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EXECUTIVE SUMMARY

During the winter of 2016, the State of Vermont discovered widespread contamination of private drinking water supplies with **perfluorooctanoic acid** (PFOA) in Bennington County. Hundreds of drinking water wells in Bennington County contain **PFOA** at levels above Vermont Department of Health Advisory levels. Perfluorinated compounds, including PFOA, are manufactured chemicals used to make a variety of commercial and household products that resist heat and chemical reactions, and repel oil, stains, grease, and water. PFOA does not break down easily and persists in the environment for decades, especially in water. When ingested, PFOA can cause serious health effects, including liver toxicity, kidney damage, increased risk for cardiovascular disease, adverse effects on the reproductive system, immune system, infant and child development, and possibly testicular, prostate, thyroid, and kidney cancers. 

PFOA is a chemical of emerging concern, which means that it has not been regularly monitored but has the potential to enter the environment and cause adverse health impacts. Because PFOA is a chemical of emerging concern, it has been largely unregulated for decades under federal and Vermont laws that address end-of-the-pipe pollution. PFOA is just one example of the serious risks posed to human health and the environment from the approximately 85,000 chemicals in commerce. In many cases, there is insufficient toxicity information for these tens of thousands of chemicals, and harmful chemicals like PFOA are effectively invisible to the laws in place to protect public health and the environment.

Act 154 (2010) directs the Agency of Natural Resources to convene a working group (Act 154 Chemicals Working Group) to develop recommendations to close regulatory gaps related to emerging contaminants like PFOA, increase the State's ability to prevent citizens from being exposed to harmful chemicals and other toxic substances, increase public access to information about chemicals in their community, and ensure citizens harmed by releases of toxic substances have sufficient remedies under the law. The members of the Act 154 Chemicals Working Group reviewed current federal and state regulatory programs in place to address chemicals and other toxic substances and developed policy recommendations to cure regulatory gaps and other deficiencies that pose a risk to Vermonters and the environment.

Summary of Majority Recommendations

The policy recommendations summarized below were selected by a majority of the Act 154 Chemicals Working Group members after working group members assessed deficiencies in the current legal framework and policy for chemicals and toxic substances using a variety of methods, including LEAN processes. Given both the legislative mandate to develop recommendations to increase the protections in place to protect Vermonters from exposure to harmful chemicals and other toxic substances and significant time constraints, affordability and technical feasibility are largely not addressed in the majority policy recommendations. Affordability and technical feasibility are both important considerations and should be considered as part of a larger

discussion in the context of specific legislation. The majority of the Act 154 Chemicals Working Group recommends the following actions to strengthen protections for citizens:

- ❖ *Increase Transparency and Efficiency by Strengthening Recordkeeping and Reporting Requirements*
- ❖ *Increase Resources for Business and Strengthen Planning Requirements Under the Pollution Prevention Planning Program*
- ❖ *Strengthen the Ability of the Department of Health to Prevent Exposure to Harmful Chemicals that Pose a Risk to Human Health*
- ❖ *Increase Efficiency by Improving Coordination and Collaboration Among Agencies*
- ❖ *Increase Public Access to Information About Chemicals*
- ❖ *Strengthen Remedies Available to Vermonters to Address Violations of Pollution Laws and Exposure to Harmful Chemicals*
- ❖ *Restrict the Use of Specific Chemicals that Pose a Risk to Public Health*

I. INTRODUCTION

This report sets forth the Act 154 Chemicals Working Group's majority policy recommendations to strengthen the State's ability to protect citizens from exposure to harmful chemicals and toxic substances. The report also describes the process the Act 154 Chemicals Working Group underwent to develop these recommendations. Section I provides a brief overview of the toxic chemical problem and the legislature's charge to establish a working group to develop recommendations to address risks posed by harmful chemicals and toxic substances. Section II summarizes the deficiencies in the current legal framework and chemicals policy identified by the Act 154 Chemicals Working Group. Section III summarizes the majority policy recommendations developed by the Act 154 Chemicals Working Group.

The Act 154 Chemicals Working Group assessed the current framework for chemicals regulation and significant deficiencies in a variety of ways given the complex nature of the chemical problem and the broad scope of the legislative charge. For example, the Act 154 Chemicals Working Group looked broadly at the life cycle phases of chemicals to evaluate regulatory gaps, but also assessed specific regulatory program deficiencies. This report includes several Appendices that provide both summary level and more detailed information about the current chemicals regulatory landscape. In addition, we have presented similar information in different formats. The information contained in the Appendices is as follows:

- Appendix A is a list of the Act 154 Chemicals Working Group members and Agency support staff.
- Appendix B includes a diagram that demonstrates the life cycle phases of chemicals and other toxic substances and the potential pathways for entry into the environment and human exposure. In addition, a summary table of federal and state programs that address chemicals and toxic substances is included.
- The documents in Appendix C are detailed summaries of federal and state regulatory programs and databases that address chemicals and toxic substances.
- Appendix D is a detailed summary of regulatory requirements for addressing threats from chemicals of emerging concern.
- Appendix E is a summary of public information about toxic and hazardous wastes and substances and chemicals of emerging concern in Vermont.
- Appendix F is an assessment of civil remedies available to Vermont citizens that have been adversely impacted by releases of chemicals and toxic substances.
- Appendix G contains the detailed policy recommendations selected by a majority of the Act 154 Chemicals Working Group. These detailed recommendations include the specific rationale for each policy recommendation. Appendix G also includes the specific results of the policy selection process.
- Comments from working group members and the public on the majority policy recommendations are located in Appendix H.

Background

Health advocates, scientists, and environmental agencies across the country have warned for decades that we are at risk from exposure to harmful chemicals in our drinking water, the air we breathe, our food supply and the products we use in our homes.¹ There are over 109 million substances registered with the Chemical Abstract Service (CAS).² Of these, approximately 85,000 chemicals have been approved for use under the Toxic Substances Control Act (TSCA), but the **list does** not include insecticides, herbicides, rodenticides, pharmaceuticals, food additives, cosmetics, munitions, nuclear material, **certain** gases, or complex mixtures.³ These substances can enter the air, groundwater, soils, and surface water and may pose a threat to human health and the environment. Yet for the vast majority of these chemicals, the State has little information about their toxicity and use in Vermont.



Although many of these substances are regulated in some way, the regulations vary dramatically in terms of achieving adequate protection of human health and the environment.⁴ For example, the majority of chemicals are not subject to rigorous testing prior to being introduced into the marketplace; thus, the potential threats to human health and the environment are largely unknown.⁵ In other cases, certain chemicals and classes of chemicals are not subject to reporting and management requirements.⁶ The result of the current regulatory framework is that the State does not have complete baseline information about chemical use (i.e., volume, location, and toxicity) in the State. This information is critical to enable the State to effectively respond to emergencies and threats posed by chemicals of emerging concern, and to prioritize limited resources to address those chemicals that pose the greatest risk to Vermonters.

Additionally, several state agencies share authority over chemicals regulation, creating an inefficient and duplicative regulatory system and making it challenging for businesses to navigate.⁷ Finally, it is difficult for the public to find current information about chemicals use and potential threats that may exist in their own communities because of the lack of comprehensive reporting requirements, and because the information that is currently available is difficult to find and may be stored at multiple locations.

Act 154 and the Working Group on Toxic Chemical Use in Vermont

The widespread contamination of drinking water with PFOA in Bennington County highlighted significant deficiencies in the current legal framework and policy for chemicals management in the U.S. and Vermont. The Vermont General Assembly passed Act 154 and directed the Agency of Natural Resources to establish a working group composed of “interested parties and parties with expertise in the field of toxic chemical use and regulation” to develop recommendations to strengthen the State’s ability to protect citizens from exposure to harmful chemicals and toxic substances. Specifically, Section 10(a) directs the Act 154 Chemicals Working Group “to develop recommendations for how to improve the ability of the State to: (1) prevent citizens and communities in the State from being exposed to toxic chemicals, hazardous materials, or hazardous wastes; (2) identify and regulate the use of toxic chemicals or hazardous materials that currently are unregulated by the State; and (3) inform communities and

citizens in the State of potential exposure to toxic chemicals, including contamination of groundwater, public drinking water systems, and private potable water supplies.”⁸

The Legislature directed the Act 154 Chemicals Working Group to:

(1) Identify the existing State or federal programs that establish reporting or management requirements regarding the use or generation of a toxic substance, hazardous waste, or hazardous material;

(2) Evaluate the State or federal programs identified in subdivision (1) of this subsection to determine:

(A) the program’s effectiveness in preventing releases of toxic substances, hazardous wastes, or hazardous materials;

(B) whether gaps or duplication exists between the programs that should be addressed to reduce threats to human health and the environment; and

(C) whether the programs are adequately funded and staffed to meet their statutory and regulatory purpose;

(3) Identify State or federal programs that require a response to the release of a toxic substance, hazardous waste, or hazardous material and assess their effectiveness in responding to releases in a manner that minimizes impacts to human health and the environment;

(4) Identify programs in place in other states that address the threat to human health and the environment from emerging contaminants and assess their effectiveness in accomplishing those objectives;

(5) Evaluate the State of Vermont’s existing sources of publicly available information about toxic chemicals, including emerging contaminants, hazardous waste, and hazardous materials in Vermont;

(6) Evaluate whether civil remedies under Vermont law are sufficient to ensure that private individuals are adequately protected from releases of hazardous materials, hazardous wastes, and toxic chemicals and that persons responsible for such releases pay for any harm caused; and

- (7) Evaluate the obligations on the Environmental Contingency Fund established under 10 V.S.A. § 1283 and funding alternatives that would ensure the long-term solvency of the Fund.⁹

The Act 154 Chemicals Working Group must submit findings and recommendations to the Senate and House Committees of Natural Resources and Energy and to the House Committee on Fish, Wildlife and Water Resources no later than January 15, 2017. Act 160 (2016) also directs the Agency of Natural Resources to evaluate the obligations on the Environmental Contingency Fund and propose funding alternatives that would ensure the long-term solvency of the Fund. Thus, the Act 154 Chemicals Working Group did not address this task.

II. IDENTIFICATION OF DEFICIENCIES IN CURRENT LEGAL FRAMEWORK AND POLICY

Act 154 (2016) charged the Working Group with identifying gaps or duplication in federal and State law that should be addressed to reduce threats to human health and the environment from chemical use in Vermont. To do this, the Working Group was asked to review existing State and federal programs that address the use, management, and clean up of toxic substances, chemicals, hazardous waste, and other hazardous material. The Working Group was also asked to examine civil remedies available to private citizens harmed by releases of these harmful substances. As discussed above, a large body of information already documents significant deficiencies with respect to current U.S. chemicals policy.¹⁰ In fact, the Vermont Advisory Committee on Mercury Pollution prepared a report to the Vermont Legislature in 2009 that identified significant and serious data, safety, and technology gaps in U.S. chemicals policy that create unacceptable risks to public health and the environment.¹¹ It is no surprise that the Working Group also identified numerous and significant deficiencies in the federal and state chemical regulatory landscape that pose risks to the public and the environment from toxic chemicals, as well as duplicative regulation that places a burden on industry.

Overview of Process to Identify Deficiencies in Current Legal Framework and Policy

The Working Group met seven times and identified and analyzed gaps and other concerns in the current chemical regulatory landscape through: (1) review and discussion of background materials and presentations on chemicals policy and approaches to chemicals management in the U.S. and other states at multiple meetings; (2) subject matter expert review and discussion of current regulatory programs that address chemicals and other toxic substances; (3) two group exercises; and (4) development and discussion of policy recommendations that identified and analyzed regulatory gaps or other concerns that put the public and the environment in harm's way.

First, the Act 154 Chemicals Working Group reviewed background material on chemicals policy in the U.S. and other states.¹² The working group members heard and discussed the following presentations: Joel Tickner, Thinking About Comprehensive Chemicals Policy; Ruma Kohli and Thom Jagielski,

Overview of State, Federal, and Global Regulations; and Heather Tenney, The Massachusetts Toxics Reduction Act. During this time, working group members and Agency staff with expertise in regulatory programs created a regulatory matrix to identify the current regulatory landscape and began the work to identify specific gaps in protection and duplication that address threats to public health and the environment from chemicals and other toxic substances. . This same group of subject matter experts conducted a comprehensive review of the regulatory programs identified in Appendix C of this report.

The Working Group then participated in group exercises to identify and discuss the goals of the Working Group and the regulatory gaps, duplication, and other concerns with respect to chemicals on October 19, 2016. Two LEAN facilitators from the Agency of Natural Resources assisted the Working Group. At the end of each session, the Working Group members discussed the results of the exercise. A written summary of the results of the two exercises was circulated to the Working Group shortly after the October 19, 2016 meeting.

Finally, working group members proposing a policy recommendation were asked to identify and analyze the regulatory gap or other concern the policy recommendation aimed to address. Specifically, working group members were directed to describe one or more problems identified by the Act 154 Chemicals Working Group, provide an overview of the root cause(s) of the problem, and identify the threats to human health and the environment posed by the problem. The working group members discussed the policy proposals on November 1, 2016 and were encouraged to discuss the policy recommendations informally between meetings. The working group members were given an opportunity to revise policy recommendations in response to comments from other members. On November 17, 2016, the working group members discussed the original and revised proposals and then participated in a policy selection exercise to select the majority recommendations.

Summary of Act 154 Chemicals Working Group Goals

In order to help guide the work of the working group members to identify deficiencies in the current regulatory landscape for chemicals and other toxic substances, the Working Group participated in a group exercise to identify the goals and values of the working group members related to chemicals and toxic substances. The Agency Lean facilitators led the group in an affinity diagram exercise that helped the group organize ideas into natural relationships. These exercises are often used where there are a large number of ideas that are potentially in conflict, where complex issues are involved, and where group consensus is helpful. The working group members began by writing out their top three goals or values on individual post-it notes and randomly placing them on a large poster board. Without talking to one another, the members organized the goals by grouping them together on the board until all of the goals were placed into groups. Once completed, the group discussed specific goals, how they were grouped, and the patterns that emerged. The working group members re-organized some of the goals. Finally, the working group members named each category according to the common themes among the goals in each group. The Agency staff reviewed the results of the goals exercise summarized the results, including combining similar goals, editing goals for clarity, and grouping similar goals. The chart below summarizes the results of this exercise.

<i>Working Group Process</i>
<p>Policy recommendations are: *simple and straightforward; *identify and address regulatory gaps or other problems; and *avoid duplication with existing regulations.</p>
<p>Deeper understanding of current chemical regulations and reporting requirements</p>
<p>Vermont Legislators are aware of potential harms caused by toxic chemicals and routes of exposure</p>

<i>Prevent Human and Environmental Exposure</i>
<p>Chemicals policy is grounded in the precautionary principle. Regulations: *prevent exposure and releases in addition to ensuring sufficient emergency response and clean up; *ensure products are safe before sold in Vermont.</p>
<p>Proactive identification and response to chemicals of emerging concern; other PFOA-like incidents are prevented</p>
<p>Research and development of "safe" chemicals</p>
<p>Reduce Vermonters' exposure to toxic chemicals at home, in the workplace, in our food, and in our environment</p>
<p>Most vulnerable Vermonters are protected from exposure to toxic chemicals</p>
<p>Groundwater and drinking water supplies are free from chemical contamination and is safe to drink</p>
<p>Air is free from chemical contamination and is safe to breathe</p>
<p>Wildlife and fish are protected from toxic chemicals</p>
<p>All Vermonters have equal access to a healthy environment free from toxic chemicals</p>

<i>Public Access to Information About Chemicals</i>
<p>Easier for public to find information about chemicals they may be exposed to</p>
<p>Public has access to current information about toxicity of chemicals, including research on the safe use, risks, and potential adverse health effects of chemicals</p>
<p>Using EPCRA reporting system and infrastructure, state agencies engage effectively with manufactures, distributors, and users of chemicals</p>
<p>Public is informed early and often about the risks posed by use, storage, and presence of hazardous substances in communities</p>

<i>State Authority/Approach to Address Risks Posed by Chemicals and Toxic Substances</i>
State has sufficient authority to prevent exposures to toxic chemicals
State utilizes consistent regulatory approach to chemicals that may cause harm to human health or the environment
Closure of regulatory gaps based on potential for human exposure
State has a strategic plan to review and regulate chemicals of emerging concern
Chemicals are reviewed for safety and health risks before use
Chemicals that are an unsafe or have the potential to cause harm to humans and the environment are prohibited
State authority closes gaps in protection from federal laws
State assesses the effectiveness of current drinking water regulations to protect public health and public exposure to unregulated chemicals
All hazardous chemicals entering, leaving, or stored in Vermont are reported
Analytical method to monitor chemical is developed before chemical is put into use

<i>Harmonization of Regulations</i>
County, state, federal, and international chemicals regulations are harmonized
State regulations are not duplicative of other state or federal regulations
State builds upon federal and international reporting requirements to collect chemicals data

<i>Emergency Planning</i>
Best management practices are developed and followed for each industry
Local emergency planning committees have sufficient resources to develop comprehensive response plans for chemical releases

Summary of Deficiencies in Current Legal Framework and Policy

Appendix C through F identify regulatory and other gaps in protection from harmful chemicals and toxic substances specific to federal and state regulatory programs and Vermont law. In addition, the Agency of Natural Resources’ facilitators led the working group members in a second group exercise aimed at identifying regulatory gaps and other concerns related to chemicals and toxic substances that pose risks to public health and the environment. As part of this exercise, the Working Group worked together to identify regulatory gaps and other concerns with respect to chemicals and toxic substances in four areas: (1) reporting/disclosure; (2) management/prevention of releases; (3) remediation of releases; and (4) civil remedies for citizens harmed by chemicals. The facilitators put the working group members into

four randomly selected groups. There were four stations based on the four categories identified above. At each station, working group members wrote down priority gaps and other concerns—which they were instructed to develop prior to the meeting—related to the specific category. Each randomly selected group rotated to each station until all groups had an opportunity to identify concerns related to each category. If the concern already appeared on the board, the working group member was instructed to place a check by the concern to help avoid duplication. At the end of the exercise, the group chose one member to report the results and lead discussion. The Agency staff reviewed the results of this exercise and summarized the results, including combining similar concerns, editing concerns for clarity, and grouping similar concerns. The chart below summarizes the regulatory gaps and other concerns identified by the Working Group during the group exercise. *See* also Appendix C through F.

<i>Overall Themes</i>
Chemical by chemical approach is not effective or efficient
Most regulatory programs are reactive and do not focus on prevention
Lack of toxicity and other basic information about chemicals poses challenges for reporting, management, and clean up of chemicals and hampers citizens' ability to recover damages when exposed to harmful chemicals
Coordination among state agencies occurs in Vermont, but it is not as effective as more centralized oversight
Burden should be on manufacturers to prove relative safety of chemicals as opposed to the government to demonstrate harm
Insufficient incentives for manufactures, users, and distributors to reduce risks

<i>Reporting/Disclosure</i>
Chemical by chemical approach is not effective or efficient
Generally, no, limited, or voluntary reporting and disclosure requirements for many chemicals and emerging contaminants of concern
Generally, if a chemical is not on a "list", there is no reporting or disclosure requirements. Often, the lists for regulatory programs are not comprehensive.
Insufficient toxicity information about many chemicals
Information that is reported is not always easily accessible to the public
Confidential business information claims limits public access to information
Industry may lack information about its own chemical use (i.e. product manufacturers may have limited information about chemicals in components)
Small business may lack infrastructure in place to comprehensively record and manage chemical use

<i>Management and Prevention of Releases</i>
Chemical by chemical approach is not effective or efficient
Lack of science, data, monitoring, and biomonitoring of chemicals to assess toxicity, synergistic effects of multiple chemicals, accumulative risk, and environmental health can make it difficult to effectively manage and prevent releases of chemicals
Lack of holistic life-cycle regulation of chemicals: *No requirement for prior study before use in market; *Lack of sufficient regulation and monitoring once chemicals enter market; *No comprehensive chemical inventory in Vermont; *Multiple agencies share authority over chemicals regulation; and *Insufficient labeling of chemicals and chemicals in products.
Thresholds are not always health-based, especially for most vulnerable populations
Insufficient regulatory incentives for identifying safer alternatives to harmful chemicals
Lack of clarity of requirements for "safer alternatives"
Testing to determine toxicity is expensive
Insufficient federal regulation and federal preemption may affect and limit State ability to effectively manage chemicals
Certain types of chemicals are exempt from regulation under TSCA
No or limited requirements for testing of private drinking water wells
Limited technical assistance, planning, and best practices to help businesses avoid or limit chemical use

<i>Clean-Up/Remediation</i>
Lack of information on chemicals can make it difficult to identify existence and scope of contamination and effective remedy
Detection limits may not be sufficient to detect contamination at levels that are harmful to human health
May be difficult to determine when release occurred
Can be expensive to clean up and remediate toxic substances releases and there are limited releases
Responsible parties may be hard to identify; may not have sufficient funds available; or may not otherwise be held responsible for clean up
In some cases, there is no defined release and no clear remediation technologies available
States have limited resources to address all releases of toxic substances
Citizens have limited tools to respond to releases of toxic substances

Once released into the environment, chemicals and toxic substances are much more expensive to clean up

<i>Civil Remedies</i>
Liability is often "externalized" to general public
Lack of meaningful remedies for adverse health impacts caused by exposure to harmful chemicals
Insufficient funding for communities adversely impacted by exposure to harmful chemicals or other toxic substances
<p>Citizens must overcome high bar to recover damages caused by exposure to harmful chemicals, including:</p> <ul style="list-style-type: none"> *can be difficult to identify exposure routes; *demonstrating that harm was caused solely by exposure to a specific chemical can be difficult for a citizen to prove; *statute of limitations may run before citizen experiences adverse health impacts from exposure; *burden of proof and evidentiary standard for technical experts is high; *can be difficult to value human health and environmental costs associated with exposure; *can be difficult to identify responsible parties or responsible parties are shielded from responsibility (i.e. complex corporate structures, bankruptcy)
Difficult for citizens to recover costs of medical monitoring and impacts after exposure even if legal claims are pursued

III. RECOMMENDATIONS TO GENERAL ASSEMBLY

Overview of Policy Selection Process

Once the final set of policy proposals were developed, the Agency facilitators assisted the Working Group with the policy selection process. Prior to the policy selection exercise, the facilitation team led the group through a discussion of ground rules. There are twenty working group members. Each working group member was able to take one position on each policy proposal: (1) support entire proposal; (2) support a portion of the proposal; (3) oppose proposal; or (4) take no position on the proposal at this time. All proposals—or portions of proposals—receiving eleven or more votes of support was identified as a majority recommendation and is included as a recommendation to the General Assembly below. The complete proposals that were selected as majority policy recommendations are attached in Appendix G. These proposals include the specific rationale for each policy recommendation. Working group members were provided with an opportunity to comment on the majority policy recommendations. These comments are available in Appendix H.

Majority Policy Recommendations

The Working Group was directed to “develop recommendations to improve the ability of the State to (1) prevent citizens and communities in the State from being exposed to toxic chemicals, hazardous materials, or hazardous wastes; (2) identify and regulate the use of toxic chemicals or hazardous materials that currently are unregulated by the State; and (3) inform communities and citizens in the State of potential exposure to toxic chemicals, including contamination of groundwater, public drinking water systems, and private potable water supplies.” Act 154, Section 10(a). The majority of the working group members selected the policy recommendations summarized below to address this charge. For a more detailed discussion of the policy recommendations and the rationale for these majority recommendations, please see the complete policy recommendations located in Appendix G.

Given both the legislative mandate to develop recommendations to protect Vermonters from exposure to harmful chemicals and other toxic substances, regulate previously unregulated chemicals of concern, increase public access to information about chemicals in their community, and ensure citizens have sufficient remedies where persons release chemicals and other toxic substances into the environment and significant time constraints, affordability and technical feasibility are largely not addressed in the majority policy recommendations. Affordability and technical feasibility are both important considerations and should be considered as part of a larger discussion in the context of specific legislation.

i. Increase Transparency and Efficiency by Strengthening Recordkeeping and Reporting Requirements

Problem: A significant number of chemicals are manufactured, imported, transported, used, and disposed of daily in Vermont. One of the major problems identified by the Act 154 Chemicals Working Group is a lack of data with respect to toxicity information and chemical use (volume and location) in Vermont. The State does not have a baseline understanding of all chemicals in use, and where they are used, within the State. Without this information, it is challenging for the State to respond to emergencies and threats posed by chemicals of emerging concern, and review and assess which chemicals the State should regulate. Additionally, a lack of a coordinated and streamlined approach to chemicals regulation among State agencies results in an inefficient and duplicative reporting system that can be difficult for businesses to navigate.

Recommendations:

- ❖ Expand upon existing reporting requirements to require users, manufacturers, importers, and distributors of chemicals to report inventories of all chemicals to the State on an annual basis subject to appropriate thresholds for recordkeeping and reporting requirements.

- ❖ Expand pesticide use reporting requirements beyond commercial applications and identify sales to consumers at the point of sale or distribution in the State.
- ❖ Create a streamlined electronic reporting system and other tools to reduce duplication and make it easier for businesses to comply with recordkeeping and reporting requirements.

ii. *Increase Resources for Businesses and Strengthen Planning Requirements Under the Pollution Prevention Planning Program*

Problem: The list of chemicals triggering reporting and planning requirements has not been updated since 1991. The current program does not require that planners certified by the State sign off on plans before submission or offer sufficient technical assistance for businesses.

Recommendations:

- ❖ Institute a certified planner requirement and improve technical assistance to available to businesses in Vermont.
- ❖ Update the 1991 list of chemicals that trigger reporting and planning requirements to include chemicals listed under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA); chemicals of high concern identified pursuant to Act 188; and California's Initial Candidate Chemical List.
- ❖ Lower reporting thresholds for companies that use persistent bioaccumulative toxics (PBTs).

iii. *Strengthen the Ability of the Department of Health to Prevent Exposure to Harmful Chemicals that Pose a Risk to Public Health*

Problem: The Toxic Free Families Act of 2014 (Act 188) restricts the Department of Health's authority to require labeling or restrict the use of chemicals of high concern in children's products even when there is significant scientific evidence to support such an action. Act 188 is limited to a small percentage of consumer products and product manufacturers are not required to report both the product name and universal product code.

Recommendations:

- ❖ Expand Act 188 to include all consumer products and require reporting of product name and universal product code.
- ❖ Revise Act 188 to provide the Department of Health with authority to restrict or label chemicals of concern independent of an Act 188 Working Group recommendation.

- ❖ Revise Act 188 to ensure the Department of Health has the authority to act to protect Vermonters from exposure to chemicals of concern in products when there is sufficient scientific support for action.

iv. Increase Efficiency by Improving Coordination and Collaboration Among Agencies

Problem: Several state agencies share authority over chemicals regulation and there is no single agency charged with evaluating potential risks to human health and the environment from unregulated chemicals and identifying actions to minimize risks.

Recommendations:

- ❖ Create an inter-agency advisory committee to review and evaluate chemical inventories on an annual basis to identify potential risks to human health and the environment and measures to address those risks. Specifically, the new advisory committee should be:
 - (a) be comprised of a representative from the Agency of Agriculture, Agency of Natural Resources, Department of Health, Department of Labor, and the Department of Public Safety;
 - (b) convene and consult with a policy advisory panel that will consist of members with expertise in: toxicology, environmental law, pollution prevention, environmental health, public health, risk analysis, maternal and child health care, occupational health, industrial hygiene, and public policy;
 - (c) identify an agency or agencies to create a streamlined electronic reporting system and develop tools to make it easier for businesses to comply with regulatory requirements;
 - (d) develop streamlined reporting forms and guidance for businesses to help ensure compliance with existing and expanded reporting requirements through a single unified reporting system
 - (e) track and notify the relevant State agencies of any “action” taken by EPA to regulate chemicals under the TSCA/Lautenberg Amendments that could affect any State regulatory decision;
 - (f) review chemical inventories on an annual basis and identify chemicals of high concern; and
 - (g) identify actions or strategies to reduce health risks from exposure to chemicals of high concern and risks of harm to the natural environment, including the development of regulatory standards, sampling of private drinking water supplies, and other necessary actions to protect Vermonters.
 - (h) The creation and duties of the interagency committee shall not limit the independent authority of the Agency of Agriculture, Agency of Natural Resources, Department of Health, Department of Labor, and the Department of Public Safety to regulate chemicals.

- ❖ Fund one dedicated senior staff position to support the work of the interagency committee.

v. ***Increase Public Access to Information About Chemicals***

Problem: There is currently no electronic database that provides resources and chemical use data in an easy-to-digest format for Vermont businesses, agencies, and the public. There is a lack of easily accessible comprehensive information for Vermonters to evaluate the risks associated with the presence of harmful chemicals in their communities.

Recommendations:

- ❖ Create a new Agency of Natural Resources Natural Resources Atlas data layer(s) with information on the use, manufacture, import, and distribution of chemicals in a format that is accessible to the public. At a minimum, this data layer should include complete chemical inventory information reported to the State, including location; information submitted to the Agency pursuant to the Pollution Prevention Planning Program; and information about pesticide use.
- ❖ Improve existing data structures within the Agency of Agriculture to compile and provide meaningful data to the public about pesticide use and require Agency of Agriculture to coordinate and share pesticide use information and information regarding risks associated with pesticides with an interagency committee and the public through a new Agency of Natural Resources Atlas data layer.
- ❖ Require testing of private drinking water supplies when property is transferred.
- ❖ Increase fees on toxic substances, hazardous waste, and/or chemicals of concern to fund expansion and improvements to the Natural Resources Atlas and subsidize the cost of testing drinking water and groundwater in areas where the Agency of Natural Resources determines that the risk of contamination of water supplies is high.

vi. ***Strengthen Remedies Available to Vermonters to Address Violations of Pollution Laws and Exposure to Harmful Chemicals***

Problem: The existing civil remedies are insufficient to ensure Vermonters are protected from releases of harmful chemicals and other toxic substances and that persons responsible for such releases pay for harm.

Recommendations:

- ❖ Enact a citizen suit provision modeled after federal law to allow citizens to enforce alleged violations of 10 V.S.A. § 6616 or is alleged to be in violation of a permit, condition, standard,

limitation, or order issued under Title 10 for the release of a hazardous material as defined in 10 V.S.A. § 6602.

- ❖ Authorize individuals to recover the expense of medical monitoring for latent diseases and other ailments where individuals have been exposed to toxic substances as a result of a defendant's tortious conduct and, due to this exposure, have an increased risk of developing diseases, ailments, or other physiological changes.
- ❖ Adopt a strict joint and several liability standard for harm to private citizens by the release of toxic chemicals into the environment and allow parties held liable for toxic chemical releases to seek contribution from any other responsible party, including chemical manufacturers for failing to warn of the chemical's propensity to cause harm.

vii. *Restrict the Use of Specific Chemicals that Pose a Risk to Public Health*

Problem: Studies have shown that some poly and perfluoroalkyl substances (PFASs) disrupt normal endocrine activity; reduce immune function; cause adverse effects on multiple organs, including the liver and pancreas; and cause developmental problems in rodent offspring exposed in the womb. Further, a panel convened to examine the impacts of long chain PFASs found probable links between these chemicals and 55 diseases, including 21 types of cancers. PFASs are used to coat many products such as dental floss, microwave popcorn bags, cookware, and pizza boxes.

Recommendation:

- ❖ Ban the use of poly and perfluoroalkyl substances (PFASs) from food contact substances and dental floss.

¹ See, e.g., Lowell Center for Sustainable Production, *Options for State Chemical Policy Reform: A Resource Guide* (2008); Maine Governor John E. Baldacci's Task Force to Promote Safer Chemicals in Consumer Products, *Final Report* (Dec. 2007); The Centers for Occupational and Environmental Health, University of Berkeley, *Green Chemistry: Cornerstone to a Sustainable California* (2008); and California Department of Toxic Substances Control, California Environmental Protection Agency, *California Green Chemistry Initiative, Final Report* (2008).

² See Chemical Abstract Service, American Chemical Society, CAS Registry, *available at* <https://www.cas.org/content/chemical-substances>.

³ 15 U.S.C. § 2602(2)(B).

⁴ See Appendix C.

⁵ See 15 U.S.C. §.

⁶ See Appendix C

⁷ *Id.*

⁸ Act No. 154, Section 10(a).

⁹ *Id.* § 10(b).

¹⁰ See *supra* note 1.

¹¹ Advisory Committee on Mercury Pollution, *Opportunities for Action on Toxic Chemicals* (Jan. 2009).

¹² Integral Consulting, Inc., *A Compendium of State Regulatory Authorities on Emerging Contaminants* (May 2016); Wilson et al., *Toward a New U.S. Chemicals Policy: Rebuilding the Foundation to Advance New Science, Green Chemistry, and Environmental Health* (2009); University of Minnesota Department of Health, *Contaminants of Emerging Concern Program Process for Selecting Chemicals* (May 2016).