

Wisconsin Department of Natural Resources

State Innovation Grant Technical Project Report



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Region 5 States Environmental Results Program for Autobody Refinishing Shops

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Wisconsin Department of Natural Resources State Innovation Grant Technical Project Report

Project Title: Region 5 States Environmental Results Program for Autobody Refinishing Shops

Report: Region 5 Autobody Refinishing Environmental Results Program Evaluation

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Introduction

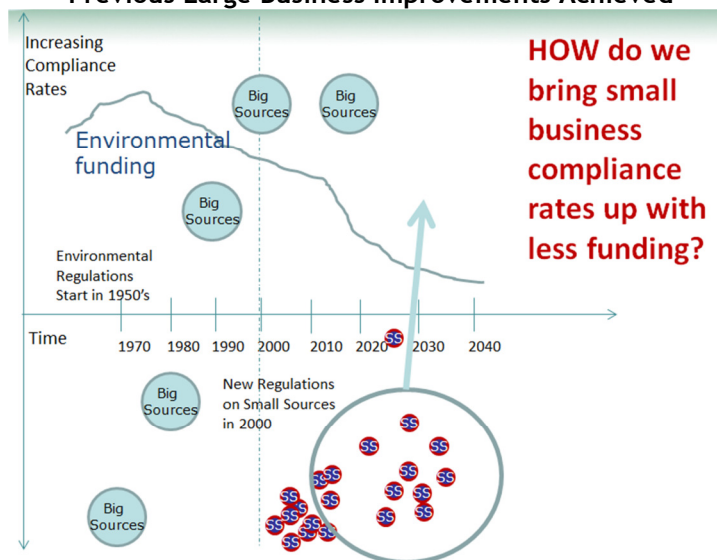
This report summarizes the Region 5 Autobody ERP project and results. In 2008, new federal rules to reduce air toxic emissions affected thousands of very small sources that previously had experienced little or no regulation by state or federal environmental agencies. One of the sectors affected by the new rule was autobody shops with a compliance deadline of January 10, 2011. In the six Region 5 states (Indiana, Illinois, Michigan, Minnesota, Ohio, and Wisconsin) the new rule was expected to affect nearly 13,000 autobody shops. Emissions reductions would not be achieved without an effort to help these small sources understand and comply with the requirements in the rule. However, state regulatory agencies lacked sufficient resources to implement and enforce this new rule.

State small business environmental assistance programs (SBEAPs) are experts at providing effective compliance assistance on limited budgets. The SBEAPs in Region 5 were interested in combining efforts to find a way to approach compliance for the newly regulated autobody shops, given the large number of businesses in the sector.

How do we raise the level of compliance among small businesses?

Bigger businesses have had the resources and time to improve their performance, and state environmental agencies had the funding to visit the smaller number of large sources over many years to gain that improved performance. As funding continues to decrease but the number of regulated sources increases, how do states bring up the compliance rates for the small sources? Figure 1 is visual representation of this question. The Big Sources have benefited from relatively well funded regulatory agencies that performed regular inspections to reinforce what they needed to do to comply with the rules over the decades. Starting around 1970, when the Clean Air Act was created, through 2000, the Big Sources had all of the attention. While regulations were starting to be applied to Small Sources (SS in Figure 1) starting in 1990, the bulk of the regulations for small sources were promulgated between 2000 and 2010. How will the Small Sources improve performance without regular inspections from the regulatory agencies?

Figure 1: Improving Small Business Compliance Rates Similar to Previous Large Business Improvements Achieved



Individual inspections of each one of these small sources is not possible given today's government funding and staffing situation. A new tool needs to be added to the compliance and enforcement toolbox. The Region 5 SBEAPs hoped to show USEPA how this ERP design might be another tool that works well for improving compliance in certain business sectors.

After many discussions about different options, the Wisconsin Department of Natural Resources' (WDNR) Bureau of Air Management and the Wisconsin Small Business Clean Air Assistance Program (Wisconsin's SBEAP) partnered with other state SBEAPs in Region 5 and proposed using ERP to implement the new area source rule, 40 CFR part 63 Subpart HHHHHH (6H) as it affects autobody refinishing shops. The Region 5 SBEAPs hoped to show USEPA how this ERP design might be another tool that works well for improving compliance in small business sectors.

What are the SBEAPs?

The state SBEAPs are a mandated element in the Clean Air Act Title V permit programs that each state must implement. States have implemented the SBEAP function in a variety of ways, but the majority of state programs have a free and confidential source of compliance assistance for any small business in their state that is affected by air pollution regulations. Nationally, around half of the programs have the added role of providing assistance on other environmental regulations, including waste and water. The programs have an average of three staff and an average annual budget around \$250,000. These budgets have been declining even as the number of regulations affecting small business through the area source NESHAPs has increased. Assistance provided by SBEAPs can include:

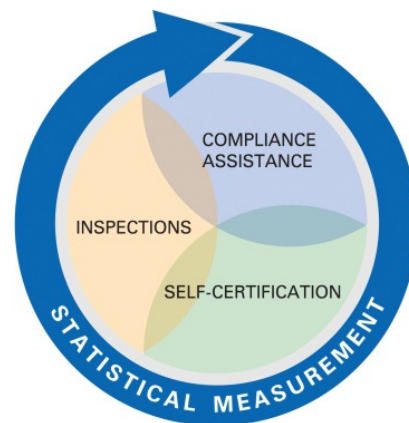
- toll-free hotlines to respond to questions,
- fact sheets and other publications provided via mail and the web,
- workshops and webinars,
- on-site assessments,
- completing permit applications and forms, and
- any other task needed to help a small business comply with environmental rules.

What is ERP and Why Use it?

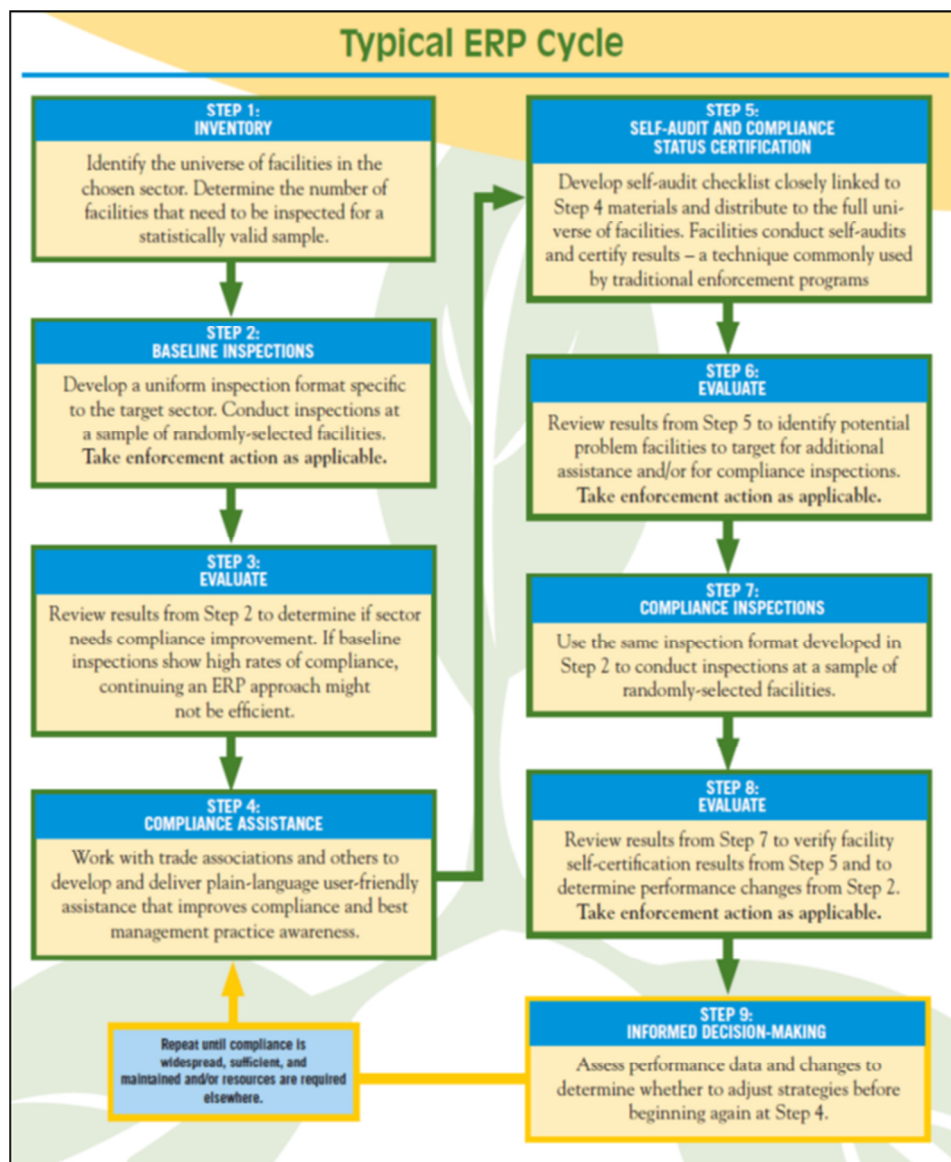
ERP is a cost effective approach to improving and measuring the environmental performance of selected business sectors or groups. ERP uses a unique combination of **compliance assistance**, **compliance certification** and **statistical performance measurement** that leverages traditional compliance assurance activities to improve performance for the selected group.

The measured changes in performance are based on verified observations recorded by trained individuals, knowledgeable in the regulatory issues being measured. Voluntary submittals, including the self-certifications offer insight into the facilities' perception of performance but are not statistically analyzed. States, including Rhode Island, Delaware and Maine, that have used ERP with autobody shops have shown strong evidence for improving performance:

<http://www.USEPA.gov/erp/2009evaluation.htm>.



The typical steps involved in an ERP project are outlined in the figure below:



Results from many prior ERPs, including previous state innovation grant projects, suggest that the combined use of plain-language materials and simple assessment tools can be effective in achieving a positive change in small business compliance rates. The traditional compliance approach of writing permits for each facility and conducting on-site inspections to assess compliance is not a feasible approach for rules affecting thousands of small businesses. Small business owners often do not have the legal or technical training to understand the content of permits and what is needed to meet each of the requirements. An ERP can be an efficient and cost effective alternative approach to reach small businesses and improve their compliance and environmental performance. Also, there is substantial leverage offered by ERP's educational methods and its statistical approach to assessing sector-wide compliance.

Project Partners and Design Factors

The project involved all of the Region 5 states SBEAP programs; however, the Illinois Sustainable Technology Center (ISTC), which has historically conducted compliance assistance visits on behalf of the IL SBEAP, was brought on board through a contract to conduct the baseline visits for Illinois. The IL SBEAP staff participated in all of the material development, training, and outreach stages of the project. The SBEAPs engaged USEPA Region 5 air enforcement staff because the SBEAPs are non-regulatory programs and did not have authority to enforce any non-compliance in the follow up phase of ERP. USEPA commitment to this effort was outlined in a e-mail from Cheryl Newton, Acting Division Director, Air and Radiation, USEPA Region 5, to state air directors on September 24, 2008, stating "USEPA's Air Enforcement and Compliance Assurance Branch has agreed to support the ERP pilot by conducting all post compliance inspections of the sampled facilities in the Region." The Region 5 SBEAPs and USEPA Region 5 staff will be called the Project Team throughout the report.

The WI SBEAP was located at the Wisconsin Department of Commerce (Commerce) at the beginning of the project. During 2011, the whole program was moved to the WDNR. While this created some delays in certain phases of the project, it did not affect the final results. Staff, project files, and the project webpage were all transferred to WDNR.

The Project Team also partnered with Northeast Waste Management Officials' Association (NEWMOA) for their expertise in developing and conducting training on data collection, data management, analysis for a multistate project, and planning and managing logistics of multiple States ERP Consortium meetings. NEWMOA had managed the Common Measures Project (<http://www.newmoa.org/erp/projects/commeas.cfm>) that involved ten states.

As the Project Team designed the universe of the project, it was agreed that the focus would match the original focus of the Urban Air Toxics Strategy. The Clean Air Act (CAA) requires USEPA to identify a list of at least 30 air toxics that pose the greatest potential health threat in urban areas, and to identify and list the area source categories that represent 90 % of the emissions of the 30 urban air toxics associated with area sources and subject them to standards under the CAA. Under the Strategy, USEPA identified a list of 33 air toxics and a total of 70 area source categories. The autobody sector was included among the area source categories and 6H regulates six of the heavy metals included in the Strategy.

The universe in this project comprises all autobody refinishing shops within the urban areas of the six states. The Project Team decided that urban areas would include only the most densely populated counties in the six states. However, the project excludes the City of Chicago, Illinois because local ordinances were more stringent than 6H and the local agency responsible for regulating autobody shops did its own enforcement and outreach and therefore, shops in that area would not receive the same level of treatment as shops in the rest of the areas covered by the project. Including Chicago may bias the results of the project.

Generally, 6H requires autobody shops to:

- Conduct all spray painting in an enclosure that satisfies the rule, such as a paint booth
- Install an exhaust fan in each enclosure that works properly and is used at all times
- Install a filter on each exhaust fan that complies with the rule and is properly maintained
- Use only compliant spray guns, such as HVLP
- Train all employees who paint on the equipment and on the requirements of 6H

While the primary focus of this project was compliance with the 6H rule, the ERP also provided education and collected data on basic waste and water requirements, and best practices in energy efficiency and pollution prevention.

Report Organization

The report is organized according to the requirements of the grant with USEPA and, in addition to this Introduction, contains the following sections:

- Program Goals and Desired Outcomes including discussions of:
 - Project Goals/Objectives
 - Outcomes and Measures that outlines the expected outputs and outcomes of the project and the agreed measures
- ERP Development and Implementation including discussions of:
 - Methodology or Technical Approach where each phase of the project and its implementation are detailed
 - Key Milestones of the project
- Project Outputs where the outreach and other materials created by the project are outlined
- Project Outcomes where the results of the baseline and follow-up inspections are presented and discussed, including measured changes in performance
- Data Quality Assurance including discussions of:
 - Inspector Training and Resources
 - Inspection Data Entry
 - Analytical Accuracy
- Evaluation including discussions of:
 - Project Achievements
 - Project Adjustments
 - Continuation of Project Elements
 - Stakeholder Input
- Recommendations

Executive Summary

State environmental agencies have been looking for ways to better address compliance rates among a growing population of regulated sources. Recent compliance and enforcement efforts have focused on the small businesses affected by USEPA's National Emissions Standards for Hazardous Air Pollutants (NESHAPs). Many of the recent NESHAPs include in the preamble that compliance will largely rely on the outreach and compliance assistance efforts of the State Small Business Environmental Assistance Programs (SBEAPs).

Core Issue: How are state programs with limited staff and limited budgets going to reach thousands of small businesses affected by the new NESHAPs and assure compliance?

The Region 5 SBEAPs designed a project to show how use of a different compliance tool can achieve improved environmental performance for the autobody refinishing shops affected by 40 CFR Part 63, Subpart HHHHHH (6H). The project was called the Region 5 Autobody Environmental Results Program (ERP). ERP is a cost effective approach used by many states to improve and measure the environmental performance of selected business sectors or groups. ERP uses a unique combination of compliance assistance, compliance certification and statistical performance measurement that leverages traditional compliance assurance activities to improve performance for the selected group.

The Region 5 ERP used both state SBEAPs and USEPA Region 5 staff to measure the environmental performance of autobody shops in urban counties in the six Region 5 states: Illinois, Indiana, Michigan, Minnesota, Ohio and Wisconsin. SBEAPs visited the shops before the compliance deadline in the rule, to measure the baseline performance and use the data to plan the level of outreach and training that the shops would need to comply with the rule. USEPA Region 5 staff conducted inspections after the compliance deadline passed to assess final compliance rates.

Outcome: Statistical analysis of a random sample from the urban population in Region 5 states measured increased performance in many areas related to the NESHAP. Out of 25 regulatory questions on 6H, 18 showed a statistically significant increase. When including other non-regulatory questions, 26 areas of performance showed a statistically significant improvement in gaining the desired response.

Compliance and performance areas showing statistically significant improvements included:

- Regulatory:
 - Shops showed no evidence of painting outside of a paint booth.
 - Shops increased use of paint booths and enclosed preparation stations.
 - Shops had booths and preparation stations that met the requirements of the rule:
 - All enclosures ventilated;
 - All exhausts filtered; and
 - All filters meet 98% collection efficiency.
 - Painters completed their training and shops had appropriate records on the training.
 - Shops had records on methylene chloride in paint strippers.
 - Shops submitted their initial notification on the rule.
- Non-regulatory:
 - Shops retained records on coating use.
 - Shops used 3 ounce cups for some paint jobs.
 - Shops received information on the rule.
 - Shops were aware of the option to petition out of the rule.
 - Booths had clean lighting.

Conclusion: A coordinated effort between state SBEAPs and USEPA compliance staff achieves results in compliance for Area Source NESHAPs. Using the ERP design offers economy of scale, by reducing the number of inspections that need to be conducted and showing areas where compliance has improved as well as where additional outreach, training, and/or targeted enforcement may be needed improve performance.

Key Recommendations:

- Look for partnerships to provide efficiencies in environmental compliance efforts.
- A cross-media focus is helpful for small business, but a narrow focus may be sufficient to achieve improvements in performance.
- Consider whether using a proportional sample is worth the effort in such a statistical study.
- Ensure enforcement is taken soon after follow-up inspections, to maintain achievements in compliance rates.
- Complete additional follow-up rounds of inspections to measure continuing compliance.

The ERP design as implemented under the State Innovation Grant programs presents an interesting statistical study of a regulatory program. However, states or EPA regional offices that might want to implement a similar program do not need to be as rigorous as this report describes. Does the traditional compliance and enforcement or permitting program involve a statistical analysis of compliance rates? Not that the author is aware of. The traditional programs only measure one-for-one compliance rates on a particular day or moment in time, once every two to five years, depending on the size of the source and the established inspection schedule. This ERP project summary report shows how a different style of compliance program CAN be successful. It shows the ERP is successful by measuring an improvement in compliance rates over a short period of time. In addition, the ERP shows results where traditional inspection or 'command & control' programs did not, in those circumstances where regulations similar to 6H had already been in place for a while. The ERP itself is simply another set of compliance tools for the regulatory toolbox. It should be accepted as such by states and EPA alike.

I. Project Goals and Outcomes

The goals of the Region 5 Autobody ERP are summarized, and a description of the outputs and outcomes are provided here.

I.A. Project Goals/Objectives

The goal of the Region 5 States ERP for Autobody Refinishing Shops project was to use the ERP structure to implement the portion of subpart 6H affecting autobody refinishing shops and in doing so, determine the impact of direct compliance assistance, self-assessment and certification, and random-sample site visits or inspections in lieu of traditional permitting and enforcement inspections. Those who help small businesses comply with environmental regulations have found small business owners do not have the legal or technical training to understand the content of state issued air pollution permits and what is needed to meet each of the requirements. Additional plain-English documents or training are often needed, and welcomed, to translate the regulatory language for the small business owner. The work of providing a translation of regulations through plain-English materials and training is often called compliance assistance.

Following the ERP design, random sample baseline visits as well as compliance inspections following the compliance assistance phase would measure whether the environmental performance of the shops affected by the area source rule changed and whether it improved or declined.

I.B. Outcomes and Measures

In our project proposal, we outlined a list of possible measures as a starting point for discussions of what is reasonable and achievable to measure in a shop visit. Beyond those measures directly related to the requirements in subpart 6H, additional measures were discussed among the partnering agencies. The measures originally proposed were largely similar to those used in the Common Measures project, but instead of Small Quantity Generators it was for autobody refinishing shops. We planned to retain as much similarity as possible, to be able to make correlations between our project and others using the Common Measures for autobody refinishing.

The measures proposed, called Environmental Business Practice Indicators or EBPIs, are compared to the outcomes listed in the Logic Model by their number. The Logic Model proposed for this project can be found in **Appendix A**. The proposed and final list of EBPIs is included in **Appendix E** to this report. Other outcomes in the Logic Model that are not identified as EBPIs are considered side benefits to the project that cannot be directly measured through the ERP format.

Some of the federal requirements in 6H had previously applied in states with non-attainment areas, as Reasonably Available Control Technology or RACT rules, for many years. Elements such as high efficiency spray guns and occasional use of a booth was required in most of the Region 5 states for at least a few counties. Other elements in 6H were completely new for every state, like painter training, so we expected to see definite improvements on those elements.

The partnering agencies agreed to collect data on the elements of subpart 6H. Through discussions among the partners, the group planned to have a complete list of additional measures that would be included in the baseline and post-certification data collection phases early in the process. The outcome measures, through the finalized baseline checklist, were approved as part of the Quality Assurance Project Plan.

The final list of EBPIs and how they were included in the data collection checklists is shown in Table 1.

Table 1: List of Environmental Business Practice Indicators (EBPIs) and Other Indicators

EBPIs	Question(s) in Checklist
Practices Associated with subpart 6H	
• % using HVLP or equivalent high transfer efficiency technology	I6
• % with high transfer efficiency painter training in place	B2a
• % with different components of training	B2b
• % using hands-on or classroom-only training	B2b
• % with documentation of training	B2c
• % at which all spray-applied coatings were used in enclosed booth or prep station	C3, I1, I3
• % of booths/stations fitted with particle filters	C4b, I2, I4
• % of booths/stations fitted with filter/system achieving 98% capture	C4c&d
• % where spray gun cleaning is done with enclosed or non-atomizing washers	C5, I7
• % maintaining MSDS or formulation records for all solvents/coatings used	C9
• % maintaining records of the amount/content of coatings containing Cr, Pb, Cd, Ni, Mn	C10
• % NOT using paint strippers containing Methylene Chloride	C6, I8
• % keeping records to document annual MeCL usage	C7
• Average and range of MeCL used	C7b
• % of MeCL users with written MeCL minimization plan	C8
• % maintaining records of the amount of coatings containing VOC and HAP	A6
Other Practices	
AIR PRACTICES	
• Paint hours per year	A7
• Average quantity and range of coatings used	A6
• % using dustless vacuum or overhead capture equipment	F
• % meeting applicable state requirements	Varied
AIR RECORD KEEPING:	
• Average use of high VOC and low VOC coatings and solvents per year	A6
HAZARDOUS WASTE	
• Average and range of maximum amount of RCRA waste generated in a month	D3
• Numbers of facilities in generator classes (CESQG or VSQG, SQG, LQG or not)	D3
INDUSTRIAL WASTEWATER INDICATORS	
• % of facilities not discharging IWW to surface water	E2
• % of facilities not discharging IWW to a storm, sanitary or combined sewer system	E2
POLLUTION PREVENTION-ENERGY EFFICIENCY INDICATORS	
• % of facilities taking one or more actions to conserve energy over the past three years (distribution across menu of possible actions)	G1
• % of facilities taking one or more actions to reduce pollution (VOC, PM and toxics) during the past three years (distribution across menu of possible actions)	F1

II. ERP Development and Implementation

The following section provides a description of the general approach that was used to implement the project, including a description of methodologies, stakeholders involved, and project milestones.

II.A. Methodology

The WDNR and WI SBEAP partnered with Region 5 state SBEAPs, other technical assistance staff, and USEPA Region 5 Air Program staff to develop this ERP for the autobody refinishing sector affected by subpart 6H, which included compliance assistance, self-certification, and statistical analysis of baseline and post-certification measurement of performance. Four of the six Region 5 states already had strong experience leading and/or participating in the development and implementation of an ERP. We also partnered with NEWMOA for their expertise in developing and conducting training on data collection, data management and analysis in a multistate project (Common Measures), and planning and managing logistics of multiple States ERP Consortium meetings.

ERP design elements and statistical analysis tools created for previous state ERP's were used in development of the Region 5 ERP. Most of the tools can be found on one of two websites:

- States ERP Consortium: <http://erpstates.org/>
- EPA's ERP Roadmap: <http://www.epa.gov/erp/roadmap/>

Commerce developed a memorandum of understanding between each state SBEAP as well as NEWMOA to outline expectations for each entity's role in the project and how expenses will be reimbursed.

The Region 5 ERP for autobody shops was developed in the following phases, similar to the full ERP design, which are described in detail below:

- Phase One - Universe of Shops for Sampling
- Phase Two - Checklist Development and Baseline Visits
- Phase Three - Baseline Evaluation
- Phase Four - Compliance Assistance and Self-Certification
- Phase Five - Compliance Inspections
- Phase Six - Final Evaluation

Phase One - Universe of Shops for Sampling:

In the first step, the Project Team compiled and refined the universe of sources in the project. The universe of shops is the list of all autobody shops potentially affected by 6H. Each state SBEAP compiled the best autobody refinishing universe for their state. Then, the Project Team pulled out only the shops located within the urban areas to develop the universe that was used to select a random sample for the baseline visits.

USEPA Region 5 stated early in the project that urban areas were their priority in implementation of the area source rules, since those rules are developed under the Urban Air Toxics Strategy. In addition, focusing on urban areas would make the best use of time and travel expenses, as well as achieve the biggest gains on public health impact from the environmental performance improvements and improve the chances of reduced air toxics and collateral emissions (e.g., VOCs) in environmental justice areas. Assessing impact on environmental justice areas was also a regional and USEPA priority.

Researching the Urban Air Toxics Strategy definition, the USEPA describes "urban" as "major metropolitan areas" according to the US Census. US Census "major metropolitan areas" include those with greater than 50,000 people in a city and surrounding communities. While the SBEAPs agreed with the urban focus, the official major metropolitan areas still seemed to cover too much area in their respective states. Most of the SBEAPs have just one or two people in a central location, making travel quite lengthy if too many areas are included. After much discussion, the Project Team agreed to focus on counties with the highest population density. The urban shops were selected from the counties

within Region 5 that were in the top 10% by population density, based on census data available in 2010, which was around 357 people per square mile at the time.

In addition to looking at the high density counties, we also reviewed draft (at the time) maps provided by USEPA's Region 5 environmental justice group which showed a relative ranking of areas with a particular environmental justice concern. In an attempt to gauge how the project reached the environmental justice areas, during each baseline visit the field staff evaluated each location to determine whether it met criteria for being in an environmental justice area, including a shop's proximity to residential neighborhoods, schools, nursing homes, etc.

Each state developed their universe of autobody shops from outside listings, whose accuracy was beyond our control. A number of states have a business registration specific to autobody refinishing shops that was expected to result in a more accurate list. Other states used business identification codes for autobody refinishing (SIC 7532, NAICS 811121) to build lists from larger business databases like InfoUSA or Dun and Bradstreet. The group discussed ways to improve the accuracy of their lists and, where states felt a single source may be too inaccurate, additional sources were used to improve the accuracy. The sources used by each state are identified in Table 2.

Table 2: State Data Sources

State	Universe data source
IL	Illinois Secretary of State - Licensed Collision Repair Shops (updated November 2009)
IN	Dun & Bradstreet (October 2008, SIC 7532)
MI	Michigan Secretary of State listing of licensed repair facilities that conduct auto body collision repair (updated November 2009)
MN	Registration air permit holders listed in delta (a MN database), Hazardous waste generators listed in delta, Dun and Bradstreet listings, Reference USA listings (combined data November 2009)
OH	Ohio Board Of Motor Vehicle Collision Repair Registration (current November 2009)
WI	Reference USA Business Database sorted by NAICS 811121 (downloaded September 2009)

SBEAPs made every effort to quality check the lists they used, including updating lists based on new information (e.g., returned mail, drop outs) at each stage of the project.

The baseline visits were conducted by SBEAPs in all states except Illinois. The ISTC, which has historically conducted compliance assistance visits on behalf of the IL SBEAP, was brought on board through a contract to conduct the baseline visits in Illinois.

The Region 5 urban universe, at the time of the ERP development, was 5069 shops - which excluded the City of Chicago. The project excludes the City of Chicago because local ordinances were more stringent than 6H and the local agency responsible for regulating autobody shops did its own enforcement and outreach and therefore, shops in that area would not receive the same level of treatment as shops in the rest of the areas covered by the project. Including Chicago may bias the results of the project.

The calculated sample size for the desired margin of error and confidence level was 140; however, it was necessary to round up to whole numbers for a sample size of 143 shops. In addition, individual states with a sample size less than 15, chose to do a minimum of 15 to reduce their individual margin of error in the event they wished to conduct state specific analysis. This brought the total regional sample to 146, and this design provided a maximum margin of error of 6.8% for a single-sample confidence interval for a proportion and 9.7% for a confidence interval for the difference between baseline and post-certification proportions, at a 90% confidence level.¹ The urban definition and high density counties in each of the six Region 5 states were used to develop the stratified sample shown in

¹ For simplicity, region-wide precision estimates were developed based upon an assumption of simple random sampling. This is a conservative estimate; consequently, actual precision may be somewhat better because of stratification.

Figure 2. More detail on the sample development process is provided in the project Quality Assurance Project Plan (QAPP).

Figure 2: Proportional Stratification Sample Planner (as of 10/09/2009)

DATA SET:		URBAN SHOPS						
Confidence Level		90%						
Sample Size Goal (Each Round)		140						
Ensure Minimum Stratum Samples?		Y						
Minimum Stratum Sample Size		15						
		Wisconsin	Minnesota	Michigan	Indiana	Illinois	Ohio	Region-Wide
Population		456	675	877	489	1,225	1,347	5,069
Exact Proportional Sample Size		12.6	18.6	24.2	13.5	33.8	37.2	140
Rounded Sample Size		13	19	25	14	34	38	143
Recommended Sample Size		15	19	25	15	34	38	146
Margin of Error (+/-)	1 sample	19.3%	17.4%	15.4%	19.3%	13.4%	12.7%	6.8%
	2 samples	30.6%	27.0%	23.4%	30.6%	20.0%	18.8%	9.7%
Note: Margin of error figures produced using Sample Planner 2007 (for citations, see that tool). For region-wide figures, actual margin of error will likely be smaller, because of stratification. Margin of error figures for individual state results may be slightly larger.								

USEPA's Sample Planner was used for the process of sample size determination. The Sample Planner is a spreadsheet-based tool that estimates the maximum confidence interval for a given sample size, population (universe), and percentage of facilities complying. Confidence intervals yielded by varying sample sizes were compared, in order to select a sample size that would meet the project's goals for statistical precision and sensitivity. The statistical tools created for EPA are found here: <http://www.epa.gov/erp/toolsandresources.htm#stattools>.

Phase Two - Checklist Development and Baseline Visits:

At the same time as the universe and sample size were in development, the inspection checklist was being drafted through discussions among state SBEAPs and USEPA regional staff. Each SBEAP contributed staff to subgroups with specific areas of expertise to create section of the checklist. Then a small group pulled the final checklist together. Materials developed for this phase were saved on a page available only to participants in the project, until the writing of this report: <http://dnr.wi.gov/topic/CompAssist/sb/autobodyerptraining.html>.

State SBEAPs and ISTC staff conducted the baseline site visits. Prior to beginning that effort, all project field staff (2 to 3 per participating state and Region 5) conducting the baseline site visits as well as follow-up compliance inspectors were trained together to ensure common understanding of the measures and statistical principles for data gathering would be followed. Since some of the USEPA staff changed between the initial training and the USEPA follow-up inspections, additional training would be necessary at a later time. NEWMOA developed and conducted the training on data quality and collection techniques for the project field staff. A few state staff assisted in developing training on the environmental regulations for project field staff, depending on their program's expertise.

Table 3 shows the distribution of shop visits between the six states. Each state planned to conduct 2-3 visits above the initial goal shown in Figure 2, to ensure sufficient data at the end of the project. If we needed to drop a particular record during the analysis, then we still had sufficient data to meet the goals of the analysis.

Table 3: Round 1 (Baseline) Target and Actual Sample Sizes

States	Illinois	Indiana	Michigan	Minnesota	Ohio	Wisconsin	Totals
Target Sample Size	34	15	25	19	38	15	146
Actual Visits Completed	35	19	27	20	38	17	156
Difference from target	1	4	2	1	0	2	10

Over the course of the baseline visits, the SBEAP field staff encountered a number of rejections from shops or shop contacts that could not be reached as well as drops due to inaccurate listings. Table 4 shows how each state fared in terms of the number of dropped shops (e.g., closed shops or those that did not fit the definition of autobody refinishing shop) and shops that could not be reached or that declined having a site visit. Among the drops were shops that we could not reach and that, after some more research, were found on lists like Department of Revenue's delinquent tax payers, or in other state records that made it clear the shop was closed.

The states with higher drop-out rates did not have state-mandated registrations or licenses for refinishing shops. Ohio had a state registration for refinishing shops, but a miscommunication about categories in the list resulted in a large number that were not affected by the rule being on the list. Indiana, Minnesota and Wisconsin used business databases that were developed by companies for marketing or yellow pages listings and often included many inaccurate uses of the industry codes (SIC and NAICS) used to sort out refinishing shops.

Those shop owners who declined visits gave a variety of reasons for the lack of interest. Some expressed concern about the amount of time taken out of their day when they were very busy. Others felt they already met all the requirements and didn't need the help. [We were offering the visit as a free assessment of their compliance with the new USEPA rule.] The shops that didn't return calls, assuming they were in operation, were likely the ones that didn't want anyone from government in their shop. Occasionally staff would drive by locations that were not returning calls, if another visit was nearby. Many were shut down, but a few were still operating and looked rather busy. We did not do a full check on all those that declined visits, so we don't know fully know which ones might have been drops. Another complication in some areas was the language barrier. If no one was available that could speak English, we often marked that shop as declined or unavailable.

Table 4: Baseline Visits - Drops and Declines

States	IL	IN	MI	MN	OH	WI
Baseline Universe	1225	489	877	675	1347	456
Baseline Sample Size	34	15	25	19	38	15
Drops	19	33	5	33	61	19
Declined/Unavailable	45	55	9	57	94	40
Drop-out Rate	23.2%	44.6%	14.3%	42.8%	46.2%	32.7%

Phase Three - Baseline Evaluation:

Following completion of the baseline site visits, the participating states entered their own site visit data directly to WI SBEAP through an online survey tool. NEWMOA assisted WI SBEAP in compiling and analyzing the data from baseline site visits to determine if there were particular regulatory issues where we should focus during the training and outreach phase.

Upgrades to the analysis tool, the ERP Performance Analyzer, began at this stage to assist with the statistical analysis. The original ERP Performance Analyzer was developed for the Massachusetts Department of Environmental Protection (MassDEP) to simplify their statistical analysis of multiple ERP rounds for multiple industries. Grant funding helped MassDEP create a basic application, but over time they developed a list of features that would improve the program for the user. Our plan was to use the Region 5 grant to make a number of the improvements to the tool and then use the software application to conduct the statistical analysis for the project.

Phase Four - Compliance Assistance and Self-Certification:

SBEAPs along with USEPA staff and other stakeholders developed common materials for the compliance assistance phase of the ERP. Workshops were conducted throughout the six Region 5 states to help the autobody refinishing shops understand the environmental requirements and how to implement other efficiency and best management practices.

A self-certification checklist that also meets the needs of the Notification of Compliance Status for subpart 6H was developed and mailed to all shops, urban and otherwise, in the states. The deadline for submitting the checklists was March 11, 2011 so that they would also meet the notification deadline in the rule. The Notification of Compliance Status only required basic facility information and an indication of the compliance status. We designed our self-certification checklist to ask about compliance with individual elements of the rule and provide selected compliance assistance within the document, and then we referenced resources and training tools developed by the SBEAPs and posted on the Autobody Compliance website: <http://dnr.wi.gov/topic/CompAssist/sb/Autobody.html>. Also on the website, we posted a schedule of upcoming presentations for additional compliance assistance. A summary of all the compliance assistance provided by each state is included in **Appendix C**.

While we initially intended to have Region 5 USEPA staff provide any follow up on non-submittals of the Notification of Compliance Status, we lacked sufficient resources to follow through on that step.

Phase Five - Compliance Inspections:

The compliance program in the Air Branch at USEPA Region 5 agreed to conduct the compliance inspections following the self-certification phase. USEPA commitment to this effort was outlined in a e-mail from Cheryl Newton, Acting Division Director, Air and Radiation, USEPA Region 5, to state air directors on September 24, 2008, stating “USEPA’s Air Enforcement and Compliance Assurance Branch has agreed to support the ERP pilot by conducting all post compliance inspections of the sampled facilities in the Region.” In order to maintain consistency for the final statistical analysis, USEPA’s effort used the following guidelines for its inspections: (1) the project lead drew an independent, proportionally stratified random sample for USEPA’s facility inspections from the same urban universe established for the baselines, with slight adjustments for drops discovered during the baseline and self-certification phases; and (2) the recommended sample size for each state was met, as shown in Table 5 below.

Table 5: Round 2 (Post) Target and Actual Sample Sizes

States	Illinois	Indiana	Michigan	Minnesota	Ohio	Wisconsin	Totals
Target Sample Size	34	15	25	19	38	15	146
Actual Inspections Completed	34	15	25	19	38	15	146
Difference from target	0	0	0	0	0	0	0

The primary difference in the universe of sources between the baseline and the follow-up rounds was due to the project co-lead removing known “drops” that states identified during the baseline and

outreach phases. Dropped shops were those not affected by the project in one way or another, including reasons such as: the shop had closed, it did not paint, or it did not conduct autobody refinishing work in any way. However, as Table 6 shows, Ohio had a combination of added shops and drops such that their follow-up universe was larger than the baseline. There had been some confusion in categorizing of shops in that state's registration listing, resulting in the difference.

Table 6: Region 5 Urban Universe of Autobody Refinishing Shops

States	IL	IN	MI	MN	OH	WI
Baseline	1225	489	877	675	1347	456
Follow-up	1223	380	858	520	1422	394
Difference	-2	-109	-19	-155	75	-62

For USEPA, the inspectors did not have the issue of shops having the option of declining a visit, as shown in Table 7. All drops were either confirmed closed shops, they did not paint or phones were disconnected and no one could be reached to confirm an operating shop.

Table 7: Follow-up Inspections - Drops and Declines

States	IL	IN	MI	MN	OH	WI
Baseline Universe	1225	489	877	675	1347	456
Baseline Sample Size	34	15	25	19	38	15
Drops	12	0	8	7	20	9
Declined/Unavailable	0	0	0	0	0	0
Drop-out Rate	26.1%	0%	24.2%	25.9%	32.3%	37.5%

Phase Six - Final Evaluation:

Following completion of the follow-up compliance inspections, WI SBEAP, in concert with NEWMOA staff, compiled all data, conducted the statistical analysis, and drafted the final report.

II.B. Key Milestones

Table 8 shows the key milestones with projected dates in the first column. Where milestones were delayed, the adjusted dates are shown following the specific milestone. Specific updates on each milestone were provided in quarterly reports submitted to USEPA Region 5, and are summarized in Appendix B.

Table 8: ERP Project Milestones

Quarter	Projected Milestones	Accomplished
1. Fall 2009 (Oct-Dec)	1. Develop and submit QAPP 2. Identify universe of facilities 3. Select contractor for IL baseline visits 4. Complete MOU between Commerce and other state SBEAPs and NEWMOA 5. Develop site visit checklist, protocol and training, data management process 6. Conduct site visit training 7. Begin baseline site visits	December 2009 Spring 2009 Spring 2010 October 2009 Summer 2009 - Winter 2010 Fall 2009 Spring 2010
2. Winter 2010 (Jan-Mar)	8. Quarterly Report 9. Finish baseline site visits 10. Data management and analysis for baseline 11. In partnership with associations, develop outreach materials to publicize the project	On time Fall 2010 Fall 2010 Fall 2009 - Spring 2010
3. Spring 2010 (Apr-Jun)	12. Quarterly Report 13. Mail self-certification and workbook to urban universe 14. Respond to requests for assistance on phone or site	On time December 2010 Spring 2011
4. Summer 2010 (Jul-Sep)	15. Quarterly Report 16. Conduct workshops and other education	On time Started Fall 2010 Continued through 2011
Federal fiscal year 2011		
5. Fall 2010 (Oct-Dec)	17. Quarterly Report 18. Help USEPA develop post-certification inspection and data management protocol	On time Spring 2011
6. Winter 2011 (Jan-Mar)	19. Quarterly Report 20. Finish development of post-certification inspection protocol and data routines; Begin processing cert data	On time Started Spring 2011, Complete Spring 2012
7. Spring 2011 (Apr-Jun)	21. Quarterly Report 22. Final cert data processing; Begin post-cert inspections; design transition to Region 5 (Sept 2011 - May 2012)	On time Spring 2012 Sept 2011-Jan 2012 No transition plan
8. Summer 2011 (Jul-Sept)	23. Quarterly Report 24. Finish post-cert inspections	On time Spring 2012 (Data entry complete)
Federal Fiscal Year 2012		
9. Fall 2011- Winter 2012 (Oct-Mar)	25. Quarterly Report 26. Finalize post-cert data and analysis 27. Create vehicle for annual (or other periodic) submittals and data management between state/fed	On time Winter-Summer 2012 Not complete
10. Spring - Summer 2012 (Apr - Sept)	28. Finalize project report.	Summer 2013

II.C. Project Outputs

The following is a description of the primary project outputs. Outputs are the materials created to complete the different phases of the project. The expected outputs from this project included the standard products expected for a State Innovation Grant, which includes progress reports, a statistical methodology and the quality assurance plan.

For the Region 5 Autobody ERP we created the following documents:

- For SBEAPs/EPA field staff:
 - training materials for the regulations to be measured,
 - checklist for measuring performance on key indicators,
 - resource documents to assist during site visits, and
 - a single webpage to post the materials (<http://dnr.wi.gov/topic/CompAssist/sb/autobodyERPtraining.html>).
- For the shops:
 - facility self-assessment checklist and accompanying materials,
 - documentation associated with workshops/training sessions to explain environmental requirements to the shops,
 - a single webpage to post all the materials (<http://dnr.wi.gov/topic/CompAssist/sb/Autobody.html>), and
 - an on-line tutorial to assist facilities with completion of the self-assessment.

As part of the original project proposal, we planned to compare the compliance assistance tools created for the project and demonstrate their benefits over the traditional permitting and enforcement system for a small business sector such as autobody shops, by reviewing how autobody shop compliance was approached in other states and/or regions and address the findings in the final report. However, because states and regions have approached implementation of the rule in a wide variety of ways, it has been difficult to compile the information in a useful way for the final report.

1. Staff Training, Checklist, Resources and Website Development

Training:

Following past practice for other ERPs, the project team developed a day and a half long training that included not only the key elements of regulatory topics from the checklist but also statistical principals to help ensure a broad understanding of the goals of the project.

The first training event was designed for those who would be conducting the baseline visits for the SBEAPs. Staff from each of the Region 5 state SBEAP office as well as ISTC staff who would conduct the IL site visits all attended. USEPA inspectors from multiple program areas were invited to the first training session to garner their input on possible issues or regulatory interpretations, in an attempt to ensure consistency between the two rounds of site visits. Statistical information was provided by NEWMOA staff because of their expertise in the Common Measures project as well as a number of other state ERPs. Project leads from WI and MN led the development and discussion of the regulatory topics, going through the checklist questions one-by-one. The slides from the training were provided on a webpage for field staff to as well as to share with other state SBEAPs who may need to work with autobody shops.

The second round of training took place once it was confirmed that USEPA inspectors would complete the follow-up round of inspections. The training design for the USEPA inspectors was very similar to the SBEAPs training, for consistency. However, USEPA had reduced the number of questions so there was less information to cover in the training. The statistical training was repeated as well; however, USEPA's National Center for Environmental Innovation provided funding for Mike Crow of Crow Environmental to be the presenter for this round of training. Mike Crow has worked on multiple states' ERPs as a resource on both the statistical calculations as well as general design of ERP.

Checklist:

The SBEAPs spent a lot of time working on the checklist, refining the questions to ensure common understanding among all states. The site visit checklist was completed in February, 2010. The effort was extended to ensure that the questions could be entered correctly in an online data entry survey that was designed. The online data entry survey was provided to the SBEAPs so that each field staff could enter their own checklist responses and then WI SBEAP could download all the data into a single database for analysis. The survey was closed once all the state data was entered.

The original plan had been to have USEPA Region 5 field staff ask all of the same questions as SBEAPs asked in the baseline. However, USEPA Regional Counsel determined the inspectors would be unable to ask questions beyond 6H, so the post-certification inspections would not address multimedia topics. A data entry survey similar to that for the baseline data was created for the EPA inspection data; however, staff at the WI SBEAP entered the EPA data.

Resources and Webpage:

To assist the field staff in recalling information from the training, or to create additional copies of resource materials to provide to shops during the visits, we created a single webpage for the Project Team: <http://dnr.wi.gov/topic/CompAssist/sb/Autobodyerptraining.html>. This page was not linked to any other agency webpage so that no one outside the Project Team could gain access to the information.

2. Compliance Assistance Webpage

Region 5 SBEAP states worked together to create common or similar materials for autobody shops looking to complete the self-certification checklist. All of the materials were posted on a web page along with a link to the survey where the shops could enter their responses to the checklist questions. This page can now be found at <http://dnr.wi.gov/topic/CompAssist/sb/Autobody.html>. Based on previous state SBEAP efforts in ERP, it was decided that a large printed document would be too intimidating for autobody shops. With the materials on line, organized by state and topic, shops could print only those materials they needed. Not printing out all the materials to send to 12,000 shops also saved a large amount of grant funds. Along with materials they could print out, we created two webinars to train shops on the rule and to explain how to go through the self-certification checklist.

Of the two webinars created for training shops, we found use was high even beyond the compliance date of the rule.

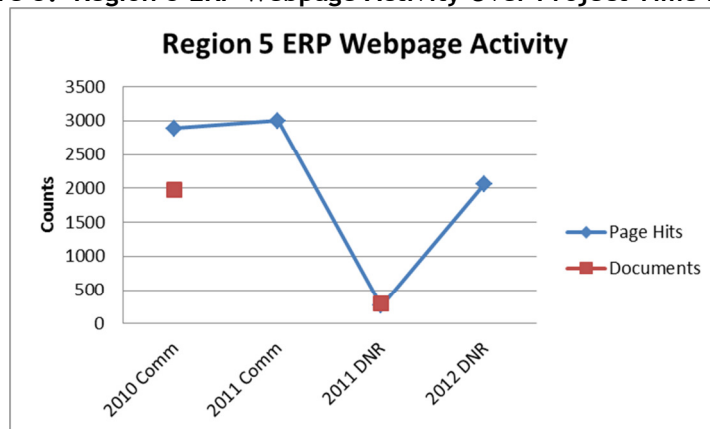
Table 9: Web-based Training Video Participation

Training Video	Posting through 3/17/2011	3/18/2011 through 2/20/2013
6H Overview	244	137
6H Self-certification Checklist	247	81

While the bulk of the use of these tutorials happened up through the compliance deadline of March 11, 2011, there have been a good number of views since the deadline.

Figure 3 shows fluctuation in webpage activity in the early stages of the transition from Commerce to WDNR web page hosting, but it rebounded quickly once the pages were posted and then publicized. Document download activity was not always available as the agencies switched between web activity monitoring applications during the span of the project.

Figure 3: Region 5 ERP Webpage Activity Over Project Time Period



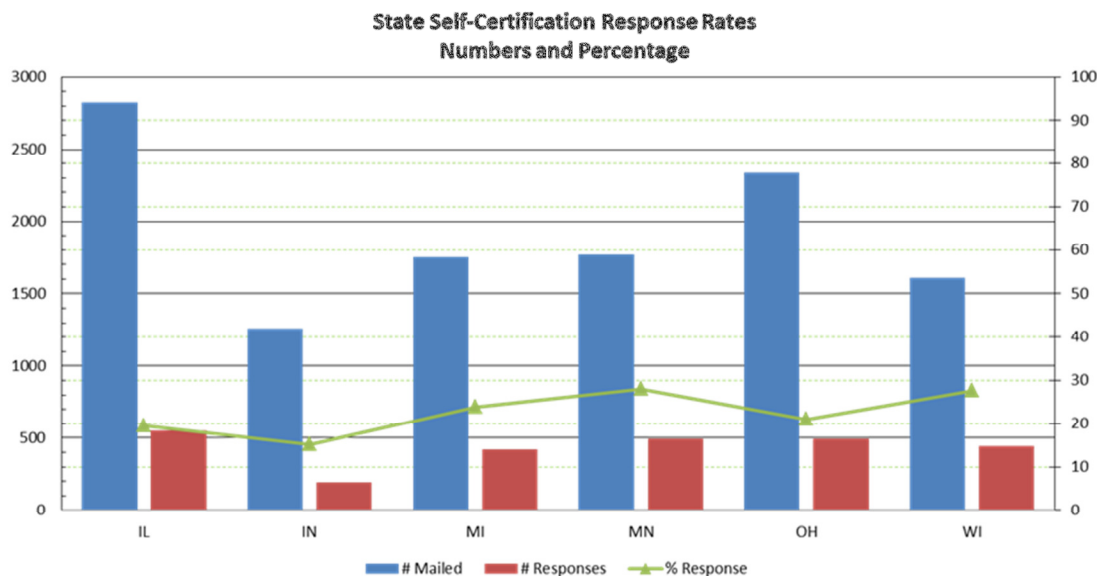
3. Self-certification Checklist/Materials:

The self-certification checklist was developed by the SBEAPs, using the baseline inspection checklist as the starting point and putting it into a format more easily utilized by shop owners or staff that might complete the form. Ensuring the questions were easily understandable was the most important element, but the project co-lead also needed to ensure the answers would have the same meaning as those collected from the baseline checklist. Simplifying a question can sometimes change the intent.

Another element of the self-certification checklist was finding the best way to provide sufficient supporting information so the shops could determine whether they were answering accurately. Previous ERPs have provided a large workbook which is cross-referenced in the checklist. This was decided by the Region 5 SBEAPs to be something the shop owners would not read. Instead of a lengthy workbook, brief explanations or links to resources for each question were provided right alongside the question within the checklist itself.

Response rates for the self-certifications were very good, for a voluntary survey.

Figure 4: State Self-Certification Response Rates - Numbers vs. Percentage



Regardless of how well or how carefully questions are phrased, others will always read them with different results than expected or intended. That is apparent from reading through the responses as data was entered into the database for analysis. Refer to **Appendix D** for a summary of some key impressions from WI staff entering the self-certification responses.

II.D. Project Outcomes

The primary outcomes expected from this project were changes in performance measured between the baseline visits and the follow-up compliance inspections.

As mentioned previously, the baseline visits measured multiple environmental program areas, including observations of hazardous waste and wastewater management, as well as recent energy efficiency and pollution prevention efforts in addition to the requirements of 6H. During the baseline evaluation, 156 randomly-selected facilities were visited. The follow-up compliance inspections were limited to evaluations of 6H requirements. USEPA inspected 146 randomly-selected facilities. Before and after comparisons in this section are limited to 6H requirements, since USEPA did not evaluate other regulatory questions. Observations of baseline conditions for the other elements follow the 6H results. More detail on the results and statistical analysis presented in this section is contained in **Appendix E**.

The state SBEAPs discussed the rate of compliance would constitute an acceptable rate, above which we could be satisfied that the industry does not need more assistance to improve performance. Compliance is considered widespread and adequate when at least 85% of facilities meet all of the requirements. However, for key elements in 6H, we would agree with enforcement staff who generally expressed that 95% compliance is preferred. Each of the areas discussed below is also evaluated for compliance concerns.

An outside team reviewed the statistical analysis and indicated the regional results should be analyzed as a proportional sample. While we designed the sample as a proportional distribution for each state, so that no one state was visiting more shops than their share, the intent was always to analyze this as a regional sample. The minimum sample for each state was increased to a minimum of 15, so that individual states could analyze their data with a reasonable margin of error and confidence level. By increasing a couple state's samples to greater than their proportional share, we changed it from a true proportional sample as well. Data analysis tools created for previous ERP projects are all designed for simple random samples. There was not sufficient time or funding for development of a tool to conduct a proportional analysis. We did conduct a proportional analysis for a few key EBPI questions. The results showed a smaller margin of error for each of the questions, for baseline and follow-up results.

Before evaluating the performance of the shops, it is helpful to understand the makeup of shops found in the two samples.

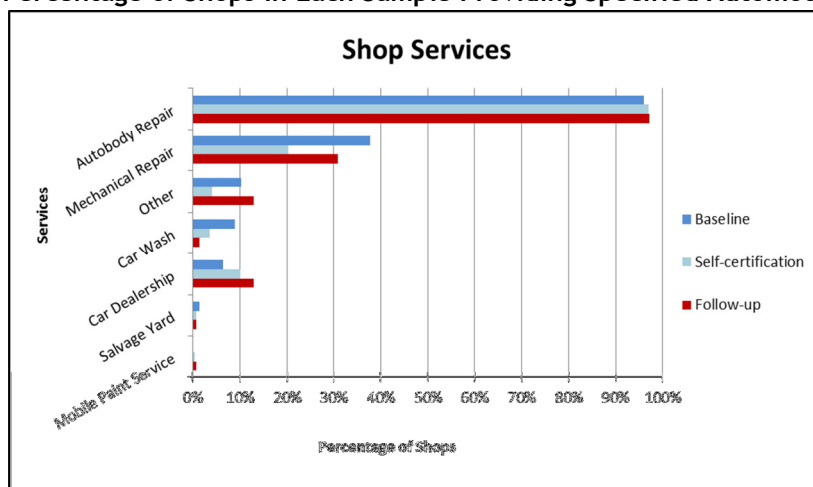
1. Facility Characterization/Informational Responses

A number of questions asked during the visits were solely to capture information about the shops. Some of the information was intended to ensure the shops were eligible to participate in the ERP, being affected by the 6H requirements in at least one aspect. Others captured whether or not specific regulatory questions should be asked. A few of these descriptive and informational questions have been analyzed to see how shops in the samples compared. The results of the facility characterizing questions and self-certification are shown in **Appendix D**.

Shop Services:

When we asked about the types of service provided at each shop, we found the full spectrum of services. Figure 5 shows similar results for baseline, follow-up inspections as well as in the self-certifications. There were a few shops in each sample that were not full autobody repair, but may have done some painting along with other services provided like simple touch-up repairs at a used car dealership.

Figure 5: Percentage of Shops in Each Sample Providing Specified Automotive Services



Shop Size (Employees):

We asked the shops about the number of employees compared to the number of painters in the shop. In the baseline visits, the shops averaged 6 employees and less than 2 painters per shop, while in the follow-up inspections the shops averaged 7.5 employees but still averaged less than 2 painters per shop.

Figures 6 and 7 show a comparison of the range of painters in shops, from 0-5, 6-10 and more than 10, measured at baseline and follow up. This shows that very few shops have more than 5 painters, almost half have at least 5 employees, while many have more than 10 employees. The main difference between baseline and follow-up is that more shops had over 10 employees in the follow-up sample.

Figure 6: Baseline Employee vs Painter Counts

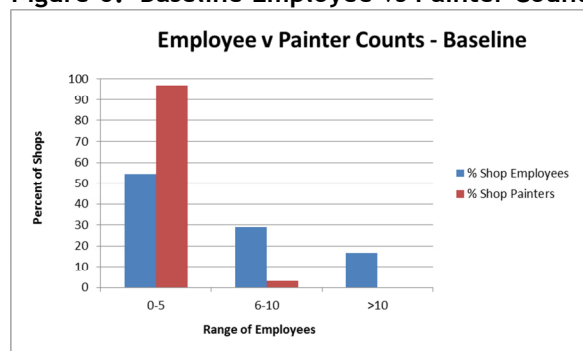
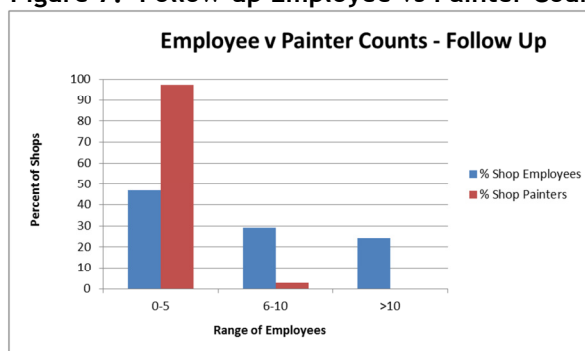


Figure 7: Follow-up Employee vs Painter Counts

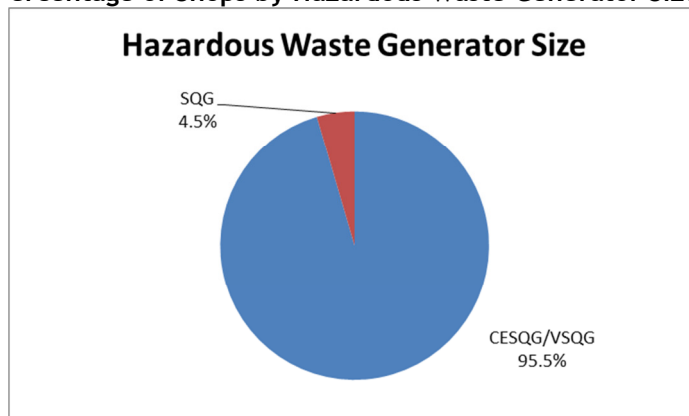


While the follow-up inspections did not capture waste or water information, the self-certifications provided a comparison for the baseline visits. No comparisons of statistical differences are made since the self-certification is voluntary information and not verified by a trained individual.

Waste Disposal:

For hazardous waste, we asked about the amounts of waste generated per month, and we used the amounts to estimate their generator size. Figure 8 shows that 95.5% of the baseline sample was considered very small or conditionally exempt small quantity generators. Wisconsin uses the term “very small” instead of “conditionally exempt” but the thresholds are the same in all the Region 5 states. That leaves 4.5% of the shops as small quantity generators.

Figure 8: Percentage of Shops by Hazardous Waste Generator Size at Baseline



During the baseline visits, the SBEAPs determined whether the shops were using the proper methods to dispose of their wastes. Figure 9 shows that 45% of the 156 shops visited were using all proper methods of disposal; it also provides a scale of which methods were used by the shops.

Figure 9: Percentage of Shops Using Certain Waste Disposal Methods at Baseline



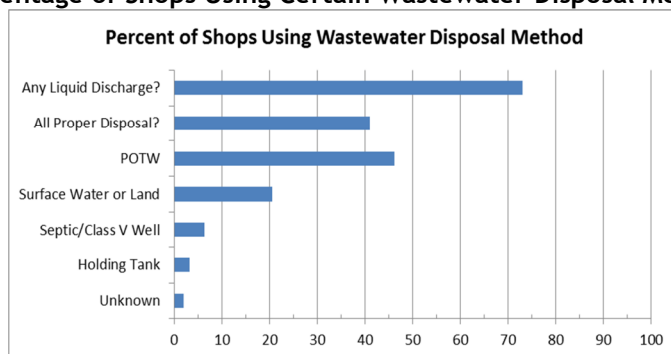
From the self-certification responses about the amount of waste generated over a period of time, we found 91.9% were very small/conditionally exempt small quantity generators and 8.1% were small quantity generators. We did not specifically ask what their generator size was since, from the experience of both SBEAP staff that provide waste assistance as well as state hazardous waste inspectors, we believed the shops would not understand the terminology anyway. On waste disposal methods, we did not count the actual responses for disposal methods used but provided them with information on proper methods for likely shop wastes and asked if they were using the proper methods.

Water Discharge:

The wastewater discharge responses in Figure 10 have a similarly wide range of results as waste disposal because the shops could identify more than one discharge outlet. Because they could identify more than one outlet the numbers will total more than 100% of shops responding.

During the baseline visits, the SBEAPs determined whether the shops were using the proper methods to dispose of their wastewater discharges. Figure 10 shows that 42% of the 156 shops visited were using all proper methods of disposal, and it provides a scale of which methods were used by the shops.

Figure 10: Percentage of Shops Using Certain Wastewater Disposal Methods at Baseline



By comparison, the self-certification responses indicated 61.8% discharged to their Publicly Owned Treatment Works (POTW), 35.8% had some level of surface water or land discharge, 15% were using septic or Class V injection wells, and 5% had an unknown discharge point in the shop.

2. Achievement Scores

We measured facility achievement scores for baseline visits and follow-up inspections and sorted the questions into different categories and scores calculated for those sets of questions. We determined scores for key categories of questions, including EBPIs and compliance related questions. It is also possible to calculate scores for facility information question, individual regulations like air, waste or water, and for individual state samples.

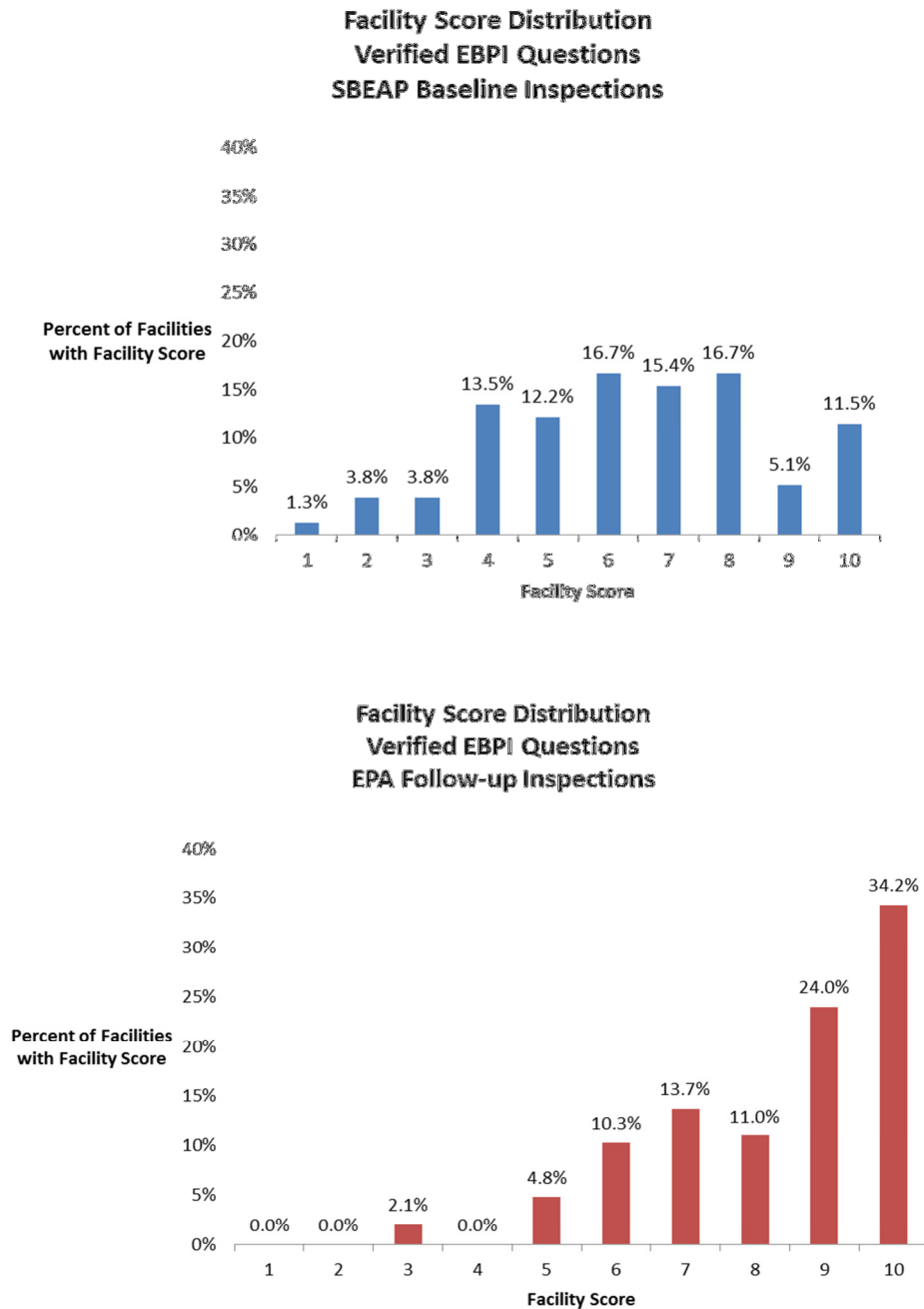
Facility achievement scores are calculated by counting the number of questions where the facility met the requirements, dividing by all the questions that applied to that facility, and then multiplying by a factor of ten to express the score as an integer. For example, if a facility met requirements for 5 questions and 14 applied to that facility, then $5 \div 14 \times 10$ or 3.6 is their facility score.

Facility score distributions do not include all of the questions. For accurate comparisons between baseline and follow-up, we only looked at questions asked by both SBEAPs and USEPA and only those with Yes/No responses. EBPIs and Compliance figures below include a specific subset of the questions as assigned by project team members.

The facility score distribution in Figure 11 for the EBPI's shows that just 33.3% of facilities have a score of 8 or higher at the baseline but 69.2% of facilities in the follow up round had scores of 8 or higher. The difference in average scores between baseline and follow-up was a statistically significant difference.

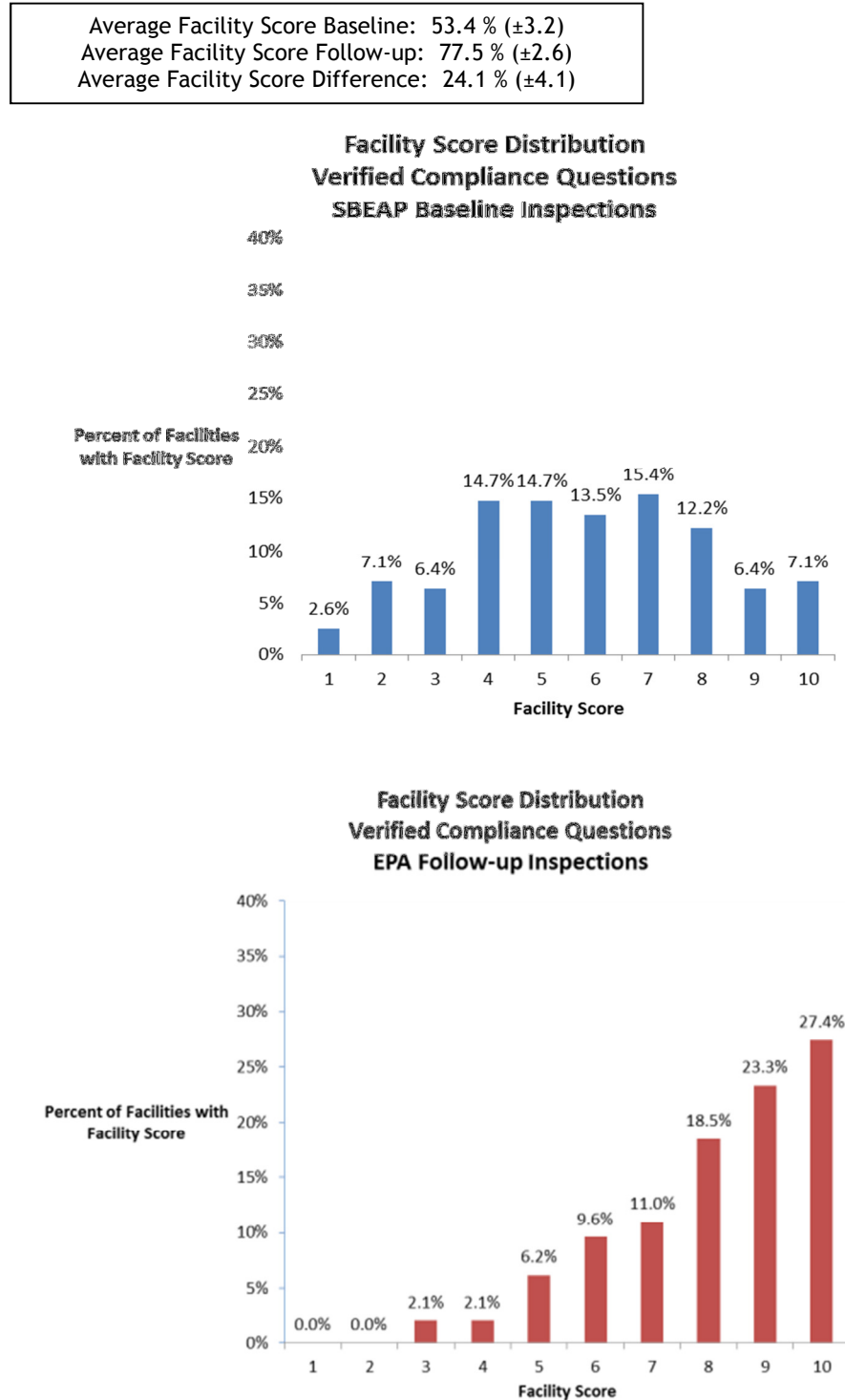
Figure 11: EBPIs - Baseline vs Follow-up

Average Facility Score Baseline: 56.6 % (± 3.0)
 Average Facility Score Follow-up: 77.7 % (± 2.6)
 Average Facility Score Difference: 21.1 % (± 4.0)



For the Compliance score distributions, Figure 12 shows they are very similar to the EBPI's with 25.7% of facilities in the baseline scoring 8 or higher while 69.2% in the follow up round scored in that range. The Compliance scores increase by a larger percentage than the EBPI's. This was a statistically significant difference.

Figure 12: Compliance Scores - Baseline vs Follow-up



3. 6H Regulatory Questions

There was a statistically significant improvement in compliance between the baseline and inspection rounds for the following 6H requirements. Out of 25 regulatory questions on 6H, 18 showed a statistically significant increase.

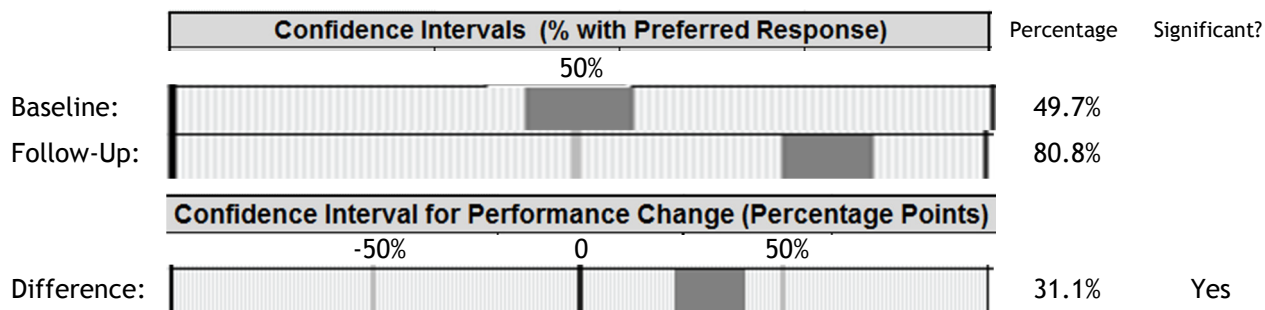
It is important to note that there were some states in the project where local or state-wide standards for reduction of Volatile Organic Compounds or VOCs have been in place for many years, standards called Reasonable Available Control Technologies or RACT. A number of these RACT rules have some overlapping requirements with 6H, so some of the results that follow may have been impacted by those existing regulations. In IL, MI, OH, and WI they have rules for autobody shops in many of the urban counties we sampled and in IN the autobody rules applied state-wide. For the IL universe, we removed the City of Chicago at the beginning because their VOC RACT and other county ordinances were more stringent than 6H. The state RACT rules included requirements similar to 6H on HVLP guns and enclosed gun cleaning, and some states also include use of paint booth. The ERP shows results where traditional inspection or 'command & control' programs did not, in those circumstances where regulations similar to 6H had already been in place for a while.

Excerpts from charts provided in **Appendix E** are provided here for illustration of performance on topics that showed statistically significant increases. The graphics capture the width of the confidence interval for each sample and the difference.

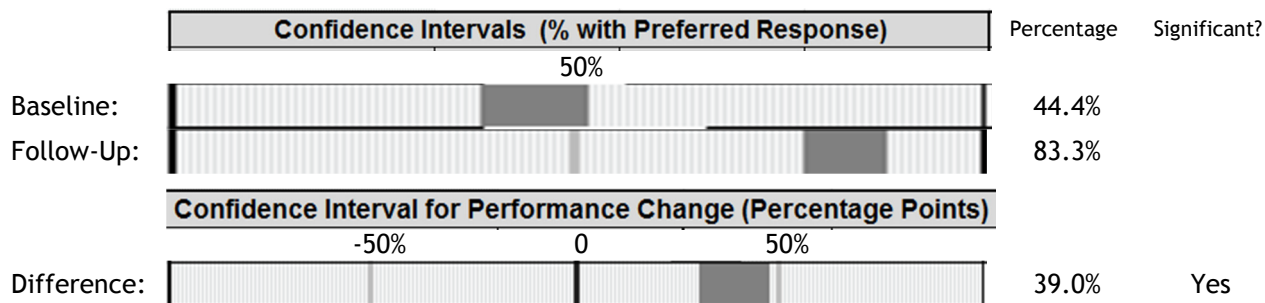
Training:

The percentage of facilities that had trained all their paint technicians properly within the required timeframes increased from 49.7 % to 80.8 %. The percentage of facilities maintaining the proper records documenting technician training increased from 44.4 % to 83.3 %.

(B2a) Have ALL your paint technicians been trained in proper selection, use and maintenance of spray equipment, within the proper time frames?

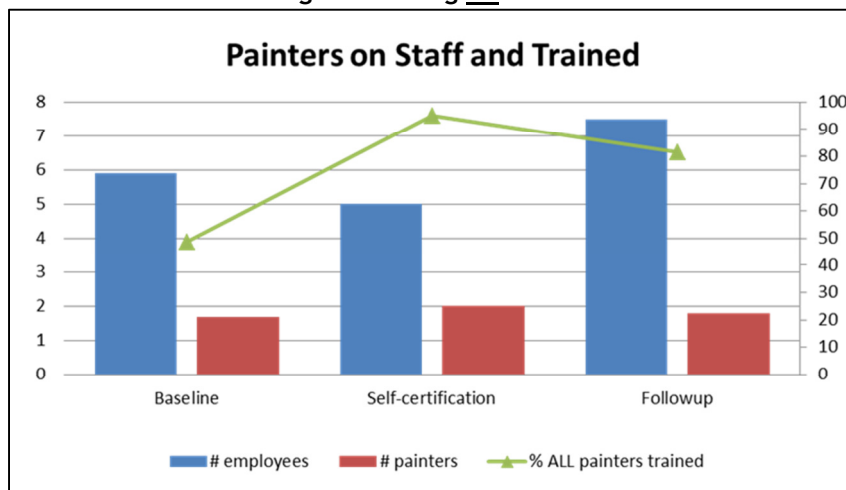


(B2c) Do you have records on technicians trained on the use of spray equipment?
Used for Facility Score: Compliance, EBPI



Following the question regarding whether all painters were trained, the results of which are described above, we asked how many of the painters had been trained. Out of the shops in the baseline which had some of their painters lacking training: 54 had no painters with current training, 28 had at least one painter trained, and 37 had two or more painters trained. In the follow-up inspections, fewer shops had painters without training, but of those: 18 had no painters with current training, 11 had at least one painter trained, and 8 had two or more painters with the training required. When looking at the percentage of those having all their painters trained, the line in Figure 13 shows that the perception of shops without verification is higher than those verified observations regarding completed training.

Figure 13: Comparison of Employees vs. Painters for Baseline, Self-Certification and Follow-up And the Percentage Indicating All Painters Were Trained



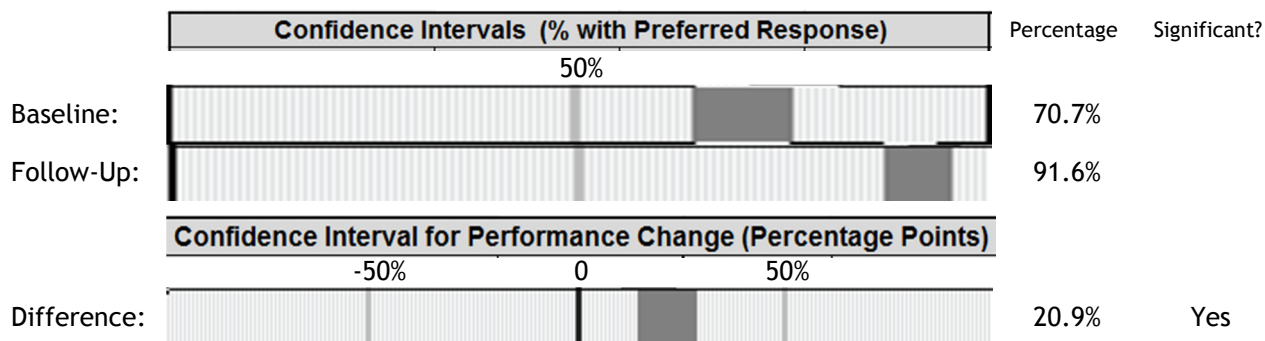
Project results indicate that, while improving, compliance with 6H for painter training requirements is an ongoing concern. This could be easily resolved as most shops had at least one painter trained and that painter could train the rest in the shop.

Paint Booths:

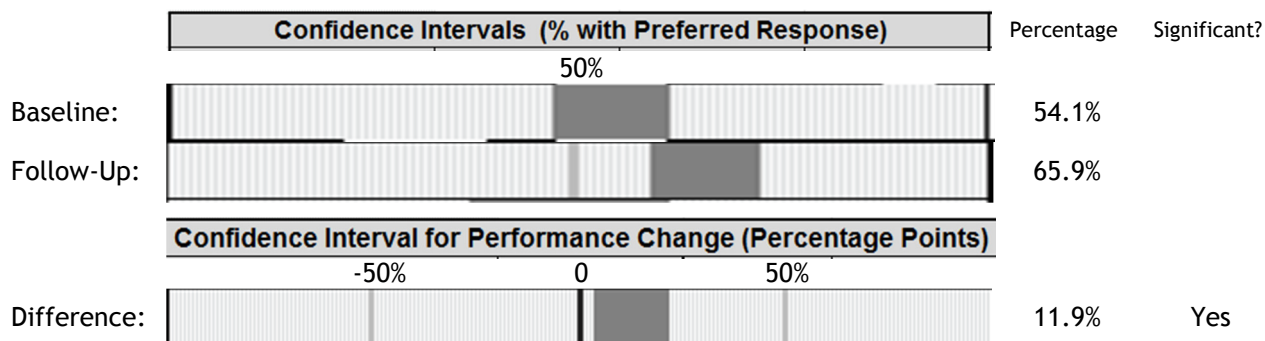
Most elements were evaluated twice - in question format with the shop representative reporting to the field staff their understanding of the situation, and then by direct observation on the shop floor. Comparisons of the information obtained from each method are made in addition to the baseline versus inspection rounds.

The number of facilities that had a fully compliant spray booth increased from 70.7 % during baseline visits to 91.6 % during follow-up inspections. While the number of facilities where all the spray booth exhaust and filter systems met the requirements was lower than reported, increased compliance was observed - from 54.1 % to 65.9 %. Each of these was a statistically significant increase. It would appear that while some elements of the collection systems still did not meet the rule, their overall compliance had improved from the baseline.

(11c) Do the spray booths ALL meet the [enclosure] requirements at this time [has 4 walls, roof, and exhaust]?

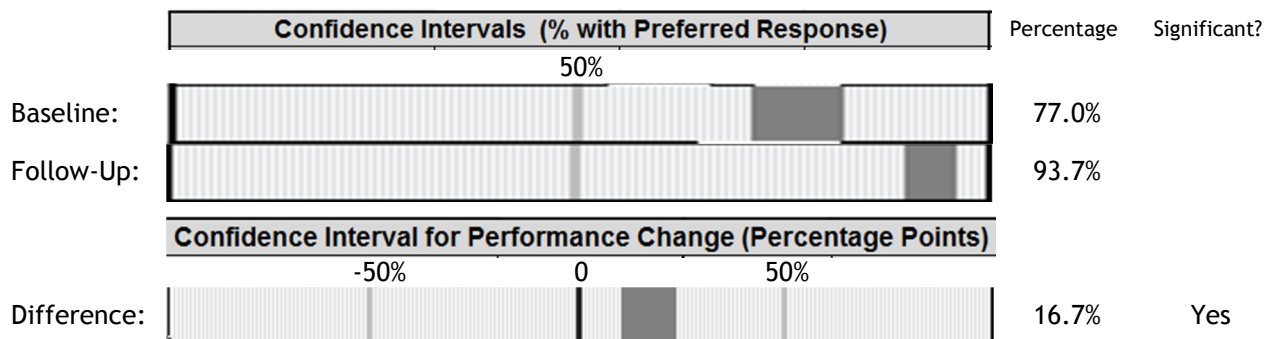


(12d) Do the spray booth exhaust/filter systems ALL meet the requirements at this time? [filter in good condition, adequate exhaust pressure]



SBEAP evaluations and USEPA inspections also included two observations of best practices to help verify that coatings are applied in compliance with 6H. In the baseline evaluations, 77.0 % of facilities showed no evidence that spray coating occurred outside a spray booth. This increased to 93.7 % of facilities in the follow-up inspection round. The percentage of facilities where the lighting in the booth/paint areas was clean of paint residue (except from the most recent job) increased from 88.4 % to 95.8 %. Each of these was a statistically significant increase.

(11b) Is there no evidence that spray coating occurs outside of a spray booth?²



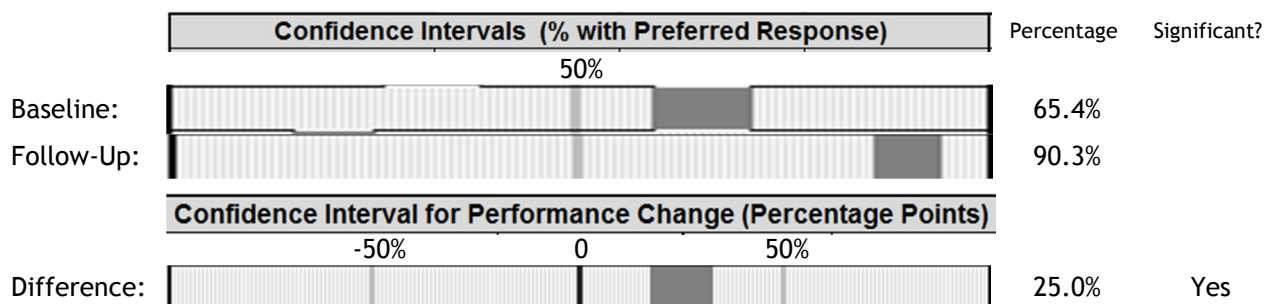
² Question reworded so yes is the preferred answer. Original wording: Is there evidence that some spray coating occurs outside of a spray booth?

Project results indicate that most facilities have adequate spray booth configurations and use them; however, compliance with 6H requirements for the spray booth exhaust and filter systems could be improved upon further.

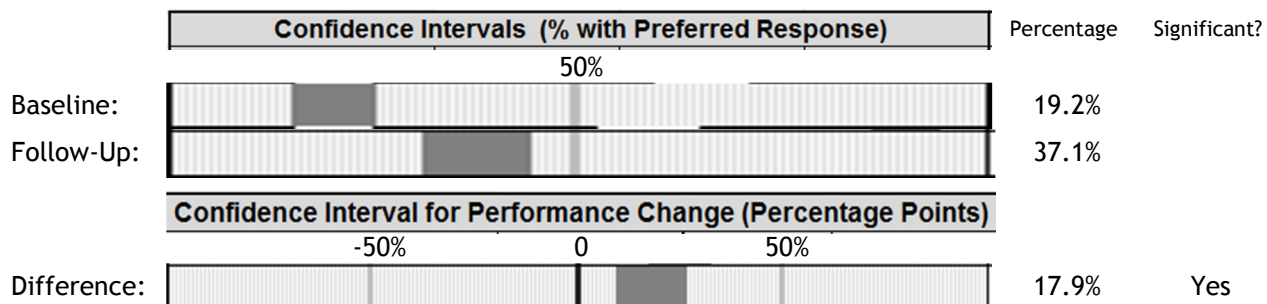
Awareness of 6H and Initial Notifications:

At the baseline visit, 65.4 % of the facilities visited reported that already knew they were affected by a new USEPA rule, 19.2 % were aware they could petition for an exemption by changing the coating they use, and 59.0 % had submitted the required Initial Notification form to USEPA. By the follow-up inspections, these increased to 90.3 % knowing they were affected, 36.6 % knowing about the exemption option, and 71.5 % submitting the notification. Each of these was a statistically significant increase.

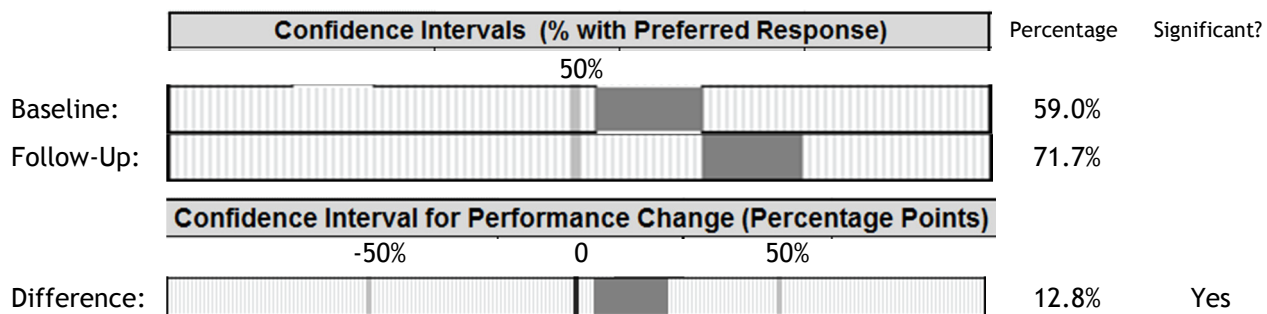
(C11) Before this visit, did you know you are affected by the new USEPA rule that affects autobody shops and other small paint shops? FACILITY CHARACTERISTIC



(C12a) Are you aware that autobody shops may be able to petition out of new requirements by changing the paints they use? FACILITY CHARACTERISTIC



(C13a) Have you submitted an initial notification report form to USEPA and the state, where required?



We also checked recent submittals received by USEPA Region 5, to confirm whether responses on the notifications were accurate. Table 10 shows the results of that review.

Table 10: Comparison of Responses on Notification and Actual Submittals

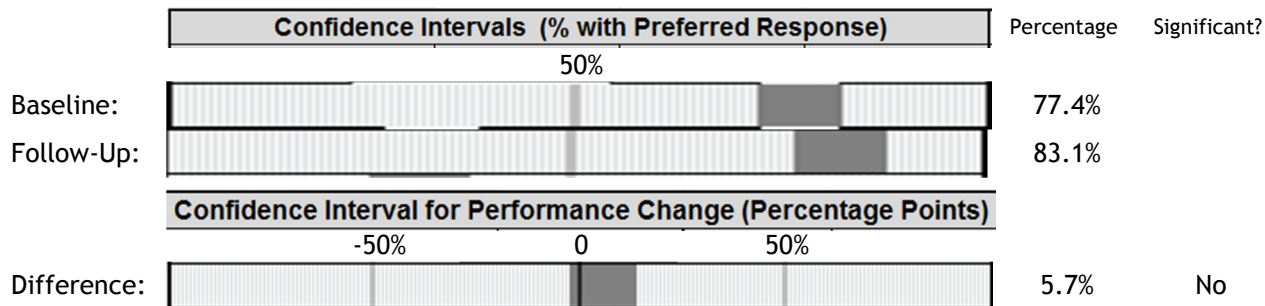
Phase	Visits			Confirmation		
	Total Response	Yes, Form Submitted	% Submitted	Differed on EPA List	Actual # Submitted	Other
Baseline	156	92	59%	30	100	
EPA Follow-up	138	99	71.5%	31	91	7 without initial, did submit compliance notification

For the following elements, while the percentage of facilities in compliance with a particular requirement was not the same between the baseline and inspection rounds, the changes were not statistically significant.

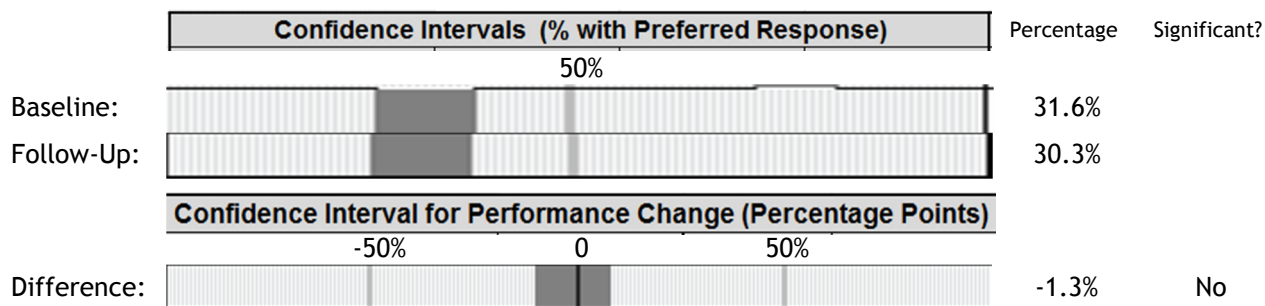
Paint Formulation and Documentation:

The percentage of facilities having Material Safety Data Sheets (MSDS) and coating formulation data for all the solvents and coating used increased from 77.4 % to 83.1 %. However, the percentage of facilities knowing if the coatings they use contain the HAPs of concern in 6H (chromium, lead, cadmium, nickel or manganese) decreased from 31.6 % to 30.3 %.

(C9) Does your shop have Material Safety Data Sheets (MSDS) and coating formulation data supplied by the manufacturer for ALL the solvents and coatings that you use?



(C10a) Do none of the coatings used by your shop contain any of the following hazardous air pollutants: chromium, lead, cadmium, nickel, or manganese (includes compounds of these metals)?³



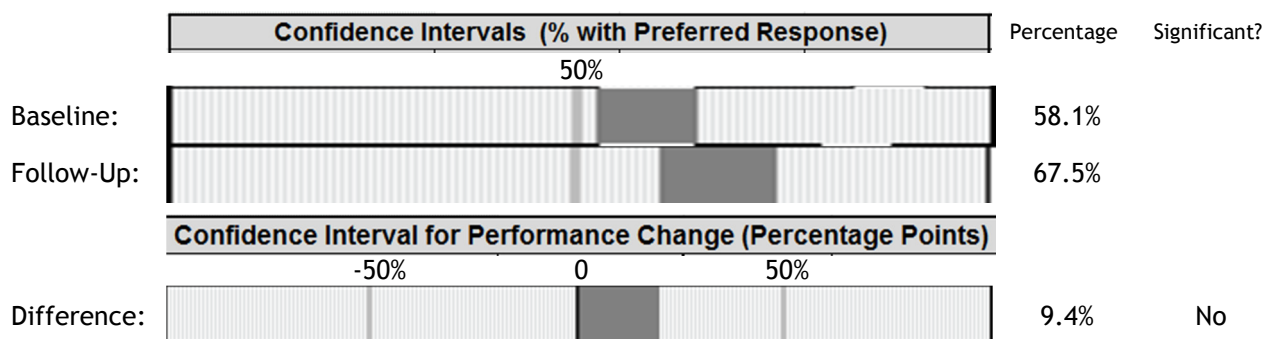
³ Question reworded so yes is the preferred answer. Original language: Do the coatings used by your shop contain any of the following hazardous air pollutants: chromium, lead, cadmium, nickel, or manganese (includes compounds of these metals)?

The question was asked as a lead in to whether or not the shop knew about and intended to petition for the exemption from 6H requirements. Project results indicate that facilities need to improve documentation of the solvent and paint formulations they use. It is also possible that shops simply decided to comply with the rule requirement rather than worrying about the components in their coatings.

Spray Guns and Gun Cleaning:

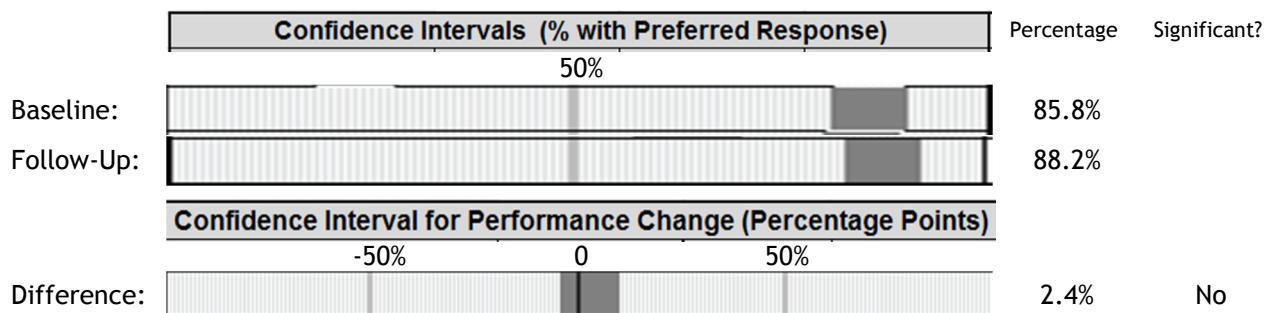
The percentage of facilities where all spray guns are compliant increased from 58.1 % to 67.5 %. This may seem low since most states would have had requirements in place to mandate use of compliance spray guns for many years. However, we viewed the presence of any non-compliant guns in the shop, even if they had not been used in years, as a “No” response to the question.

(I6b) Do they have only compliant spray guns, based on the requirements for 6H, available for use at this time?



The percentage of facilities where all spray gun cleaning is done in a compliant manner increased from 85.8 % to 88.2 %.

(C5a) Is all paint spray gun cleaning done with a fully enclosed spray gun washer or in a manner that avoids creating a mist of solvent?



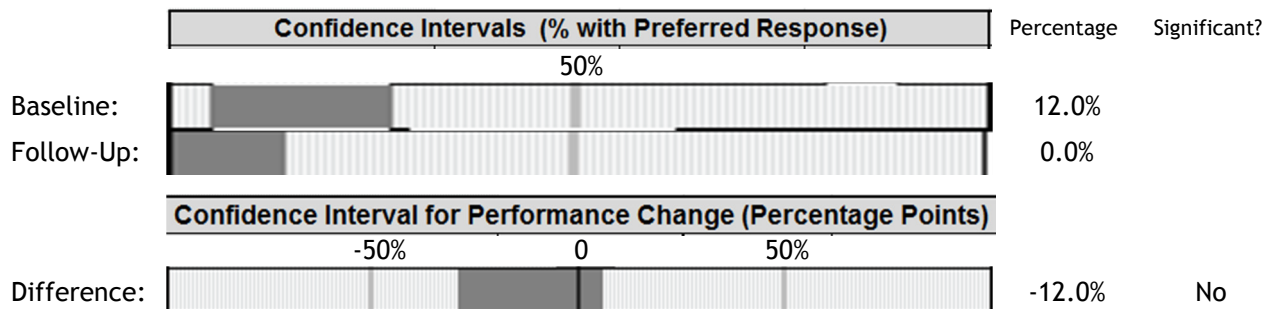
Because this is one area where states had RACT Rules in place requiring the use of HVLP, we felt it was important to indicate “No” if any non-compliant guns were present. Project results indicate that spray gun cleaning methods are adequate, but there are many shops that still have non-compliant spray guns on the premises, creating an ongoing compliance concern. An inexperienced painter may accidentally pick up the non-compliant gun and create a situation of non-compliance for the whole shop.

Paint Stripping:

During baseline visits, we found 84.0 % of shops did not using chemical products for paint stripping. This increased to 87.5 % in the follow-up inspection round, but was not a significant increase. Of those

that were observed using chemical products, 88.0 % were found to use chemicals that did not contain methylene chloride in the baseline, improving to 100.0 % in the follow-up.

(C6b) Do none of the chemical products you use for paint stripping contain Methylene Chloride?⁴



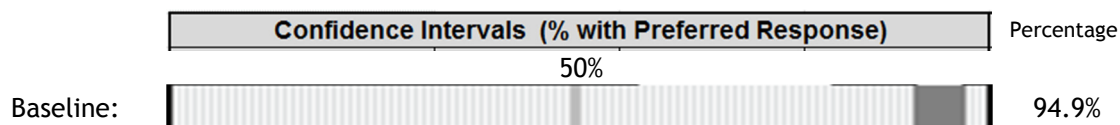
Paint stripping with methylene chloride containing chemicals does not appear widespread in the autobody refinishing sector. Anecdotal information from the outreach phase indicated that most shops who could eliminate the methylene chloride, and any solvent based paint strippers, had already done so. They didn't want the chemicals in the shops. Some large scale restoration operations did need the more effective solvents for the large surface area removal of paint layers. For the few facilities that do use methylene chloride, compliance with the requirements of 6H could still be a concern.

4. Baseline-Only Observations

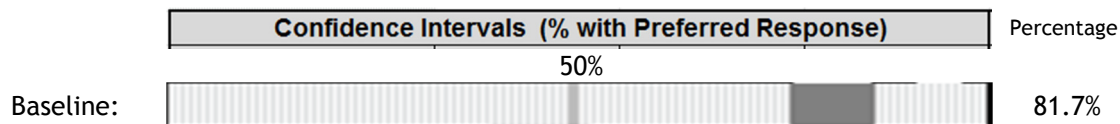
Hazardous Waste:

Results of the baseline evaluations indicate possible compliance concerns. We found that 81.7 % of facilities have identified all their facility's hazardous wastes. Of greater concern is that while 95 % indicated they understood how to dispose of all the wastes on site, only 45.5 % of facilities were determined to be using proper disposal practices for all their wastes.

(D1) Do you understand what you are supposed to do with each of the wastes generated by your shop?

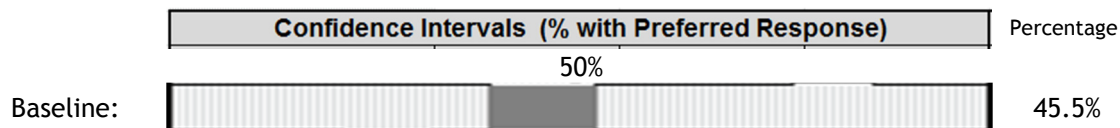


(D2) Have you identified all of your facility's hazardous wastes?



⁴ Question reworded so yes is the preferred answer. Original language: Do any of the chemical products you use for paint stripping contain Methylene Chloride?

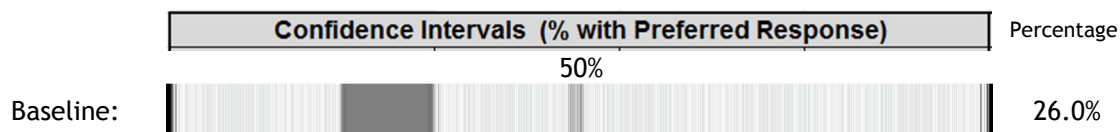
(D5) Are they using all proper disposal methods at this time?



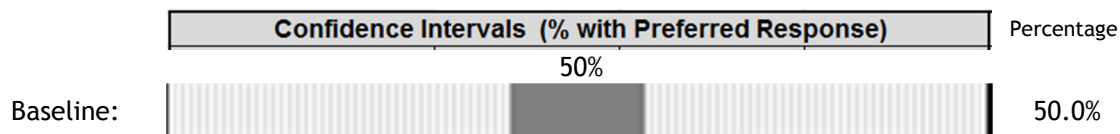
Wastewater:

Results of the baseline evaluations indicate that wastewater management is also a compliance concern. Only 62.7 % of facilities were reported using proper disposal methods for all liquids.

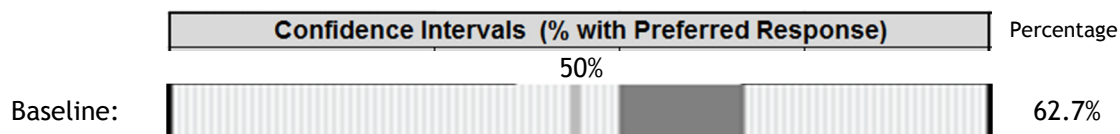
(E1) Are none of your motor vehicle service liquids (solvents, oils, antifreeze, car wash water, floor washing, etc) or shop wastewater discharged through a utility sink, toilet, unsealed floor drain, or out on the ground?⁵



(E2f) If you have any liquids going to municipal sewer or a holding tank that is later transported to POTW, have the POTW or municipal authorities been notified of the motor vehicle service liquids or wastewater in your discharge?



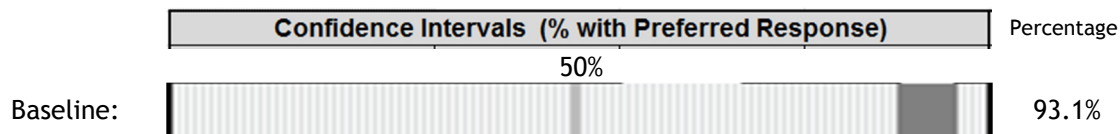
(E3) Are they using all proper liquid disposal methods at this time?



Pollution Prevention and Energy Efficiency:

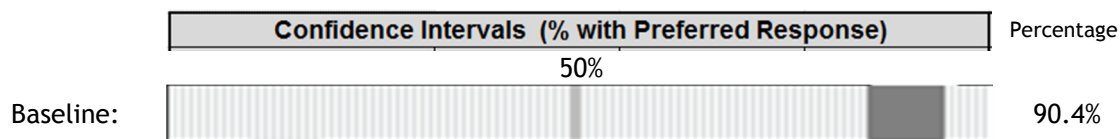
We found that 93.1 % of facilities reported implementing measures to reduce the use of toxics within the past three years. In addition, we found 90.4 % of facilities reported implementing energy efficiency measures within the past three years.

(F1a) In the past 3 years, have you taken any of the following actions to reduce toxics?



⁵ Question reworded so yes is the preferred answer. Original wording: Are you discharging any of your motor vehicle service liquids (solvents, oils, antifreeze, car wash water, floor washing, etc) or shop wastewater through a utility sink, toilet, unsealed floor drain, or out on the ground?

(G1a) In the past 3 years, have you taken any of the following actions to minimize energy use in your shop?



II.E. Compliance Assistance Materials/Effort

The effort on the compliance web page for the regional project was discussed previously. Figure 3 shows details on the usage of materials provided on the website. Examples of all the materials created by individual states for their compliance assistance efforts are included in **Appendix C**.

II.F. Information Transfer

The information on the project that was originally provided on the Commerce website was moved to the WDNR. The best way for information sharing to take place is to maintain the Autobody ERP webpage on the WI DNR website for as long as there appears to be interest in the documents provided. Government agencies, whether state or federal, take a long time to change their structure or processes. The ERP can become a key element in a new structure or process for implementing a compliance and enforcement program at the state or federal level. The results may need to be available for a number of years before agencies are ready to adopt new practices like ERP as part of the broader compliance and enforcement toolbox.

Since subpart 6H will continue to apply to shops in the future, retaining the compliance materials on the WI SBEAP's Compliance page (<http://dnr.wi.gov/topic/CompAssist/sb/Autobody.html>) would help ensure compliance.

The final report for the project will be posted on the WDNR ERP page, for states and other organizations who might wish to learn more: <http://dnr.wi.gov/topic/CompAssist/sb/ERP.html>. Any presentations providing a summary of the outcomes will be posted there as well.

III. Data Quality Assurance

Actions were taken to ensure that accurate and representative data were collected and that analysis of the collected data followed accepted statistical practice. These included an inspector training program, set procedures to guide inspection data entry, thorough QA/QC of the field data, statistical evaluation of collected data and an external review of data evaluation and reported results. The methodology for statistical analysis was completed with the assistance of USEPA's ERP consultant. The Quality Assurance Project Plan (QAPP) was approved by USEPA on January 22, 2010. The actions outlined below supplemented the steps identified in the approved QAPP. The QAPP can be found here <http://dnr.wi.gov/topic/CompAssist/sb/ERP.html> under "Final Documents for EPA Grant".

III.A. Inspector Training and Resources

To promote consistency within the data collection phases, SBEAP field staff and USEPA inspectors received training and were provided with resource materials regarding key regulatory issues. The following actions were taken to ensure consistency:

- Initial training for all SBEAP field staff on regulations covered in the inspection checklist, as well as statistical principles for data collection.
- Training on the contents of the inspection checklist, to familiarize SBEAP field staff with all the questions and requirements and to establish a common understanding of what constitutes compliance with regulatory requirements. Training included a practical orientation to equipment and terminology commonly used in autobody repair shops to build familiarity among SBEAP field staff.
- Similar training, including input from SBEAP field staff, provided to USEPA staff prior to the follow-up inspections.
- Inspection checklist annotated with tips containing information and examples of compliant practices and/or common violations. Inspectors were also provided with inspection tip sheets that contained more detailed information and examples.
- Trial run visits for some SBEAP and USEPA staff prior to conducting official visits/inspections. Program experts in areas like hazardous waste management conducted some of these visits with SBEAP staff observing, to help SBEAP staff recognize common violations. Information learned from program experts was incorporated into inspector tips.
- All inspectors were provided information packets that, in addition to tips and background information mentioned above, also included compliance assistance fact sheets, information, and copies of required notification forms. These materials could be distributed to the shops as needed during visits. Inspectors captured performance data prior to any assistance provided.
- SBEAP field staff participated in regular conference calls during baseline visits, to reinforce a common understanding of the checklist questions and to have opportunities to share experiences and question each other about what was encountered during the visits. By addressing issues early, we avoided having to go back and reinterpret previous visits, or it was only necessary to adjust a few if the issue was critical to the overall goals of the project.
- A web page was established for all the participating SBEAP and USEPA staff, where they could access project documents, inspection checklists, and compliance assistance materials.
- USEPA inspectors were provided with SBEAP contact information and the link to a compliance assistance web page to offer as resources to shops needing assistance after inspections.

We did expect to have introduced some bias by having two separate sets of individuals conducting the baseline versus follow up inspections. However, much of the training and communication mentioned previously was conducted in an effort to minimize that bias. Consistent interpretation of the responses should reduce the bias between multiple data collectors.

III.B. Inspection Data Entry

A quality check on each field staff's data entry was made as they manually entered their results into a final database. Where answers were unclear or conflicted with other responses, staff were asked to

clarify by entering corrections in the final database and writing notes regarding the changes on the hard copy inspection report. In addition, for at least 10% of the SBEAP baseline sample a separate quality check was performed by the project co-lead, QA officer, and NEWMOA. Where state entries did not match what was entered in the database, the field staff were asked to further correct or clarify as needed. For a couple states where many discrepancies were found, we conducted a check of all data to be sure the final results were accurately entered.

USEPA post-certification results were entered into a database by an intern, and a similar QA was conducted by the project co-lead and QA officer. Since the intern maintained an error rate less than 0.5% of the fields entered for 2100 self-certifications, across all six states when checked individually, only a limited QA was conducted for the USEPA post-certification data. Where conflicts or confusion arose from the hand-written data provided by USEPA inspectors, the intern provided a list of questions that was sent to the USEPA inspector for clarification before finalizing the data set.

III.C. Analytical Accuracy

Data from the baseline visits and follow up inspections were compared using Results Pro, created by Crow Environmental. Results Pro is a spreadsheet-based tool that (1) calculates a confidence interval around a compliance rate for a specified sample of facilities, (2) calculates a confidence interval around a difference between compliance rates in two samples (baseline vs follow-up), and (3) performs a Z test of significance on the magnitude of this difference. The Results Pro also provides the Facility Score Distribution for the baseline and follow-up samples. Importantly, the Results Pro was not designed to conduct a proper weighted analysis of a stratified random sample; instead, it was designed to analyze results from two independent simple random samples.

Data were imported into Results Pro from Excel spreadsheets containing the raw data from the baseline visits and follow-up inspections. Because of the design of the Results Pro, only Yes/No responses can be entered and analyzed. Also, for all the questions regarding paint booths and prep stations, where multiple options were allowed, we only analyzed the first response since second responses and beyond had a much smaller sample size. To check for accurate data transfer from the Excel files into Results Pro, a subset of data values were manually compared by the Project Lead.

Basic descriptive statistics were performed in Excel spreadsheets. These included calculations of proportions of facilities in various categories in the facility and self-certification characterizations. Descriptions of these results are found in **Appendix D** and Section III.E.5 above. A portion of these data were also manually checked.

An outside team reviewed the statistical analysis and indicated the regional results should be analyzed as a proportional sample. While we designed the sample as a proportional distribution for each state, so that no one state was visiting more shops than their share, the intent was always to analyze this as a regional sample. The minimum sample for each state was increased to a minimum of 15, so that individual states could analyze their data with a reasonable margin of error and confidence level. By increasing a couple state's samples to greater than their proportional share, we changed it from a true proportional sample as well. Data analysis tools created for previous ERP projects are all designed for simple random samples. There was not sufficient time or funding for development of a tool to conduct a proportional analysis.

We did conduct a proportional analysis for a few key EBPI questions. The results showed a smaller margin of error for each of the questions, for baseline and follow-up results.

IV. Evaluation

This section evaluates project achievements and adjustments, discusses stakeholder input and the potential to continue project elements, and offers recommendations for those considering a similar project.

IV.A. Project Achievements

The following topics have been selected by the Project Team as key achievements and are detailed below.

- Magnitude of the level of improvement found.
- Areas with less improvement give us targets for outreach and enforcement.
- Voluntary rate of response on self-certifications was high.
- Extensive outreach effort conducted by six states in a concerted effort.
- Partnership between state SBEAPs and USEPA regional staff.
- Conduct additional enforcement to encourage further improvements.

Results show clearly that the project measured improved compliance with many aspects in the USEPA's Autobody Refinishing Rule, subpart 6H, within Region 5 states. Out of 25 compliance indicators, 18 showed statistically significant improvement, and out of all the indicators measured there were 26 with a statistically significant increase. The magnitude of the improvement was quite large for many of these questions. We saw double-digit increases ranging from 10.0% to 65.5% for 24 questions.

A few areas where there was state or local regulatory overlap appear to show less improvement, such as having no guns available that do not meet HVLP or full use of enclosed gun cleaners. Yet, that gives us useful information as states can see they need to continue outreach and enforcement efforts on long standing rules that affect small business to maintain compliance in the long term. Many of the Region 5 SBEAPs plan to continue conducting outreach on the rule, and can use the outcomes measured in the project to target those efforts.

The rate of response for the voluntary self-certification checklist was quite impressive. Our checklist averaged 25 pages, which would take some time to go through. For any type of survey, a response rate of 10% is considered quite good. Achieving a rate of 22.5% for businesses with so few employees was great. In addition, nearly 500 went through the process of submitting it online. Given the size of the shops, with many being a one-man shop, we did not expect that a high percentage would use the online survey.

The level of compliance assistance provided across the Region 5 states was extensive. The state partners provided a wide range of information on all of the environmental regulations that might affect autobody shops, and posted it in one place for easy reference. Each state conducted dozens of presentations for local associations, technical and other colleges, jobbers (paint suppliers), and other training organizations. Through these presentations and outreach materials we reached thousands of shops, which was important when we knew the universe was around 12,000 shops in our six states. This type of outreach effort is generally the normal practice for SBEAPs; however, the concerted effort within all six states on one rule at the same time was unique.

The extent of the partnership between Region 5 SBEAPs and USEPA regional staff was a great achievement. Many states and regions work well together. However, most do not attempt such a concerted effort that extends across the whole region. Often it is one state at a time partnering with USEPA on projects like a compliance/enforcement effort.

There was some concern by the shops and their associations that the implementation effort has not gone far enough to 'level the playing field' yet. Follow-up and enforcement by the delegated enforcing agency was expected to drive those not motivated by the desire to simply do the right thing, to come to some minimum level of compliance. Most of the Region 5 states have not taken delegation

from USEPA for 6H, which is why the project included the USEPA regional office as a partner. At the time of this writing, USEPA Region 5 had only issued a few letters of correction to shops in a couple of the states. States and the shops would like to see additional enforcement to encourage continued compliance.

IV.B. Project Adjustments

The following are some adjustments made during the course of the project that are detailed below:

- Different checklists for baseline and follow-up.
- Changes when WI SBEAP moved from Commerce to WDNR.
- Problems with key data analysis tool midway through the project.

The original project plan was to have both rounds of data for the full checklist, including waste and water. The waste and water questions were simplified greatly from the very beginning to ease any concerns by either the SBEAPS, who are largely focused on air regulations, or the USEPA air inspectors that were assigned to the project. However, in the end the USEPA Regional Counsel indicated their inspectors could not ask those questions if not trained in those programs. This resulted in less information on changes in performance for all environmental programs affecting autobody refinishing shops.

A number of major adjustments were required when the WI SBEAP was transferred from the WI Department of Commerce to the Department of Natural Resources. Juggling staff, files, and then the website caused delays in data analysis and drafting of the report.

The project might have been completed 6-9 months sooner had more electronic self-certification checklists been submitted by the shops. The delay caused by having to hire part time staff to do data entry on the hard copies added some time, but that was further delayed by a change in the agency housing the WI SBEAP. The agency change was out of the control of the project lead. A shorter checklist might have made electronic submittal an easier option for small shops. It was a concern for the SBEAPs, from the beginning of the project, that the number of questions asked during the visit and the length of the self-certification would be too intimidating and would reduce participation by valid shops. It would also have taken project staff less time to enter all of the self-certifications submitted on paper had they been shorter checklists.

Data analysis was greatly affected by issues with the ERP Performance Analyzer. Upgrades in Microsoft versions made the application stall, and then programming assistance was delayed. Use of the program was only available at the very end of the project, at which time all data analysis was largely complete through the use of the Results Pro 2.0 application.

IV.C. Continuation of Project Elements

The ability for an agency to inspect a small fraction of the known universe of sources in a particular industry or category and infer the performance of the whole group is a recognized benefit to the ERP design. However, most states are still at a budgetary standpoint that any work on industries largely comprised of small businesses is put at the bottom of the priority list. Even if the total emissions from that industry would rival that of a few of the major sources in the state, it is just the perception that they don't have a major environmental impact so bringing them into compliance won't make much of a difference. It is also an issue that USEPA funding is earmarked for compliance and enforcement efforts on larger sources. ERP has been shown in many projects to be an effective means of targeting sectors where the population size is too numerous for inspecting every one, which often brings in the small business sector, and that a compliance assistance/self-certification approach combined with verification by trained individuals would be effective in promoting self-driven performance improvement.

Most of the SBEAPs in Region 5 will continue the outreach effort, given the level of success achieved in some areas and improvement needed in others. Future outreach will focus on those areas where gains were not statistically significant or even declined. Illinois plans to work with community colleges and vendors to continue 6H training. Minnesota also plans to do some follow up work, focusing on the main 6H compliance issues in addition to waste/emissions reductions and energy efficiency measures.

IV.D. Stakeholder Input

The primary message we have received from stakeholders based on the follow-up, or lack thereof so far, is that shops are dissatisfied with the ability of this rule to 'level the playing field' as they had hoped. Many of the shops in compliance are those that were largely doing many of these aspects as best management practices, because they want to be good neighbors and do the right thing for employees and customers and neighbors alike. SBEAPs in a few states were receiving calls from their local associations in 2012, wondering about the status of any USEPA follow-up. The concern is the number of painters operating out of their garage/home who don't believe they're affected or choose not to comply. They can complete a paint job for a much lower cost than those using all of the equipment required in 6H.

V. Recommendations

The following key recommendations are described below:

- Look for partnerships to provide efficiencies in environmental compliance efforts.
- A cross-media focus is helpful for small business, but a narrow focus may be sufficient to achieve improvements in performance.
- Consider whether using a proportional sample is worth the effort in such a statistical study.
- Ensure enforcement is taken soon after follow-up inspections, to maintain achievements in compliance rates.
- Complete additional follow-up rounds of inspections to measure continuing compliance.

As compliance and enforcement programs see steady declines in funding, states will need to investigate whether partnerships can help them maintain current levels of environmental protection. This project showed the benefits of partnership in implementing a very complex program. Working as a regional partnership we were able to share the work effort, share skills or expertise not available in each state, and share tips on success or failure of different outreach tools within the same audience. Information sharing created efficiencies, where each state took on a fraction of the work and then pooled the final products.

States or USEPA regions that contemplate repeating this project might want to consider whether using a proportional sample is worth the effort of conducting a statistical analysis that is not easily completed with the existing ERP tools. We decided that the results were sufficiently accurate for our data analysis and decision making at a policy level. A review of a few key indicators using proportional analysis showed a tighter confidence level, such that our results might only show more statistically significant results over the whole list of questions. The time it would take to complete a full proportional analysis was not available within the time frame of the project and given the tools readily available. In addition, this analysis was not part of the original, approved design in the QAPP.

Another aspect to consider is whether a cross-media effort is needed, or whether targeting a specific regulatory area would be more efficient for the time or expertise is available within the project team. By having six SBEAPs available, with four programs having strong cross-media expertise, we were able to address all environmental areas. Many who work with small businesses understand that owners don't make a distinction between the environmental topics that most regulatory agencies use as organizational areas: air pollution, waste disposal, wastewater discharge, among others. To help small businesses improve environmental performance, it can be more effective to provide the information all in one place. The self-certification checklist may have been divided up by topic areas, but we did include the main environmental topics affecting autobody refinishing shops all in one.

One element that would have improved this project, from a broader environmental performance perspective, would have been follow through from USEPA Region 5 to address all aspects of the autobody shop compliance at even a minimal level. If we had understood who would make a final decision on the issue, regional counsel should have been engaged from the beginning to set boundaries on what USEPA inspectors could capture, even if it was insufficient for them to follow up from the enforcement side. USEPA does gather a wide range of information used solely to inform program development, like in the development of emission factors, which is never used for enforcement purposes. There should have been some way to capture the multimedia data for both rounds so we could better measure whether the outreach phase achieved improvements overall or whether improvement was confined to certain areas of the NESHAP rule requirements. The renewal of the ICR on State Innovation Grant data collection was even updated to clarify that collecting cross-media information was a goal and an option for USEPA staff, yet their regional counsel would not allow staff to look at areas outside air other than a few very general informational topics.

One other aspect that could have improved the outcome was reaching shops that are not the traditional businesses. Individuals painting cars out of their garages and advertising by word of mouth were not included in the universe since most of the SBEAPs relied on databases created from Yellow

Page ads and state employment listings. These were the most likely shops described by others as blatantly not complying with the rule. *“Who’s going to find me?”* Without a thorough search of other advertising sources, like local newspaper ads or flyers, no one will find these sources. Some states have a registration program, which allows for some enforcement of those not listing their business so you might think those states would have a better listing. Although both Ohio and Illinois have registration programs, they still had fairly high drop-out rates in the samples.

Between the time that USEPA staff finished their inspections and 2012 when USEPA finally sent out letters on their findings to some shops, state SBEAP programs received numerous calls from shops and trade representatives who still see many shops that are not following the requirements and are blatant in their refusal to comply. SBEAPs have used the USEPA’s enforcement hotline as well, asking shops to forward their concerns to USEPA, since they are the delegated enforcement authority for this rule. However, based on the agreements between state enforcement programs and USEPA, these calls are then passed on to the states. State enforcement programs usually cannot or will not follow up on these forwarded complaints because they are based on a rule for which the state does not have delegated authority or they do not have sufficient funding to deal with the area source rules, of which subpart 6H is just one of dozens of that affect thousands of sources in each state. A different arrangement might drive higher enforcement of these types of sources.

To truly know whether compliance is maintained for autobody shops, additional rounds of follow-up compliance inspections should be conducted at regular intervals. In addition, a review should be conducted in the meantime about outreach and training provided by SBEAPs or targeted compliance and enforcement efforts in individual states to compare with measured compliance results. The tools available for simple random sample analysis make data analysis fairly simple, once someone has had a little training on their use.

The ERP design as implemented under the State Innovation Grant programs presents an interesting statistical study of a regulatory program. However, states or EPA regional offices that might want to implement a similar program do not need to be as rigorous as this report describes. Does the traditional compliance and enforcement or permitting program involve a statistical analysis of compliance rates? Not that the author is aware of. The traditional programs only measure one-for-one compliance rates on a particular day or moment in time, once every two to five years, depending on the size of the source and the established inspection schedule. This ERP project summary report shows how a different style of compliance program CAN be successful. It shows the ERP is successful by measuring an improvement in compliance rates over a short period of time. In addition, the ERP shows results where traditional inspection or ‘command & control’ programs did not, in those circumstances where regulations similar to 6H had already been in place for a while. The ERP itself is simply another set of compliance tools for the regulatory toolbox. It should be accepted as such by states and EPA alike.

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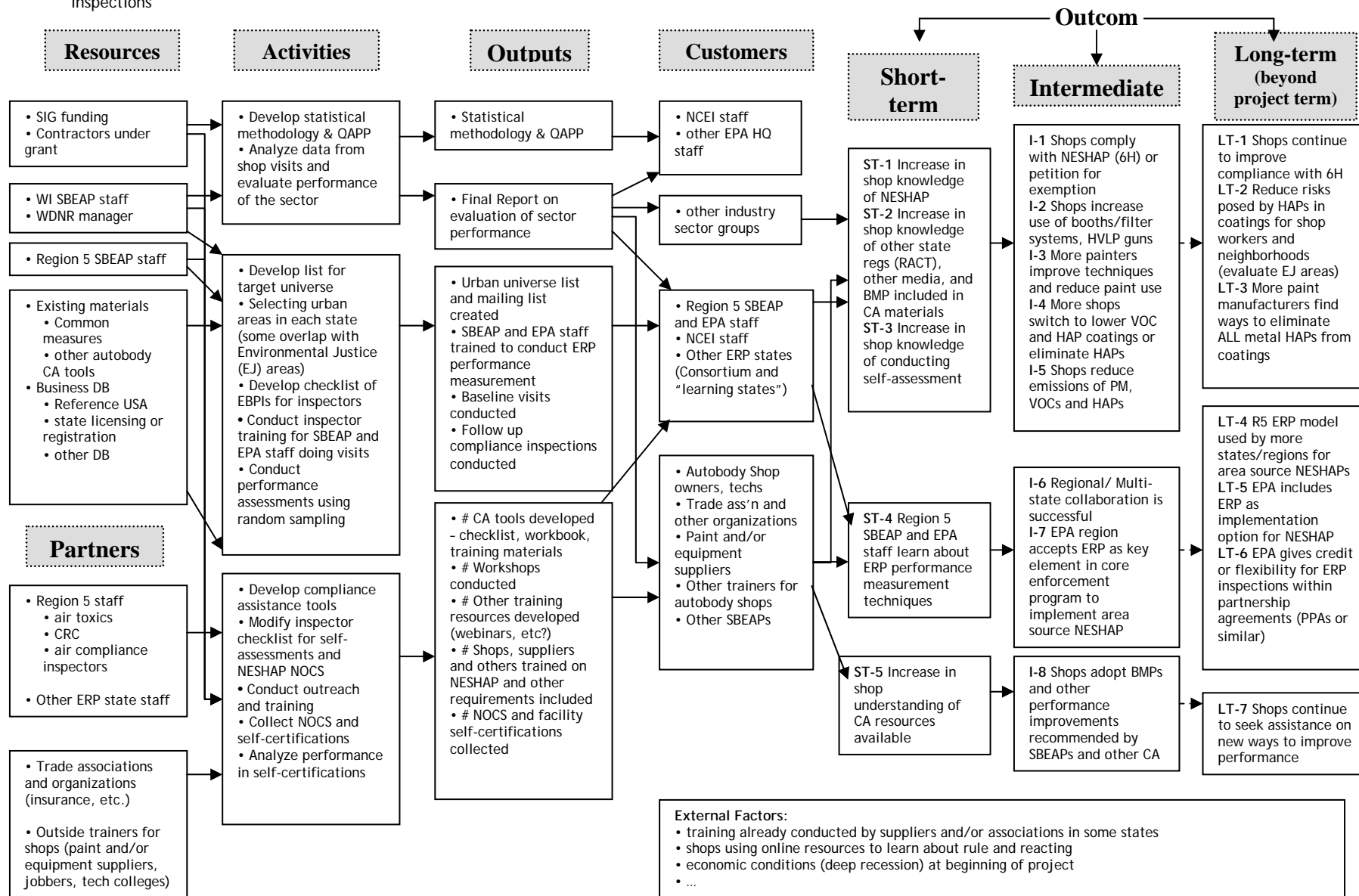
Appendix A

Region 5 Autobody ERP Logic Model

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Region 5 ERP for Autobody Refinishing Shops

Program/Project Goal: Use the ERP structure to implement a portion of subpart 6H affecting autobody refinishing shops and in doing so, determine the impact of direct compliance assistance, self-assessment and certification, and random-sample site visits or inspections in lieu of traditional permitting and enforcement inspections



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Appendix B

Summary of Quarterly Report Updates

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Summary of Quarterly Report Updates

Wisconsin was awarded the State Innovation Grant in Spring 2009. By Fall 2009 the Region 5 project team had begun work to develop the Environmental Results Program for Autobody Shops. The first quarterly report to USEPA Region 5 was submitted January 29, 2010. Within 30 days of the end of each quarter, a report was submitted summarizing activities undertaken by the project team to complete each of the key project milestones shown here.

ERP Project Milestones

Quarter	Projected Milestones	Accomplished
1. Fall 2009 (Oct-Dec)	1. Develop and submit Quality Assurance Project Plan (QAPP) 2. Identify universe of facilities 3. Select contractor for IL baseline visits 4. Complete MOU between WI Department of Commerce and other state SBEAPs and NEWMOA 5. Develop site visit checklist, protocol and training, data management process 6. Conduct site visit training 7. Begin baseline site visits	December 2009 Spring 2009 Spring 2010 October 2009 Summer 2009 - Winter 2010 Fall 2009 Spring 2010
2. Winter 2010 (Jan-Mar)	8. Quarterly Report 9. Finish baseline site visits 10. Data management and analysis for baseline 11. In partnership with associations, develop outreach materials to publicize the project	On time Fall 2010 Fall 2010 Fall 2009 - Spring 2010
3. Spring 2010 (Apr-Jun)	12. Quarterly Report 13. Mail self-certification and workbook to urban universe 14. Respond to requests for assistance on phone or site	On time December 2010 Spring 2011
4. Summer 2010 (Jul-Sep)	15. Quarterly Report 16. Conduct workshops and other education	On time Started Fall 2010 Continued through 2011
Federal fiscal year 2011		
5. Fall 2010 (Oct-Dec)	17. Quarterly Report 18. Help USEPA develop post-certification inspection and data management protocol	On time Spring 2011
6. Winter 2011 (Jan-Mar)	19. Quarterly Report 20. Finish development of post-certification inspection protocol and data routines; Begin processing cert data	On time Started Spring 2011, Complete Spring 2012
7. Spring 2011 (Apr-Jun)	21. Quarterly Report 22. Final cert data processing; Begin post-cert inspections; design transition to Region 5 (Sept 2011 - May 2012)	On time Spring 2012 Sept 2011-Jan 2012 No transition plan
8. Summer 2011 (Jul-Sept)	23. Quarterly Report 24. Finish post-cert inspections	On time Spring 2012 (Data entry complete)
Federal Fiscal Year 2012		

ERP Project Milestones

Quarter	Projected Milestones	Accomplished
9. Fall 2011- Winter 2012 (Oct-Mar)	25. Quarterly Report 26. Finalize post-cert data and analysis 27. Create vehicle for annual (or other periodic) submittals and data management between state/fed	On time Winter-Summer 2012 Not complete
10. Spring - Summer 2012 (Apr - Sept)	28. Finalize project report.	Summer 2013

The milestones summarized are numbered below. The numbering is not sequential as the quarterly reports are not addressed in the summary. Some of the items were combined in summaries below.

1. Develop and submit QAPP - The QAPP was drafted, reviewed by all partner organizations and submitted to USEPA for their review in December 2009. It was approved by USEPA on January 22, 2010.

2. Identify universe of facilities - States agreed upon the use of county population density and selected shops from within the counties within the highest 10% of population density across the whole region (6 states). Lists of each state's universe of shops were sent to WI SBEAP in December for selecting the randomized samples.

3. Select contractor for IL baseline visits - University of Illinois, Illinois Sustainable Technology Center was selected as the contractor to conduct baseline visits on behalf of the IL SBEAP.

4. Complete MOU between WI Dept of Commerce and other state SBEAPs and NEWMOA - The MOU was completed and signed in October 2009.

5. Develop site visit checklist, protocol and training, data management process - The SBEAPs spent a lot of time working on the checklist, refining the questions to ensure common understanding among all states. The site visit checklist was completed in February, 2010. The effort was extended to ensure that the questions could be entered correctly in an online data entry survey that was designed. During the discussions on the checklist, our EBPI's were refined to the following:

List of Environmental Business Practice Indicators (EBPIs) and Other Indicators

EBPIs	Question(s) in Checklist
Practices Associated with subpart 6H	
• % using HVLP or equivalent high transfer efficiency technology	I6
• % with high transfer efficiency painter training in place	B2a
• % with different components of training	B2b
• % using hands-on or classroom-only training	B2b
• % with documentation of training	B2c
• % at which all spray-applied coatings were used in enclosed booth or prep station	C3, I1, I3
• % of booths/stations fitted with particle filters	C4b, I2, I4
• % of booths/stations fitted with filter/system achieving 98% capture	C4c&d

List of Environmental Business Practice Indicators (EBPIs) and Other Indicators

EBPIs	Question(s) in Checklist
• % where spray gun cleaning is done with enclosed or non-atomizing washers	C5, I7
• % maintaining MSDS or formulation records for all solvents/coatings used	C9
• % maintaining records of the amount/content of coatings containing Cr, Pb, Cd, Ni, Mn	C10
• % NOT using paint strippers containing Methylene Chloride	C6, I8
• % keeping records to document annual MeCl usage	C7
• Average and range of MeCL used	C7b
• % of MeCL users with written MeCl minimization plan	C8
• % maintaining records of the amount of coatings containing VOC and HAP	A6
Other Practices	
AIR PRACTICES	
• Paint hours per year	A7
• Average quantity and range of coatings used	A6
• % using dustless vacuum or overhead capture equipment	F
• % meeting applicable state requirements	Varied
AIR RECORD KEEPING:	
• Average use of high VOC and low VOC coatings and solvents per year	A6
HAZARDOUS WASTE	
• Average and range of maximum amount of RCRA waste generated in a month	D3
• Numbers of facilities in generator classes (CESQG or VSQG, SQG, LQG or not)	D3
INDUSTRIAL WASTEWATER INDICATORS	
• % of facilities not discharging IWW to surface water	E2
• % of facilities not discharging IWW to a storm, sanitary or combined sewer system	E2
POLLUTION PREVENTION-ENERGY EFFICIENCY INDICATORS	
• % of facilities taking one or more actions to conserve energy over the past three years (distribution across menu of possible actions)	G1
• % of facilities taking one or more actions to reduce pollution (VOC, PM and toxics) during the past three years (distribution across menu of possible actions)	F1

6. Conduct site visit training - Site visit training was conducted on November 18 and 19, 2009.

7. Finish baseline site visits - Site visits began in February 2010, and were conducted steadily through the end of summer 2010. The field staff encountered a number of rejections from shops or shop contacts that could not be reached as well as drops due to inaccurate listings. MN experienced a short term travel restriction during May 2010, during which no business travel could be conducted. They were able to resume site visits in June.

States encountered a range of dropped shops (e.g., closed shops or those that did not fit the definition of autobody refinishing shop) and shops that could not be reached or that declined having a site visit. Among the drops were shops that we could not reach and that, after some more research, were found on lists like Department of Revenue's delinquent tax payers, or in other state records that made it clear the shop was closed.

The states with higher drop-out rates did not have state-mandated registrations or licenses for refinishing shops. Ohio had a state registration for refinishing shops, but a miscommunication about categories in the list resulted in a large number that were not affected by the rule being on the list. Indiana, Minnesota and Wisconsin used business databases that were developed by companies for marketing or yellow pages listings and often included many inaccurate uses of the industry codes (SIC and NAICS) used to sort out refinishing shops.

Those shop owners who declined visits gave a variety of reasons for the lack of interest. Some expressed concern about the amount of time taken out of their day when they were very busy. Others felt they already met all the requirements and didn't need the help. [We were offering the visit as a free assessment of their compliance with the new USEPA rule.] The shops that didn't return calls, assuming they were in operation, were likely the ones that didn't want anyone from government in their shop. Occasionally staff would drive by locations that were not returning calls, if another visit was nearby. Many were shut down, but a few were still operating and looked rather busy. We did not do a full check on all those that declined visits, so we don't know fully which ones might have been drops. Another complication in some areas was the language barrier. If no one was available that could speak English, we often marked that shop as declined or unavailable.

10. Data management and analysis for baseline - An online survey form was developed, matching the baseline checklist questions, for the purpose of having field staff enter the responses for each visit. The online data entry and data management process was completed and explained to all participants in April 2010. Data entry began immediately for those states with some portion of their baseline visits complete. By the end of summer 2010, data for around 140 visits had been entered. Each state agreed to complete 2-3 extra visits in order to ensure a complete data set for the sample goal of 146 for the region, in case some had to be dropped for statistical reasons. Data entry was completed by September 2010, with data from 156 visits for the final analysis.

A contract was issued to Tetra Tech to upgrade to the ERP Performance Analyzer Tool so it would allow analysis of the regional data. The project statistical analysis was to be completed with the Analyzer once all the data had been entered.

11. In partnership with associations, develop outreach materials to publicize the project - A smaller group of SBEAPs and NEWMOA met to develop the self-certification checklist to be provided to shops. The checklist was completed and development of a training video was started, to walk shops through how to use the checklist. Materials were created to mail to

shops, notifying them of the availability of the checklist and training materials. An online checklist was prepared to allow shops to respond electronically, only mailing in the official Notification of Compliance Status for the Area Source NESHAP.

All materials were developed and posted online. Each state program worked with trade associations, suppliers or other contacts to provide training and materials to shops. States sent emails or letters to contacts to notify them prior to or around the time the self-certification materials were mailed in November 2010.

13. Mail self-certification and workbook to urban universe - In early November 2010, all self-certification checklists were mailed to shops - in fact they were sent to all shops in all states, not just urban areas. The "workbook" refers to compliance assistance materials, which in many ERPs are provided through a detailed document. To save costs and simplify the materials, the project materials were all provided online through a common web page originally maintained by WI Department of Commerce (Commerce) and later maintained by WDNR when the WI SBEAP moved to that agency.

14. Respond to requests for assistance on phone or site - All states were getting calls soon after the self-certification forms were mailed to facilities by the states. Since the final deadline for the compliance notification was not until March 2011, calls were expected to continue for months.

Calls tapered off about one week after the March 2011 deadline. A few additional checklists and forms were trickling in during the following months, and a few continued to come in through 2012.

16. Conduct workshops and other education - Each state managed workshops in different ways, as best served their shops' needs. An online webinar was provided via the website to help shops complete their forms. This made training available 24/7 to shops that may be busy during the day. We expected training needs to taper off by early January, but planned to respond to any requests in the future as well. Training requests continued into 2011, well beyond the deadline, but it appeared many shops still had not heard about the rule.

Of the two webinars created for training shops, the counts are:

Training Video	Posting through 3/17/2011	3/18/2011 through 2/20/2013
6H Overview	244	137
6H Self-certification Checklist	247	81

While the bulk of the use of these tutorials happened up through the compliance deadline of March 11, 2011, there have been a good number of views since the deadline.

18. Help USEPA develop post-certification inspection - This began in November 2010. We held training on November to go through an inspection checklist for USEPA's use. Discussion of the type and number of what the USEPA staff could not take place at the time. We expected issues with USEPA's Information Collection Request (ICR) process when asking the full slate of questions, and going beyond air questions when they are air staff doing the inspections.

The state innovation grant ICR was out for public comment for its renewal in October 2010, and comments were provided to clarify the process of USEPA follow-up inspections to complete the project.

In January 2011, USEPA inspectors were provided with their randomized inspection lists so that they could prepare for travel in late spring and early summer. A discussion between project co-lead Bashel and the USEPA inspectors occurred in February to establish the final inspection checklist questions. USEPA Region 5 determined they would be unable to ask questions beyond the Area Source NESHAP, so the post-certification inspections would not address multimedia topics.

20. Processing self-certification data - This step was delayed until temporary staff could be hired to complete the work. The delay continued through 2011 because the WI SBEAP moved from Commerce to WDNR. Finally, in January 2012 staff was hired. The data entry was completed in May 2012, quickly assessed for accuracy, and then data analysis began.

22. Conduct post-certification inspections - This step was delayed until the ICR renewal was finalized. USEPA inspectors began conducting inspections in September 2011 and presented a progress report with some lessons learned to that point at the Region 5 SBEAP annual meeting on October 18, 2011. Inspections were completed in January 2012.

26. Finalize post-cert data and analysis - Once inspections were complete, USEPA staff began scanning and emailing the checklists to Bashel for data entry. The temporary staff hired for self-certification data entry also entered the USEPA checklists into a separate survey tool for that purpose. This was completed in June 2012 and data analysis began.

During 2011, testing of a final version of the Performance Analyzer was completed. Data analysis appeared to work for the baseline data entered. However, subsequent application updates to Microsoft Access a bug caused an error to result whenever using the Performance Analyzer to complete the statistical analysis. When contacting the programmer to fix the bug, we learned she had moved to a new job. In late 2012 she was brought on in a small subcontract in an attempt to fix the bug. The fixes to address current versions of Microsoft have been completed.

27. Create vehicle for future submittals and data management between state/fed - After all data was compiled, the state SBEAPs and USEPA inspectors involved in the project held a conference call. As of November 2012, the final decision from USEPA Region 5 management on how to proceed on enforcement of the violations found was still under review.

Appendix C

State SBEAP Compliance Assistance Outreach Effort and Related Materials

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The following outreach materials and summary of effort are organized by state.

- Illinois
- Indiana
- Michigan
- Minnesota
- Ohio
- Wisconsin

Illinois - 6H Outreach

The following table is a summary of autobody industry presentations for outreach on the autobody painting NESHAP 6H.

Location	Date	Number of Attendees
Joliet (sponsored by a paint and parts sales group)	2/17/10	80
Rockford	6/15/10	80
Peoria (sponsored by a paint and parts sales group)	8/26/10	55
Ulin	9/27/10	50
Grayslake	9/30/10	55
Olney	10/26/11	50
Springfield	10/28/11	35
Mattoon	11/4/10	50
Sugar Grove	11/18/10	50
Galesburg (hands on and classroom)	11/23/10	25
Edwardsville	12/7/10	50
Galesburg (hands on and classroom)	2/16/11	22
Kankakee	2/23/11	21
Lisle (Alliance of Automotive Service Providers annual meeting)	3/26/11	50
Chicago (Chicago Korean American Chamber of Commerce)	4/5/11	30
St. Charles - Body Shop Business conference	5/5/11	80
Illinois South Side Fire Inspectors	5/13/11	42
TOTALS		825
Total number of potentially impacted shops in Illinois		3062

Details:

- Initial mailing we sent out 6300 postcards in 2009 for all potential 6H sources
- Mailed 2975 notifications in 2010
- Publications include notification form, fact sheet, HVLP and equivalent list, etc at http://www.ildceo.net/dceo/Bureaus/Entrepreneurship+and+Small+Business/Small+Business+Environmental+Assistance+Program/EI_AutobodySpraycoating.htm
 - Or you can use the shorter version www.ienconnect.com/enviro and click on autobody.
- Presented at an industry forum sponsored by Babcox Media (publisher of autobody industry publications) on May 5th in St. Charles.
 - Babcox is a publishing company with multiple publications, their autobody and collision repair monthly publication has a circulation of 50,096 collision repair industry professionals, and goes to 46,710 units (individual locations/addresses).
- Presented at the Illinois South Side Fire Inspectors meeting on May 13th. This is a presentation to fire inspectors who are routinely in autobody shops to give them a better idea of the new federal requirements so they can give current information to the shop owners they are inspecting.
- IL send letters inviting shops to workshops. Also, the Illinois SBEAP included articles in two of their newsletters, February and October 2011.

Indiana - 6H Outreach

Notes:

- IN worked with numerous vocational schools, auto body associations and suppliers; and partnered with EPA on presentations
 - One of the largest was in partnership with EPA titled the "Best Practices for Auto Body/Collision Repair Shops in Fort Wayne and Surrounding Counties in Northeast Indiana."
 - Jacqueline Nwia and Rae Trine, both with EPA Region 5 helped to organize and presented at this event.
 - The Indiana Auto Body Association (IABA) was involved to some extent. Ivy-Tech hosted this event.
- IN participated in the IABA biannual convention in 2011, hosted by Lincoln College of Technology.
- IN created a Collision Repair assistance website www.in.gov/idem/ctap/2360 with a compliance manual and links to the Region V ERP page.
- With the exception of PPG, we found most paint manufacturers and jobbers were hesitant to work with IDEM, and preferred educating their customers with their own training.

Events:

- **October 28, 2009:** Mark Stoddard was invited to present information on air regulations and CTAP at EPA's Best Practices in Autobody/Collision Repair Workshop. This presentation was held on the Ivy Tech Campus in Fort Wayne, IN. EPA and the Indiana Autobody Association organized this event which included making phone calls to shops located in this area and the surrounding counties. [77]
- **January 25, 2011:** Mark Stoddard was invited to present information about 40 CFR 63, Subpart 6H and CTAP to autobody shops at the North West Regional Office - Merrillville, IN. [3]
- **January 27, 2011:** Mark Stoddard was invited to present information about 40 CFR 63, Subpart 6H and CTAP to autobody shops at the North Regional Office - South Bend, IN. [15]
- **February 10, 2011:** Mark Stoddard, Dave Abel and Scott Anslinger were invited to present information about 40 CFR 63, Subpart 6H and CTAP to autobody shops at the South West Regional Office - Petersburg, IN. [18]
- **March 31, 2011:** Dave Abel and Scott Anslinger were invited to present information about 40 CFR 63, Subpart 6H at the Evansville EPA Air Quality Workshop. [42]
- **April 28-30, 2011:** Mark Stoddard had a booth and presented information about 40 CFR 63, Subpart 6H at the Indiana Autobody Association Convention held at Lincoln Technical Institute in Indianapolis, IN. [110]
- **May 5, 2011:** Cathy Csatari assisted the Illinois SBEAP with a booth regarding 40 CFR 63, Subpart 6H at the Babcox 2011 Body Shop Business Conference and Trade Show. [40]
- **August 30, 2011:** Dave Abel was invited to present information about solid and hazardous waste to Twin River Auto Tech Cooperative Students at Linton Stockton High School. [13]
- **September 20, 2011:** Mark Stoddard was invited to present information about 326 IAC 8-10 and 40 CFR 63, Subpart 6H to H&H Automotive Supply Customers. The presentation was made at a retail store in Lebanon, IN where many shops in the area purchase their supplier including automotive paint. The retail store sells PPG products. A PPG representative presented along with me. [16]

Michigan - 6H Outreach

Materials created:

- Paint Stripping Fact Sheet http://www.michigan.gov/documents/deq/deq-ess-caap-factsheet-paintstripping_238161_7.pdf
- Surface Coating of Motor Vehicles and Mobile Equipment Fact Sheet http://www.michigan.gov/documents/deq/deq-ess-caap-factsheet-surfacecoating_237165_7.pdf
- FAQs for Automotive Collision Repair Facilities http://www.michigan.gov/documents/deq/dnre-opPCA-faq-Subpart_6H_310934_7.pdf
- Autobody Rule Overview Video <http://www.screencast.com/users/MDEQ-EO/folders/6H%20NESHAP/media/76acd604-560d-43e3-b89e-f8e668e00fb3>
- Self-Certification Checklist for Autobody Step-by-Step Tutorial <http://www.screencast.com/t/tKAahu1x9I0>
- Article - DNRE Program Helps Auto Body Shops Cope with New Clean Air Rules - http://www.michigan.gov/dnr/0,1607,7-153-10366_46403-243947--,00.html
- Notification postcard sent to all shops in our database.

Training/workshops:

Presented at trainings hosted by various paint vendors/suppliers on the following days

Date	Location
2/13/10	Grand Rapids
3/10/10	Plymouth
4/13/10	Flint
4/14/10	Springfield
4/20/10	Lansing
4/21/10	Taylor
4/26/10	Troy
4/27/10	Caro
4/28/10	Troy
5/4/10	Grand Rapids
5/5/10	Novi
5/11/10	Romulus
5/12/10	Muskegon
5/19/10	Holland
5/26/10	Ubly
5/26/10	Mason
6/15/10	Mt. Pleasant
6/30/10	Saginaw
8/17/10	Ionia
9/22/10	Grand Rapids
10/5/10	Alma
10/12/10	Big Rapids
10/14/10	Dearborn Heights

Date	Location
10/20/10	W. Bloomfield
10/21/10	Mason
10/27/10	Southgate
11/19/10	Richmond
12/1/10	Jackson and Dearborn
12/6/10	Grand Rapids
12/8/10	Ferndale, Waterford, Holland
12/15/10	Fraser and Taylor
12/23/10	Otisville

- Conducted webinar on December 9th with ASA of Michigan. 70 participants.
- Presentation on Region 5 ERP at 2011 National Environmental Sustainability Summit June 8, 2011. 20 participants.

Minnesota - 6H Outreach

The following is a summary of the outreach effort in Minnesota:

Material	Date	Topic/Notes	Title	Count	Link / Attachment
Factsheet (updated)	August 2008	Pre-ERP, but used during project	"Air quality Rules Affecting Autobody Shops with Paint Spraying Equipment"		no longer available online, request pdf -- "aq5-13"
forms -- notifications	September 2008	Pre-ERP, but used during project	"Initial Notification, Compliance Certification, and Notification of Changes"		http://www.pca.state.mn.us/index.php/view-document.html?gid=12083
form -- petition for exemption	September 2008	Pre-ERP, but used during project	"Petition Checklist - Paint Stripping and Misc. Surface Coating Operations"		http://www.pca.state.mn.us/index.php/view-document.html?gid=12085
compliance calendar	2009 and subsequent	page 2 -- "Air Emissions, Collision Repair Shops"	Vehicle Maintenance Compliance Calendar		http://www.pca.state.mn.us/index.php/view-document.html?gid=15401
presentation	March 2009	presented at Paint and Powder Coat Expo	"NESHAP -- Paint Stripping and Misc Surface Coating"	30	
presentation	June 2009	met with metro area paint supplier to discuss 6H		3	
article in AASP-MN (Alliance of Automotive Service Providers -- Minnesota) email newsletter	October 2009	Info about 6H NESHAP notification requirements and forms.		300	
presentation	October 2009	presented to Twin Cities county hazardous waste inspectors; background summary and timeline of ERP		25	
postcard	December 2009	initial notification and general info		2400	pdf -- "MN postcard"
article in AASP-MN News	January 2010	6H summary	"How to Reduce Harmful Emissions and Your Regulatory Burden"	2000	http://data.memberclicks.com/site/aaspm/How%20to%20Prevent%20Harmful%20Emissions.pdf
article in AASP-MN News	March 2010	training requirements	"EPA Training Requirements"	2000	http://data.memberclicks.com/site/aaspm/EPA%20Training%20Requirements.pdf

Material	Date	Topic/Notes	Title	Count	Link / Attachment
presentation	April 2010	presented at 2010 AASP-MN Annual Conference	"If you can't beat 'em, how to meet 'em -- NESHAP air regulations"	5	
webpage	July 2010	updated with links to MPCA reporting and petition forms, EPA TTN 6H page;	MN SBEAP Automotive Sector webpage		http://www.pca.state.mn.us/pyrife8
article in AASP-MN News	July 2010	ERP and Cert of Compliance	"Are We There Yet?"	2000	http://data.memberclicks.com/site/aaspm/Partners%20In%20Prevention%20June.pdf
presentation	October 2010	presented to Twin Cities county hazardous waste inspectors; update and baseline data summary		25	
article in MN SBEAP "Enterprise" newsletter	Fall 2010	6H NESHAP, checklist packet heads-up	"Smell that clean air? Federal NESHAP update" and "Attention Auto Body Shops"	2000	http://www.pca.state.mn.us/index.php/view-document.html?gid=14894
article in AASP-MN News	November 2010	deadline reminder	"Final Deadline to Comply With Federal Air Quality Regulations"	2000	http://data.memberclicks.com/site/aaspm/Final%20Deadline%20to%20Comply%20With%20Federal%20Air%20Quality%20Regulations.pdf
article in AASP-MN News	November 2010	info about checklist packet	"Looking for help with Environmental Regulations? Check your mail."	2000	http://data.memberclicks.com/site/aaspm/Looking%20for%20Help.pdf
postcard (reminder)	February 2011	cert of compliance and ERP checklist		1475	pdf -- "MN reminder postcard"

Ohio - 6H Outreach

2008

- Newsletter article - 6H rule requirements (see Ohio CPQ winter2008.pdf)

2009

- Newsletter article- area source rule compliance dates (see Ohio CPQ summer2009.pdf)
- 3 workshops + 1 meeting, all industry led. 152 attendees total. (see 6H workshop agenda OAK2009) Future workshops did not make a formal agenda, but generally followed the Ohio Auto Kolor (OAK) format.

2010

- Newsletter article - 6H compliance report reminder (see Ohio CPQ autumn2010.pdf)
- OCAPP Auto body web page launched
- 10 workshops, all led and sponsored by paint suppliers. 428 attendees total.
- 1 workshop for Ohio Dept of Transportation maintenance garage personnel. 30 attendees.
- 1 workshop for Toledo local air agency. 15 attendees.
- Compliance date reminder postcard (2500) sent and paid under SIG.
- OCAPP advisory notice sent to 14 Ohio EPA districts/local air agencies about reminder postcard.

2011

- Newsletter article - Iowa WRC online painter training (see Ohio CPQ autumn2011.pdf)
- 2 advisory e-mails sent by OCAPP to 6H supplier network. Sent 10/27/11 advisory on 3 oz cup use. Network of approx. 50 paint, filter, booth, and other suppliers assembled from previous workshops.
- 4 workshops, all led and sponsored by suppliers. 160 attendees total.
- 4 workshops for ASA-Ohio trade org board and members. 60 attendees total.

2012

- 6 workshops, all led and sponsored by suppliers. 165 attendees total.
- 1 presentation for Ohio Collision Board members (state licensing agency for body shops). 20 attendees.

We did not develop any other written materials than what was listed under Ohio on the Region 5 ERP webpage. That included an "Ohio" Initial and NOCS forms, and an "Ohio" version of the FAQ guide. Note that the newsletter has approximately 5000 subscribers.

Wisconsin - 6H Outreach

Publications/mailing, etc:

- Renee authored article on 6H, with input from MN and MI SBEAPs, for the June/July 2008 edition of The Auto Body Journal.
- Sent out postcard reminder about notification deadlines in late 2010.

Events and presentations on ERP efforts:

Date	Group	Outreach effort	Count
April 2008	Manitowoc autobody association	dinner presentation on 6H	55
May 2008	LaCrosse autobody association	dinner presentation on 6H	50
September 2008	Northwest autobody association	dinner presentation on 6H	40
December 2008	Wausau autobody association	dinner presentation on 6H	50
May 2009	Environmental Summit	presentation on R5 ERP project to states/EPA	10
March 2009	WACTAL Spring Conference	presentation on 6H, updates/reminders	20
December 2009	Manitowoc autobody association	dinner presentation - reminder on 6H and updates	10
January 2010	Auto Industrial Color	presentation on 6H and waste	20
March 2010	Autotech Training	presentation on 6H as part of larger certification training	30
March 2010	Western Technical college	6H training as part of larger certification	20
November 2010	EPA-States ERP training	training with EPA inspectors on checklist and ERR process	20
December 2010	Autobody Associations - Manitowoc, Waukesha, Wausau	presentations on 6H	20, 50, 50
March 2011	WACTAL Spring Conference	reminder on 6H, exhibit table with materials	20

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Appendix D

Facility Characterization and Self-Certification: Summary of Results

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Facility Characterization

A number of questions asked during the visits were solely to capture information about the shops. Some of the information was intended to ensure the shops were eligible to participate in the ERP, being affected by the 6H requirements in at least one aspect. Others captured whether or not specific regulatory questions should be asked. A few of these descriptive and informational questions have been analyzed to see how shops in the samples compared.

Facility/operation characteristics	Inspection samples		Self- certification group
	Baseline	Post- certification	
Shop Information			
Estimated population size	5069	4797	12000
Number of facilities in sample	156	145	2585
Employees at facility			
Average employees/painters	5.9/1.7	7.5/1.8	5.0/2.0
All painters trained?	48.7%	81.4%	94.9%
Number of painters trained? - if NOT ALL trained			
0 trained	54	18	*
1 trained	28	11	*
2+ trained	37	8	*
Type of services provided:			
Autobody Repair	96.1%	96.5%	97.1%
Mechanical Repair	37.8%	30.8%	20.3%
Mobile Paint Service	0	0.7%	0.4%
Salvage Yard	1.3%	0.7%	0.7%
Car Dealership	6.4%	13.0%	10.1%
Car Wash	8.9%	1.4%	3.6%
Other	10.2%	13.0%	4.1%
Air emissions			
Aware of NESHAP	65.4%	90.3%	*
Use of 3 oz cup spray gun	38.1%	52.8%	*
Paint Booths			
Shops with spray booths	93.5%	98.6%	98.9%
Of those, shops with >1 spray booth	15.8%	27.3%	*
Shops with prep areas	42.9%	30.3%	97.9%
Of those, shops with >1 prep area	24.2%	40.1%	*
Use distribution (averaged over all responses)			
Booth 1	92.3%	98.6%	*
Booth 2	18.6%	23.4%	*
Booth 3	1.9%	2.1%	*
Booth 4	39.7%	0.7%	*
Prep 1	7.1%	26.2%	*
Prep 2	2.5%	11.7%	*
Prep 3	1.3%	2.1%	*
Prep 4	--	--	*

Facility/operation characteristics	Inspection samples		Self-certification group
	Baseline	Post-certification	
Hazardous waste generator size			
VSQG	95.5%	*	91.9%
SQG/LQG	4.5%	*	8.1%
Wastewater Discharge†			
POTW	46.1%	*	61.8%
Groundwater discharge	20.5%	*	35.8%
On septic system	6.4%	*	14.9%
Unknown outlet	2.0%	*	5.0%
* No data available.			
† Results do not add up to 100% as each shop may have multiple outlets for wastewater.			

Self-certification Statistical Analysis

Question:	Number of Responses	Proportion	Average	Standard Deviation
Was the survey submitted on-line?	2585			
On-line	479	18.5%		
Mail	2106	81.5%		
1. Which of the following categories best describes your role at this shop?	2558			
Owner	2021	79.0%		
Manager	1020	39.9%		
Technician who applies spray coatings	671	26.2%		
Another role	128	5.0%		
2. What type of services does your shop provide?	2566			
Auto mechanical repair	521	20.3%		
Autobody shop	2492	97.1%		
Mobile paint service	10	0.4%		
Salvage yard	17	0.7%		
Car dealership	258	10.1%		
Car wash	93	3.6%		
Other	105	4.1%		
3. How many employees and paint technicians (anyone who may paint) do you have in your shop?				
Number of employees	2507		5.0	14.3
Number of paint technicians	2477		2.0	1.4
4a. Do you use any water based paints?	2516			
Only	194	7.7%		
Some	396	15.7%		
None	1932	76.8%		
4b. Do you use any water based primers?	2514			
Only	40	1.6%		
Some	503	20.0%		
None	1975	78.6%		
4c. Do you use any water based solvents?	2529			
Only	55	2.2%		
Some	1046	41.4%		
None	1436	56.8%		

Question:	Number of Responses	Proportion	Average	Standard Deviation
5. Do any of the primers, base coats, clear coats, or other coatings used at your shop contain any of these ingredients or compounds including at least one of these?	2497			
Cadmium	202	8.1%		
Chromium	302	12.1%		
Lead	215	8.6%		
Manganese	126	5.0%		
Nickel	222	8.9%		
None	767	30.7%		
Don't know	1414	56.6%		
6. Were you aware of your state Small Business Environmental Assistance Program and its free, confidential, non-regulatory compliance assistance services?	2552			
Yes	1462	57.3%		
No	645			
Don't know	313			
I would like more information	401	15.7%		
7a. What is your preferred format to receive regulatory information?	2552			
Mailing/written materials	2224	87.1%		
Videos-training or "fact sheets"	328	12.9%		
E-mail messages/documents	653	25.6%		
Web training	280	11.0%		
Web site	215	8.4%		
Facebook/twitter/YouTube	21	0.8%		
On site visit	71	2.8%		
Training sessions/workshops offered by suppliers	825	32.3%		
Training sessions/workshops offered by SBEAP	247	9.7%		
Other	9	0.4%		
7b. When do you prefer workshops to be held?	2427			
During the day	882	36.3%		
After work hours	1605	66.1%		
Other	9	0.4%		

Question:	Number of Responses	Proportion	Average	Standard Deviation
8a. Are ALL spray guns at your shop HVLP, HVLP-equivalent, electrostatic, airless, or air-assisted airless?	2547			
Yes	2533	99.5%		
No	14			
8b. If you answered YES, identify which gun(s) are used:	2497			
HVLP	2488	99.6%		
HVLP equivalent	695	27.8%		
Electrostatic	10	0.4%		
Airless	25	1.0%		
Air-assisted airless	14	0.6%		
9a. Is all paint spray gun cleaning done with a fully enclosed spray gun washer or in a way that does not create a mist of solvent?	2543			
Yes	2481	97.6%		
No	62			
9b. If you answered YES, identify what methods are used:	2506			
Fully enclosed spray gun washer	961	38.3%		
Fully enclosed spray gun washer and occasionally disassemble and clean by hand	982	39.2%		
Flush with solvent but don't spray	1106	44.1%		
Disassemble gun and clean by hand or mechanical methods	1091	43.5%		
10. Does ALL spray coating (including priming) occur in a spray booth or prep station - never out on the shop floor or outdoors?	2547			
Yes	2458	96.5%		
No	89			
11a. When applying a coating to a whole vehicle, or to a component that is still attached to the vehicle, does it ALWAYS occur in a spray booth or prep station that has 4 walls/curtains and a roof?	2545			
Yes	2518	98.9%		
No	27			

Question:	Number of Responses	Proportion	Average	Standard Deviation
11b. How many spray booths or prep stations with 4 walls/curtains and a roof do you have?	2368		1	0.9
12a. When applying a coating to a component that is removed from the vehicle, does it ALWAYS occur in a spray booth/prep station that has AT LEAST 3 walls/curtains and a roof?	2532			
Yes	2480	97.9		
No	52			
12b. How many spray booths/prep stations with only 3 walls/curtain and a roof do you have?	2177		1	0.8
13. Are ALL spray booths and prep stations ventilated with an exhaust fan?	2549			
Yes	2544	99.8%		
No	5			
14. Is each spray booth and prep station that has 4 walls: ventilated at negative pressure; OR ventilated at positive pressure, with seals on all doors and openings and an automatic pressure balancing system, and operated at no more than 0.05 inches water gauge positive pressure?	2533			
Yes	2462	97.2%		
No	71			
15. Is each spray booth and prep station that has 3 walls ventilated so that air is drawn into the booth?	2528			
Yes	803	31.8%		
No	11			
Not applicable	1721	68.1%		
16. Do ALL spray booth and prep station exhaust systems have an overspray filter system?	2541			
Yes	2516	99.0%		
No	25			
17. Are the spray booth and prep station exhaust/filter systems ALWAYS used when any spray painting (including priming) is done?	2542			
Yes	2503	98.5%		
No	39			

Question:	Number of Responses	Proportion	Average	Standard Deviation
18. Is the filter capture efficiency rating of ALL dry filter systems at least 98 percent?	2540			
Yes	2466	97.1%		
No	48			
Not applicable-we have a waterwash booth	26	1.0%		
19a. Do you have a procedure to determine when exhaust/filter systems need to be cleaned and maintained?	2544			
Yes	2501	98.3%		
No	43			
19b. If you answered YES, how do you decide when to change a filter?	2509			
Set schedule	1013	40.4%		
Pressure gauge reading	733	29.2%		
Visual check of filter	1726	68.8%		
Other	100	4.0%		
20a. Have ALL your paint technicians attended training specifically designed to cover the requirements of the new EPA autobody rule (known as 6H or NESHAP)?	2547			
Yes	2418	94.9%		
No	129			
20b. If you answered YES, did the training include both hands-on and classroom sessions?	2423			
Yes	2347	96.9%		
No	76			
21. Did the training cover ALL of the following specific topics?	2460			
Yes	2418	98.3%		
No	42			
22. Is the training for ALL technicians up to date?	2529			
Yes	2433	96.2%		
No	96			
23. Is your shop exempt from the methylene chloride (MeCl) paint stripping requirements in the EPA autobody rule?	2539			

Question:	Number of Responses	Proportion	Average	Standard Deviation
Exempt	2262	89.1%		
Not exempt	277			
24. Do you have records documenting the amount of paint stripping products containing methylene chloride (MeCl) your shop uses each year?	270			
Yes	215	79.6%		
No	55			
25. How much product containing MeCl does your shop use each year? (gallons)	268		3	3.7
26. Does your shop have a plan to reduce or eliminate the use of MeCl?	268			
Yes	216	80.6%		
No	52			
27. If your shop uses 2000 pounds (~150 gallons) or more in a year, is your minimization plan written and posted where MeCl is used?	272			
Yes	0	0.0%		
No	2			
Not applicable-we use less than 2000 pounds per year	270	99.3%		
28a. Have you submitted an initial notification for the EPA autobody rule as required?	2501			
Yes	2228	89.1%		
No	273			
28b. If you answered YES, do you have a copy in your files and available for review?	2183			
Yes	2102	96.3%		
No	81			
29. Do you have in your files and available for review the required documentation of the efficiency of the filters used to capture paint overspray?	2523			
Yes	2327	92.2%		
No	168			
Not applicable-we have a waterwash booth	28	1.1%		

Question:	Number of Responses	Proportion	Average	Standard Deviation
30a. Do you have records on the training each technician received in your files and available for review?	2527			
Yes	2385	94.4%		
No	142			
30b. If you answered YES to 30a, has the shop owner and/or operator certified that the training each technician took meets the requirements of the EPA autobody rule?	2384			
Yes	2368	99.3%		
No	16			
30c. If you answered YES to 30a, has the training for each technician occurred within the past 5 years?	2394			
Yes	2377	99.3%		
No	17			
31a. Do you have verification that all your spray guns are HVLP, HVLP-equivalent, electrostatic, airless, or air-assisted airless?	2541			
Yes	2504	98.5%		
No	37			
31b. If YES, please describe the documentation available on the spray guns:	2500			
HVLP is stamped on every gun	1612	64.5%		
Documentation for every gun in my shop is in my files and available for review	445	17.8%		
HVLP is stamped on some guns and documentation is in my files for all the others	795	31.8%		
Other	4	0.2%		
WM1. Have you looked at all of the wastes your shop generates and determined which ones are considered hazardous?	2501			
Yes	2468	98.7%		
No	33			
WM 2a. Do you record the amount of hazardous waste that your shop generates?	2468			
Yes	1995	80.8%		

Question:	Number of Responses	Proportion	Average	Standard Deviation
No	473			
WM 2b and 2c. What is the highest amount of hazardous waste that your business generates in a month (in pounds)?	2265		58	103.6
WM3. Does your shop generate NO MORE than 220 pounds (26 gallons) of hazardous waste in its busiest month?	2516			
Yes	2311	91.9%		
No	205			
WM4. Are all your hazardous wastes stored correctly as outlined below?	2439			
Yes	2410	98.8%		
No	29			
WM5. Are all your hazardous waste containers properly labeled as outlined below?	2422			
Yes	2263	93.4%		
No	159			
WM6. Are you following the proper disposal methods for each of the wastes you generate?	2418			
Yes	2395	99.0%		
No	23			
WM7. Do you have an employee training program that teaches proper hazardous waste management procedures?	2426			
Yes	1944	80.1%		
No	482			
WW 1. Do you operate a dry' shop?	2512			
Yes	666	26.5%		
No	1846			
WW 2. Are you following only allowed discharge practices for your shop waste liquids? [Shop waste liquids include solvents, oils, antifreeze, car wash water, floor washing, etc.]	1777			
Yes	1726	97.1%		
No	51			

Question:	Number of Responses	Proportion	Average	Standard Deviation
WW 2a. Which of your waste liquids are discharged to a storm drain, onto the ground or into a ditch?	1816			
Solvents	7	0.4%		
Oil/grease	4	0.2%		
Car wash	648	35.7%		
Antifreeze	10	0.6%		
None	1166	64.2%		
Other	16	0.9%		
WW 2b. Which of your waste liquids are discharged to a septic system?	1817			
Solvents	3	0.2%		
Oil/grease	2	0.1%		
Car wash	270	14.9%		
Antifreeze	11	0.6%		
None	1547	85.1%		
Other	8	0.4%		
WW 2c. Which of your waste liquids are discharged to an unknown outlet?	1813			
Solvents	0	0.0%		
Oil/grease	0	0.0%		
Car wash	85	4.7%		
Antifreeze	0	0.0%		
None	1722	95.0%		
Other	3	0.2%		
WW 2d. Which of your waste liquids are discharged to the sewer (local wastewater treatment plant) or a holding tank later whose contents are to be transferred to a treatment plant?	1826			
Solvents	29	1.6%		
Oil/grease	32	1.8%		
Car wash	1110	60.8%		
Antifreeze	61	3.3%		
None	697	38.2%		
Other	27	1.5%		

Question:	Number of Responses	Proportion	Average	Standard Deviation
WW 3. If you checked anything other than 'NONE' in WW 2a, 2b, or 2c above, has your shop contacted the state environmental agency to determine if a permit or other authorization is required for any of those activities?	756			
Yes	251	33.2%		
No	505			
PP 1a. Please check any of the following actions you have taken to reduce air emissions...	2585			
Keep all solvent containers closed to limit evaporation	2408	93.2%		
Avoid use of coatings that contain toxic metals by asking suppliers for alternative formulations	1776	68.7%		
Use paintless dent repair techniques	1773	68.6%		
Avoid use of methylene-chloride based paint strippers	2265	87.6%		
Automatic enclosed gun washer	1506	58.3%		
Use water-based or low-solvent coatings	1043	40.3%		
Use low-VOC solvents or thinners	1806	69.9%		
Two-stage solvent use	1128	43.6%		
Recycle solvents with on-site (or off-site) distiller	979	37.9%		
Have an inventory system (first-in, first-out) in place to prevent products from going out of date	1514	58.6%		
Use computerized paint mixing system to minimize mistakes/over-mixing	1735	67.1%		
Use non-solvent based putty/fillers	990	38.3%		
Other	13	0.5%		
PP 1b. Dust or Particulate Matter emissions:	2585			
Use a disposable paint cup system to minimize unused paint and emissions	1566	60.6%		

Question:	Number of Responses	Proportion	Average	Standard Deviation
Use a ventilated sander or self-contained media plaster to minimize emissions from preparing parts	626	24.2%		
Reusable aerosol or pump spray containers	1179	45.6%		
Use roll-on primer	445	17.2%		
Other	20	0.8%		
EE 1a. Please check any of the following actions you have taken to minimize energy use in your shop...	2585			
Paint booth energized only when necessary	2260	87.4%		
Booth lights kept clean	2290	88.6%		
Filters changed regularly to ensure good airflow	2368	91.6%		
Paint booth fan motors have variable speed drives	757	29.3%		
Booth uses heated air recirculation	1049	40.6%		
Energy efficient equipment	1349	52.2%		
Booth lighting on timers/motion sensors to reduce energy use	464	17.9%		
Other	29	1.1%		
EE1 b. In general shop areas:	2585			
Installed specialized controls	514	19.9%		
Install programmable thermostat for heating/cooling	965	37.3%		
Installed efficient fluorescent lights	1496	57.9%		
Encouraged employees to turn off lights	2102	81.3%		
Cleaned light fixture reflectors to increase available light	1928	74.6%		
Reduced light intensity where acceptable	1176	45.5%		
Taken advantage of day-lighting	1642	63.5%		
Install dusk to dawn lighting fixtures/equipment	801	31.0%		

Question:	Number of Responses	Proportion	Average	Standard Deviation
Completed an energy audit/aware of monthly electricity/fuel use	408	15.8%		
Insulated building, windows and hot/cold ducts or pipes	1348	52.1%		
Regularly check your air compressor system for leaks and repair all leaks found	2236	86.5%		
Regularly check your air compressor to ensure that the pressure setting isn't higher than it needs to be	2013	77.9%		
Use electric tools like shop-vacs or blow dryers instead of the compressed air system	1728	66.8%		
Energy efficient office products/machines; reduce number of machines in use	1484	57.4%		
High efficiency furnace; in floor heating	977	37.8%		
Other	42	1.6%		

Discussion of Results for Self-Certifications

Questions 1-7 summarize general information about the facilities that voluntarily returned self-certification surveys. The majority (81.5%) returned paper surveys by mail while the rest were completed on-line. 79.0% of respondents were owners of the businesses, while 39.9% identified themselves as managers. Only 26.2% classified themselves as paint technicians. Some of these responses overlap, since respondents were able to select more than one role. Most (97.1%) described their businesses as auto body shops. However, there was some overlap, with many also identifying themselves as auto mechanical repair shops or car dealerships. On average, each shop had 5 employees, 2 of which were paint technicians.

Question 4 asked if shops used any water-based paints, primers or cleaning solvents. The majority reported using none of these. 76.8% reported using no water-based paints, 78.6% reported using no water-based primers, and 56.8% reported using no water-based solvents. Very few facilities reported only using water-based products with 7.7% using only water-based paints, 1.6% using only water-based primer, and 2.2% using only water-based solvents.

There was a lot of uncertainty regarding the presence of regulated metals at the facilities. When asked if the facilities use any of the metals - cadmium, chromium, lead, manganese or nickel - 56.6% responded that they did not know whether any of the metals were present at their shops. However, another 30.7% stated that they use none of these metals.

Respondents were split on whether they were familiar with the Small Business Environmental Assistance program. 57.3% replied that they were aware of the program, whereas the rest said no, don't know, or requested additional information on the program. By far, the most preferred means of receiving regulatory information was by mail, with 87.1% choosing this option. Other popular choices

were training sessions/workshops offered by suppliers (32.3%), and e-mail messages/documents (25.6%). Respondents were able to choose more than one preferred method. The majority of respondents preferred workshops to be held after work hours, with 66.1% choosing this option.

Spray Guns

Questions 8-9 explore the types of spray guns used by the facilities. 99.5% claimed all the spray guns in their shops were approved spray guns (HVLP, HVLP-equivalent, electrostatic, airless or air-assisted airless). The vast majority of respondents (99.6%) used HVLP guns. A fair number (27.8%) used HVLP-equivalent guns, and very few used the other types of approved guns. Respondents were able to select more than one gun type if they used multiple kinds.

Question 9a and b deals with how spray guns are cleaned. 97.6% of respondents stated they use only approved spray gun cleaning methods. Respondents were pretty split on which cleaning methods were used. The most popular method was "flush with solvent but don't spray" (44.1%), followed closely by "disassemble gun and clean by hand or mechanical methods" (43.5%), "fully enclosed spray gun washer and occasionally disassemble and clean by hand" (39.2), and "fully enclosed spray gun washer" (38.3%). Respondents were able to select more than one cleaning method, and in some cases, even selected all four choices, although this was redundant.

Spray Booths and Prep Stations

Questions 10-19 address the spray booths and prep stations used by auto body shops. There appears to be pretty good compliance in this area, with all questions in the above 90% compliance range.

96.5% of respondents claimed to always use a spray booth or prep station when spraying coatings. 98.9% stated that, when applying a coating to a whole vehicle or component that is attached to the vehicle, it is always done within a spray booth or prep station with 4 walls or curtains and a roof with an average of 1 such spray booth or prep station per shop. In addition, 97.9% stated that when they are coating a component that is not attached to the vehicle, it is always done in a spray booth or prep station with at least 3 walls or curtains and a roof with an average of 1 such spray booth or prep station per facility.

99.8% of respondents stated that all their spray booths and prep stations are ventilated with an exhaust fan. The survey then asked, "is each spray booth and prep station that has 4 walls: ventilated at negative pressure; or ventilated at positive pressure, with seals on all doors and openings and an automatic pressure balancing system, and operated at no more than 0.05 inches water gauge positive pressure?" for which 97.2% said yes. Only 31.8% stated that each spray booth and prep station that has 3 walls was ventilated so that air is drawn into the booth, but 68.1% said that this was not applicable, since they only had spray booths or prep stations with 4 walls, bringing up the total that are in compliance to 99.9%. 99% stated that all booth or prep station exhaust systems have an overspray filter system and 98.5% said those exhaust/filter systems are always used for all spray painting. 97.1% said the filter capture efficiency rating of their dry filter systems is at least 98%. Only 1.0% said this was not applicable, because they have a waterwash booth. 98.3% have a procedure to determine when exhaust/filter systems need to be cleaned and maintained. Of these procedures, the most common was a visual check of the filter which was practiced by 68.8% of respondents, followed by a set schedule practiced by 40.4% and a pressure gauge reading with a 29.2% response rate.

Training

Questions 20-22 discuss the training necessary for paint technicians to take regarding the auto body rule. 94.3% of respondents stated that their technicians had attended training designed to cover the new rule. 96.9% of those said this training was comprised of both classroom and hands-on sessions. 98.3% of respondents answered that the training covered all the topic requirements outlined in

question 21 of the survey. Finally, 96.2% of respondents said the training for all of their technicians was up to date. Note that if the respondent answered "no" to the first question (20A), they may have skipped the remaining questions which would not be relevant. Thus, the percentages are only including those that actually answered the question. Those that answered no to 20A and skipped the rest would not be included in the percentage.

Paint Removal/Stripping

Questions 23-27 address the methylene chloride requirements of the auto body rule. The majority of respondents do not use methylene chloride. 89.1% reported that they were exempt from these requirements, because they do not use chemical paint strippers or they verified that their chemical strippers do not contain methylene chloride. Those that do use the chemical were asked to answer a few follow up questions. Of those who answered the follow up questions, 79.6% have records documenting the amount of methylene chloride they use and averaged 3 gallons of the product per year. 80.6% of those responding to the follow up questions have a plan to reduce or eliminate methylene chloride. Finally, when asked "if your shop uses 2,000 pounds or more in a year, is your minimization plan written and posted where MeCl is used?", almost all (99.3%) responded that this was not applicable because they use less than 2,000 pounds a year. No one answered "no" to this question, and only 2 said "yes".

Documentation, Recordkeeping and Reporting

Questions 28-31 address the paperwork auto body facilities are required to maintain per the auto body rule. 89.1% stated at the time they filled out this survey that they had submitted the initial notification form. Of those, 96.3% retained a copy in their files. In addition, 92.2% have retained documentation on the efficiency of their filters used to capture paint overspray and an additional 1.1% said that this did not apply to them, because they had a waterwash booth.

Auto body shops are also required to maintain documentation on the training their paint technicians have received. 94.4% said they have records on the training of their paint technicians. Of those that have training records, 99.3% said the shop owner or operator had certified that the training meets the requirements of the EPA auto body rule and 99.3% certified that the training occurred within the last five years.

Finally, the auto body shops were asked if they have documentation on the spray guns. 98.5% stated that they have verification that they spray guns are comprised of only approved types (HVLP, HVLP-equivalent, electrostatic, airless or air-assisted airless). Of those that have documentation on their spray guns, 64.5% said "HVLP stamped on every gun", 31.8% said "HVLP stamped on some guns and documentation is in my files for all the others", and 17.8% said "documentation for every gun in my shop is in my files and available for review. For this last question, respondents were able to select more than one option.

Waste Management

Questions WM1-WM7 go beyond the new EPA auto body rule and touch on some of the waste management requirements for hazardous waste auto body shops are subject to. 98.7% of respondents reported that they have looked at the waste they generate and determined which are hazardous. However, only 80.8% reported actually recording the amount of hazardous waste they generate. Of those who recorded their waste, an average of 58 pounds of hazardous waste was generated in a month per facility. 91.9% claim that they generate no more than 220 pounds of hazardous waste in their busiest month.

The survey then addresses how the facility handles their hazardous waste. Whether or not these are requirements or just best practices vary from state to state. However, 98.8% of respondents from all states stated that their hazardous waste is stored correctly as outlined in the survey. 93.4%

said they property label their hazardous waste containers. 99.0% report that they are following proper disposal methods for the hazardous waste they generate, as the survey describes. However, fewer, only 80.1%, reported having a training program that covers hazardous waste management with their employees.

Wastewater

Questions WW1-WW3 address whether or not the auto body shops discharge any waste liquids and to where they are discharged. A little over a quarter of respondents (26.5%) classified themselves as dry shops. Of those who do discharge waste liquids, 97.1% claim to follow only allowed discharge practices. When asked which of these waste liquids are discharged to a storm drain, onto the ground, or into a ditch, the majority (64.2%) stated none. The most common type of discharge to this outlet was car wash water, at 35.7%. All other types of wastewater were rarely discharged to this outlet, all with a less than 1% response rate for each discharge type. 85.1% of respondents said they do not discharge their waste liquids to a septic system. However, 14.9% did report discharging car wash water here. For all other discharge types, less than 1% sent each type to a septic system. 95.0% do not discharge to an unknown outlet. Only 4.7% sent their car wash water here. Very few reported discharging another waste liquid to an unknown outlet (0.0%-0.2%). 60.8% reported discharging their car wash water to a local wastewater treatment plant or holding tank to be transferred to a wastewater treatment plant. 38.2% said they do not discharge any waste water to a treatment plant. Very few (under 4% for each) discharged any of the other types of waste liquids here. Overall, very few facilities discharged any types of waste liquid other than car wash water to any of the outlets described above. Finally, those facilities that discharged waste liquids anywhere other than to a wastewater treatment plant were asked if they had contacted their state environmental agency to determine if a permit or other authorization is required to do so. Only 33.2% of those responding to the question reported that they had, so there may be some issues with compliance here.

Best Management Practices in Pollution Prevention and Energy Efficiency

Questions PP1-EE1 address best management practices that the facilities use to reduce pollution or energy use. Percentages for these questions were calculated using the total number of surveys received, even if they did not answer the question, since they could be practicing none of these. When asked which actions they have taken to reduce air toxics emissions, the most common response was "keep all solvent containers closed to limit evaporation" with 93.2% claiming to use this method. Other responses with high percentages were "avoid use of methylene-chloride based paint strippers" at 87.6%, "use low-VOC solvents or thinners" at 69.9%, "avoid use of coatings that contain toxic metals by asking suppliers for alternative formulations" at 68.7%, "use paintless dent repair techniques" at 68.6%, and "use computerized paint mixing system to minimize mistakes/over-mixing" at 67.1%. Even the practice with the lowest percentage (besides "other"), "recycle solvents with on-site (or off-site) distiller", was practiced by over a third of all those surveyed. The survey then asked what actions have been taken to reduce dust/particulate matter. The most common response to this question was "use a disposable paint cup system to minimize unused paint and emissions" with 60.6% selecting this method followed by "reusable aerosol or pump spray containers" at 45.6%.

The survey then asks what shops do to minimize energy use. In the paint booth area, the most popular practice was "filters changed regularly to ensure good airflow" at 91.6% followed by "booth lights kept clean" at 88.6% and "paint booth energized only when necessary" at 87.4%. In the general shop area, common energy reduction practices include "regularly check you air compressor system for leaks and repair all leaks found" (86.5%), "encourage employees to turn off lights" (81.3%), "regularly check your air compressor to ensure that the pressure setting isn't higher than it needs to be" (77.9%), "cleaned light fixture reflectors to increase available light" (74.6%), "use electric tools like shop-vacs or blow dryers instead of the compressed air system" (6.8%), and "taken advantage of day-lighting" (63.5%).

General Observations on Responses from Self-Certification Data Entry

General Information:

4. Does your shop use water-based paints, water-based primers, water-based cleaning solvents? - "None" appeared to be the most common response to each of these. There were some "some" responses, but there didn't seem to be many "only" responses to this question.
5. Do any of the primers, base coats, clear coats, or other coating used at your shop contain any of these ingredients or compounds including at least one of these? - It seemed that "None" and "Don't know" were both pretty common responses. The individual metals present were rarely indicated.
6. Are you aware of your state's Small Business Environmental Assistance Program? - I feel like "no" was probably more common than "yes" but not by a whole lot. Most did not request more information.
- 7A. How do you prefer to receive regulatory information? - "Mailing/written materials" was by far the most common response. "Facebook/Twitter/YouTube" and "On site visit" were very rarely checked.

Spray Guns:

- 8A-B. Are all spray guns at your shop HVLP, HVLP-equivalent, electrostatic, airless, or air-assisted airless? - "Yes" was almost always checked and most guns were identified as either HVLP or HVLP-equivalent.
- 9A-B. Is all paint spray gun cleaning done with a fully enclosed spray gun washer or in a way that does not create a mist of solvent? - Responses to this question were mostly "yes". All approved methods listed in B seemed to be about equally common with many indicating multiple methods.

Spray Booths and Prep Stations:

- 10-19. Responses to these questions seemed to be mostly "yes". It was very common for there to be 0 prep stations and 1, sometimes 2, booths. When "no" responses did occur, they seemed to be most commonly regarding filter efficiency in 18. Not many used waterwash booths.

Training:

- 20-22. Training questions were more commonly "yes" than "no", although there was a fair amount of "no's". The most common issue was no hands-on training in 20B.

Paint Removal/Stripping:

23. Is your shop exempt from the methylene chloride paint stripping requirements? - The majority said they were exempt. Those who were not exempt used very small amounts.

Documentation, Recordkeeping and Reporting:

- 28A. The majority had submitted the Initial Notification but there was a fair amount that hadn't.
- 29-31. Recordkeeping for filter efficiency, training and spray guns was fairly good, but there was a fair number of "no's" here as well.

Waste Management:

WM1-3. The majority had looked at their waste and recorded the amount of hazardous waste generated. However, I was surprised by the number of people who were not aware. Hazardous waste amounts seemed to be pretty low with very few exceeding 220 pounds a month.

WM4-7. These questions were primarily “yes” except WM7 (employee training program) for which I saw a lot of “no’s”. Often, no’s were accompanied by a note that they didn’t have any employees, so that is probably the primary reason for the “no” responses.

Wastewater:

WW1-3. The majority were not dry shops. Most responded that they were following only allowed discharge practices, although many discharged to outlets other than the sanitary sewer. Most shops only discharged car wash water which was commonly discharged to a storm drain/ditch if not going to the sanitary sewer.

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Appendix E

List of Environmental Business Practice Indicators and Detailed Statistical Analysis

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List of Environmental Business Practice Indicators

The following is the list of Environmental Business Practice Indicators, or EBPIs, that were proposed to be measured in this project. Where possible, the measures are compared to the outcomes listed in the Logic Model by their number: ST=short term, I=intermediate, LT=long term. The Logic Model proposed for this project can be found in Appendix A. From the original list, some measures the SBEAPs agreed we would not attempt are in ~~strikeout~~ text in the list below while others we modified or added are in **bold**. Among the long-term outcomes identified, project staff were uncertain whether the data collection within just two to three years was sufficient to show progress. Other outcomes in the Logic Model not identified here are considered side benefits to the project that cannot be directly measured through the ERP format.

The outcomes under Impact Changes are probably the hardest to measure, and depend on the ability to capture accurate information about emissions/waste generation, etc. We proposed use of a couple tools that might help us measure (DfE's Emissions Reductions Calculator for the Auto Refinishing Industry (May 2008) and the Motor Vehicle and Mobile Refinishing NESHAP baseline emissions and emissions reduction estimates prepared during rule development); however we decided those both had issues and ultimately settled on capturing both the quantity of paint used and the 'average paint hours'. This allowed us to calculate "paint used per hour" which better indicates whether actual paint use per shop changed, or just that the mix of the size [and/or quantity of business] of the shops changed between rounds.

For comparison purposes, each indicator is identified by the actual question in the checklist related to measuring the performance of that practice.

EBPIs	Related Question(s) in Checklist
Practices Associated with subpart 6H (ST-1, I-1)	
• % using HVLP or equivalent high transfer efficiency technology (I-2)	I6
• % with high transfer efficiency painting training in place (I-3)	B2a
• % with different components of training (I-3)	B2b
• % using hands-on or classroom-only training (I-3)	B2b
• % with documentation of training	B2c
• % at which all spray-applied coatings used in enclosed booth or prep station	C3, I1, I3
• % of booths/stations fitted with particle filters (I-2)	C4b, I2, I4
• % of booths/stations fitted with filter/system achieving 98% capture (I-2)	C4c&d
• % where spray gun cleaning is done with enclosed or non-atomizing washers	C5, I7
• % maintaining MSDS or formulation records for all solvents/coatings use	C9
• % maintaining records of the amount/content of coatings containing Cr, Pb, Cd, Ni, Mn	C10
• % NOT using paint strippers containing Methylene Chloride (I-4, I-5)	C6, I8
• % keeping records to document annual MeCl usage	C7
• Average and range of MeCL used (I-4, I-5)	C7b
• % of MeCL users with written MeCl minimization plan	C8
• % maintaining records of the amount/content of coatings containing VOC and HAP	A6

EBPIs	Related Question(s) in Checklist
Other Practices	
AIR PRACTICES	
<ul style="list-style-type: none"> • Average throughput (vehicles painted) per year (I-5) [replaced with measure of "paint hours per year" to control for operational variability of paint use by calculating paint use per month divided by paint hours per month] 	A7
<ul style="list-style-type: none"> • Average quantity and range of coatings used (and HAP content) (I-4, I-5) 	A6
<ul style="list-style-type: none"> • % using dustless vacuum or overhead capture equipment (I-8) 	F
<ul style="list-style-type: none"> • % keeping shop doors closed to avoid releasing sanding dust (I-8) 	
<ul style="list-style-type: none"> • % meeting applicable state requirements (ST-2) 	
AIR RECORD KEEPING:	
<ul style="list-style-type: none"> • Average and range of VOC and HAP content (% by weight) (I-4, I-5) 	
<ul style="list-style-type: none"> • Average and range of listed metals content (% by weight) (I-4, I-5) 	
<ul style="list-style-type: none"> • [replaced with "Average use of high VOC and low VOC coatings and solvents per year"] 	A6
HAZARDOUS WASTE (I-8)	
<ul style="list-style-type: none"> • Average and range of maximum amount of RCRA waste the facility generates in a month 	D3
<ul style="list-style-type: none"> • Numbers of facilities in generator classes (CESQG or VSQG, SQG, LQG or not) 	D3
INDUSTRIAL WASTERWATER INDICATORS (I-8)	
<ul style="list-style-type: none"> • % of facilities <u>not</u> discharging IWW to surface water 	E2
<ul style="list-style-type: none"> • % of facilities <u>not</u> discharging IWW to a storm, sanitary or combined sewer system 	E2
POLLUTION PREVENTION-ENERGY EFFICIENCY INDICATORS (I-8)	
<ul style="list-style-type: none"> • % of facilities taking one or more actions to conserve water the past three years (distribution across menu of possible actions) 	
<ul style="list-style-type: none"> • % of facilities taking one or more actions to conserve energy over the past three years (distribution across menu of possible actions) 	G1
<ul style="list-style-type: none"> • % of facilities taking one or more actions to reduce toxics pollution (VOC, PM and toxics) the past three years (distribution across menu of possible actions) 	F1

OTHER OUTCOMES (from the States ERP Consortium's Core Measures)

The States ERP Consortium developed a "Template for Reporting Core ERP Measures" (Appendix C to "The States ERP Consortium Guide to Reporting ERP Results", April 2009). The Template contains 23 "Core Measures of ERP" that were evaluated to the extent possible. The following 17 Core Measures were proposed for inclusion in this project and data is presented in this report, where feasible.

Self-Certification (ST-3)

- Final certification rate

- Rate of “high-concern” discrepancies with regard to facility certifications on indicators
- Rate of self-disclosed noncompliance
- ~~Rate of return to compliance (RTC) plan submission (if RTCs used)– RTCs not used.~~
- ~~Rate of self-disclosing facilities submitting one or more return to compliance plans (if RTCs used)~~

Performance/Compliance Rates (I-1, I-5, LT-1)

- Summary of performance changes for each indicator (where follow-up inspection data is available from EPA Region 5)
- Aggregate achievement rate for all indicators
- Achievement rate across all compliance-related measures (commonly called a traditional compliance rate)
- Average facility score for all indicators
- Distribution of facility scores for all indicators
- Average facility score for compliance-related indicators
- Distribution of facility scores for compliance-related indicators

Impact Changes (I-5, LT-2)

- Rate of managing/controlling certain environmental aspects
- Level of group emissions/waste/discharges/chemical usage related to certain environmental aspects
- Relationship of project activity and typical impact on environmental justice areas

Detailed Statistical Analysis

For those questions with “Yes/No” responses, we used Results Pro 2.1, an Excel-based spreadsheet tool developed by Mike Crow, Crow Environmental to analyze simple random samples. Results for EBPIs and Facility Characteristics with yes/no responses are detailed below.

Other qualitative responses were summarized and statistical results analyzed using the EPA Results Analyzer, a simple Excel-based tool created by a consultant for EPA to help states conducting statistical analysis in ERPs for simple random samples. The Results Analyzer is available from the States ERP Consortium website at: www.erpstates.org/p/softtools.php. The Results Analyzer offers results in the difference in proportion for one or two samples or difference in the mean for one or two samples. It calculates these results for individual questions, requiring you to enter sample and response data one question at a time.

Sample Data Detail:

State	Baseline		Follow-Up	
	Facility Population	Number of Inspections	Facility Population	Number of Inspections
Illinois	1,225	35	1,223	33
Indiana	489	19	380	15
Michigan	877	27	858	25
Minnesota	675	20	520	19
Ohio	1,347	38	1,422	38
Wisconsin	456	17	394	15
Total:	5,069	156	4,797	145



In the detailed analysis below, note:


- Follow-Up Inspections were conducted by EPA Region 5 and only included questions related to facility characteristics and the 6H rule. Therefore, complete analysis could not be performed for several questions as noted.
- “Observed”: for “Yes/No” questions, “Observed” = percent of facilities answering that answered “Yes” to the question. “Yes” is the answer that means in compliance with the requirement or is the “preferred” answer from an environmental perspective. However, not all questions are compliance or environmental performance questions, meaning that neither “yes” or “no” are preferred - these are informational questions and noted as “FACILITY CHARACTERISTIC”.
- Answers were not always obtained from every facility for every question, typically because the question did not apply in that particular instance. The figure in the “All” column of Counts of Responses is the total number of facilities where an answer was entered. The figure in the “Yes” column is the total number of facilities where the answer to the question was “Yes”.
- Questions that are included in Facility Score Calculations are noted.
- The two software tools used to conduct the statistical analysis were designed for use with a single random sample. This project used a stratified sample - dividing the total number of random sample inspections required for a 90 percent confidence interval in the results among states in proportion to overall population of the state. Then each state chose the required number of facilities for inspection at random from within their state sample population. Analyzing a stratified sample as a simple sample could reduce the precision of the results. However, statistical analysis of a stratified sample over multiple questions is complex and

beyond the resources available for this project. In general, the results from analyzing a stratified sample as a simple sample are more conservative; however this might not always be the case.


Introduction Questions

(A3) Did your shop start coating vehicles or parts after September 17, 2007? FACILITY CHARACTERISTIC

Confidence Intervals (% with Yes Response)					Counts of Responses	
	50%	Lower Bound	Observed	Upper Bound	Yes	All
Baseline:		2.5%	4.5%	8.0%	7	156
Follow-up:		2.7%	4.8%	8.6%	7	145

Confidence Intervals for Performance Change (percentage points)						
	-50%	0	+50%	Statistically Significant?	Lower Bound	Upper Bound
Difference:				no	-4.1	0.3

(A5) Do you use any water based paints or solvents? [Baseline only]



Confidence Intervals (% with Yes Response)					Counts of Responses	
	50%	Lower Bound	Observed	Upper Bound	Yes	All
Baseline:		11.9%	16.0%	21.4%	25	156


(A6) How much paint and solvents have you used or purchased in the last few months?				
Survey	Observed Mean <i>Paint use (gal/mo)</i>	Std Dev	Margin of Error	Confidence Interval
Baseline	17.5	24.8	3.2	14.3-20.7
Follow-up	18.5	28.4	3.8	13.7-21.3
Difference in Means	1.00 gal/mo ± 5.0 gal			-4.0 - 6.0

Range of Values	Solvent based coatings (gal/mo)		Water based coatings (gal/mo)		High VOC cleaning solvents (gal/mo)		Low VOC cleaning solvents (gal/mo)		Paint Hours/mo	
	Baseline	EPA	Baseline	EPA	Baseline	EPA	Baseline	EPA	Baseline	EPA
High	118	256	50.75	62	311	41.2	8.3	10	1187	970.5
Low	0.08	0.24	0.02	0.04	0.17	0.09	0.04	0.12	0.08	0.42
Average	17.5	18.5	8.8	8.7	8.2	7.1	1.85	1.6	91.3	123.8
Median	8.3	9.8	3.5	3.7	2.9	4.0	0.5	0.6	41.7	51.0

(A7) What are your total paint hours in the last few months?					
Survey	Observed Mean <i>Paint time (hours/mo)</i>	Std Dev	Margin of Error	Confidence Interval	Estimated Population
Baseline	91.3	160.6	20.9	70.4-112.2	91.3
Follow-up	123.8	194.9	26.2	97.6-150.0	123.8
Difference in Means	32.5 hours/mo ± 33.60 hours			-0.9 - 65.9	Not Statistically Significant

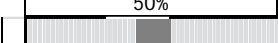
(A8) Do you do any paint work using a gun with 3 ounce cup or less? FACILITY CHARACTERISTIC

	Confidence Intervals (% with Yes Response)				Counts of Responses	
	50%	Lower Bound	Observed	Upper Bound	Yes	All
Baseline:		31.0%	37.0%	43.5%	57	154
Follow-Up:		86.5%	92.7%	96.1%	76	82


	Confidence Intervals for Performance Change (percentage points)						
	-50%	0	+50%	Statistically Significant?	Lower Bound	Observed	Upper Bound
Difference:				YES	47.4	55.7	63.9

Training Questions

(B1a) Do you have an employee training program that teaches proper hazardous waste management procedures? [Baseline Only]

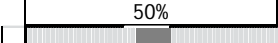

	Confidence Intervals (% with Yes Response)				Counts of Responses	
	50%	Lower Bound	Observed	Upper Bound	Yes	All
Baseline:		43.2%	49.7%	56.1%	77	155


(B1b) Do you have documentation related to the employee hazardous waste management training, including who was trained, when and in what? [Baseline Only]

	Confidence Intervals (% with Yes Response)				Counts of Responses	
	50%	Lower Bound	Observed	Upper Bound	Yes	All
Baseline:		37.9%	46.2%	54.7%	42	91

(B2a) Have ALL your paint technicians been trained in proper selection, use and maintenance of spray equipment, within the proper time frames?



Used for Facility Score: Compliance, EBPI

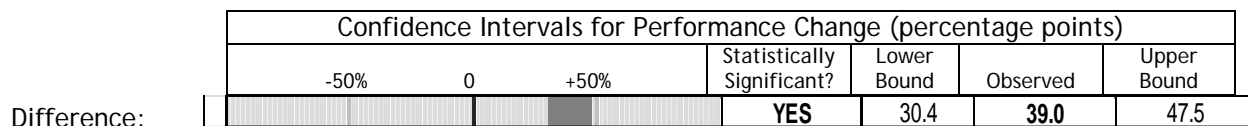
	Confidence Intervals (% with Yes Response)				Counts of Responses	
	50%	Lower Bound	Observed	Upper Bound	Yes	All
Baseline:		43.2%	49.7%	56.1%	77	155
Follow-Up:		75.0%	80.8%	85.5%	118	146

	Confidence Intervals for Performance Change (percentage points)						
	-50%	0	+50%	Statistically Significant?	Lower Bound	Observed	Upper Bound
Difference:				YES	22.7	31.1	39.6

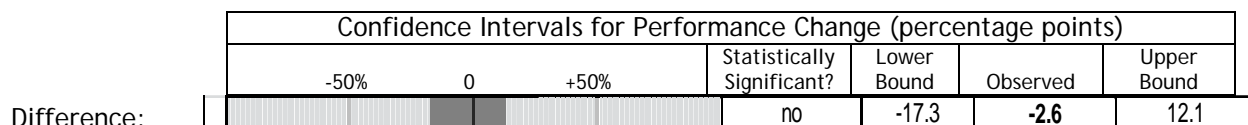
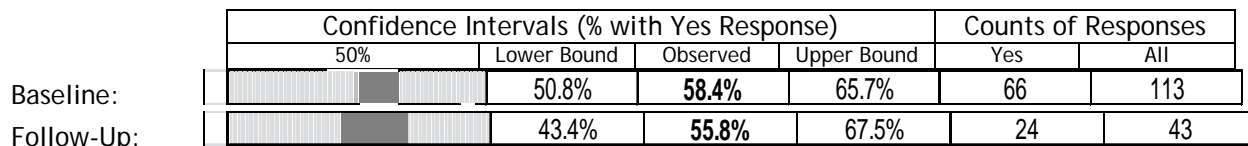
(B2c) Do you have records on technicians trained on the use of spray equipment?

Used for Facility Score: Compliance, EBPI

	Confidence Intervals (% with Yes Response)				Counts of Responses	
	50%	Lower Bound	Observed	Upper Bound	Yes	All
Baseline:		37.8%	44.4%	51.2%	63	142
Follow-Up:		77.7%	83.3%	87.7%	120	144



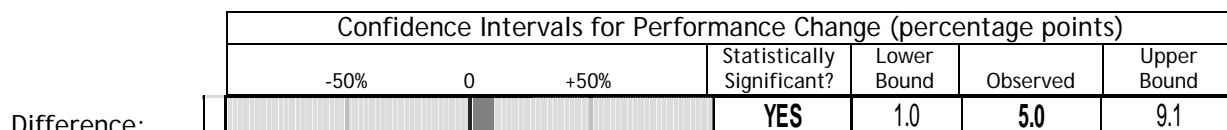
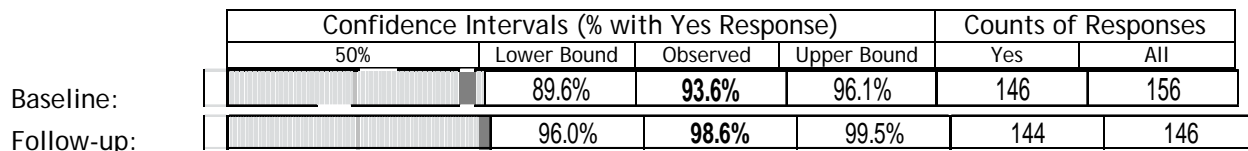
(B2d) Are there any specific reasons paint technicians have not been trained on ALL of the topics?
FACILITY CHARACTERISTIC



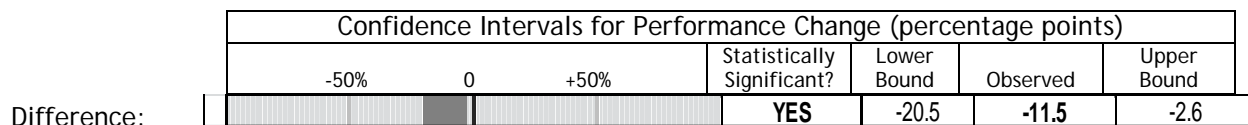
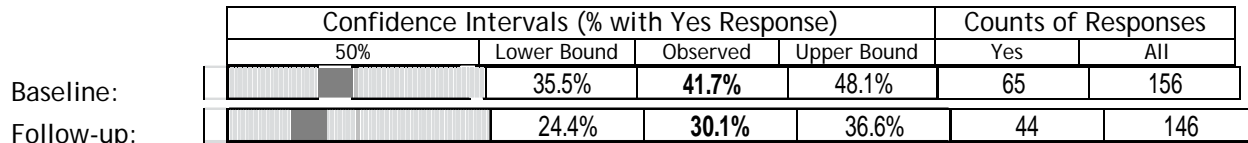
Air Pollution - EPA Rule

*Paint Booths



(C1a) Does your shop have a spray booth?
Used for Facility Score: EBPI






(C2a) Do you have a prep station/area where coatings are applied on vehicle components? FACILITY CHARACTERISTIC








(C3b) Did your shop first begin using each enclosure to apply coatings on or before Sept 17, 2007?
FACILITY CHARACTERISTIC - Booth 1

	Confidence Intervals (% with Yes Response)				Counts of Responses	
	50%	Lower Bound	Observed	Upper Bound	Yes	All
Baseline:		94.1%	97.3%	98.7%	142	146
Follow-up:		90.5%	94.4%	96.8%	136	144



Confidence Intervals for Performance Change (percentage points)						
-50%	0	+50%	Statistically Significant?	Lower Bound	Observed	Upper Bound
			no	-7.1	-2.8	1.5




(C3c) If any enclosure (paint booth, walled prep area) was installed after September 17, 2007, was the installation due to the new area source NESHAP regulations? FACILITY CHARACTERISTIC - Booth 1

	Confidence Intervals (% with Yes Response)				Counts of Responses	
	50%	Lower Bound	Observed	Upper Bound	Yes	All
Baseline:		3.3%	14.3%	45.2%	1	7
Follow-up:		7.7%	22.2%	49.6%	2	9



Confidence Intervals for Performance Change (percentage points)						
-50%	0	+50%	Statistically Significant?	Lower Bound	Observed	Upper Bound
			no	-32.2	7.9	48.1




(C3b) Did your shop first begin using each enclosure to apply coatings on or before Sept 17, 2007?
FACILITY CHARACTERISTIC - Prep Station 1

	Confidence Intervals (% with Yes Response)				Counts of Responses	
	50%	Lower Bound	Observed	Upper Bound	Yes	All
Baseline:		91.1%	96.9%	99.0%	63	65
Follow-up:		74.1%	86.1%	93.0%	31	36

Confidence Intervals for Performance Change (percentage points)						
-50%	0	+50%	Statistically Significant?	Lower Bound	Observed	Upper Bound
			no	-22.4	-10.8	0.7

(C3c) If any enclosure (paint booth, walled prep area) was installed after September 17, 2007, was the installation due to the new area source NESHAP regulations? FACILITY CHARACTERISTIC - Prep Station 1

	Confidence Intervals (% with Yes Response)				Counts of Responses	
	50%	Lower Bound	Observed	Upper Bound	Yes	All
Baseline:		0.0%	0.0%	47.4%	0	3
Follow-up:		27.3%	60.0%	85.7%	3	5

Confidence Intervals for Performance Change (percentage points)						
-50%	0	+50%	Statistically Significant?	Lower Bound	Observed	Upper Bound
			no	-6.5	60.0	126.5

(C4a) Is each spray booth/prep station ventilated with an exhaust fan?

	Confidence Intervals (% with Yes Response)				Counts of Responses	
	50%	Lower Bound	Observed	Upper Bound	Yes	All
Baseline:		84.7%	89.5%	92.8%	136	152
Follow-up:		96.0%	98.6%	99.5%	144	146

	Confidence Intervals for Performance Change (percentage points)						
	-50%	0	+50%	Statistically Significant?	Lower Bound	Observed	Upper Bound
Difference:				YES	4.4	9.2	13.9

(C4b) Does your exhaust system have a filter system?

	Confidence Intervals (% with Yes Response)				Counts of Responses	
	50%	Lower Bound	Observed	Upper Bound	Yes	All
Baseline:		87.7%	92.1%	94.9%	139	151
Follow-up:		94.1%	97.3%	98.7%	142	146

	Confidence Intervals for Performance Change (percentage points)						
	-50%	0	+50%	Statistically Significant?	Lower Bound	Observed	Upper Bound
Difference:				YES	0.6	5.2	9.8

(C4c) Is the filter capture efficiency rating of your exhaust/filter system at least 98 percent? Booth 1

	Confidence Intervals (% with Yes Response)				Counts of Responses	
	50%	Lower Bound	Observed	Upper Bound	Yes	All
Baseline:		37.2%	43.9%	50.8%	61	139
Follow-up:		96.2%	99.1%	99.8%	114	115

	Confidence Intervals for Performance Change (percentage points)						
	-50%	0	+50%	Statistically Significant?	Lower Bound	Observed	Upper Bound
Difference:				YES	48.0	55.2	62.5

(C4d) Is the documentation related to the capture efficiency of your exhaust and filter system present and available for review? Booth 1

Used for Facility Score: Compliance, EBPI

	Confidence Intervals (% with Yes Response)				Counts of Responses	
	50%	Lower Bound	Observed	Upper Bound	Yes	All
Baseline:		23.5%	29.3%	35.9%	41	140
Follow-up:		63.4%	70.0%	75.9%	98	140

	Confidence Intervals for Performance Change (percentage points)						
	-50%	0	+50%	Statistically Significant?	Lower Bound	Observed	Upper Bound
Difference:				YES	31.8	40.7	49.6

(C4c) Is the filter capture efficiency rating of your exhaust/filter system at least 98 percent? Prep Station 1

	Confidence Intervals (% with Yes Response)				Counts of Responses	
	50%	Lower Bound	Observed	Upper Bound	Yes	All
Baseline:		19.5%	28.1%	38.6%	16	57
Follow-up:		82.3%	93.5%	97.8%	29	31

Confidence Intervals for Performance Change (percentage points)						
-50%	0	+50%	Statistically Significant?	Lower Bound	Observed	Upper Bound
			YES	51.7	65.5	79.3

(C4d) Is the documentation related to the capture efficiency of your exhaust and filter system present and available for review? Prep Station 1

Used for Facility Score: Compliance, EBPI

	Confidence Intervals (% with Yes Response)				Counts of Responses	
	50%	Lower Bound	Observed	Upper Bound	Yes	All
Baseline:		11.0%	17.9%	27.7%	10	56
Follow-up:		63.8%	77.1%	86.6%	27	35

Confidence Intervals for Performance Change (percentage points)						
-50%	0	+50%	Statistically Significant?	Lower Bound	Observed	Upper Bound
			YES	44.2	59.3	74.4

(C4f) Do ALL of the booths [enclosures - includes prep stations] meet the exhaust/filter requirements in C4 a, b, c & d at this time?

	Confidence Intervals (% with Yes Response)				Counts of Responses	
	50%	Lower Bound	Observed	Upper Bound	Yes	All
Baseline:		17.5%	22.5%	28.5%	34	151
Follow-up:		57.4%	64.1%	70.3%	91	142

Confidence Intervals for Performance Change (percentage points)						
-50%	0	+50%	Statistically Significant?	Lower Bound	Observed	Upper Bound
			YES	33.0	41.6	50.2

(I1b) Is there no evidence that spray coating occurs outside of a spray booth?¹

Used for Facility Score: Compliance

	Confidence Intervals (% with Yes Response)				Counts of Responses	
	50%	Lower Bound	Observed	Upper Bound	Yes	All
Baseline:		71.0%	77.0%	82.1%	114	148
Follow-up:		89.5%	93.7%	96.3%	134	143

¹ Question reworded so yes is the preferred answer. Original wording: Is there evidence that some spray coating occurs outside of a spray booth?

Confidence Intervals for Performance Change (percentage points)							
-50% 0 +50%				Statistically Significant?	Lower Bound	Observed	Upper Bound
Difference:				YES	10.0	16.7	23.4

(I1c) Do the spray booths ALL meet the [enclosure] requirements at this time [has 4 walls, roof, and exhaust]?

Used for Facility Score: Compliance, EBPI

Confidence Intervals (% with Yes Response)				Counts of Responses	
50%	Lower Bound	Observed	Upper Bound	Yes	All
Baseline:	64.3%	70.7%	76.3%	106	150
Follow-up:	87.0%	91.6%	94.6%	131	143

Confidence Intervals for Performance Change (percentage points)							
-50% 0 +50%				Statistically Significant?	Lower Bound	Observed	Upper Bound
Difference:				YES	13.7	20.9	28.2

(I2a) Does the spray booth have a filter on the exhaust? Booth 1

Confidence Intervals (% with Yes Response)				Counts of Responses	
50%	Lower Bound	Observed	Upper Bound	Yes	All
Baseline:	86.8%	91.3%	94.3%	136	149
Follow-up:	92.2%	95.8%	97.8%	138	144

Confidence Intervals for Performance Change (percentage points)							
-50% 0 +50%				Statistically Significant?	Lower Bound	Observed	Upper Bound
Difference:				no	-0.4	4.6	9.6

(I2d) Do the spray booth exhaust/filter systems ALL meet the requirements at this time? [filter in good condition, adequate exhaust pressure]



Used for Facility Score: Compliance, EBPI


Confidence Intervals (% with Yes Response)				Counts of Responses	
50%	Lower Bound	Observed	Upper Bound	Yes	All
Baseline:	47.4%	54.1%	60.6%	80	148
Follow-up:	59.2%	65.9%	72.1%	91	138

Confidence Intervals for Performance Change (percentage points)							
-50% 0 +50%				Statistically Significant?	Lower Bound	Observed	Upper Bound
Difference:				YES	2.5	11.9	21.3



(I3b) Do the prep stations/areas ALL meet the [enclosure] requirements in at this time [has 3 wall, roof and exhaust]?


Used for Facility Score: Compliance, EBPI

	Confidence Intervals (% with Yes Response)				Counts of Responses	
	50%	Lower Bound	Observed	Upper Bound	Yes	All
Baseline:		21.3%	29.2%	38.5%	21	72
Follow-up:		36.8%	48.8%	61.0%	21	43

	Confidence Intervals for Performance Change (percentage points)				Statistically Significant?	Lower Bound	Observed	Upper Bound
	-50%	0	+50%					
Difference:					YES	4.2	19.7	35.1



(I4a) Does the prep station/area have a filter on the exhaust? Prep Station 1


	Confidence Intervals (% with Yes Response)				Counts of Responses	
	50%	Lower Bound	Observed	Upper Bound	Yes	All
Baseline:		43.9%	53.5%	62.9%	38	71
Follow-up:		83.4%	92.9%	97.1%	39	42

	Confidence Intervals for Performance Change (percentage points)				Statistically Significant?	Lower Bound	Observed	Upper Bound
	-50%	0	+50%					
Difference:					YES	26.8	39.3	51.9



(I4d) Do the prep station/area exhaust/filter systems ALL meet the requirements at this time [filter in good condition, adequate exhaust pressure]?


Used in Facility Score: Compliance, EBPI

	Confidence Intervals (% with Yes Response)				Counts of Responses	
	50%	Lower Bound	Observed	Upper Bound	Yes	All
Baseline:		18.5%	26.1%	35.5%	18	69
Follow-up:		56.2%	69.2%	79.8%	27	39

	Confidence Intervals for Performance Change (percentage points)				Statistically Significant?	Lower Bound	Observed	Upper Bound
	-50%	0	+50%					
Difference:					YES	27.9	43.1	58.4

(I5) Is lighting in the booths/paint areas clean of paint residue, besides what may be present from the most recent job?



	Confidence Intervals (% with Yes Response)				Counts of Responses	
	50%	Lower Bound	Observed	Upper Bound	Yes	All
Baseline:		83.3%	88.4%	92.0%	129	146
Follow-up:		92.1%	95.8%	97.8%	137	143


Confidence Intervals for Performance Change (percentage points)							
-50% 0 +50%				Statistically Significant?	Lower Bound	Observed	Upper Bound
Difference: 				YES	2.0	7.4	12.9

*Spray Guns/Gun Cleaning

(C5) Is all paint spray gun cleaning done with a fully enclosed spray gun washer or in a manner that avoids creating a mist of solvent?



Used for Facility Score: Compliance, EBPI


Confidence Intervals (% with Yes Response)					Counts of Responses	
50%	Lower Bound	Observed	Upper Bound		Yes	All
Baseline: 	80.6%	85.8%	89.7%		133	155
Follow-up: 	83.1%	88.2%	91.9%		127	144

Confidence Intervals for Performance Change (percentage points)							
-50% 0 +50%				Statistically Significant?	Lower Bound	Observed	Upper Bound
Difference: 				no	-4.1	2.4	8.9

(I6b) Do they have only compliant spray guns, based on the requirements for 6H, available for use at this time?



Used for Facility Score: Compliance, EBPI

Confidence Intervals (% with Yes Response)					Counts of Responses	
50%	Lower Bound	Observed	Upper Bound		Yes	All
Baseline: 	51.6%	58.1%	64.3%		90	155
Follow-up: 	60.3%	67.5%	73.9%		83	123

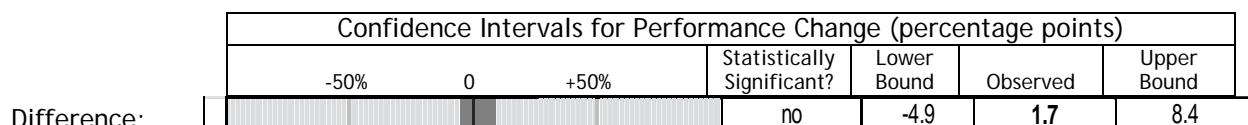
Confidence Intervals for Performance Change (percentage points)							
-50% 0 +50%				Statistically Significant?	Lower Bound	Observed	Upper Bound
Difference: 				no	0.0	9.4	18.9

*Paint Stripping

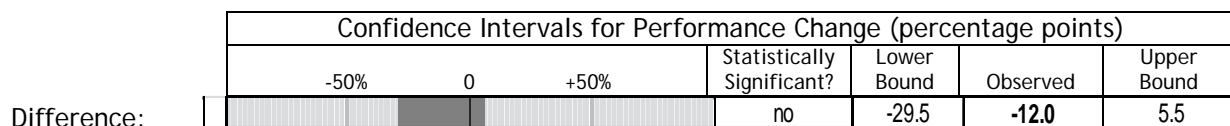
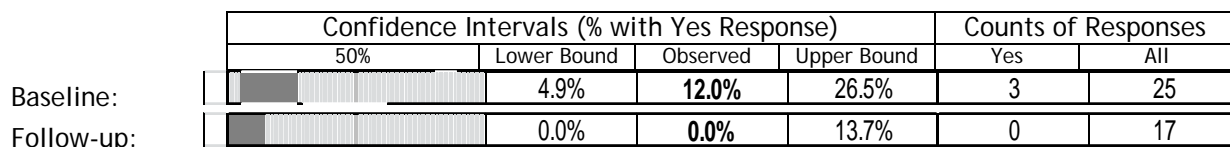
(C6a) Are all paint stripping tasks done without the use of chemical products?² FACILITY CHARACTERISTIC

Confidence Intervals (% with Yes Response)					Counts of Responses	
50%	Lower Bound	Observed	Upper Bound		Yes	All
Baseline: 	80.1%	85.3%	89.3%		133	156
Follow-up: 	81.8%	87.0%	90.8%		127	146

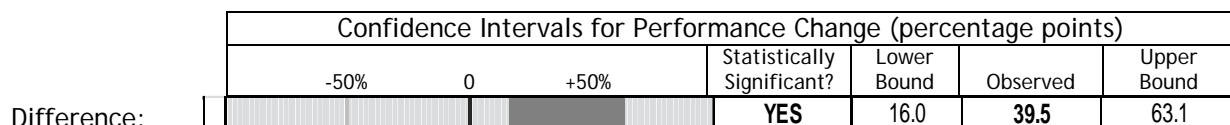
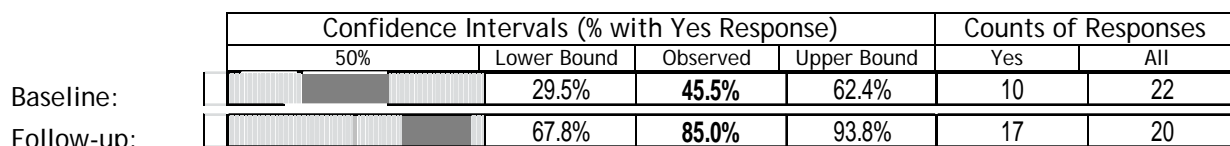
² Question reworded so yes is the preferred answer. Original language: Do you use chemical products for paint stripping tasks?



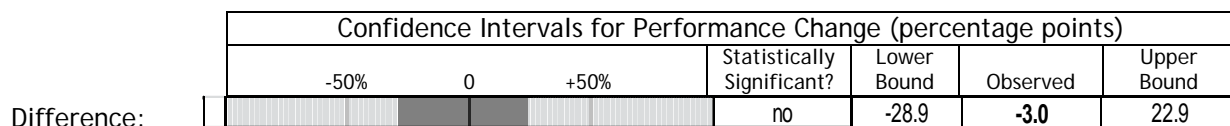
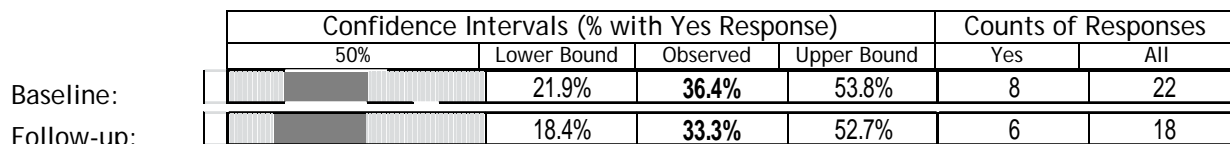
(C6b) Do none of the chemical products you use for paint stripping contain Methylene Chloride?³



(C7a) Do you have records relating to your shop's use of paint stripping products containing MeCl?
Used for Facility Score: Compliance, EBPI






(C8a) Does your shop have a minimization plan for use of MeCl?
Used for Facility Score: Compliance, EBPI





³ Question reworded so yes is the preferred answer. Original language: Do any of the chemical products you use for paint stripping contain Methylene Chloride?


(I8a) Does no chemical paint stripping occur in the shop?⁴ FACILITY CHARACTERISTIC

		Confidence Intervals (% with Yes Response)			Counts of Responses		
		50%	Lower Bound	Observed	Upper Bound	Yes	All
Baseline:		78.6%	84.0%	88.1%	131	156	
Follow-up:		82.4%	87.6%	91.3%	127	145	

Confidence Intervals for Performance Change (percentage points)						
-50%	0	+50%	Statistically Significant?	Lower Bound	Observed	Upper Bound
Difference:			no	-3.1	3.6	10.3



(I8b) Do none of the {chemical paint stripping materials} contain MeCl?⁵
Used for Facility Score: EBPI


		Confidence Intervals (% with Yes Response)			Counts of Responses		
		50%	Lower Bound	Observed	Upper Bound	Yes	All
Baseline:			7.1%	15.4%	30.2%	4	26
Follow-up:			3.4%	10.0%	26.1%	2	20

Confidence Intervals for Performance Change (percentage points)						
-50%	0	+50%	Statistically Significant?	Lower Bound	Observed	Upper Bound
Difference:			no	-24.6	-5.4	13.8

*Paint Formulation/Documentation

(C9) Does your shop have Material Safety Data Sheets (MSDS) and coating formulation data supplied by the manufacturer for ALL the solvents and coatings that you use?
Used for Facility Score: EBPI



		Confidence Intervals (% with Yes Response)			Counts of Responses		
		50%	Lower Bound	Observed	Upper Bound	Yes	All
Baseline:		71.5%	77.4%	82.4%	120	155	
Follow-up:		77.4%	83.1%	87.6%	118	142	


Confidence Intervals for Performance Change (percentage points)						
-50%	0	+50%	Statistically Significant?	Lower Bound	Observed	Upper Bound
Difference:			no	-1.9	5.7	13.3

⁴ Question reworded so yes is the preferred answer. Original language: Does chemical paint stripping occur in the shop?



⁵ Question reworded so yes is the preferred answer. Original language: Do they {chemical paint stripping materials} contain MeCl?


(C10a) Do none of the coatings used by your shop contain any of the following hazardous air pollutants: chromium, lead, cadmium, nickel, or manganese (includes compounds of these metals)?⁶
FACILITY CHARACTERISTIC

	Confidence Intervals (% with Yes Response)				Counts of Responses	
	50%	Lower Bound	Observed	Upper Bound	Yes	All
Baseline:		25.9%	31.6%	37.9%	49	155
Follow-up:		24.6%	30.3%	36.8%	44	145



	Confidence Intervals for Performance Change (percentage points)						
	-50%	0	+50%	Statistically Significant?	Lower Bound	Observed	Upper Bound
Difference:				no	-10.0	-1.3	7.4


(C11) Before this visit, did you know you are affected by the new EPA rule that affects autobody shops and other small paint shops? FACILITY CHARACTERISTIC

	Confidence Intervals (% with Yes Response)				Counts of Responses	
	50%	Lower Bound	Observed	Upper Bound	Yes	All
Baseline:		59.0%	65.4%	71.2%	102	156
Follow-up:		85.6%	90.3%	93.6%	131	145

	Confidence Intervals for Performance Change (percentage points)						
	-50%	0	+50%	Statistically Significant?	Lower Bound	Observed	Upper Bound
Difference:				YES	17.5	25.0	32.4



(C12a) Are you aware that autobody shops may be able to petition out of new requirements by changing the paints they use? FACILITY CHARACTERISTIC


	Confidence Intervals (% with Yes Response)				Counts of Responses	
	50%	Lower Bound	Observed	Upper Bound	Yes	All
Baseline:		14.6%	19.2%	24.9%	29	151
Follow-up:		30.8%	37.1%	43.8%	53	143

	Confidence Intervals for Performance Change (percentage points)						
	-50%	0	+50%	Statistically Significant?	Lower Bound	Observed	Upper Bound
Difference:				YES	9.4	17.9	26.3


⁶ Question reworded so yes is the preferred answer. Original language: Do the coatings used by your shop contain any of the following hazardous air pollutants: chromium, lead, cadmium, nickel, or manganese (includes compounds of these metals)?

(C13a) Have you submitted an initial notification report form to USEPA and the state, where required?
 Used for Facility Score: Compliance, EBPI

	Confidence Intervals (% with Yes Response)				Counts of Responses	
	50%	Lower Bound	Observed	Upper Bound	Yes	All
Baseline:		52.5%	59.0%	65.1%	92	156
Follow-up:		65.2%	71.7%	77.5%	99	138


	Confidence Intervals for Performance Change (percentage points)					
	-50%	0	+50%	Statistically Significant?	Lower Bound	Upper Bound
Difference:				YES	3.8	21.7

(C13b) Have you submitted a notification of compliance status form (due Jan 10, 2011) to USEPA and the state, where required? **[Follow-up Only]**


	Confidence Intervals (% with Yes Response)				Counts of Responses	
	50%	Lower Bound	Observed	Upper Bound	Yes	All
Follow-up:		63.4%	70.0%	75.9%	98	140

Hazardous Waste [ALL Baseline Only]


(D1) Do you understand what you are supposed to do with each of the wastes generated by your shop?

	Confidence Intervals (% with Yes Response)				Counts of Responses	
	50%	Lower Bound	Observed	Upper Bound	Yes	All
		91.2%	94.9%	97.0%	148	156

(D2) Have you identified all of your facility's hazardous wastes?


	Confidence Intervals (% with Yes Response)				Counts of Responses	
	50%	Lower Bound	Observed	Upper Bound	Yes	All
		76.1%	81.7%	86.2%	125	153

(D5) Are they using all proper disposal methods at this time?


	Confidence Intervals (% with Yes Response)				Counts of Responses	
	50%	Lower Bound	Observed	Upper Bound	Yes	All
		39.1%	45.5%	52.0%	70	154

Wastewater [ALL Baseline Only]

(E1) Are none of your motor vehicle service liquids (solvents, oils, antifreeze, car wash water, floor washing, etc) or shop wastewater discharged through a utility sink, toilet, unsealed floor drain, or out on the ground?⁷

	Confidence Intervals (% with Yes Response)				Counts of Responses	
	50%	Lower Bound	Observed	Upper Bound	Yes	All
		20.7%	26.0%	32.1%	40	154


(E2f) If you have any liquids going to municipal sewer or a holding tank that is later transported to POTW, have the POTW or municipal authorities been notified of the motor vehicle service liquids or wastewater in your discharge?

	Confidence Intervals (% with Yes Response)				Counts of Responses	
	50%	Lower Bound	Observed	Upper Bound	Yes	All
		41.6%	50.0%	58.4%	46	92

(E3) Are they using all proper liquid disposal methods at this time?


	Confidence Intervals (% with Yes Response)	Counts of Responses
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⁷ Question reworded so yes is the preferred answer. Original wording: Are you discharging any of your motor vehicle service liquids (solvents, oils, antifreeze, car wash water, floor washing, etc) or shop wastewater through a utility sink, toilet, unsealed floor drain, or out on the ground?

	50%	Lower Bound	Observed	Upper Bound	Yes	All
Baseline:		54.7%	62.7%	70.1%	64	102


Pollution Prevention [Baseline Only]

(F1a) In the past 3 years, have you taken any of the following actions to reduce toxics?

	Confidence Intervals (% with Yes Response)				Counts of Responses	
	50%	Lower Bound	Observed	Upper Bound	Yes	All
Baseline:		88.6%	93.1%	95.9%	122	131

Energy Efficiency [Baseline Only]

(G1a) In the past 3 years, have you taken any of the following actions to minimize energy use in your shop?

	Confidence Intervals (% with Yes Response)				Counts of Responses	
	50%	Lower Bound	Observed	Upper Bound	Yes	All
Baseline:		85.4%	90.4%	93.7%	122	135