

## FINAL MEMORANDUM

Date: **June 8, 2021**

To: **Zac Adelman, LADCO**

From: **John Grant, Lynsey Parker, Paul Kerns, Lit Chan**

Subject: **Task 6: Evaluation of LADCO Product Formulations for Architectural and Industrial-Maintenance (AIM) Coatings and Consumer Products Focused Survey**

### INTRODUCTION

This memorandum presents the results of the focused survey which was performed to compile and summarize information on industrial practices for architectural and industrial maintenance (AIM) coatings and consumer/commercial product marketing and distribution. This task is the first component of Task 6: "*Evaluation of LADCO Product Formulations for Architectural and Industrial-Maintenance (AIM) Coatings and Consumer Products*" and a necessary step to estimating potential emission reductions that account for existing practices related to VOC controls, product distribution, and regional differences in product formulation standards. Five interviews were performed. The interviewees were comprised of one governmental representative and four representatives from three national trade associations. The organizations represented are described in more detail in Appendix B and summarized here:

1. Ozone Transport Commission (OTC)<sup>1</sup> - a multi-state organization created under the Clean Air Act responsible for advising EPA on transport issues and for developing and implementing regional solutions to the ground-level ozone problem in the Northeast and Mid-Atlantic regions.
2. The American Coatings Association (ACA)<sup>2</sup> - represents manufacturers, raw materials suppliers, distributors, and technical professionals in the paint and coatings industry.
3. The Household and Commercial Products Association (HCPA)<sup>3</sup> - represents companies that make and sell \$180 billion annually of products used for cleaning, protecting, maintaining, and disinfecting in homes and commercial environments.
4. The Personal Care Products Council (PCPC)<sup>4</sup> - is the leading national trade association representing cosmetics and personal care products companies and represent more than 90% of the U.S. beauty industry.

The interviews were conducted by Ramboll staff: Paul Kerns, Lit Chan and John Grant in April and May 2021. The information gleaned from the interviews gave a broad overview of industry practices and highlighted important distinctions between national, regional and

---

<sup>1</sup> <https://otcair.org/>

<sup>2</sup> <https://www.paint.org/about/about-aca/about-us/>

<sup>3</sup> <https://www.thehcpa.org/about-us/>

<sup>4</sup> <https://www.personalcarecouncil.org/about-us/>

local scale manufacturers and their product formulations in terms of compliance with existing regulatory frameworks. The information was generally qualitative in nature and will be a valuable foundational tool to help guide development of a quantitative understanding of industry practices and help shape potential strategies for effective VOC reductions from these sectors.

## BACKGROUND

Nonpoint sources account for a majority of VOC emissions in the LADCO region. According to the 2016v1 modeling platform, in 2016, 82% of nonpoint source VOC emissions were from solvent utilization. Common chemicals used in residential or business settings can have a significant impact on regional air quality. Contributing products can include degreasing solvents, cleaning materials, lawn and garden chemicals, paints, lubricants, personal care, household, or wood products to name a few. Many of these products are formulated with VOCs or other compounds which are considered hazardous to human health and welfare. AIM and consumer/commercial products are subsets of volatile chemical products (VCP) and will have separate, identifiable control options from other VCP sub-sectors.

In addition to Federal regulations, a number of State and regional air quality agencies have adopted regulations for VOC-containing coatings and volatile consumer/commercial products. To achieve lower emissions, agencies have targeted maximum feasible VOC emissions reductions while ensuring that the regulations are both technologically and commercially feasible. The control strategy for such product-based standards is generally to require reduction or elimination of VOCs from the product over a period of time. For this type of reformulation standard, the regulation may be technology-forcing (i.e., the prescribed formulation has not been developed or proven), requiring a feasibility demonstration for both the standard and a timetable for complying with the standard. In other cases, it may be more expeditious for the agency to consider adopting already-demonstrated standards from other jurisdictions. For example, California (CARB)<sup>5</sup> and Ozone Transport Commission (OTC) states have adopted a large number of existing products standards for product types covered under LADCO's Solvent Utilization category emissions. These VOC control regulations, especially OTC-based VOC limits for various AIM and volatile consumer/commercial products, have also been adopted by other non-OTC states, for example, Illinois, Ohio, Indiana, Utah, and Colorado.

## SUMMARY OF APPLICABLE LADCO STATE REGULATION STATUS

In previous work, Ramboll compiled, and LADCO member states reviewed and commented on, local and state regulations applicable to anthropogenic sources responsible for the majority of NO<sub>x</sub> and VOC emissions in the LADCO region (Ramboll, 2021). Table 1 presents excerpted rows that are applicable to the source categories relevant for the current work effort which are: (1) Architectural coatings, (2) Surface Coatings and (3) Solvents: Consumer, Commercial, Household, Personal Care Products.

State/local regulations which incorporated Federal regulations by reference, and that do not require emissions control beyond Federal requirements were not included.

---

<sup>5</sup> <https://ww2.arb.ca.gov/>

LADCO state regulations listed in Table 1 are indicative of control requirements that are more stringent than Federal requirements. In some cases, LADCO states have adopted OTC model rule regulations. Note that OTC has different phases of model rule regulations for consumer products (the most current is Phase V<sup>6</sup>). Ramboll (2021) noted that the review of the existing LADCO states' regulations revealed that on-the-books regulations largely represent the OTC 2005/2009 model rules (Phase II). The updated OTC rules for 2014/2019 represents emission reduction that could be realized with regulation updates. For example, Ohio adopted the 2006 OTC model rule Phase II for Consumer Products, but there are more recent OTC model rules for Consumer Products that could result in greater emission reductions.

---

<sup>6</sup> [https://otcair.org/upload/Documents/Meeting%20Materials/OTC\\_CP\\_Model\\_Rule\\_Phase\\_V\\_Draft\\_04172018.pdf](https://otcair.org/upload/Documents/Meeting%20Materials/OTC_CP_Model_Rule_Phase_V_Draft_04172018.pdf)

**Table 1. State and Local Regulations by LADCO-wide emissions inventory groupings, organized from largest to smallest VOC contribution<sup>7</sup>**

Category	Percent of 2016 VOC Emissions LADCO-wide	On-the-Books / On-the-Way Regulations					
		Michigan	Illinois	Indiana	Minnesota	Ohio <sup>8</sup>	Wisconsin
<b>Solvents: Consumer, Commercial, Household, Personal Care Products</b>	14.5%	Part 6. Emission Limitation and Prohibitions – Existing and New Sources of Volatile Organic Compounds Emissions ( 336.1660, 336.1661) <sup>9</sup>	Title 35, Part 223: Subpart B: Consumer and Commercial Products <sup>10</sup>	Title 326, Article 8-15 (Standards for Consumer and Commercial Products) <sup>11</sup>		Chapter 3745-112, Consumer Products <sup>12</sup>  based on 2006 OTC model rule Phase II (statewide)	
<b>Surface Coating</b>	5.7%	Part 6 and 7. Emission Limitation and Prohibitions – Existing and New Sources of Volatile Organic Compounds Emissions (336.1610,	Title 35, Parts 218 and 219: Subpart F: Coating Operations <sup>14, 15</sup>	Title 326, Article 8-14 Volatile Organic Compound Rules (Standards for AIM Coatings) <sup>16</sup>		Chapter 3745-21, Carbon Monoxide, Photochemically Reactive Materials, Hydrocarbons, and Related Materials Standards <sup>17</sup> (geographic applicability varies by control	Chapter NR 421 Control of Organic Compound Emissions from Chemical, Coatings And Rubber Products Manufacturing <sup>18</sup>

<sup>7</sup> 2016v1 modeling platform for calendar year 2016 (v2016fh)

<sup>8</sup> Ohio EPA has provided information on the geographical scope of Ohio regulations.

<sup>9</sup> [https://dtmb.state.mi.us/ARS\\_Public/AdminCode/DownloadAdminCodeFile?FileName=1608\\_2016-003EQ\\_AdminCode.pdf](https://dtmb.state.mi.us/ARS_Public/AdminCode/DownloadAdminCodeFile?FileName=1608_2016-003EQ_AdminCode.pdf)

<sup>10</sup> <http://www.ilga.gov/commission/jcar/admincode/035/03500223sections.html>

<sup>11</sup> <http://www.in.gov/legislative/iac/T03260/A00080.PDF>

<sup>12</sup> [https://www.epa.ohio.gov/dapc/regs/3745\\_112](https://www.epa.ohio.gov/dapc/regs/3745_112)

<sup>14</sup> <https://pcb.illinois.gov/documents/dsweb/Get/Document-11930/>

<sup>15</sup> <https://pcb.illinois.gov/documents/dsweb/Get/Document-11932/>

<sup>16</sup> <http://www.in.gov/legislative/iac/T03260/A00080.PDF>

<sup>17</sup> [https://www.epa.ohio.gov/dapc/regs/3745\\_21](https://www.epa.ohio.gov/dapc/regs/3745_21)

<sup>18</sup> [https://docs.legis.wisconsin.gov/code/admin\\_code/nr/400/421](https://docs.legis.wisconsin.gov/code/admin_code/nr/400/421)

Category	Percent of 2016 VOC Emissions LADCO-wide	On-the-Books /On-the-Way Regulations					
		336.1620, 336.1621, 336.1632) <sup>13</sup>				technique guideline [CTG])	Chapter NR 422 Control of Organic Compound Emissions from Surface Coating, Printing And Asphalt Surfacing Operations <sup>19</sup>
<b>Architectural Coatings</b>	3.5%		Title 35, Part 223, Subpart C, Architectural and Industrial Maintenance Coatings <sup>20</sup>  Title 35, Parts 218 and 219, Subpart X: Construction <sup>21, 22</sup>	Title 326, Article 8-14 Volatile Organic Compound Rules (Standards for AIM Coatings) <sup>23</sup>		Chapter 3745-113, AIM Coatings <sup>24</sup> based on 2001 OTC model rule (statewide)	Chapter 422.15 Control of Organic Compound Emissions From Surface Coating, Printing And Asphalt Surfacing Operations <sup>25</sup>

<sup>13</sup> [https://dtmb.state.mi.us/ARS\\_Public/AdminCode/DownloadAdminCodeFile?FileName=1608\\_2016-003EQ\\_AdminCode.pdf](https://dtmb.state.mi.us/ARS_Public/AdminCode/DownloadAdminCodeFile?FileName=1608_2016-003EQ_AdminCode.pdf)

<sup>19</sup> [https://docs.legis.wisconsin.gov/code/admin\\_code/nr/400/422](https://docs.legis.wisconsin.gov/code/admin_code/nr/400/422)

<sup>20</sup> <https://casetext.com/regulation/illinois-administrative-code/title-35-environmental-protection/part-223-standards-and-limitations-for-organic-material-emissions-for-area-sources/subpart-c-architectural-and-industrial-maintenance-coatings>

<sup>21</sup> <https://pcb.illinois.gov/documents/dsweb/Get/Document-11930/>

<sup>22</sup> <https://pcb.illinois.gov/documents/dsweb/Get/Document-11932/>

<sup>23</sup> <http://www.in.gov/legislative/iac/T03260/A00080.PDF>

<sup>24</sup> [https://www.epa.ohio.gov/dapc/regs/3745\\_113](https://www.epa.ohio.gov/dapc/regs/3745_113)

<sup>25</sup> [https://docs.legis.wisconsin.gov/code/admin\\_code/nr/400/422](https://docs.legis.wisconsin.gov/code/admin_code/nr/400/422)

## SURVEY QUESTIONS, INTERVIEWS AND RESULTS

Ramboll conducted five interviews in April and May 2021 which are listed in Table 2. The survey focused on the questions listed below:

- How are products distributed that must meet formulation standards which differ by state/region?
- In the case that separate formulations are distributed for different states/regions to conform to different state/region formulation requirements, what are typical industrial practices related to formulations and what is the basis of distribution by geographic area?
- Are there any product type exemptions (e.g., specific product type, or small business entity) that affect product formulations and/or distribution patterns? What product classifications are affected?
- Describe potential changes to product formulations, product distribution, and costs associated with potential adoption of more stringent regulations in the LADCO states.

**Table 2. List of Interviews**

Interviewers <sup>26</sup>	Interviewee	Organization	Position	Date of Interview
Paul Kerns, Lit Chan, John Grant	Lisa Rector	OTC <sup>27</sup>	Stationary & Area Sources	4/27/2021
Paul Kerns, Lit Chan, John Grant	Nicholas Georges	HCPA <sup>28</sup>	Vice President, Scientific & International Affairs	4/28/2021
Paul Kerns, Lit Chan, John Grant	David Darling P.E., CAE	ACA <sup>29</sup>	VP, Health, Safety and Environmental Affairs	4/30/2021
Paul Kerns, Lit Chan	Joe Yost	HCPA <sup>30</sup>	HCPA - Vice President, Strategic Alliances & Industry Relations	5/7/2021
Paul Kerns	Mike Thompson	PCPC <sup>31</sup>	Sr. Vice President, Government Affairs	5/27/2021

Detailed survey responses are provided in Appendix A; below we describe some key takeaways from the interviews and synthesize consistent themes that were discussed by the interviewees.

<sup>26</sup> All Interviewers are Ramboll staff

<sup>27</sup> Ozone Transport Commission

<sup>28</sup> Household and Commercial Products Association

<sup>29</sup> American Coatings Association

<sup>30</sup> Household and Commercial Products Association

<sup>31</sup> Personal Care Products Council

### **1. A desire for enhanced regulatory consistency in VOC regulations**

The OTC and industry representatives all indicate that they would like more consistency in VOC regulations. OTC would welcome activity by EPA to update the national consumer/commercial production and AIM coating VOC regulations. They note that, AIM and consumer product Federal VOC regulations are now 20 years old. However, they note that EPA would likely only consider such a regulation if there was broad support for such a measure across the US. From OTC's perspective there seem to be separate formulations from each state. OTC also notes that Rhode Island recently rolled back their Volatile Chemical Products (VCP) VOC regulations because their retailers were losing sales to neighboring states that did not have regulations and could sell less expensive formulations. APA expressed frustration at the inconsistency of regulations and HCPA would also like to see consistency among states but notes that some adaptability is needed for regional climate differences for some products (e.g. windshield fluid); this issue is discussed below. HCPA expressed a preference for OTC rules over CARB because they felt CARB is too complicated. PCPC however, indicated that most of their manufacturers comply with CARB regulations and thought that the CARB/industry coordination had been successfully implemented.

### **2. Different impacts for national/regional/local manufacturers if LADCO states were to implement new VOC regulations – with smaller manufacturers more highly impacted**

National manufacturers that sell to big box retailers typically distribute single formulations that are nationally compliant; while no supporting data was readily available, ACA estimated that these products represent 70-80% of the market, and HCPA estimated that these products represent 80-90% of their market. Similarly, PCPC noted that a vast majority of products are distributed nationally and are already nationally compliant. Nationally distributed products would see little change in formulation with new LADCO state regulations since they already meet the most stringent regulations by any state (typically the CARB standards). Regional manufacturers typically produce product formulations on a state-by-state basis and therefore would be impacted by new regulations. Likewise, small/local manufacturers distribute products on a local basis and would also be impacted by new regulations. All trade association representatives interviewed highlighted the issue that the smaller/local manufacturers would be most impacted by new LADCO state regulations and emphasized the need for a phase-in period which is discussed below.

### **3. The importance of government/industry dialogue, sufficient phase-in periods for new regulations and the ability to sell existing products**

A reoccurring theme was the need for good communication and sufficient time for manufacturers and distribution networks to plan and adjust to new regulations. PCPC felt that there has been good coordination between CARB and the PCPC industry and successful implementation of VOC regulations. They noted that the discussions started early and informally and evolved into formal regulations. Per APA, sell-through provisions and other provisions and languages must be clear and the more stringent the regulations, the more time is needed to adjust.

### **4. Climate considerations play an important role for some product formulations and make nationally consistent regulations impractical**

Climate considerations play a role in formulations for some products and industries. For example, windshield wiper fluid formulation must be different in Florida and Maine due to

freezing considerations. In additions, marine coatings and outside architectural coatings formulations change to higher VOCs due to colder weather conditions and there have been some VOC regulation exemptions for these products. Nationally consistent VOC regulations for these products are not feasible.

#### **5. Online sales**

Online sales of VOC controlled products are difficult to control. Non-compliant VOC products have even been shipped to regulating agency offices in states with VOC regulations.

#### **6. Lack of quantitative data**

Data is not available to characterize the fraction of distribution by national/regional/local manufacturers. National manufacturers are likely to represent a majority of products (an ACA industry representative estimated 70-80%, an HCPA industry representative estimated 80-90%, and a PCPC representative noted that a vast majority of products are nationally distributed), regional manufacturers are likely to represent most of the remaining manufacturers, with local manufacturers only accounting for a very small share of products. The ACA industry representative indicated that a market analysis for the AIM product industry is available; more information, including TOC, sample chapter, and pricing for the market survey report "U.S. Market Analysis for the Paint & Coatings Industry (2019 – 2024)" is available from ACA's website link (<https://www.paint.org/programs-publications/publications/market-analyses/>).

## **CONCLUSIONS AND RECOMMENDATIONS**

Industry representatives who were interviewed were not strongly opposed to more VOC regulations and would welcome consistent regulations, but regional/smaller manufacturers would need sufficient time to adjust product formulations and sell existing products.

A majority of the consumer/commercial products and coatings (particularly from national scale manufacturers) are likely already compliant with CARB and/or OTC regulations; therefore, new VOC regulations for those products in LADCO states may not reduce emissions from these sectors as dramatically as expected. Information was not readily available to determine quantitative fractions of products that are already compliant.

Ramboll recommends developing a white paper describing potential emission reduction programs and providing total emission reduction estimates that would be achieved going from all non-compliant to all compliant products. In the white paper we recommend that discussion of the potential for substantially smaller emission reductions be included to provide context for potential real, achievable emission reductions. Emission reductions should be framed in the context of the focused survey results described herein which found that the geographic reach of product distribution is a primary determiner of potential emission reductions, with little to no reductions from nationally distributed products and substantial reductions from regionally and locally distributed products.

## **REFERENCES**

Ramboll 2021. Final report: control of ozone precursor emissions in the Great Lakes region. (March 2021).

**APPENDIX A: RAW SURVEY NOTES**

Government Script		OTC Responses
Introduction	I'd like to ask you a few questions about consumer and commercial product VOC regulations in your area. Do you have 10-15 minutes to provide input to this screening survey?	OTC would like to see the Federal government make an effort for more national VOC regulations. Massachusetts and Connecticut along with Rhode Island have different VOC regulations. Small state geography affects the OTC states' ability to control VOC product distribution. Rhode Island rolled back their VOC regs due to border encroachment and losing sales to next door states with less expensive formulations due to lesser VOC regulations in those states.
	Could you provide us with a brief summary of the current VOC regulations adopted by your state (or regulatory area) and any upcoming changes?	From OTC's perspective there seems to be separate formulations depending on state regs. AIM and consumer product Federal VOC regulations are now 20 years old, but there has been no unified effort by the states to pressure EPA to review and update the VOC regulations on a Federal level.
Background Questions	Does your state (or area) provide any exemptions for specific product types or for small business entities that are crucial to the success of our program? If so, why are these important?	OTC would like to see a Federal effort to review/update the national VOC regulations. It has become more difficult for OTC states to be uniform with the VOC regulations.
	In addition, LADCO is interested in understanding logistical aspects of product distribution in relation to the control requirements;	Only 5 OTC states have phase 4 rules in place. Most states have not implemented more stringent VOC regulations because there are higher priority efforts such as GHG and EJ.
Formulation/ Distribution Questions	Such as, how manufacturers are handling distribution logistics for product formulations meeting your state (or area's) VOC regulations. To what extent do you think formulations have lower VOC content to because of your state's (or area's) VOC regulations?	Product formulations appear to be formulated differently for each OTC state. OTC has met with Feds in regard to updating the VOC regulations but they were not very interested in making any changes. Enforcement of VOC regulations are limited with online products sales.
	Are there particular product classifications that are more affected than others by your state's/area's VOC regulations?	There are some exemptions to the Marine industry for many of the boat building OTC states. NY and other OTC states do not have marine exemptions.
	In your experience do you think that there would be substantial changes to product formulations, product distribution or additional costs in adopting these more stringent regulations in the LADCO states?	Per OTC, the formulations of products are manufactured by the OEMs to meet a state's VOC standards.

<b>Trade Association Script</b>		<b>Responses: David Darling P.E., CAE (ACA)</b>
Introduction	I'd like to ask you a few questions about consumer and commercial products VOC regulations and how your organization assists your members to meet these regulations. Do you have 15 minutes to provide input to this screening survey?	David was happy to help us with the survey for LADCO. He noted that there are different requirements in different areas which is not ideal for manufacturers.
Background Questions	Could you provide us with a brief summary of the regulatory landscape for VOC regulations that affect your members and how your organization assists members in complying with these regulations?	Suggested that LADCO go the same route as OTC in a phase to phase for consistency. Big box retailers specify national formulations. Regional manufacturers like Sherwin Williams can tailor products to state specific regs.
	Does your organization assist members to provide any information on state-by-state exemptions for specific product types or for small business entities that are crucial to the success of your members? If so, how do you provide that information to your members?	Marine coatings and outside architectural coatings formulations change to higher VOCs due to colder weather conditions. Low VOC formulations can be very problematic due to weather especially in the north.
Formulation/ Distribution Questions	In addition, LADCO is interested in understanding logistical aspects of product distribution in relation to the control requirements that your members (large and small manufacturers) have adopted to meet VOC state and national regulations;	If LADCO increases reg stringency, that would affect regional and smaller manufacturers/distributors, but no national distributors?
	Such as, how do manufacturers handle distribution logistics for product formulations that must meet different VOC regulations for different states (or areas).	Sell-through provisions and other provisions and languages have to be clear. Time is helpful to allow manufacturers to make adjustments. More stringent regs require more adjustment time.
	In the case that separate formulations are distributed for different states to conform to different state's formulation requirements, what are typical industrial practices related to formulations and what is the basis of distribution by geographic area?	Smaller regional manufacturers will be very impacted by more stringent regs and will have to reformulate. National/big box manufacturers would see little change, providing estimated 70-80% nationally compliant products. Regional manufacturers need time to make adjustments to both formulations and control distribution. Should have sell-through provision so that all old products have at least 3 year shelf sell life.
	Are there any product type exemptions (e.g., specific product type, or small business entity) that affect product formulations and/or distribution patterns? If so, what product classifications are affected?	Consistent policies and time for adjustment and planning should be key considerations for future changes to VOC regulations.
	To what extent do you think stringent low VOC formulation requirements in specific states (for example California and Connecticut) have lowered VOC content in areas where there are not stringent low VOC formulations requirements?	State / county specific regs such as those in Utah (seven counties) and Colorado have caused the industry many issues. Prefers that states be regionally consistent when adopting regs.
	In your experience do you think that there would be substantial changes to product formulations, product distribution or additional costs in adopting these more stringent regulations in the LADCO states?	David will follow-up with a link to members of an industry study.

<b>Trade Association Script</b>		<b>Responses: Nicholas Georges (HCPA)</b>
Introduction	I'd like to ask you a few questions about consumer and commercial products VOC regulations and how your organization assists your members to meet these regulations. Do you have 15 minutes to provide input to this screening survey?	Had a meeting with Michigan State on VOC regulations recently. One set of VOC regulations across multi-state regions would be helpful, but allowance for differing requirements for formulations by climate is necessary for some products like windshield washer fluid.
Background Questions	Could you provide us with a brief summary of the regulatory landscape for VOC regulations that affect your members and how your organization assists members in complying with these regulations?;	Three types of approaches: 1. Some OEMs make formulations for all 50 states. The 50 state products typically meet the most stringent regulations. Estimated that 50 state products represent 80-90% of all products sold, but has no supporting data. 2. Regional OEMs (ex: brake cleaner product) produce product formulations on a state-by-state basis. Typical these are distributed via distribution channels and carry multiple formulations. 3. Small/local OEM manufacturers formulations for each state on a local basis. Formulations adhere to local requirements.
	Does your organization assist members to provide any information on state-by-state exemptions for specific product types or for small business entities that are crucial to the success of your members? If so, how do you provide that information to your members?	Industry is used to the current approach.
Formulation/ Distribution Questions	In addition, LADCO is interested in understanding logistical aspects of product distribution in relation to the control requirements that your members (large and small manufacturers) have adopted to meet VOC state and national regulations;	There would be some benefits to implementing more stringent regs, but benefits would be primarily for regional and local distributors.
	Such as, how do manufacturers handle distribution logistics for product formulations that must meet different VOC regulations for different states (or areas).	Third party online sales can have some issues with distribution.
	In the case that separate formulations are distributed for different states to conform to different state's formulation requirements, what are typical industrial practices related to formulations and what is the basis of distribution by geographic area?	No information available.
	Are there any product type exemptions (e.g., specific product type, or small business entity) that affect product formulations and/or distribution patterns? If so, what product classifications are affected?	No level of detail on how OEMs at all levels of distribution of specific products.
	To what extent do you think stringent low VOC formulation requirements in specific states (for example California and Connecticut) have lowered VOC content in areas where there are not stringent low VOC formulations requirements?	Membership list is online for review.
	In your experience do you think that there would be substantial changes to product formulations, product distribution or additional costs in adopting these more stringent regulations in the LADCO states?	No information available.

<b>Trade Association Script</b>		<b>Responses: Joe Yost (HCPA)</b>
Introduction	I'd like to ask you a few questions about consumer and commercial products VOC regulations and how your organization assists your members to meet these regulations. Do you have 15 minutes to provide input to this screening survey?	
Background Questions	Could you provide us with a brief summary of the regulatory landscape for VOC regulations that affect your members and how your organization assists members in complying with these regulations?	We represent about 230 manufacturers of consumer commercial products. From Joe's experience the OTC rules have helped. There is a desire for consistency of all VOC related products.
	Does your organization assist members to provide any information on state-by-state exemptions for specific product types or for small business entities that are crucial to the success of your members? If so, how do you provide that information to your members?	No information available.
Formulation/ Distribution Questions	In addition, LADCO is interested in understanding logistical aspects of product distribution in relation to the control requirements that your members (large and small manufacturers) have adopted to meet VOC state and national regulations;	He would highly recommend adopting more stringent, regionally consistent, OTC regulations for consumer products. His organization does not represent many small local or regional companies, and they would have the toughest time to meet more stringent requirements. A minimum of one year is needed to make adjustments for distribution compliance.
	Such as, how do manufacturers handle distribution logistics for product formulations that must meet different VOC regulations for different states (or areas).	Large companies such as Clorox, Proctor and Gamble, etc. have national formulations, while smaller regional companies will have to change formulations to meet more stringent regs.
	In the case that separate formulations are distributed for different states to conform to different state's formulation requirements, what are typical industrial practices related to formulations and what is the basis of distribution by geographic area?	Many personal products are not part of HCPA. If you jump to CARB regulations, then the small companies in individual states would be hard pressed to make new formulations if at all.
	Are there any product type exemptions (e.g., specific product type, or small business entity) that affect product formulations and/or distribution patterns? If so, what product classifications are affected?	Windshield fluid is a good example; 35% alcohol for OTC states, 25% for California and 1% in Southern California which is very challenging for manufacturers with product distribution.

<b>Trade Association Script</b>		<b>Responses: Joe Yost (HCPA)</b>
	To what extent do you think stringent low VOC formulation requirements in specific states (for example California and Connecticut) have lowered VOC content in areas where there are not stringent low VOC formulations requirements?	Not quantifiable, but a majority of companies distribute consumer products on a national basis and they would not be affected. The regional and small companies would be required to change formulations.
	In your experience do you think that there would be substantial changes to product formulations, product distribution or additional costs in adopting these more stringent regulations in the LADCO states?	No information available.

<b>Trade Association Script</b>		<b>Responses: Mike Thompson (PCPC)</b>
Introduction	I'd like to ask you a few questions about consumer and commercial products VOC regulations and how your organization assists your members to meet these regulations. Do you have 15 minutes to provide input to this screening survey?	No information available.
Background Questions	Could you provide us with a brief summary of the regulatory landscape for VOC regulations that affect your members and how your organization assists members in complying with these regulations?;	VOC has a history of 30-40 years of regulations. The early regulations were less challenging, and now it is more difficult. But, because CARB is the leader nationally, and worldwide in environmental protection and in regard to VOCs, most of the personal care manufacturers follow the CARB standards in production. Mike explained that CARB's first step to making any regulatory changes is informal with industry but then the final process is very formal. But, there is a real benefit to the CARB process, where there is an informal communication process between government and industry process regarding regulatory change and allowances to have discussions if there is a problem with production changes by the industry to meet a new standard.
	Does your organization assist members to provide any information on state-by-state exemptions for specific product types or for small business entities that are crucial to the success of your members? If so, how do you provide that information to your members?	Mike indicated in his industry there are leaders and laggards, but since the pandemic, manufacturers are adapting to a more positive position and marketing their role as a responsible environmental leader. Leaders in both the PCPC and HCPA industries are working towards a more collaborative effort on to address environmental concerns for industry. In the personal care industry, most of the business is done more by companies that use contracted OEM manufacturers that play a key role in guiding private label personal care brands and companies to meet the CARB standards.

Trade Association Script		Responses: Mike Thompson (PCPC)
Formulation/ Distribution Questions	In addition, LADCO is interested in understanding logistical aspects of product distribution in relation to the control requirements that your members (large and small manufacturers) have adopted to meet VOC state and national regulations;	California is the leader nationally and internationally in regulations and Mike actually prefers that any changes in VOC regulations would be consistent with the CARB regulations and that they not take only parts of CARB regulations if they accept those standards. He said that when they only take part of the CARB regulations then they do not include industry kick-outs and allowance for new creative and innovative strategies that might actually be better for the environment.
	Such as, how do manufacturers handle distribution logistics for product formulations that must meet different VOC regulations for different states (or areas).	The large retailers are demanding products meet CARB standards.
	In the case that separate formulations are distributed for different states to conform to different state's formulation requirements, what are typical industrial practices related to formulations and what is the basis of distribution by geographic area?	Only very small companies in the personal care industry are affected by not using VOC formulas required by CARB, and they are small companies that buy unique formulas for the nail industry.
	Are there any product type exemptions (e.g., specific product type, or small business entity) that affect product formulations and/or distribution patterns? If so, what product classifications are affected?	The personal care industry was instrumental in working with CARB on alternative CARB allowances or kickouts for products that cannot meet the standards.
	To what extent do you think stringent low VOC formulation requirements in specific states (for example California and Connecticut) have lowered VOC content in areas where there are not stringent low VOC formulations requirements?	CARB policy allowed companies to be creative and innovative in producing personal care aerosol products to meet CARB requirements.
	In your experience do you think that there would be substantial changes to product formulations, product distribution or additional costs in adopting these more stringent regulations in the LADCO states?	Collaborative efforts within the personal care industry has been the key to successful VOC changes, which included open discussions between industry and regulators, time to adjust to new regulations and communication before, during and after regulations have been adopted.
	1. In the case of a state like Rhode Island, before it had rescinded its VOC regs, was it primarily cost or quality concerns that drove buyers to buy out-of-state, non-compliant products?	Mike is originally from the NE US and familiar with situations like Rhode Island. He used personal care products such as Sunscreen that are still be diverted to restricted VOC markets and propelled by cheap prices. The personal care industry reacts to the big box stores and retailers. As he put it, if you want to sell Walmart and cannot offer products that meet both the CARB and NY VOC regulations, then Walmart will not even consider carrying your products.

## APPENDIX B: TRADE ASSOCIATION DETAILS

<p>APA<sup>32</sup></p>	<p>The American Coatings Association (ACA) is a voluntary, nonprofit trade association working to advance the needs of the paint and coatings industry and the professionals who work in it, including manufacturers, raw materials suppliers, distributors, and technical professionals. ACA serves as an advocate and ally for members on legislative, regulatory and judicial issues, and provides forums for the advancement and promotion of the industry through educational and professional development services.</p>
<p>HCPA<sup>33</sup></p>	<p>The Household and Commercial Products Association (HCPA) is the premier trade association representing companies that make and sell \$180 billion annually of products used for cleaning, protecting, maintaining, and disinfecting in homes and commercial environments. HCPA members employ 200,000 people in the U.S. whose work helps consumers and workers create a cleaner, healthier, and more productive life. Our mission is to protect, promote and enhance the household and commercial products industry and the consumers and workers who use our members' products</p>
<p>PCPC<sup>34</sup></p>	<p>Founded in 1894, the Personal Care Products Council (PCPC) is the leading national trade association representing cosmetics and personal care products companies and serving as the voice on scientific, legal, regulatory, legislative and international issues for the \$499.6 billion global industry. PCPC's 600 member companies represent more than 90% of the U.S. beauty industry and are some of the most beloved brands in beauty and personal care today. They manufacture, distribute and supply the vast majority of personal care products marketed in the U.S. and are global leaders committed to product safety, quality and innovation.</p>

<sup>32</sup> <https://www.paint.org/about/about-aca/about-us/>

<sup>33</sup> <https://www.thehcpa.org/about-us/>

<sup>34</sup> <https://www.personalcarecouncil.org/about-us/>