-19,111	-46,671	-5.24	279
PM6-Exp															
Collection & transport to sorting/aggreg	899	139	0.48	6,867	0.41	0.12	2.8E-09	227	2.02	0	1,669	12,684	1,812	0	0
Sorting															
Transp from sorting/aggreg to processor															
Processing & packaging	182	42.0	0.16	1,378	0.20	0.15	3.8E-09	26.1	0.023	433	247	14,326	4,211	0.47	0
Waste mgmt (includes transp & WTE)	931	-73.8	6.33	7,941	-0.34	0.0037	2.9E-06	25.9	171	308	157	-1,065	-1,061	1.2E-06	219
Empty can recycling credit	-104	-15.0	-0.054	-1,211	-0.070	-0.014	0	-13.6	-0.0084	-352	-103	-1,564	-1,564	-0.77	0
Transport & use recycled paint															
Virgin paint credit															
Total	1,908	92.0	6.93	14,975	0.21	0.25	2.9E-06	265	173	389	1,970	24,382	3,398	-0.29	219

**RESULTS TABLES FOR MODIFIED METHODS – LIMITED INFRASTRUCTURE
WITH DETAIL BY LIFE CYCLE STAGE**

**Individual tables for
0% Displacement, 25% Export
50% Displacement, 25% Export
100% Displacement, 25% Export**

Results for Modified Methods under Limited Infrastructure for 0% displacement (recycled paint does not replace purchase of virgin paint)

"Transport & use recycled paint" based on 75% of recycled paint going to domestic users and 25% to export markets.

Results per 1000 Gallons of Leftover Paint Managed	Global Warming Potential kg CO2 eq	Acidification Potential kg H+ mol eq	HH - Carcinogenics Potential kg benzene eq	HH - Non carcinogenics Potential kg toluene eq	Respiratory Effects Potential kg PM2.5 eq	Eutrophication Potential kg N eq	Ozone Depletion Potential kg CFC-11 eq	Ecotoxicity Potential kg 2,4-D eq	Smog Formation Potential kg NOx eq	Total Water Use liters	Fossil Fuel Depletion Surplus MJ	Total Energy MJ	Total Fuel Energy MJ	Mineral Extraction Surplus MJ	Total Unspecified VOCs kg
MM1-Lim (5% suitable; unsuitable managed by PM2)															
Collection & transport to sorting	46.5	7.28	0.025	357	0.022	0.0061	1.5E-10	11.8	0.11	0	86.5	658	81.3	0	0
Sorting	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Transp from sorting to remote processor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Processing & packaging	133	38.3	0.088	930	0.48	0.0041	1.4E-08	326	233	113	125	1,776	1,774	0.045	299
Waste mgmt (includes transp & WTE)	166	-16.0	1.04	1,530	-0.073	0.0015	4.8E-07	10.7	0.0061	50.8	79.8	59.9	61.1	2.0E-07	0
Empty can recycling credit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Transport & use recycled paint	0	0	0	0	0	0	0	0	22.2	0	0	0	0	0	28.4
Virgin paint credit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	346	29.6	1.16	2,816	0.43	0.012	4.9E-07	349	256	163	292	2,494	1,916	0.045	327
MM2-Lim (80% suitable; unsuitable managed by PM6)															
Collection & transport to sorting/aggreg	127	19.2	0.067	966	0.058	0.016	4.0E-10	31.8	0.28	0	235	1,787	310	0	0
Sorting	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Transp from sorting/aggreg to processor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Processing & packaging	149	40.7	0.11	1,058	0.45	0.033	1.3E-08	280	197	181	155	4,361	2,336	0.13	252
Waste mgmt (includes transp & WTE)	322	-27.4	2.10	2,829	-0.13	0.0020	9.6E-07	14.2	34.3	102	99.6	-133	-131	4.0E-07	43.9
Empty can recycling credit	-20.9	-3.00	-0.011	-242	-0.014	-0.0027	0	-2.71	-0.0017	-70.3	-20.5	-313	-313	-0.15	0
Transport & use recycled paint	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Virgin paint credit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	577	29.5	2.26	4,611	0.36	0.048	9.8E-07	323	231	213	469	5,703	2,202	-0.021	296
MM3-Lim (20% suitable; unsuitable managed by PM6)															
Collection & transport to sorting/aggreg	636	96.0	0.34	4,831	0.29	0.079	2.0E-09	159	1.38	0	1,177	8,937	1,552	0	0
Sorting	308	102	0.20	721	0.47	0.0036	2.1E-08	14.3	0.012	832	271	4,181	4,177	1.3E-05	0
Transp from sorting/aggreg to processor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Processing & packaging	146	33.6	0.13	1,103	0.16	0.12	3.1E-09	20.9	0.019	346	198	11,461	3,369	0.38	0
Waste mgmt (includes transp & WTE)	766	-63.1	5.27	6,578	-0.29	0.0029	2.4E-06	20.6	137	257	121	-995	-991	9.9E-07	176
Empty can recycling credit	-83.5	-12.0	-0.043	-969	-0.056	-0.011	0	-10.8	-0.0067	-281	-82.1	-1,251	-1,252	-0.61	0
Transport & use recycled paint	345	54.0	0.19	2,646	0.16	0.045	1.1E-09	87.8	89.5	0	642	4,882	603	0	114
Virgin paint credit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	2,117	211	6.08	14,910	0.73	0.24	2.4E-06	291	228	1,153	2,326	27,215	7,458	-0.24	289
MM4-Lim (75% suitable; unsuitable managed by PM6)															
Collection & transport to sorting/aggreg	834	127	0.44	6,354	0.38	0.11	2.6E-09	209	1.84	0	1,546	11,744	1,844	0	0
Sorting	174	57.7	0.11	423	0.27	0.0021	1.1E-08	8.34	0.010	1,695	159	2,383	2,381	4.4E-06	0
Transp from sorting/aggreg to processor	156	10.9	0.048	1,030	0.051	0.0042	4.5E-10	28.5	0.011	0	268	1,986	1,986	0	0
Processing & packaging	949	645	0.73	9,264	3.04	0.077	4.1E-06	172	4.87	724	3,239	29,407	13,700	0.15	5.10
Waste mgmt (includes transp & WTE)	320	-35.2	2.43	2,914	-0.16	7.7E-04	1.1E-06	6.00	42.8	119	17.9	-863	-861	4.6E-07	54.9
Empty can recycling credit	-334	-88.6	-0.19	-4,045	-0.42	-0.042	-3.1E-11	-49.6	-0.029	-1,012	-530	-6,182	-5,005	-2.21	0
Transport & use recycled paint	1,273	174	0.62	9,465	0.55	0.14	3.9E-09	303	340	0	2,331	17,623	5,415	0	432
Virgin paint credit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	3,373	891	4.20	25,405	3.71	0.28	5.2E-06	678	389	1,527	7,030	56,096	19,458	-2.06	492
MM5-Lim (50% suitable; unsuitable managed by PM6)															
Collection & transport to sorting/aggreg	836	128	0.44	6,371	0.38	0.11	2.6E-09	210	1.85	0	1,550	11,775	1,844	0	0
Sorting	105	34.9	0.066	269	0.16	0.0013	6.7E-09	5.29	0.010	2,140	101	1,456	1,455	0	0
Transp from sorting/aggreg to processor	96.0	6.70	0.030	636	0.031	0.0026	2.8E-10	17.6	0.0068	0	165	1,225	1,225	0	0
Processing & packaging	2,990	1,331	2.49	41,213	6.23	0.20	6.3E-05	687	72.1	6,700	9,530	78,744	39,373	0.85	76.6
Waste mgmt (includes transp & WTE)	514	-46.0	3.63	4,480	-0.21	0.0018	1.7E-06	12.8	85.7	177	67.8	-851	-849	6.8E-07	110
Empty can recycling credit	-274	-66.5	-0.15	-3,297	-0.31	-0.035	-2.1E-11	-39.8	-0.023	-849	-404	-4,896	-4,112	-1.85	0
Transport & use recycled paint	1,167	156	0.56	8,629	0.50	0.12	3.6E-09	275	295	0	2,130	16,092	5,470	0	376
Virgin paint credit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	5,434	1,544	7.07	58,300	6.78	0.40	6.5E-05	1,168	455	8,168	13,140	103,545	44,407	-1.00	562
MM6-Lim (100% suitable)															
Collection & transport to sorting/aggreg	636	96.0	0.34	4,831	0.29	0.079	2.0E-09	159	1.38	0	1,177	8,937	1,552	0	0
Sorting	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Transp from sorting/aggreg to processor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Processing & packaging	182	42.0	0.16	1,378	0.20	0.15	3.8E-09	26.1	0.023	433	247	14,326	4,211	0.47	0
Waste mgmt (includes transp & WTE)	931	-73.8	6.33	7,941	-0.34	0.0037	2.9E-06	25.9	171	308	157	-1,065	-1,061	1.2E-06	219
Empty can recycling credit	-104	-15.0	-0.054	-1,211	-0.070	-0.014	0	-13.6	-0.0084	-352	-103	-1,564	-1,564	-0.77	0
Transport & use recycled paint	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Virgin paint credit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1,645	49.3	6.78	12,939	0.082	0.22	2.9E-06	197	173	389	1,478	20,634	3,137	-0.29	219

Results for Modified Methods under Limited Infrastructure for 50% displacement (50% of recycled paint replaces purchase of equivalent amount of virgin paint)

"Transport & use recycled paint" based on 75% of recycled paint going to domestic users and 25% to export markets.

Results per 1000 Gallons of Leftover Paint Managed	Global Warming Potential kg CO2 eq	Acidification Potential kg H+ mol eq	HH - Carcinogenics Potential kg benzene eq	HH - Non carcinogenics Potential kg toluene eq	Respiratory Effects Potential kg PM2.5 eq	Eutrophication Potential kg N eq	Ozone Depletion Potential kg CFC-11 eq	Ecotoxicity Potential kg 2,4-D eq	Smog Formation Potential kg NOx eq	Total Water Use liters	Fossil Fuel Depletion Surplus MJ	Total Energy MJ	Total Fuel Energy MJ	Mineral Extraction Surplus MJ	Total Unspecified VOCs kg
MM1-Lim (5% suitable; unsuitable managed by PM2)															
Collection & transport to sorting	46.5	7.28	0.025	357	0.022	0.0061	1.5E-10	11.8	0.11	0	86.5	658	81.3	0	0
Sorting	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Transp from sorting to remote processor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Processing & packaging	133	38.3	0.088	930	0.48	0.0041	1.4E-08	326	233	113	125	1,776	1,774	0.045	299
Waste mgmt (includes transp & WTE)	166	-16.0	1.04	1,530	-0.073	0.0015	4.8E-07	10.7	0.0061	50.8	79.8	59.9	61.1	2.0E-07	0
Empty can recycling credit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Transport & use recycled paint	0	0	0	0	0	0	0	0	22.2	0	0	0	0	0	28.4
Virgin paint credit	-157	-50.0	-0.12	-2,001	-0.23	-0.0064	-3.3E-06	-34.1	-11.1	-727	-437	-3,436	-2,427	-0.067	-11.8
Total	189	-20.4	1.03	815	0.20	0.0052	-2.8E-06	314	245	-563	-145	-941	-510	-0.022	316
MM2-Lim (80% suitable; unsuitable managed by PM6)															
Collection & transport to sorting/aggreg	127	19.2	0.067	966	0.058	0.016	4.0E-10	31.8	0.28	0	235	1,787	310	0	0
Sorting	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Transp from sorting/aggreg to processor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Processing & packaging	149	40.7	0.11	1,058	0.45	0.033	1.3E-08	280	197	181	155	4,361	2,336	0.13	252
Waste mgmt (includes transp & WTE)	322	-27.4	2.10	2,829	-0.13	0.0020	9.6E-07	14.2	34.3	102	99.6	-133	-131	4.0E-07	43.9
Empty can recycling credit	-20.9	-3.00	-0.011	-242	-0.014	-0.0027	0	-2.71	-0.0017	-70.3	-20.5	-313	-313	-0.15	0
Transport & use recycled paint	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Virgin paint credit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	577	29.5	2.26	4,611	0.36	0.048	9.8E-07	323	231	213	469	5,703	2,202	-0.021	296
MM3-Lim (20% suitable; unsuitable managed by PM6)															
Collection & transport to sorting/aggreg	636	96.0	0.34	4,831	0.29	0.079	2.0E-09	159	1.38	0	1,177	8,937	1,552	0	0
Sorting	308	102	0.20	721	0.47	0.0036	2.1E-08	14.3	0.012	832	271	4,181	4,177	1.3E-05	0
Transp from sorting/aggreg to processor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Processing & packaging	146	33.6	0.13	1,103	0.16	0.12	3.1E-09	20.9	0.019	346	198	11,461	3,369	0.38	0
Waste mgmt (includes transp & WTE)	766	-63.1	5.27	6,578	-0.29	0.0029	2.4E-06	20.6	137	257	121	-995	-991	9.9E-07	176
Empty can recycling credit	-83.5	-12.0	-0.043	-969	-0.056	-0.011	0	-10.8	-0.0067	-281	-82.1	-1,251	-1,252	-0.61	0
Transport & use recycled paint	173	27.0	0.093	1,323	0.080	0.023	5.4E-10	43.9	89.1	0	321	2,441	302	0	114
Virgin paint credit	-628	-200	-0.49	-8,004	-0.93	-0.026	-1.3E-05	-137	-44.5	-2,907	-1,747	-13,742	-9,707	-0.27	-47.3
Total	1,317	-16.3	5.50	5,584	-0.27	0.19	-1.1E-05	111	183	-1,753	257	11,032	-2,551	-0.50	242
MM4-Lim (75% suitable; unsuitable managed by PM6)															
Collection & transport to sorting/aggreg	834	127	0.44	6,354	0.38	0.11	2.6E-09	209	1.84	0	1,546	11,744	1,844	0	0
Sorting	174	57.7	0.11	423	0.27	0.0021	1.1E-08	8.34	0.010	1,695	159	2,383	2,381	4.4E-06	0
Transp from sorting/aggreg to processor	156	10.9	0.048	1,030	0.051	0.0042	4.5E-10	28.5	0.011	0	268	1,986	1,986	0	0
Processing & packaging	949	645	0.73	9,264	3.04	0.077	4.1E-06	172	4.87	724	3,239	29,407	13,700	0.15	5.10
Waste mgmt (includes transp & WTE)	320	-35.2	2.43	2,914	-0.16	7.7E-04	1.1E-06	6.00	42.8	119	17.9	-863	-861	4.6E-07	54.9
Empty can recycling credit	-334	-88.6	-0.19	-4,045	-0.42	-0.042	-3.1E-11	-49.6	-0.029	-1,012	-530	-6,182	-5,005	-2.21	0
Transport & use recycled paint	781	97.3	0.36	5,691	0.32	0.072	2.4E-09	178	338	0	1,415	10,658	4,554	0	432
Virgin paint credit	-2,387	-760	-1.86	-30,446	-3.53	-0.098	-4.9E-05	-519	-169	-11,057	-6,647	-52,273	-36,924	-1.01	-180
Total	493	54.2	2.07	-8,815	-0.054	0.12	-4.4E-05	33.3	219	-9,530	-533	-3,142	-18,327	-3.07	312
MM5-Lim (50% suitable; unsuitable managed by PM6)															
Collection & transport to sorting/aggreg	836	128	0.44	6,371	0.38	0.11	2.6E-09	210	1.85	0	1,550	11,775	1,844	0	0
Sorting	105	34.9	0.066	269	0.16	0.0013	6.7E-09	5.29	0.010	2,140	101	1,456	1,455	0	0
Transp from sorting/aggreg to processor	96.0	6.70	0.030	636	0.031	0.0026	2.8E-10	17.6	0.0068	0	165	1,225	1,225	0	0
Processing & packaging	2,990	1,331	2.49	41,213	6.23	0.20	6.3E-05	687	72.1	6,700	9,530	78,744	39,373	0.85	76.6
Waste mgmt (includes transp & WTE)	514	-46.0	3.63	4,480	-0.21	0.0018	1.7E-06	12.8	85.7	177	67.8	-851	-849	6.8E-07	110
Empty can recycling credit	-274	-66.5	-0.15	-3,297	-0.31	-0.035	-2.1E-11	-39.8	-0.023	-849	-404	-4,896	-4,112	-1.85	0
Transport & use recycled paint	739	88.8	0.33	5,345	0.30	0.064	2.2E-09	166	295	0	1,334	10,032	4,722	0	376
Virgin paint credit	-2,077	-661	-1.62	-26,489	-3.07	-0.085	-4.3E-05	-452	-147	-9,620	-5,783	-45,480	-32,125	-0.88	-157
Total	2,929	815	5.22	28,527	3.51	0.26	2.2E-05	607	307	-1,452	6,560	52,006	11,533	-1.88	406
MM6-Lim (100% suitable)															
Collection & transport to sorting/aggreg	636	96.0	0.34	4,831	0.29	0.079	2.0E-09	159	1.38	0	1,177	8,937	1,552	0	0
Sorting	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Transp from sorting/aggreg to processor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Processing & packaging	182	42.0	0.16	1,378	0.20	0.15	3.8E-09	26.1	0.023	433	247	14,326	4,211	0.47	0
Waste mgmt (includes transp & WTE)	931	-73.8	6.33	7,941	-0.34	0.0037	2.9E-06	25.9	171	308	157	-1,065	-1,061	1.2E-06	219
Empty can recycling credit	-104	-15.0	-0.054	-1,211	-0.070	-0.014	0	-13.6	-0.0084	-352	-103	-1,564	-1,564	-0.77	0
Transport & use recycled paint	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Virgin paint credit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1,645	49.3	6.78	12,939	0.082	0.22	2.9E-06	197	173	389	1,478	20,634	3,137	-0.29	219

Results for Modified Methods under Limited Infrastructure for 100% displacement (100% of recycled paint replaces purchase of equivalent amount of virgin paint)

"Transport & use recycled paint" based on 75% of recycled paint going to domestic users and 25% to export markets.

Results per 1000 Gallons of Leftover Paint Managed	Global Warming Potential kg CO2 eq	Acidification Potential kg H+ mol eq	HH - Carcinogenics Potential kg benzene eq	HH - Non carcinogenics Potential kg toluene eq	Respiratory Effects Potential kg PM2.5 eq	Eutrophication Potential kg N eq	Ozone Depletion Potential kg CFC-11 eq	Ecotoxicity Potential kg 2,4-D eq	Smog Formation Potential kg NOx eq	Total Water Use liters	Fossil Fuel Depletion Surplus MJ	Total Energy MJ	Total Fuel Energy MJ	Mineral Extraction Surplus MJ	Total Unspecified VOCs kg
MM1-Lim (5% suitable; unsuitable managed by PM2)															
Collection & transport to sorting	46.5	7.28	0.025	357	0.022	0.0061	1.5E-10	11.8	0.11	0	86.5	658	81.3	0	0
Sorting	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Transp from sorting to remote processor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Processing & packaging	133	38.3	0.088	930	0.48	0.0041	1.4E-08	326	233	113	125	1,776	1,774	0.045	299
Waste mgmt (includes transp & WTE)	166	-16.0	1.04	1,530	-0.073	0.0015	4.8E-07	10.7	0.0061	50.8	79.8	59.9	61.1	2.0E-07	0
Empty can recycling credit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Transport & use recycled paint	0	0	0	0	0	0	0	0	22.2	0	0	0	0	0	28.4
Virgin paint credit	-314	-99.9	-0.24	-4,002	-0.46	-0.013	-6.5E-06	-68.3	-22.2	-1,453	-874	-6,871	-4,853	-0.13	-23.7
Total	32.2	-70.3	0.91	-1,186	-0.034	-0.0012	-6.0E-06	280	233	-1,290	-582	-4,377	-2,937	-0.088	304
MM2-Lim (80% suitable; unsuitable managed by PM6)															
Collection & transport to sorting/aggreg	127	19.2	0.067	966	0.058	0.016	4.0E-10	31.8	0.28	0	235	1,787	310	0	0
Sorting	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Transp from sorting/aggreg to processor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Processing & packaging	149	40.7	0.11	1,058	0.45	0.033	1.3E-08	280	197	181	155	4,361	2,336	0.13	252
Waste mgmt (includes transp & WTE)	322	-27.4	2.10	2,829	-0.13	0.0020	9.6E-07	14.2	34.3	102	99.6	-133	-131	4.0E-07	43.9
Empty can recycling credit	-20.9	-3.00	-0.011	-242	-0.014	-0.0027	0	-2.71	-0.0017	-70.3	-20.5	-313	-313	-0.15	0
Transport & use recycled paint	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Virgin paint credit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	577	29.5	2.26	4,611	0.36	0.048	9.8E-07	323	231	213	469	5,703	2,202	-0.021	296
MM3-Lim (20% suitable; unsuitable managed by PM6)															
Collection & transport to sorting/aggreg	636	96.0	0.34	4,831	0.29	0.079	2.0E-09	159	1.38	0	1,177	8,937	1,552	0	0
Sorting	308	102	0.20	721	0.47	0.0036	2.1E-08	14.3	0.012	832	271	4,181	4,177	1.3E-05	0
Transp from sorting/aggreg to processor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Processing & packaging	146	33.6	0.13	1,103	0.16	0.12	3.1E-09	20.9	0.019	346	198	11,461	3,369	0.38	0
Waste mgmt (includes transp & WTE)	766	-63.1	5.27	6,578	-0.29	0.0029	2.4E-06	20.6	137	257	121	-995	-991	9.9E-07	176
Empty can recycling credit	-83.5	-12.0	-0.043	-969	-0.056	-0.011	0	-10.8	-0.0067	-281	-82.1	-1,251	-1,252	-0.61	0
Transport & use recycled paint	0	0	0	0	0	0	0	0	88.7	0	0	0	0	0	114
Virgin paint credit	-1,255	-400	-0.98	-16,008	-1.86	-0.052	-2.6E-05	-273	-88.9	-5,813	-3,495	-27,484	-19,414	-0.53	-94.6
Total	517	-243	4.91	-3,743	-1.28	0.14	-2.4E-05	-69.4	138	-4,660	-1,811	-5,151	-12,559	-0.77	195
MM4-Lim (75% suitable; unsuitable managed by PM6)															
Collection & transport to sorting/aggreg	834	127	0.44	6,354	0.38	0.11	2.6E-09	209	1.84	0	1,546	11,744	1,844	0	0
Sorting	174	57.7	0.11	423	0.27	0.0021	1.1E-08	8.34	0.010	1,695	159	2,383	2,381	4.4E-06	0
Transp from sorting/aggreg to processor	156	10.9	0.048	1,030	0.051	0.0042	4.5E-10	28.5	0.011	0	268	1,986	1,986	0	0
Processing & packaging	949	645	0.73	9,264	3.04	0.077	4.1E-06	172	4.87	724	3,239	29,407	13,700	0.15	5.10
Waste mgmt (includes transp & WTE)	320	-35.2	2.43	2,914	-0.16	7.7E-04	1.1E-06	6.00	42.8	119	17.9	-863	-861	4.6E-07	54.9
Empty can recycling credit	-334	-88.6	-0.19	-4,045	-0.42	-0.042	-3.1E-11	-49.6	-0.029	-1,012	-530	-6,182	-5,005	-2.21	0
Transport & use recycled paint	289	20.2	0.090	1,917	0.094	0.0078	8.4E-10	53.0	337	0	499	3,694	3,694	0	432
Virgin paint credit	-4,775	-1,520	-3.72	-60,891	-7.07	-0.20	-9.9E-05	-1,038	-338	-22,114	-13,294	-104,547	-73,848	-2.02	-360
Total	-2,387	-783	-0.051	-43,035	-3.82	-0.040	-9.4E-05	-611	48.7	-20,587	-8,096	-62,380	-56,111	-4.09	132
MM5-Lim (50% suitable; unsuitable managed by PM6)															
Collection & transport to sorting/aggreg	836	128	0.44	6,371	0.38	0.11	2.6E-09	210	1.85	0	1,550	11,775	1,844	0	0
Sorting	105	34.9	0.066	269	0.16	0.0013	6.7E-09	5.29	0.010	2,140	101	1,456	1,455	0	0
Transp from sorting/aggreg to processor	96.0	6.70	0.030	636	0.031	0.0026	2.8E-10	17.6	0.0068	0	165	1,225	1,225	0	0
Processing & packaging	2,990	1,331	2.49	41,213	6.23	0.20	6.3E-05	687	72.1	6,700	9,530	78,744	39,373	0.85	76.6
Waste mgmt (includes transp & WTE)	514	-46.0	3.63	4,480	-0.21	0.0018	1.7E-06	12.8	85.7	177	67.8	-851	-849	6.8E-07	110
Empty can recycling credit	-274	-66.5	-0.15	-3,297	-0.31	-0.035	-2.1E-11	-39.8	-0.023	-849	-404	-4,896	-4,112	-1.85	0
Transport & use recycled paint	311	21.7	0.097	2,062	0.10	0.0084	9.0E-10	57.0	294	0	537	3,973	3,973	0	376
Virgin paint credit	-4,154	-1,323	-3.24	-52,977	-6.15	-0.17	-8.6E-05	-904	-294	-19,240	-11,567	-90,959	-64,251	-1.76	-313
Total	423	87.1	3.37	-1,245	0.24	0.12	-2.1E-05	46.8	159	-11,072	-19.8	467	-21,341	-2.77	249
MM6-Lim (100% suitable)															
Collection & transport to sorting/aggreg	636	96.0	0.34	4,831	0.29	0.079	2.0E-09	159	1.38	0	1,177	8,937	1,552	0	0
Sorting	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Transp from sorting/aggreg to processor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Processing & packaging	182	42.0	0.16	1,378	0.20	0.15	3.8E-09	26.1	0.023	433	247	14,326	4,211	0.47	0
Waste mgmt (includes transp & WTE)	931	-73.8	6.33	7,941	-0.34	0.0037	2.9E-06	25.9	171	308	157	-1,065	-1,061	1.2E-06	219
Empty can recycling credit	-104	-15.0	-0.054	-1,211	-0.070	-0.014	0	-13.6	-0.0084	-352	-103	-1,564	-1,564	-0.77	0
Transport & use recycled paint	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Virgin paint credit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1,645	49.3	6.78	12,939	0.082	0.22	2.9E-06	197	173	389	1,478	20,634	3,137	-0.29	219

**RESULTS TABLES FOR MODIFIED METHODS – EXPANDED INFRASTRUCTURE
WITH DETAIL BY LIFE CYCLE STAGE**

**Individual tables for
0% Displacement, 25% Export
50% Displacement, 25% Export
100% Displacement, 25% Export**

Results for Modified Methods under Expanded Infrastructure for 0% displacement (recycled paint does not replace purchase of virgin paint)

"Transport & use recycled paint" based on 75% of recycled paint going to domestic users and 25% to export markets.

Results per 1000 Gallons of Leftover Paint Managed	Global Warming Potential kg CO2 eq	Acidification Potential kg H+ mol eq	HH - Carcinogenics Potential kg benzene eq	HH - Non carcinogenics Potential kg toluene eq	Respiratory Effects Potential kg PM2.5 eq	Eutrophication Potential kg N eq	Ozone Depletion Potential kg CFC-11 eq	Ecotoxicity Potential kg 2,4-D eq	Smog Formation Potential kg NOx eq	Total Water Use liters	Fossil Fuel Depletion Surplus MJ	Total Energy MJ	Total Fuel Energy MJ	Mineral Extraction Surplus MJ	Total Unspecified VOCs kg
MM1-Exp (10% suitable; unsuitable managed by PM2)															
Collection & transport to sorting	93.0	14.6	0.050	713	0.043	0.012	2.9E-10	23.7	0.21	0	173	1,316	163	0	0
Sorting	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Transp from sorting to remote processor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Processing & packaging	126	36.3	0.083	881	0.46	0.0039	1.3E-08	309	221	107	119	1,683	1,681	0.042	283
Waste mgmt (includes transp & WTE)	163	-16.3	1.04	1,509	-0.074	0.0014	4.8E-07	10.1	0.0059	50.8	74.4	19.6	20.8	2.0E-07	0
Empty can recycling credit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Transport & use recycled paint	0	0	0	0	0	0	0	0	44.3	0	0	0	0	0	56.8
Virgin paint credit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	382	34.6	1.18	3,103	0.43	0.017	4.9E-07	343	266	158	366	3,018	1,864	0.042	340
MM2-Exp (80% suitable; unsuitable managed by PM6)															
Collection & transport to sorting/aggreg	180	27.8	0.096	1,373	0.083	0.023	5.6E-10	45.4	0.40	0	334	2,537	362	0	0
Sorting	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Transp from sorting/aggreg to processor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Processing & packaging	149	40.7	0.11	1,058	0.45	0.033	1.3E-08	280	197	181	155	4,361	2,336	0.13	252
Waste mgmt (includes transp & WTE)	322	-27.4	2.10	2,829	-0.13	0.0020	9.6E-07	14.2	34.3	102	99.6	-133	-131	4.0E-07	43.9
Empty can recycling credit	-20.9	-3.00	-0.011	-242	-0.014	-0.0027	0	-2.71	-0.0017	-70.3	-20.5	-313	-313	-0.15	0
Transport & use recycled paint	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Virgin paint credit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	629	38.0	2.29	5,019	0.39	0.055	9.8E-07	337	231	213	568	6,452	2,254	-0.021	296
MM3-Exp (20% suitable; unsuitable managed by PM6)															
Collection & transport to sorting/aggreg	899	139	0.48	6,867	0.41	0.12	2.8E-09	227	2.02	0	1,669	12,684	1,812	0	0
Sorting	308	102	0.20	721	0.47	0.0036	2.1E-08	14.3	0.012	832	271	4,181	4,177	1.3E-05	0
Transp from sorting/aggreg to processor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Processing & packaging	146	33.6	0.13	1,103	0.16	0.12	3.1E-09	20.9	0.019	346	198	11,461	3,369	0.38	0
Waste mgmt (includes transp & WTE)	766	-63.1	5.27	6,578	-0.29	0.0029	2.4E-06	20.6	137	257	121	-995	-991	9.9E-07	176
Empty can recycling credit	-83.5	-12.0	-0.043	-969	-0.056	-0.011	0	-10.8	-0.0067	-281	-82.1	-1,251	-1,252	-0.61	0
Transport & use recycled paint	345	54.0	0.19	2,646	0.16	0.045	1.1E-09	87.8	89.5	0	642	4,882	603	0	114
Virgin paint credit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	2,381	253	6.23	16,946	0.86	0.27	2.4E-06	360	229	1,153	2,818	30,963	7,718	-0.24	289
MM4-Exp (75% suitable; unsuitable managed by PM6)															
Collection & transport to sorting/aggreg	1,229	183	0.64	9,309	0.55	0.15	3.8E-09	305	2.60	0	2,271	17,236	3,318	0	0
Sorting	212	70.2	0.13	507	0.32	0.0025	1.4E-08	10.0	0.011	1,451	190	2,890	2,888	6.7E-06	0
Transp from sorting/aggreg to processor	133	9.25	0.041	877	0.043	0.0036	3.8E-10	24.3	0.0094	0	228	1,691	1,691	0	0
Processing & packaging	964	650	0.74	9,339	3.06	0.078	4.2E-06	173	4.87	728	3,258	29,637	13,897	0.15	5.10
Waste mgmt (includes transp & WTE)	328	-36.9	2.51	3,004	-0.17	7.5E-04	1.2E-06	5.87	42.8	123	15.1	-928	-926	4.8E-07	54.9
Empty can recycling credit	-320	-86.6	-0.18	-3,884	-0.41	-0.040	-3.1E-11	-47.8	-0.028	-965	-517	-5,973	-4,797	-2.11	0
Transport & use recycled paint	1,273	174	0.62	9,465	0.55	0.14	3.9E-09	303	340	0	2,331	17,623	5,415	0	432
Virgin paint credit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	3,820	963	4.52	28,618	3.95	0.33	5.3E-06	774	390	1,338	7,777	62,176	21,485	-1.96	492
MM5-Exp (60% suitable; unsuitable managed by PM6)															
Collection & transport to sorting/aggreg	1,229	183	0.64	9,305	0.55	0.15	3.8E-09	305	2.60	0	2,270	17,228	3,309	0	0
Sorting	105	34.9	0.066	269	0.16	0.0013	6.7E-09	5.29	0.010	2,140	101	1,456	1,455	0	0
Transp from sorting/aggreg to processor	106	7.40	0.033	701	0.035	0.0029	3.1E-10	19.4	0.0075	0	183	1,352	1,352	0	0
Processing & packaging	3,551	1,589	2.95	49,180	7.44	0.22	7.6E-05	820	86.6	7,954	11,386	91,628	46,406	0.93	91.9
Waste mgmt (includes transp & WTE)	427	-40.7	3.09	3,766	-0.19	0.0013	1.4E-06	9.56	68.5	151	44.4	-849	-847	5.8E-07	87.8
Empty can recycling credit	-308	-76.8	-0.17	-3,714	-0.36	-0.039	-2.5E-11	-45.0	-0.026	-948	-465	-5,563	-4,622	-2.07	0
Transport & use recycled paint	1,387	186	0.67	10,260	0.59	0.14	4.3E-09	327	355	0	2,532	19,128	6,382	0	451
Virgin paint credit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	6,497	1,883	7.28	69,767	8.23	0.48	7.7E-05	1,441	512	9,296	16,052	124,380	53,435	-1.15	631
MM6-Exp (100% suitable)															
Collection & transport to sorting/aggreg	899	139	0.48	6,867	0.41	0.12	2.8E-09	227	2.02	0	1,669	12,684	1,812	0	0
Sorting	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Transp from sorting/aggreg to processor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Processing & packaging	182	42.0	0.16	1,378	0.20	0.15	3.8E-09	26.1	0.023	433	247	14,326	4,211	0.47	0
Waste mgmt (includes transp & WTE)	931	-73.8	6.33	7,941	-0.34	0.0037	2.9E-06	25.9	171	308	157	-1,065	-1,061	1.2E-06	219
Empty can recycling credit	-104	-15.0	-0.054	-1,211	-0.070	-0.014	0	-13.6	-0.0084	-352	-103	-1,564	-1,564	-0.77	0
Transport & use recycled paint	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Virgin paint credit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1,908	92.0	6.93	14,975	0.21	0.25	2.9E-06	265	173	389	1,970	24,382	3,398	-0.29	219

Results for Modified Methods under Expanded Infrastructure for 50% displacement (50% of recycled paint replaces purchase of equivalent amount of virgin paint)

"Transport & use recycled paint" based on 75% of recycled paint going to domestic users and 25% to export markets.

Results per 1000 Gallons of Leftover Paint Managed	Global Warming Potential kg CO2 eq	Acidification Potential kg H+ mol eq	HH - Carcinogenics Potential kg benzene eq	HH - Non carcinogenics Potential kg toluene eq	Respiratory Effects Potential kg PM2.5 eq	Eutrophication Potential kg N eq	Ozone Depletion Potential kg CFC-11 eq	Ecotoxicity Potential kg 2,4-D eq	Smog Formation Potential kg NOx eq	Total Water Use liters	Fossil Fuel Depletion Surplus MJ	Total Energy MJ	Total Fuel Energy MJ	Mineral Extraction Surplus MJ	Total Unspecified VOCs kg
MM1-Exp (10% suitable; unsuitable managed by PM2)															
Collection & transport to sorting	93.0	14.6	0.050	713	0.043	0.012	2.9E-10	23.7	0.21	0	173	1,316	163	0	0
Sorting	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Transp from sorting to remote processor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Processing & packaging	126	36.3	0.083	881	0.46	0.0039	1.3E-08	309	221	107	119	1,683	1,681	0.042	283
Waste mgmt (includes transp & WTE)	163	-16.3	1.04	1,509	-0.074	0.0014	4.8E-07	10.1	0.0059	50.8	74.4	19.6	20.8	2.0E-07	0
Empty can recycling credit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Transport & use recycled paint	0	0	0	0	0	0	0	0	44.3	0	0	0	0	0	56.8
Virgin paint credit	-314	-99.9	-0.24	-4,002	-0.46	-0.013	-6.5E-06	-68.3	-22.2	-1,453	-874	-6,871	-4,853	-0.13	-23.7
Total	68.6	-65.3	0.93	-899	-0.039	0.0045	-6.0E-06	274	243	-1,296	-508	-3,853	-2,990	-0.091	316
MM2-Exp (80% suitable; unsuitable managed by PM6)															
Collection & transport to sorting/agg	180	27.8	0.096	1,373	0.083	0.023	5.6E-10	45.4	0.40	0	334	2,537	362	0	0
Sorting	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Transp from sorting/agg to processor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Processing & packaging	149	40.7	0.11	1,058	0.45	0.033	1.3E-08	280	197	181	155	4,361	2,336	0.13	252
Waste mgmt (includes transp & WTE)	322	-27.4	2.10	2,829	-0.13	0.0020	9.6E-07	14.2	34.3	102	99.6	-133	-131	4.0E-07	43.9
Empty can recycling credit	-20.9	-3.00	-0.011	-242	-0.014	-0.0027	0	-2.71	-0.0017	-70.3	-20.5	-313	-313	-0.15	0
Transport & use recycled paint	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Virgin paint credit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	629	38.0	2.29	5,019	0.39	0.055	9.8E-07	337	231	213	568	6,452	2,254	-0.021	296
MM3-Exp (20% suitable; unsuitable managed by PM6)															
Collection & transport to sorting/agg	899	139	0.48	6,867	0.41	0.12	2.8E-09	227	2.02	0	1,669	12,684	1,812	0	0
Sorting	308	102	0.20	721	0.47	0.0036	2.1E-08	14.3	0.012	832	271	4,177	4,177	1.3E-05	0
Transp from sorting/agg to processor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Processing & packaging	146	33.6	0.13	1,103	0.16	0.12	3.1E-09	20.9	0.019	346	198	11,461	3,369	0.38	0
Waste mgmt (includes transp & WTE)	766	-63.1	5.27	6,578	-0.29	0.0029	2.4E-06	20.6	137	257	121	-995	-991	9.9E-07	176
Empty can recycling credit	-83.5	-12.0	-0.043	-969	-0.056	-0.011	0	-10.8	-0.0067	-281	-82.1	-1,251	-1,252	-0.61	0
Transport & use recycled paint	173	27.0	0.093	1,323	0.080	0.023	5.4E-10	43.9	89.1	0	321	2,441	302	0	114
Virgin paint credit	-628	-200	-0.49	-8,004	-0.93	-0.026	-1.3E-05	-137	-44.5	-2,907	-1,747	-13,742	-9,707	-0.27	-47.3
Total	1,580	26.5	5.64	7,620	-0.15	0.23	-1.1E-05	179	184	-1,753	749	14,779	-2,290	-0.50	242
MM4-Exp (75% suitable; unsuitable managed by PM6)															
Collection & transport to sorting/agg	1,229	183	0.64	9,309	0.55	0.15	3.8E-09	305	2.60	0	2,270	17,228	3,309	0	0
Sorting	212	70.2	0.13	507	0.32	0.0025	1.4E-08	10.0	0.011	1,451	190	2,890	2,888	6.7E-06	0
Transp from sorting/agg to processor	133	9.25	0.041	877	0.043	0.0036	3.8E-10	24.3	0.0094	0	228	1,691	1,691	0	0
Processing & packaging	964	650	0.74	9,339	3.06	0.078	4.2E-06	173	4.87	728	3,258	29,637	13,897	0.15	5.10
Waste mgmt (includes transp & WTE)	328	-36.9	2.51	3,004	-0.17	7.5E-04	1.2E-06	5.87	42.8	123	15.1	-928	-926	4.8E-07	54.9
Empty can recycling credit	-320	-86.6	-0.18	-3,884	-0.41	-0.040	-3.1E-11	-47.8	-0.028	-965	-517	-5,973	-4,797	-2.11	0
Transport & use recycled paint	781	97.3	0.36	5,691	0.32	0.072	2.4E-09	178	338	0	1,415	10,658	4,554	0	432
Virgin paint credit	-2,387	-760	-1.86	-30,446	-3.53	-0.098	-4.9E-05	-519	-169	-11,057	-6,647	-52,273	-36,924	-1.01	-180
Total	941	126	2.39	-5,601	0.19	0.17	-4.4E-05	129	220	-9,719	214	2,938	-16,299	-2.97	312
MM5-Exp (60% suitable; unsuitable managed by PM6)															
Collection & transport to sorting/agg	1,229	183	0.64	9,305	0.55	0.15	3.8E-09	305	2.60	0	2,270	17,228	3,309	0	0
Sorting	105	34.9	0.066	269	0.16	0.0013	6.7E-09	5.29	0.010	2,140	101	1,456	1,455	0	0
Transp from sorting/agg to processor	106	7.40	0.033	701	0.035	0.0029	3.1E-10	19.4	0.0075	0	183	1,352	1,352	0	0
Processing & packaging	3,551	1,589	2.95	49,180	7.44	0.22	7.6E-05	820	86.6	7,954	11,386	91,628	46,406	0.93	91.9
Waste mgmt (includes transp & WTE)	427	-40.7	3.09	3,766	-0.19	0.0013	1.4E-06	9.56	68.5	151	44.4	-849	-847	5.8E-07	87.8
Empty can recycling credit	-308	-76.8	-0.17	-3,714	-0.36	-0.039	-2.5E-11	-45.0	-0.026	-948	-465	-5,563	-4,622	-2.07	0
Transport & use recycled paint	873	106	0.39	6,320	0.36	0.077	2.6E-09	196	353	0	1,576	11,857	5,484	0	451
Virgin paint credit	-2,493	-794	-1.94	-31,786	-3.69	-0.10	-5.2E-05	-542	-177	-11,544	-6,940	-54,576	-38,550	-1.06	-188
Total	3,490	1,009	5.06	34,041	4.31	0.31	2.5E-05	768	335	-2,248	8,156	62,533	13,986	-2.20	443
MM6-Exp (100% suitable)															
Collection & transport to sorting/agg	899	139	0.48	6,867	0.41	0.12	2.8E-09	227	2.02	0	1,669	12,684	1,812	0	0
Sorting	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Transp from sorting/agg to processor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Processing & packaging	182	42.0	0.16	1,378	0.20	0.15	3.8E-09	26.1	0.023	433	247	14,326	4,211	0.47	0
Waste mgmt (includes transp & WTE)	931	-73.8	6.33	7,941	-0.34	0.0037	2.9E-06	25.9	171	308	157	-1,065	-1,061	1.2E-06	219
Empty can recycling credit	-104	-15.0	-0.054	-1,211	-0.070	-0.014	0	-13.6	-0.0084	-352	-103	-1,564	-1,564	-0.77	0
Transport & use recycled paint	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Virgin paint credit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1,908	92.0	6.93	14,975	0.21	0.25	2.9E-06	265	173	389	1,970	24,382	3,398	-0.29	219

Results for Modified Methods under Expanded Infrastructure for 100% displacement (100% of recycled paint replaces purchase of equivalent amount of virgin paint)

"Transport & use recycled paint" based on 75% of recycled paint going to domestic users and 25% to export markets.

Results per 1000 Gallons of Leftover Paint Managed	Global Warming Potential kg CO2 eq	Acidification Potential kg H+ mol eq	HH - Carcinogenics Potential kg benzene eq	HH - Non carcinogenics Potential kg toluene eq	Respiratory Effects Potential kg PM2.5 eq	Eutrophication Potential kg N eq	Ozone Depletion Potential kg CFC-11 eq	Ecotoxicity Potential kg 2,4-D eq	Smog Formation Potential kg NOx eq	Total Water Use liters	Fossil Fuel Depletion Surplus MJ	Total Energy MJ	Total Fuel Energy MJ	Mineral Extraction Surplus MJ	Total Unspecified VOCs kg
MM1-Exp (10% suitable; unsuitable managed by PM2)															
Collection & transport to sorting	93.0	14.6	0.050	713	0.043	0.012	2.9E-10	23.7	0.21	0	173	1,316	163	0	0
Sorting	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Transp from sorting to remote processor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Processing & packaging	126	36.3	0.083	881	0.46	0.0039	1.3E-08	309	221	107	119	1,683	1,681	0.042	283
Waste mgmt (includes transp & WTE)	163	-16.3	1.04	1,509	-0.074	0.0014	4.8E-07	10.1	0.0059	50.8	74.4	19.6	20.8	2.0E-07	0
Empty can recycling credit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Transport & use recycled paint	0	0	0	0	0	0	0	0	44.3	0	0	0	0	0	56.8
Virgin paint credit	-628	-200	-0.49	-8,004	-0.93	-0.026	-1.3E-05	-137	-44.5	-2,907	-1,747	-13,742	-9,707	-0.27	-47.3
Total	-245	-165	0.69	-4,901	-0.50	-0.0084	-1.3E-05	206	221	-2,749	-1,381	-10,724	-7,843	-0.22	293
MM2-Exp (80% suitable; unsuitable managed by PM6)															
Collection & transport to sorting/agg	180	27.8	0.096	1,373	0.083	0.023	5.6E-10	45.4	0.40	0	334	2,537	362	0	0
Sorting	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Transp from sorting/agg to processor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Processing & packaging	149	40.7	0.11	1,058	0.45	0.033	1.3E-08	280	197	181	155	4,361	2,336	0.13	252
Waste mgmt (includes transp & WTE)	322	-27.4	2.10	2,829	-0.13	0.0020	9.6E-07	14.2	34.3	102	99.6	-133	-131	4.0E-07	43.9
Empty can recycling credit	-20.9	-3.00	-0.011	-242	-0.014	-0.0027	0	-2.71	-0.0017	-70.3	-20.5	-313	-313	-0.15	0
Transport & use recycled paint	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Virgin paint credit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	629	38.0	2.29	5,019	0.39	0.055	9.8E-07	337	231	213	568	6,452	2,254	-0.021	296
MM3-Exp (20% suitable; unsuitable managed by PM6)															
Collection & transport to sorting/agg	899	139	0.48	6,867	0.41	0.12	2.8E-09	227	2.02	0	1,669	12,684	1,812	0	0
Sorting	308	102	0.20	721	0.47	0.0036	2.1E-08	14.3	0.012	832	271	4,181	4,177	1.3E-05	0
Transp from sorting/agg to processor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Processing & packaging	146	33.6	0.13	1,103	0.16	0.12	3.1E-09	20.9	0.019	346	198	11,461	3,369	0.38	0
Waste mgmt (includes transp & WTE)	766	-63.1	5.27	6,578	-0.29	0.0029	2.4E-06	20.6	137	257	121	-995	-991	9.9E-07	176
Empty can recycling credit	-83.5	-12.0	-0.043	-969	-0.056	-0.011	0	-10.8	-0.0067	-281	-82.1	-1,251	-1,252	-0.61	0
Transport & use recycled paint	0	0	0	0	0	0	0	0	88.7	0	0	0	0	0	114
Virgin paint credit	-1,255	-400	-0.98	-16,008	-1.86	-0.052	-2.6E-05	-273	-88.9	-5,813	-3,495	-27,484	-19,414	-0.53	-94.6
Total	780	-200	5.06	-1,707	-1.16	0.18	-2.4E-05	-1.16	139	-4,660	-1,319	-1,404	-12,299	-0.77	195
MM4-Exp (75% suitable; unsuitable managed by PM6)															
Collection & transport to sorting/agg	1,229	183	0.64	9,309	0.55	0.15	3.8E-09	305	2.60	0	2,270	17,236	3,318	0	0
Sorting	212	70.2	0.13	507	0.32	0.0025	1.4E-08	10.0	0.011	1,451	190	2,890	2,888	6.7E-06	0
Transp from sorting/agg to processor	133	9.25	0.041	877	0.043	0.0036	3.8E-10	24.3	0.0094	0	228	1,691	1,691	0	0
Processing & packaging	964	650	0.74	9,339	3.06	0.078	4.2E-06	173	4.87	728	3,258	29,637	13,897	0.15	5.10
Waste mgmt (includes transp & WTE)	328	-36.9	2.51	3,004	-0.17	7.5E-04	1.2E-06	5.87	42.8	123	15.1	-928	-926	4.8E-07	54.9
Empty can recycling credit	-320	-86.6	-0.18	-3,884	-0.41	-0.040	-3.1E-11	-47.8	-0.028	-965	-517	-5,973	-4,797	-2.11	0
Transport & use recycled paint	289	20.2	0.090	1,917	0.094	0.0078	8.4E-10	53.0	337	0	499	3,694	3,694	0	432
Virgin paint credit	-4,775	-1,520	-3.72	-60,891	-7.07	-0.20	-9.9E-05	-1,038	-338	-22,114	-13,294	-104,547	-73,848	-2.02	-360
Total	-1,939	-711	0.27	-39,821	-3.57	0.0056	-9.4E-05	-515	49.5	-20,776	-7,349	-56,300	-54,084	-3.98	132
MM5-Exp (60% suitable; unsuitable managed by PM6)															
Collection & transport to sorting/agg	1,229	183	0.64	9,305	0.55	0.15	3.8E-09	305	2.60	0	2,270	17,228	3,309	0	0
Sorting	105	34.9	0.066	269	0.16	0.0013	6.7E-09	5.29	0.010	2,140	101	1,456	1,455	0	0
Transp from sorting/agg to processor	106	7.40	0.033	701	0.035	0.0029	3.1E-10	19.4	0.0075	0	183	1,352	1,352	0	0
Processing & packaging	3,551	1,589	2.95	49,180	7.44	0.22	7.6E-05	820	86.6	7,954	11,386	91,628	46,406	0.93	91.9
Waste mgmt (includes transp & WTE)	427	-40.7	3.09	3,766	-0.19	0.0013	1.4E-06	9.56	68.5	151	44.4	-849	-847	5.8E-07	87.8
Empty can recycling credit	-308	-76.8	-0.17	-3,714	-0.36	-0.039	-2.5E-11	-45.0	-0.026	-948	-465	-5,563	-4,622	-2.07	0
Transport & use recycled paint	358	25.1	0.11	2,379	0.12	0.0097	1.0E-09	65.8	352	0	619	4,585	4,585	0	451
Virgin paint credit	-4,985	-1,587	-3.88	-63,573	-7.38	-0.20	-1.0E-04	-1,084	-353	-23,088	-13,880	-109,151	-77,101	-2.11	-376
Total	484	135	2.84	-1,686	0.38	0.14	-2.6E-05	95.2	157	-13,792	260	686	-25,462	-3.26	255
MM6-Exp (100% suitable)															
Collection & transport to sorting/agg	899	139	0.48	6,867	0.41	0.12	2.8E-09	227	2.02	0	1,669	12,684	1,812	0	0
Sorting	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Transp from sorting/agg to processor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Processing & packaging	182	42.0	0.16	1,378	0.20	0.15	3.8E-09	26.1	0.023	433	247	14,326	4,211	0.47	0
Waste mgmt (includes transp & WTE)	931	-73.8	6.33	7,941	-0.34	0.0037	2.9E-06	25.9	171	308	157	-1,065	-1,061	1.2E-06	219
Empty can recycling credit	-104	-15.0	-0.054	-1,211	-0.070	-0.014	0	-13.6	-0.0084	-352	-103	-1,564	-1,564	-0.77	0
Transport & use recycled paint	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Virgin paint credit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1,908	92.0	6.93	14,975	0.21	0.25	2.9E-06	265	173	389	1,970	24,382	3,398	-0.29	219

TOTAL RESULTS TABLES

Each table contains bottom line results for the following 3 scenarios

0% Displacement, 25% Export

50% Displacement, 25% Export

100% Displacement, 25% Export

evaluated as pure methods and as modified methods for both the limited and expanded infrastructures.

There are four tables, shown in the following order:

Pure method results: Limited infrastructure results in the top section and expanded infrastructure below.

Modified method results: Limited infrastructure results in the top section, expanded below.

Limited infrastructure results: Pure method results in top section, modified methods below.

Expanded infrastructure results: Pure method results in top section, modified below.

**Total Results per 1,000 Gallons of Leftover Paint Managed
Pure Methods, Limited and Expanded Infrastructure**

% Displ	% Export	Method	Global Warming Potential kg CO2 eq	Acidification Potential kg H+ mol eq	HH - Carcinogenics Potential kg benzene eq	HH - Non carcinogenics Potential kg toluene eq	Respiratory Effects Potential kg PM2.5 eq	Eutrophication Potential kg N eq	Ozone Depletion Potential kg CFC-11 eq	Ecotoxicity Potential kg 2,4-D eq	Smog Formation Potential kg NOx eq	Total Water Use liters	Fossil Fuel Depletion Surplus MJ	Total Energy MJ	Total Fuel Energy MJ	Mineral Extraction Surplus MJ	Total Unspecified VOCs kg
0%	25%	PM1-Lim	1,037	125	1.53	8,264	0.34	0.12	4.8E-07	236	446	50.8	1,707	12,453	922	2.0E-07	568
50%	25%	PM1-Lim	-2,101	-874	-0.92	-31,755	-4.31	-0.0076	-6.5E-05	-446	223	-14,483	-7,030	-56,257	-47,613	-1.33	331
100%	25%	PM1-Lim	-5,239	-1,873	-3.36	-71,774	-8.95	-0.14	-1.3E-04	-1,129	1.02	-29,017	-15,768	-124,968	-96,148	-2.66	94.9
0%	25%	PM2-Lim	310	24.5	1.14	2,529	0.44	0.0059	4.9E-07	355	246	169	217	1,970	1,969	0.047	315
50%	25%	PM2-Lim	310	24.5	1.14	2,529	0.44	0.0059	4.9E-07	355	246	169	217	1,970	1,969	0.047	315
100%	25%	PM2-Lim	310	24.5	1.14	2,529	0.44	0.0059	4.9E-07	355	246	169	217	1,970	1,969	0.047	315
0%	25%	PM3-Lim	2,776	448	2.49	19,910	1.46	0.31	5.0E-07	611	449	883	4,633	36,815	8,032	1.3E-05	568
50%	25%	PM3-Lim	-1,225	-686	-0.42	-26,723	-3.58	0.066	-6.5E-05	-291	225	-13,651	-5,709	-44,101	-42,010	-1.33	331
100%	25%	PM3-Lim	-5,226	-1,820	-3.33	-73,356	-8.62	-0.18	-1.3E-04	-1,192	0.26	-28,185	-16,052	-125,017	-92,053	-2.66	94.9
0%	25%	PM4-Lim	3,824	1,142	3.27	28,911	4.79	0.30	6.0E-06	818	461	1,341	8,705	66,187	24,008	-2.65	583
50%	25%	PM4-Lim	-15.4	26.2	0.43	-16,715	-0.22	0.080	-6.0E-05	-41.0	234	-13,402	-1,379	-12,797	-26,372	-4.00	343
100%	25%	PM4-Lim	-3,855	-1,090	-2.40	-62,341	-5.23	-0.14	-1.3E-04	-900	7.20	-28,144	-11,463	-91,781	-76,752	-5.35	103
0%	25%	PM5-Lim	8,918	2,972	7.18	101,852	13.2	0.56	1.3E-04	2,083	737	13,808	24,328	182,161	83,930	-1.71	905
50%	25%	PM5-Lim	3,907	1,515	3.48	42,307	6.68	0.28	4.0E-05	961	441	-5,432	11,168	79,083	18,182	-3.47	592
100%	25%	PM5-Lim	-1,104	58.3	-0.22	-17,237	0.14	-0.0072	-4.6E-05	-160	145	-24,672	-1,992	-23,996	-47,567	-5.24	279
0%	25%	PM6-Lim	1,645	49.3	6.78	12,939	0.082	0.22	2.9E-06	197	173	389	1,478	20,634	3,137	-0.29	219
50%	25%	PM6-Lim	1,645	49.3	6.78	12,939	0.082	0.22	2.9E-06	197	173	389	1,478	20,634	3,137	-0.29	219
100%	25%	PM6-Lim	1,645	49.3	6.78	12,939	0.082	0.22	2.9E-06	197	173	389	1,478	20,634	3,137	-0.29	219
0%	25%	PM1-Exp	1,037	125	1.53	8,264	0.34	0.12	4.8E-07	236	446	50.8	1,707	12,453	922	2.0E-07	568
50%	25%	PM1-Exp	-2,101	-874	-0.92	-31,755	-4.31	-0.0076	-6.5E-05	-446	223	-14,483	-7,030	-56,257	-47,613	-1.33	331
100%	25%	PM1-Exp	-5,239	-1,873	-3.36	-71,774	-8.95	-0.14	-1.3E-04	-1,129	1.02	-29,017	-15,768	-124,968	-96,148	-2.66	94.9
0%	25%	PM2-Exp	310	24.5	1.14	2,529	0.44	0.0059	4.9E-07	355	246	169	217	1,970	1,969	0.047	315
50%	25%	PM2-Exp	310	24.5	1.14	2,529	0.44	0.0059	4.9E-07	355	246	169	217	1,970	1,969	0.047	315
100%	25%	PM2-Exp	310	24.5	1.14	2,529	0.44	0.0059	4.9E-07	355	246	169	217	1,970	1,969	0.047	315
0%	25%	PM3-Exp	3,040	491	2.64	21,947	1.59	0.34	5.1E-07	680	449	883	5,125	40,563	8,293	1.3E-05	568
50%	25%	PM3-Exp	-962	-644	-0.27	-24,687	-3.45	0.10	-6.5E-05	-222	225	-13,651	-5,217	-40,353	-41,750	-1.33	331
100%	25%	PM3-Exp	-4,963	-1,778	-3.19	-71,320	-8.50	-0.14	-1.3E-04	-1,124	0.91	-28,185	-15,560	-121,269	-91,793	-2.66	94.9
0%	25%	PM4-Exp	4,277	1,215	3.62	32,183	5.05	0.34	6.1E-06	914	462	1,170	9,448	72,293	26,050	-2.52	583
50%	25%	PM4-Exp	437	99.1	0.78	-13,443	0.033	0.13	-6.0E-05	54.5	235	-13,573	-636	-6,691	-24,329	-3.86	343
100%	25%	PM4-Exp	-3,403	-1,017	-2.05	-59,069	-4.98	-0.089	-1.3E-04	-805	7.96	-28,315	-10,720	-85,675	-74,709	-5.21	103
0%	25%	PM5-Exp	9,266	3,024	7.36	104,491	13.4	0.60	1.3E-04	2,169	738	13,808	24,972	187,045	84,826	-1.71	905
50%	25%	PM5-Exp	4,255	1,567	3.66	44,947	6.84	0.32	4.0E-05	1,048	442	-5,432	11,811	83,967	19,078	-3.47	592
100%	25%	PM5-Exp	-756	110	-0.039	-14,598	0.30	0.035	-4.6E-05	-73.6	145	-24,672	-1,349	-19,111	-46,671	-5.24	279
0%	25%	PM6-Exp	1,908	92.0	6.93	14,975	0.21	0.25	2.9E-06	265	173	389	1,970	24,382	3,398	-0.29	219
50%	25%	PM6-Exp	1,908	92.0	6.93	14,975	0.21	0.25	2.9E-06	265	173	389	1,970	24,382	3,398	-0.29	219
100%	25%	PM6-Exp	1,908	92.0	6.93	14,975	0.21	0.25	2.9E-06	265	173	389	1,970	24,382	3,398	-0.29	219

**Total Results per 1,000 Gallons of Leftover Paint Managed
Modified Methods, Limited and Expanded Infrastructure**

% Displ	% Export	Method	Global Warming Potential kg CO2 eq	Acidification Potential kg H+ mol eq	HH - Carcinogenics Potential kg benzene eq	HH - Non carcinogenics Potential kg toluene eq	Respiratory Effects Potential kg PM2.5 eq	Eutrophication Potential kg N eq	Ozone Depletion Potential kg CFC-11 eq	Ecotoxicity Potential kg 2,4-D eq	Smog Formation Potential kg NOx eq	Total Water Use liters	Fossil Fuel Depletion Surplus MJ	Total Energy MJ	Total Fuel Energy MJ	Mineral Extraction Surplus MJ	Total Unspecified VOCs kg
0%	25%	MM1-Lim	346	29.6	1.16	2,816	0.43	0.012	4.9E-07	349	256	163	292	2,494	1,916	0.045	327
50%	25%	MM1-Lim	189	-20.4	1.03	815	0.20	0.0052	-2.8E-06	314	245	-563	-145	-941	-510	-0.022	316
100%	25%	MM1-Lim	32.2	-70.3	0.91	-1,186	-0.034	-0.0012	-6.0E-06	280	233	-1,290	-582	-4,377	-2,937	-0.088	304
0%	25%	MM2-Lim	577	29.5	2.26	4,611	0.36	0.048	9.8E-07	323	231	213	469	5,703	2,202	-0.021	296
50%	25%	MM2-Lim	577	29.5	2.26	4,611	0.36	0.048	9.8E-07	323	231	213	469	5,703	2,202	-0.021	296
100%	25%	MM2-Lim	577	29.5	2.26	4,611	0.36	0.048	9.8E-07	323	231	213	469	5,703	2,202	-0.021	296
0%	25%	MM3-Lim	2,117	211	6.08	14,910	0.73	0.24	2.4E-06	291	228	1,153	2,326	27,215	7,458	-0.24	289
50%	25%	MM3-Lim	1,317	-16.3	5.50	5,584	-0.27	0.19	-1.1E-05	111	183	-1,753	257	11,032	-2,551	-0.50	242
100%	25%	MM3-Lim	517	-243	4.91	-3,743	-1.28	0.14	-2.4E-05	-69.4	138	-4,660	-1,811	-5,151	-12,559	-0.77	195
0%	25%	MM4-Lim	3,373	891	4.20	25,405	3.71	0.28	5.2E-06	678	389	1,527	7,030	56,096	19,458	-2.06	492
50%	25%	MM4-Lim	493	54.2	2.07	-8,815	-0.054	0.12	-4.4E-05	33.3	219	-9,530	-533	-3,142	-18,327	-3.07	312
100%	25%	MM4-Lim	-2,387	-783	-0.051	-43,035	-3.82	-0.040	-9.4E-05	-611	48.7	-20,587	-8,096	-62,380	-56,111	-4.09	132
0%	25%	MM5-Lim	5,434	1,544	7.07	58,300	6.78	0.40	6.5E-05	1,168	455	8,168	13,140	103,545	44,407	-1.00	562
50%	25%	MM5-Lim	2,929	815	5.22	28,527	3.51	0.26	2.2E-05	607	307	-1,452	6,560	52,006	11,533	-1.88	406
100%	25%	MM5-Lim	423	87.1	3.37	-1,245	0.24	0.12	-2.1E-05	46.8	159	-11,072	-19.8	467	-21,341	-2.77	249
0%	25%	MM6-Lim	1,645	49.3	6.78	12,939	0.082	0.22	2.9E-06	197	173	389	1,478	20,634	3,137	-0.29	219
50%	25%	MM6-Lim	1,645	49.3	6.78	12,939	0.082	0.22	2.9E-06	197	173	389	1,478	20,634	3,137	-0.29	219
100%	25%	MM6-Lim	1,645	49.3	6.78	12,939	0.082	0.22	2.9E-06	197	173	389	1,478	20,634	3,137	-0.29	219
0%	25%	MM1-Exp	382	34.6	1.18	3,103	0.43	0.017	4.9E-07	343	266	158	366	3,018	1,864	0.042	340
50%	25%	MM1-Exp	68.6	-65.3	0.93	-899	-0.039	0.0045	-6.0E-06	274	243	-1,296	-508	-3,853	-2,990	-0.091	316
100%	25%	MM1-Exp	-245	-165	0.69	-4,901	-0.50	-0.0084	-1.3E-05	206	221	-2,749	-1,381	-10,724	-7,843	-0.22	293
0%	25%	MM2-Exp	629	38.0	2.29	5,019	0.39	0.055	9.8E-07	337	231	213	568	6,452	2,254	-0.021	296
50%	25%	MM2-Exp	629	38.0	2.29	5,019	0.39	0.055	9.8E-07	337	231	213	568	6,452	2,254	-0.021	296
100%	25%	MM2-Exp	629	38.0	2.29	5,019	0.39	0.055	9.8E-07	337	231	213	568	6,452	2,254	-0.021	296
0%	25%	MM3-Exp	2,381	253	6.23	16,946	0.86	0.27	2.4E-06	360	229	1,153	2,818	30,963	7,718	-0.24	289
50%	25%	MM3-Exp	1,580	26.5	5.64	7,620	-0.15	0.23	-1.1E-05	179	184	-1,753	749	14,779	-2,290	-0.50	242
100%	25%	MM3-Exp	780	-200	5.06	-1,707	-1.16	0.18	-2.4E-05	-1.16	139	-4,660	-1,319	-1,404	-12,299	-0.77	195
0%	25%	MM4-Exp	3,820	963	4.52	28,618	3.95	0.33	5.3E-06	774	390	1,338	7,777	62,176	21,485	-1.96	492
50%	25%	MM4-Exp	941	126	2.39	-5,601	0.19	0.17	-4.4E-05	129	220	-9,719	214	2,938	-16,299	-2.97	312
100%	25%	MM4-Exp	-1,939	-711	0.27	-39,821	-3.57	0.0056	-9.4E-05	-515	49.5	-20,776	-7,349	-56,300	-54,084	-3.98	132
0%	25%	MM5-Exp	6,497	1,883	7.28	69,767	8.23	0.48	7.7E-05	1,441	512	9,296	16,052	124,380	53,435	-1.15	631
50%	25%	MM5-Exp	3,490	1,009	5.06	34,041	4.31	0.31	2.5E-05	768	335	-2,248	8,156	62,533	13,986	-2.20	443
100%	25%	MM5-Exp	484	135	2.84	-1,686	0.38	0.14	-2.6E-05	95.2	157	-13,792	260	686	-25,462	-3.26	255
0%	25%	MM6-Exp	1,908	92.0	6.93	14,975	0.21	0.25	2.9E-06	265	173	389	1,970	24,382	3,398	-0.29	219
50%	25%	MM6-Exp	1,908	92.0	6.93	14,975	0.21	0.25	2.9E-06	265	173	389	1,970	24,382	3,398	-0.29	219
100%	25%	MM6-Exp	1,908	92.0	6.93	14,975	0.21	0.25	2.9E-06	265	173	389	1,970	24,382	3,398	-0.29	219

**Total Results per 1,000 Gallons of Leftover Paint Managed
Limited Infrastructure, Pure Methods and Modified Methods**

% Displ	% Export	Method	Global Warming Potential kg CO2 eq	Acidification Potential kg H+ mol eq	HH - Carcinogenics Potential kg benzene eq	HH - Non carcinogenics Potential kg toluene eq	Respiratory Effects Potential kg PM2.5 eq	Eutrophication Potential kg N eq	Ozone Depletion Potential kg CFC-11 eq	Ecotoxicity Potential kg 2,4-D eq	Smog Formation Potential kg NOx eq	Total Water Use liters	Fossil Fuel Depletion Surplus MJ	Total Energy MJ	Total Fuel Energy MJ	Mineral Extraction Surplus MJ	Total Unspecified VOCs kg
0%	25%	PM1-Lim	1,037	125	1.53	8,264	0.34	0.12	4.8E-07	236	446	50.8	1,707	12,453	922	2.0E-07	568
50%	25%	PM1-Lim	-2,101	-874	-0.92	-31,755	-4.31	-0.0076	-6.5E-05	-446	223	-14,483	-7,030	-56,257	-47,613	-1.33	331
100%	25%	PM1-Lim	-5,239	-1,873	-3.36	-71,774	-8.95	-0.14	-1.3E-04	-1,129	1.02	-29,017	-15,768	-124,968	-96,148	-2.66	94.9
0%	25%	PM2-Lim	310	24.5	1.14	2,529	0.44	0.0059	4.9E-07	355	246	169	217	1,970	1,969	0.047	315
50%	25%	PM2-Lim	310	24.5	1.14	2,529	0.44	0.0059	4.9E-07	355	246	169	217	1,970	1,969	0.047	315
100%	25%	PM2-Lim	310	24.5	1.14	2,529	0.44	0.0059	4.9E-07	355	246	169	217	1,970	1,969	0.047	315
0%	25%	PM3-Lim	2,776	448	2.49	19,910	1.46	0.31	5.0E-07	611	449	883	4,633	36,815	8,032	1.3E-05	568
50%	25%	PM3-Lim	-1,225	-686	-0.42	-26,723	-3.58	0.066	-6.5E-05	-291	225	-13,651	-5,709	-44,101	-42,010	-1.33	331
100%	25%	PM3-Lim	-5,226	-1,820	-3.33	-73,356	-8.62	-0.18	-1.3E-04	-1,192	0.26	-28,185	-16,052	-125,017	-92,053	-2.66	94.9
0%	25%	PM4-Lim	3,824	1,142	3.27	28,911	4.79	0.30	6.0E-06	818	461	1,341	8,705	66,187	24,008	-2.65	583
50%	25%	PM4-Lim	-15.4	26.2	0.43	-16,715	-0.22	0.080	-6.0E-05	-41.0	234	-13,402	-1,379	-12,797	-26,372	-4.00	343
100%	25%	PM4-Lim	-3,855	-1,090	-2.40	-62,341	-5.23	-0.14	-1.3E-04	-900	7.20	-28,144	-11,463	-91,781	-76,752	-5.35	103
0%	25%	PM5-Lim	8,918	2,972	7.18	101,852	13.2	0.56	1.3E-04	2,083	737	13,808	24,328	182,161	83,930	-1.71	905
50%	25%	PM5-Lim	3,907	1,515	3.48	42,307	6.68	0.28	4.0E-05	961	441	-5,432	11,168	79,083	18,182	-3.47	592
100%	25%	PM5-Lim	-1,104	58.3	-0.22	-17,237	0.14	-0.0072	-4.6E-05	-160	145	-24,672	-1,992	-23,996	-47,567	-5.24	279
0%	25%	PM6-Lim	1,645	49.3	6.78	12,939	0.082	0.22	2.9E-06	197	173	389	1,478	20,634	3,137	-0.29	219
50%	25%	PM6-Lim	1,645	49.3	6.78	12,939	0.082	0.22	2.9E-06	197	173	389	1,478	20,634	3,137	-0.29	219
100%	25%	PM6-Lim	1,645	49.3	6.78	12,939	0.082	0.22	2.9E-06	197	173	389	1,478	20,634	3,137	-0.29	219
0%	25%	MM1-Lim	346	29.6	1.16	2,816	0.43	0.012	4.9E-07	349	256	163	292	2,494	1,916	0.045	327
50%	25%	MM1-Lim	189	-20.4	1.03	815	0.20	0.0052	-2.8E-06	314	245	-563	-145	-941	-510	-0.022	316
100%	25%	MM1-Lim	32.2	-70.3	0.91	-1,186	-0.034	-0.0012	-6.0E-06	280	233	-1,290	-582	-4,377	-2,937	-0.088	304
0%	25%	MM2-Lim	577	29.5	2.26	4,611	0.36	0.048	9.8E-07	323	231	213	469	5,703	2,202	-0.021	296
50%	25%	MM2-Lim	577	29.5	2.26	4,611	0.36	0.048	9.8E-07	323	231	213	469	5,703	2,202	-0.021	296
100%	25%	MM2-Lim	577	29.5	2.26	4,611	0.36	0.048	9.8E-07	323	231	213	469	5,703	2,202	-0.021	296
0%	25%	MM3-Lim	2,117	211	6.08	14,910	0.73	0.24	2.4E-06	291	228	1,153	2,326	27,215	7,458	-0.24	289
50%	25%	MM3-Lim	1,317	-16.3	5.50	5,584	-0.27	0.19	-1.1E-05	111	183	-1,753	257	11,032	-2,551	-0.50	242
100%	25%	MM3-Lim	517	-243	4.91	-3,743	-1.28	0.14	-2.4E-05	-69.4	138	-4,660	-1,811	-5,151	-12,559	-0.77	195
0%	25%	MM4-Lim	3,373	891	4.20	25,405	3.71	0.28	5.2E-06	678	389	1,527	7,030	56,096	19,458	-2.06	492
50%	25%	MM4-Lim	493	54.2	2.07	-8,815	-0.054	0.12	-4.4E-05	33.3	219	-9,530	-533	-3,142	-18,327	-3.07	312
100%	25%	MM4-Lim	-2,387	-783	-0.051	-43,035	-3.82	-0.040	-9.4E-05	-611	48.7	-20,587	-8,096	-62,380	-56,111	-4.09	132
0%	25%	MM5-Lim	5,434	1,544	7.07	58,300	6.78	0.40	6.5E-05	1,168	455	8,168	13,140	103,545	44,407	-1.00	562
50%	25%	MM5-Lim	2,929	815	5.22	28,527	3.51	0.26	2.2E-05	607	307	-1,452	6,560	52,006	11,533	-1.88	406
100%	25%	MM5-Lim	423	87.1	3.37	-1,245	0.24	0.12	-2.1E-05	46.8	159	-11,072	-19.8	467	-21,341	-2.77	249
0%	25%	MM6-Lim	1,645	49.3	6.78	12,939	0.082	0.22	2.9E-06	197	173	389	1,478	20,634	3,137	-0.29	219
50%	25%	MM6-Lim	1,645	49.3	6.78	12,939	0.082	0.22	2.9E-06	197	173	389	1,478	20,634	3,137	-0.29	219
100%	25%	MM6-Lim	1,645	49.3	6.78	12,939	0.082	0.22	2.9E-06	197	173	389	1,478	20,634	3,137	-0.29	219

**Total Results per 1,000 Gallons of Leftover Paint Managed
Expanded Infrastructure, Pure Methods and Modified Methods**

% Displ	% Export	Method	Global Warming Potential kg CO2 eq	Acidification Potential kg H+ mol eq	HH - Carcinogenics Potential kg benzene eq	HH - Non carcinogenics Potential kg toluene eq	Respiratory Effects Potential kg PM2.5 eq	Eutrophication Potential kg N eq	Ozone Depletion Potential kg CFC-11 eq	Ecotoxicity Potential kg 2,4-D eq	Smog Formation Potential kg NOx eq	Total Water Use liters	Fossil Fuel Depletion Surplus MJ	Total Energy MJ	Total Fuel Energy MJ	Mineral Extraction Surplus MJ	Total Unspecified VOCs kg
0%	25%	PM1-Exp	1,037	125	1.53	8,264	0.34	0.12	4.8E-07	236	446	50.8	1,707	12,453	922	2.0E-07	568
50%	25%	PM1-Exp	-2,101	-874	-0.92	-31,755	-4.31	-0.0076	-6.5E-05	-446	223	-14,483	-7,030	-56,257	-47,613	-1.33	331
100%	25%	PM1-Exp	-5,239	-1,873	-3.36	-71,774	-8.95	-0.14	-1.3E-04	-1,129	1.02	-29,017	-15,768	-124,968	-96,148	-2.66	94.9
0%	25%	PM2-Exp	310	24.5	1.14	2,529	0.44	0.0059	4.9E-07	355	246	169	217	1,970	1,969	0.047	315
50%	25%	PM2-Exp	310	24.5	1.14	2,529	0.44	0.0059	4.9E-07	355	246	169	217	1,970	1,969	0.047	315
100%	25%	PM2-Exp	310	24.5	1.14	2,529	0.44	0.0059	4.9E-07	355	246	169	217	1,970	1,969	0.047	315
0%	25%	PM3-Exp	3,040	491	2.64	21,947	1.59	0.34	5.1E-07	680	449	883	5,125	40,563	8,293	1.3E-05	568
50%	25%	PM3-Exp	-962	-644	-0.27	-24,687	-3.45	0.10	-6.5E-05	-222	225	-13,651	-5,217	-40,353	-41,750	-1.33	331
100%	25%	PM3-Exp	-4,963	-1,778	-3.19	-71,320	-8.50	-0.14	-1.3E-04	-1,124	0.91	-28,185	-15,560	-121,269	-91,793	-2.66	94.9
0%	25%	PM4-Exp	4,277	1,215	3.62	32,183	5.05	0.34	6.1E-06	914	462	1,170	9,448	72,293	26,050	-2.52	583
50%	25%	PM4-Exp	437	99.1	0.78	-13,443	0.033	0.13	-6.0E-05	54.5	235	-13,573	-636	-6,691	-24,329	-3.86	343
100%	25%	PM4-Exp	-3,403	-1,017	-2.05	-59,069	-4.98	-0.089	-1.3E-04	-805	7.96	-28,315	-10,720	-85,675	-74,709	-5.21	103
0%	25%	PM5-Exp	9,266	3,024	7.36	104,491	13.4	0.60	1.3E-04	2,169	738	13,808	24,972	187,045	84,826	-1.71	905
50%	25%	PM5-Exp	4,255	1,567	3.66	44,947	6.84	0.32	4.0E-05	1,048	442	-5,432	11,811	83,967	19,078	-3.47	592
100%	25%	PM5-Exp	-756	110	-0.039	-14,598	0.30	0.035	-4.6E-05	-73.6	145	-24,672	-1,349	-19,111	-46,671	-5.24	279
0%	25%	PM6-Exp	1,908	92.0	6.93	14,975	0.21	0.25	2.9E-06	265	173	389	1,970	24,382	3,398	-0.29	219
50%	25%	PM6-Exp	1,908	92.0	6.93	14,975	0.21	0.25	2.9E-06	265	173	389	1,970	24,382	3,398	-0.29	219
100%	25%	PM6-Exp	1,908	92.0	6.93	14,975	0.21	0.25	2.9E-06	265	173	389	1,970	24,382	3,398	-0.29	219
0%	25%	MM1-Exp	382	34.6	1.18	3,103	0.43	0.017	4.9E-07	343	266	158	366	3,018	1,864	0.042	340
50%	25%	MM1-Exp	68.6	-65.3	0.93	-899	-0.039	0.0045	-6.0E-06	274	243	-1,296	-508	-3,853	-2,990	-0.091	316
100%	25%	MM1-Exp	-245	-165	0.69	-4,901	-0.50	-0.0084	-1.3E-05	206	221	-2,749	-1,381	-10,724	-7,843	-0.22	293
0%	25%	MM2-Exp	629	38.0	2.29	5,019	0.39	0.055	9.8E-07	337	231	213	568	6,452	2,254	-0.021	296
50%	25%	MM2-Exp	629	38.0	2.29	5,019	0.39	0.055	9.8E-07	337	231	213	568	6,452	2,254	-0.021	296
100%	25%	MM2-Exp	629	38.0	2.29	5,019	0.39	0.055	9.8E-07	337	231	213	568	6,452	2,254	-0.021	296
0%	25%	MM3-Exp	2,381	253	6.23	16,946	0.86	0.27	2.4E-06	360	229	1,153	2,818	30,963	7,718	-0.24	289
50%	25%	MM3-Exp	1,580	26.5	5.64	7,620	-0.15	0.23	-1.1E-05	179	184	-1,753	749	14,779	-2,290	-0.50	242
100%	25%	MM3-Exp	780	-200	5.06	-1,707	-1.16	0.18	-2.4E-05	-1.16	139	-4,660	-1,319	-1,404	-12,299	-0.77	195
0%	25%	MM4-Exp	3,820	963	4.52	28,618	3.95	0.33	5.3E-06	774	390	1,338	7,777	62,176	21,485	-1.96	492
50%	25%	MM4-Exp	941	126	2.39	-5,601	0.19	0.17	-4.4E-05	129	220	-9,719	214	2,938	-16,299	-2.97	312
100%	25%	MM4-Exp	-1,939	-711	0.27	-39,821	-3.57	0.0056	-9.4E-05	-515	49.5	-20,776	-7,349	-56,300	-54,084	-3.98	132
0%	25%	MM5-Exp	6,497	1,883	7.28	69,767	8.23	0.48	7.7E-05	1,441	512	9,296	16,052	124,380	53,435	-1.15	631
50%	25%	MM5-Exp	3,490	1,009	5.06	34,041	4.31	0.31	2.5E-05	768	335	-2,248	8,156	62,533	13,986	-2.20	443
100%	25%	MM5-Exp	484	135	2.84	-1,686	0.38	0.14	-2.6E-05	95.2	157	-13,792	260	686	-25,462	-3.26	255
0%	25%	MM6-Exp	1,908	92.0	6.93	14,975	0.21	0.25	2.9E-06	265	173	389	1,970	24,382	3,398	-0.29	219
50%	25%	MM6-Exp	1,908	92.0	6.93	14,975	0.21	0.25	2.9E-06	265	173	389	1,970	24,382	3,398	-0.29	219
100%	25%	MM6-Exp	1,908	92.0	6.93	14,975	0.21	0.25	2.9E-06	265	173	389	1,970	24,382	3,398	-0.29	219

SAMPLE RESULTS FIGURES FOR PAINT MANAGEMENT METHODS

SPIDER CHARTS

Spider diagrams (so called because of their spiderweb appearance) provide a concise way of comparing the *relative* results for different paint management methods. A set of spider diagrams is attached at the end of this document for reference. Each radial line in each diagram corresponds to one of the 15 results categories evaluated in the analysis. The results categories are listed below, followed by the abbreviation used in the figures:

1. Global warming potential (GWP);
2. Acidification potential (Acid);
3. Human health cancer potential (HH-C);
4. Human health noncancer potential (HH-NC);
5. Respiratory effects potential (Resp);
6. Eutrophication potential (Eutro);
7. Ozone depletion potential (Oz Depl);
8. Ecotoxicity potential (Ecotox);
9. Smog formation potential (Smog);
10. Total water use (Water);
11. Fossil fuel depletion (FF Depl);
12. Total energy (Energy);
13. Total fuel energy (Fuel En);
14. Mineral extraction (MinExt);
15. Total unspecified VOCs (VOC).

Within each results category, the results for the different methods are normalized by dividing by the largest value among the six methods, so that a normalized value of 1 indicates the method that has the highest results for that impact.

Each method's normalized impact is plotted on a separate radial line, and the points are connected to create a "footprint." A smaller footprint indicates that a method has lower impacts relative to other methods. All impact categories are normalized in the same way, and there is no weighting of individual impacts relative to one another.

The set of spider diagrams attached at the end of this document includes four pages of results. All results are for the limited infrastructure scenario with 25% export of recycled paint from methods 4 and 5. The four sets of diagrams are for the following:

Figure A: Pure methods, 0% displacement

Figure B: Modified methods, 0% displacement

Figure C: Pure methods, 100% displacement

Figure D: Modified methods, 100% displacement

The following discussions provide additional guidance in interpreting the diagrams.

The results for the pure methods and modified methods show very different footprints. The pure method results show the results for managing 1,000 gallons of paint by each method, assuming all paint is managed solely by the intended method. The modified methods are adjusted for disposal of the percentage of the leftover paint supply that is unsuitable for management by the intended method.

As a *pure* method, direct reuse of paint (methods 1 and 3) has a small footprint compared to consolidation (method 4) and reprocessing (method 5), as seen in Figure A. This is because direct reuse requires no processing of the paint. This can be seen in Figure A. However, only a small percentage of paint is likely to be suitable for management by methods 1 and 3 (i.e., a desirable color in combination with sufficient can fullness for an intended use application). Because of the low percent suitable, the *modified* method footprints for methods 1 and 3 in Figure B are very similar to the footprints for the corresponding disposal method for the unsuitable fraction (method 2 disposal for method 1 unsuitable paint, method 6 disposal for method 3 unsuitable paint).

The results for methods 4 and 5 show very different footprints when evaluated for 0% and 100% displacement of virgin paint, as can be seen by comparing Figures A and C, or comparing Figures B and D. Collecting and reprocessing or consolidating leftover paint requires additional transportation and resources. The added burdens for reprocessed paint are higher than for consolidated paint, since larger amounts of virgin additives are used. The 0% displacement figures (A and B) show that methods 4 and 5 have higher impacts relative to other methods if the recycled paint is not used in place of virgin paint (i.e., if the paint is used in place of not painting). However, the 100% displacement figures (C and D) show that methods 4 and 5 compare more favorably to other methods (particularly the disposal methods) if the use of the recycled paint avoids production of a corresponding quantity of virgin paint.

The footprints for the disposal methods are also different under the 0% and 100% displacement scenarios, as can be seen by comparing the results for methods 2 and 6 in Figures A and B to the results in Figures C and D. The changes in the footprints for the disposal methods are not because the disposal results themselves are changed, but because the results for *other* methods are reduced when virgin paint displacement credits are applied. When results for methods 4 and 5 decrease, the results for the disposal methods become proportionately higher relative to the other methods' results in many cases.

LINE CHARTS

Although the spider diagrams provide a concise way of comparing multiple relative impacts for various methods on a normalized basis, they do not indicate the *magnitude* of the results, and they show results for only one scenario at a time. The line charts provide a comparison of results for one results category (e.g., global warming potential) for different methods and show how the results change with variations in displacement of virgin paint. At the end of this section, a sample page of figures is provided for global

warming potential (GWP) results. In the full report, similar sets of figures will be prepared for the other results.

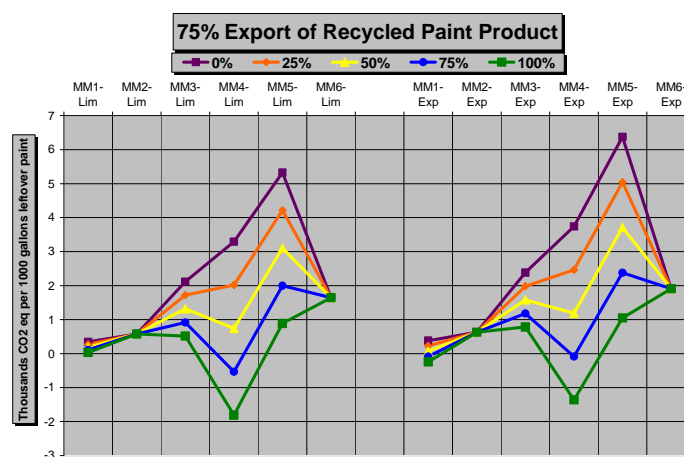
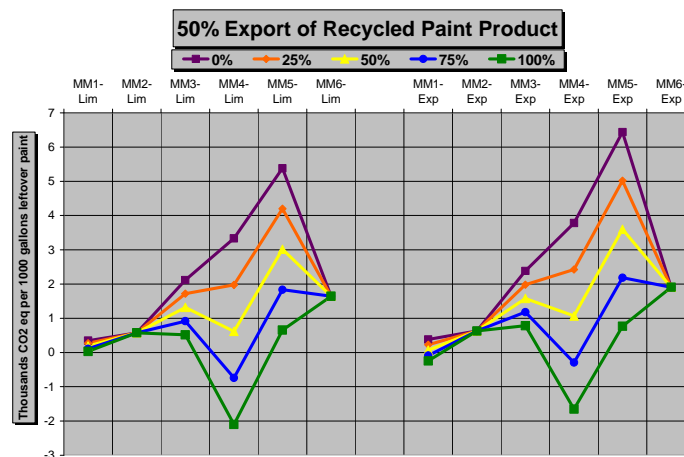
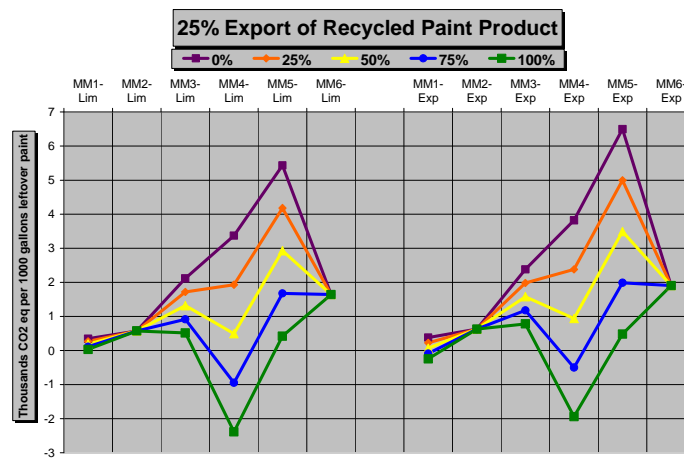
The top figure shows the results for a scenario with 25% export of recycled paint, including variations in results for different levels of virgin paint displacement for the recycled paint that is used domestically. The middle figure shows results for 50% export, and the bottom figure is for 75% export. All results shown in the figure are for modified methods, with limited infrastructure results on the left and expanded infrastructure results on the right.

Each column contains results for one method. The vertical spread in the results in each column indicate the degree to which virgin paint displacement influences the results for that method. The figures show that displacement does not affect the disposal methods 2 and 6 because no useful paint is recovered from these methods. Displacement has a small effect on modified methods 1 and 3, since a relatively small percentage of the leftover paint supply is suitable for reuse, so the majority of the paint is still disposed under these modified methods. Methods 4 and 5 show large variations in results depending upon what percentage of the domestically used recycled paint is assumed to be used in place of virgin paint. For example, modified method 4 shows a net GWP *credit* at displacement levels of 75% and 100%, and net *added* impacts at displacement levels of 50% or lower.

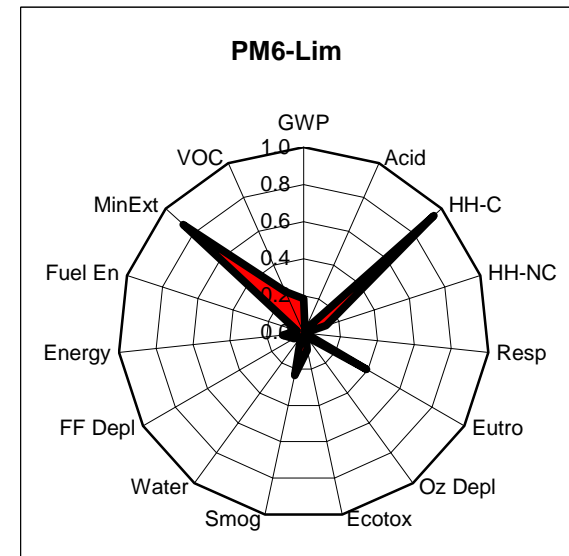
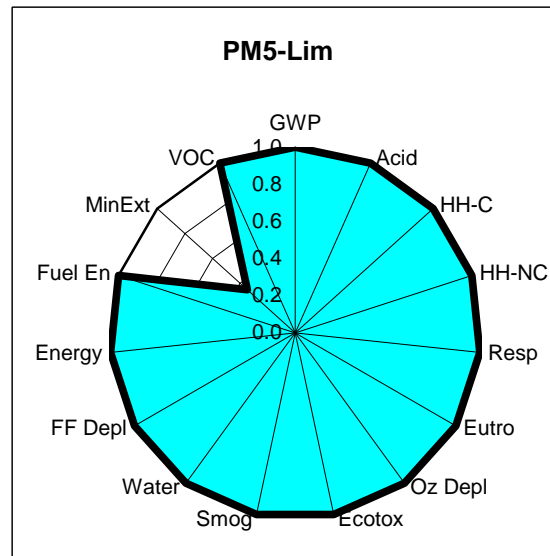
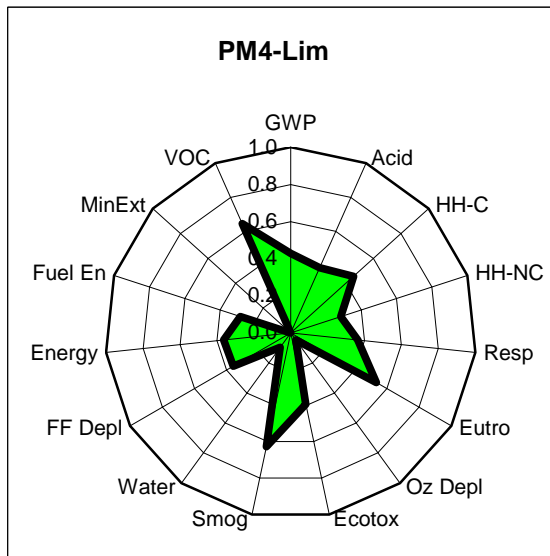
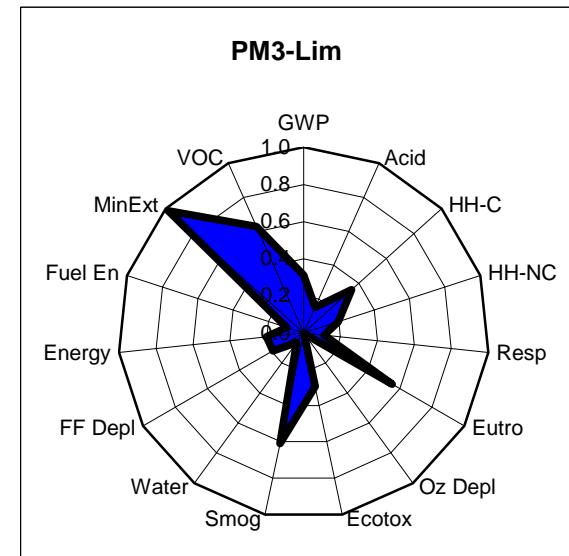
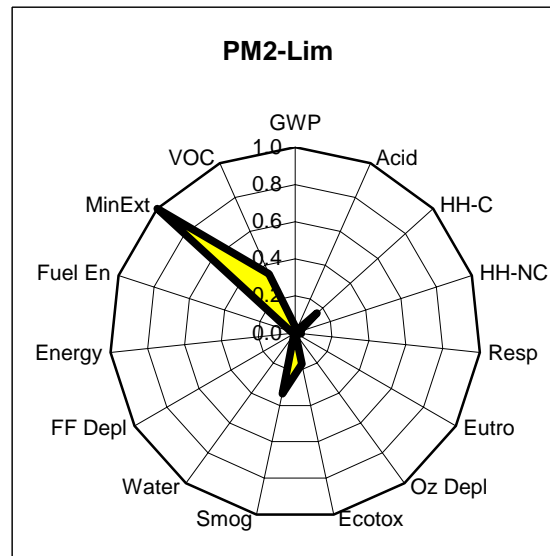
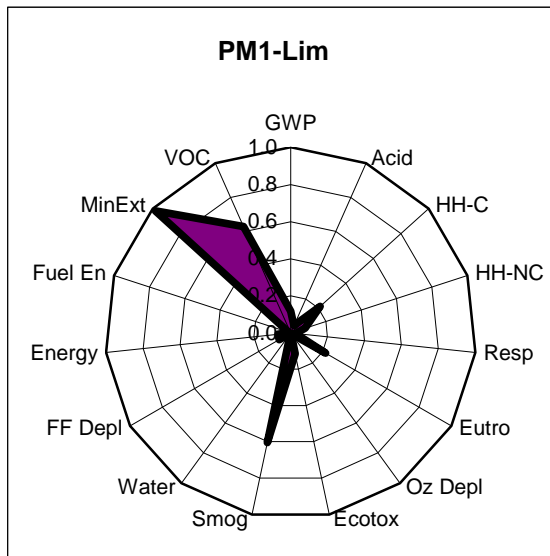
This analysis does not make any projections about the use or fate of recycled paint that is exported. Virgin paint displacement credits are only applied to paint that is used domestically. In methods 1, 2, 3, and 6, all the paint is managed domestically, so the results are the same for these methods in all three export figures. However, the percent export *does* affect the results for methods 4 and 5. The higher the export percentage modeled, the lower the remaining fraction of domestic recycled paint to which the displacement credit is then applied. Therefore, comparing the figures from top to bottom, for the same method and same displacement percentage, the results for methods 4 and 5 in the 25% export figure are lower than the results in the 75% export figure.

GLOBAL WARMING POTENTIAL RESULTS

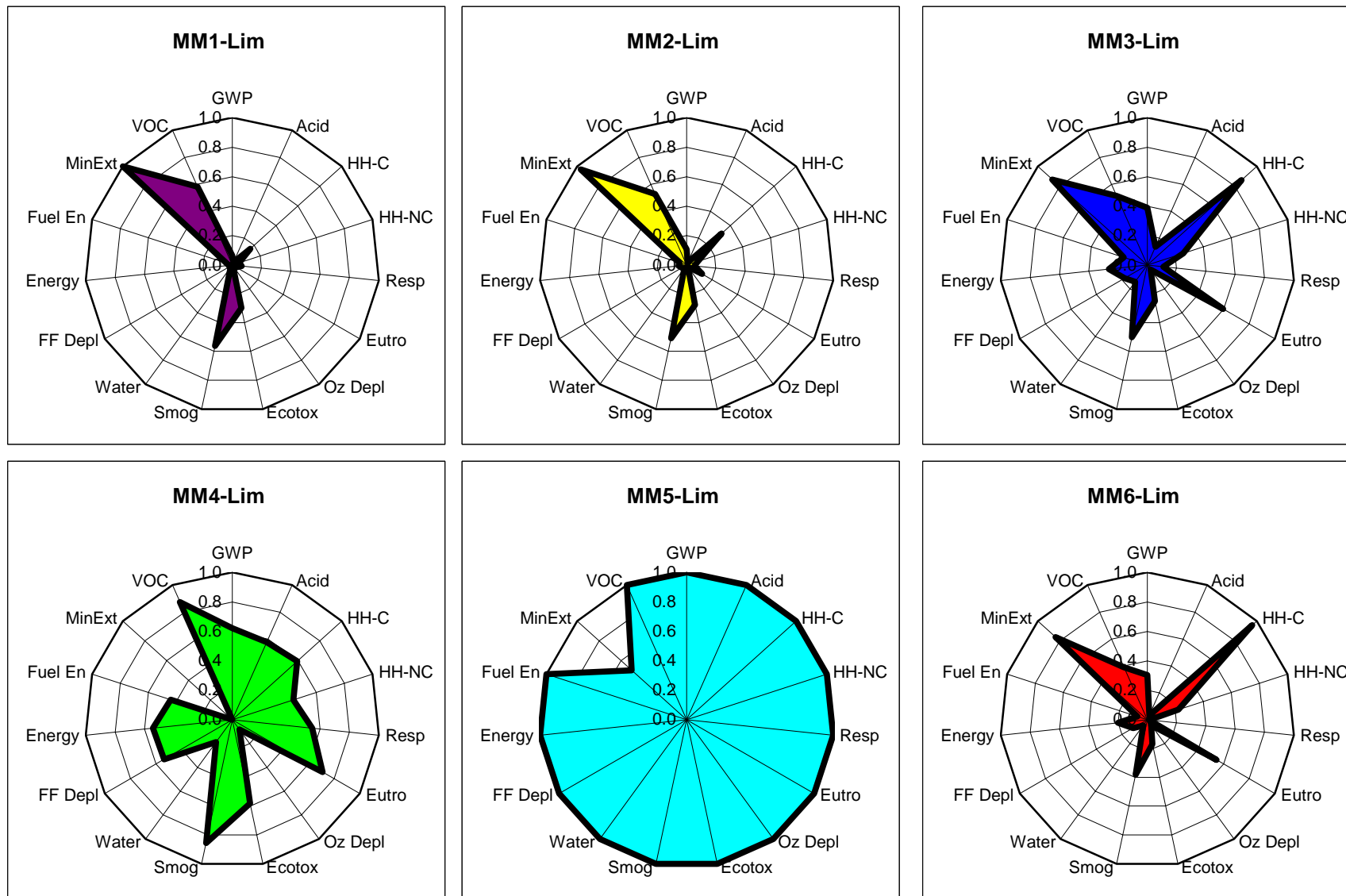
Variations with Export Percentage and Displacement Level



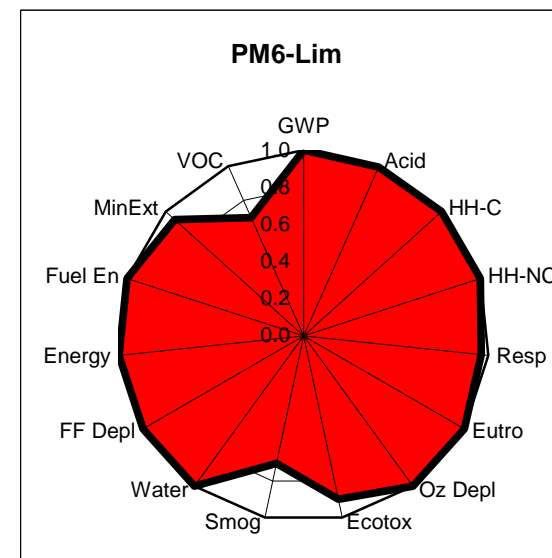
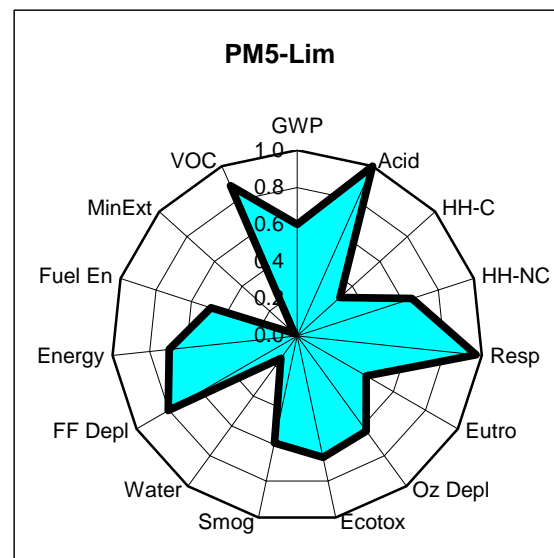
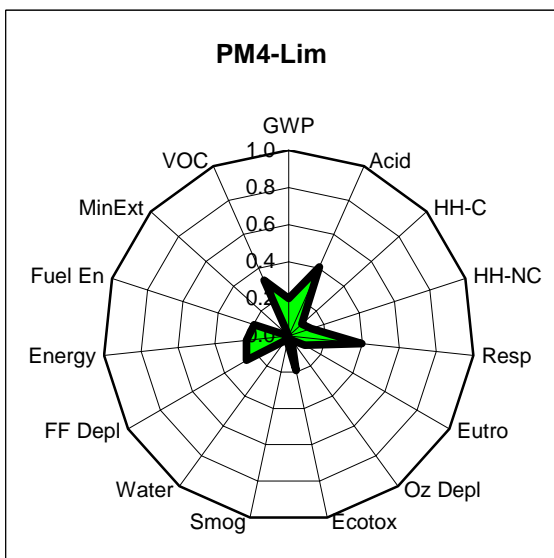
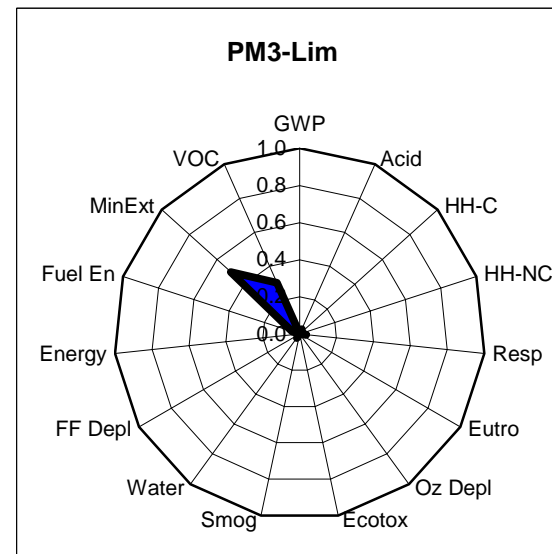
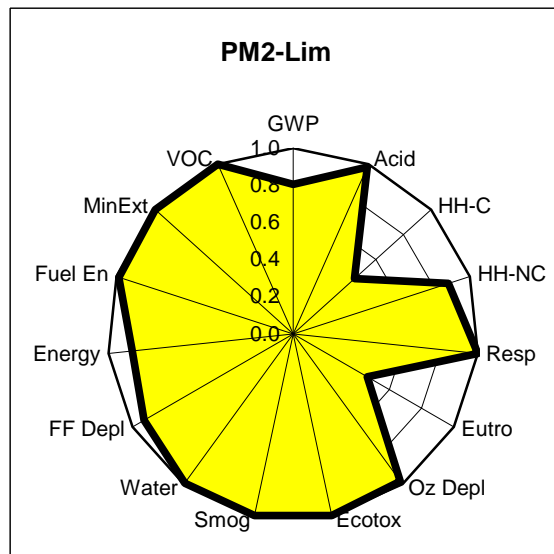
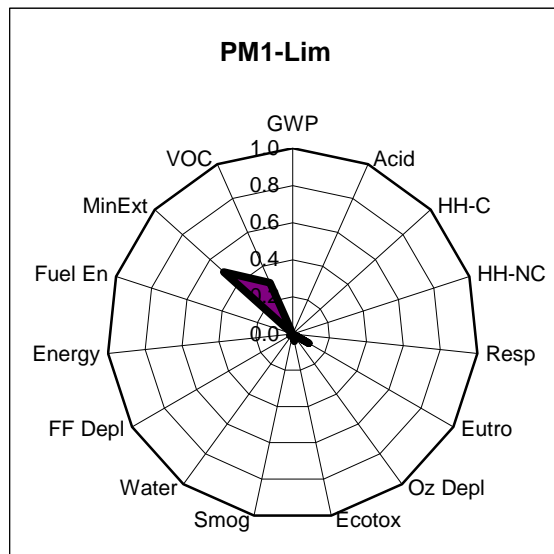
**FIGURE A: NORMALIZED FOOTPRINT FOR
PURE METHODS, LIMITED INFRASTRUCTURE
25% EXPORT, 0% DISPLACEMENT**



**FIGURE B: NORMALIZED FOOTPRINT FOR
MODIFIED METHODS, LIMITED INFRASTRUCTURE
25% EXPORT, 0% DISPLACEMENT**



**FIGURE C: NORMALIZED FOOTPRINT FOR
PURE METHODS, LIMITED INFRASTRUCTURE
25% EXPORT, 100% DISPLACEMENT**



**FIGURE D: NORMALIZED FOOTPRINT FOR
MODIFIED METHODS, LIMITED INFRASTRUCTURE
25% EXPORT, 100% DISPLACEMENT**

