

Portland Air Toxics Solutions Committee Report and Recommendations

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Quality



This report prepared by:

Oregon Department of Environmental Quality
811 SW 6th Avenue
Portland, OR 97204
1-800-452-4011
www.oregon.gov/deq

Contact:
Sarah Armitage
503-229-5186

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1. Executive Summary

1.1 Background and Purpose

Compared to other areas in Oregon, the Portland region has the highest risk to the population from air toxics due to business and population density. Along with national estimates of air toxics emissions, Portland monitoring studies confirm the presence of air toxics at levels that can cause adverse health effects. Forming individual airsheds based on geography allows the Department of Environmental Quality or DEQ to define problem areas for air toxics in Oregon. It also allows DEQ to prioritize and focus efforts to reduce air toxics. Under this geographic approach, DEQ and community members evaluate air toxics holistically in an area, striving for reductions from various sources roughly commensurate with their contributions.

DEQ created the Portland Air Toxics Solutions project, also called PATS, to work with local communities to develop an air toxics reduction plan for the Portland region. Ultimately DEQ seeks to reduce concentrations of air toxics to ambient benchmark concentrations, health based clean air goals established in state regulations. Between August 2009 and October 2011, DEQ collaborated with a diverse stakeholder committee called Portland Air Toxics Solutions Advisory Committee, known as PATSAC, to develop a foundation and framework for an air toxics reduction plan. In a series of 14 meetings, the committee and DEQ worked through the challenges of understanding and discussing air toxics problems and potential solutions in the Portland area, considering monitoring and modeling data, pollutants above health based benchmarks, sources of pollutants and potential emission reduction strategies.

1.2 Technical Study

To understand Portland air toxics problems and sources, DEQ produced a PATS modeling study that projects air toxics concentrations for 19 pollutants in 2017. The PATS model used the most current and detailed emissions information from industrial, mobile, and residential activities. The model also factored in economic conditions, population growth, topography, weather and new regulations to reduce pollution. PATSAC reviewed all stages of the PATS modeling and monitoring data and initiated technical advances that improved methodologies and data quality. In addition, DEQ and the advisory committee considered monitoring data from a 2005 regional monitoring study and performed a model to monitor comparison.

The PATS modeling study identified 14 of the 19 pollutants above health based benchmarks. Eight of the 14 pollutants cause the most risk. These pollutants are: 1, 3 butadiene, benzene, diesel particulate, 15 PAH,

naphthalene, cadmium, acrolein, and formaldehyde. The study shows that most air toxics are found throughout the study area. Higher concentrations are found in densely populated neighborhoods, near busy roads and highways and in areas with business and industrial activity.

1.3 Portland Air Toxics Solutions Advisory Committee Contributions

The advisory committee provided DEQ with a wide diversity of opinion on the technical study and developing emission reduction options. DEQ fully considered and incorporated much of the committee's input. While the scientific complexity, need for additional stakeholder representation, and lack of consensus about air toxics in the study area prevented DEQ and PATSAC from developing the type of ten year plan envisioned in the project charter, PATSAC work resulted in ground-breaking analysis and understanding of toxics problems and potential solutions in the Portland area.

PATSAC and DEQ developed a framework for next steps, including:

- A priority list of air toxics source categories;
- White papers that lay an initial technical foundation for future emission reduction strategies;
- Definition of key considerations;
- Future steps for technical analysis; and
- Future steps for stakeholder involvement, including representation and consideration of environmental justice issues.

1.4 Priority Emission Source Categories

Five categories of emissions are high priority for near term follow up action, including stakeholder consultation, planning, and emission reduction actions. This prioritization is based on total modeled risk, practicability of emission reductions, and the directive in Oregon air toxics regulations to address both area wide and localized risk. The prioritized source categories will guide DEQ and partner actions to reduce toxics. However DEQ and others may take advantage of additional emission reduction opportunities as they arise. The five priority categories are:

- Residential Wood Combustion
- On Road Mobile Light Duty
- On Road Mobile Heavy Duty
- Construction
- Industrial Metals

For all priority categories, it is clear that additional stakeholder consultation will be necessary to thoroughly consider emission reductions. This consultation will allow development of more detailed technical information and more complete consideration of affected stakeholder interests. Future stakeholder processes will also evaluate strategies to achieve emission reductions, and recommend specific actions consistent with the PATSAC considerations, including cost effectiveness, feasibility and benefits analysis as well as options for ongoing improvement. Highlights of recommendations for the priority categories are summarized below.

1.4.1 Residential Wood Combustion

In the category of residential wood combustion, the next steps are to conduct a residential wood heating survey to refine DEQ emission estimates, to implement a regional public awareness campaign to promote cleaner burning techniques, and to improve implementation of the uncertified woodstove change out program, with emphasis on assistance to affected environmental justice communities. DEQ follow-up actions also include evaluation of opacity limits, finding long term funding for woodstove change out, and supporting stronger national standards for new wood heating devices.

1.4.2 On Road Mobile Light Duty Vehicles

For on road mobile emissions, DEQ plans to coordinate with Metro's ongoing regional transportation planning process to reduce vehicle miles traveled (VMT) from light duty vehicles. Under this effort, Metro, DEQ and partners would work to identify sustainable funding for VMT reduction, incorporate air toxics reductions into existing VMT reduction planning and strive to achieve a per capita reduction of 20% of light duty vehicle air toxics emissions by 2035. Other VMT reduction elements include transportation demand management, operation improvements and transit improvements. DEQ plans to advocate for strong national standards for light duty vehicles, adopt California LEV III standards and promote infrastructure for low emitting vehicles. Cleaner fuel recommendations include a life cycle evaluation of air toxics reductions from low carbon fuels, and an evaluation of reformulated gasoline.

1.4.3 On Road Mobile Heavy Duty Vehicles

General strategies to reduce emissions from on road mobile heavy duty vehicles are to identify opportunities for financial support of clean diesel activities and to identify the most effective use of education and outreach. To burn fuel cleaner, DEQ is directed to work with stakeholders to accelerate engine turnover, repowering, and retrofits. DEQ can also work with partners to assess the feasibility and effectiveness at all levels of government of incenting or requiring clean diesel fleets at publically funded projects. To burn cleaner fuel, DEQ can evaluate alternative fuels as well as the need for a technical clearinghouse on environmental benefits of alternative fuels. To burn less fuel DEQ can evaluate efficiency measures, and current idling restrictions in Oregon and other jurisdictions.

1.4.5 Construction Equipment

Recommendations in this category direct DEQ to conduct a survey of construction equipment in the Metro area. This would better define equipment characteristics, improve emission estimates, and inform reduction strategies. Other general strategies include evaluations of an equipment registration system and evaluation of the impacts of high emission equipment imported from California. DEQ can identify opportunities for financial support of clean diesel activities as well as the role of education in promoting clean diesel activities. Strategies to burn fuel cleaner include acceleration of engine turnover, repowering and retrofits, and evaluation of requiring clean diesel equipment on publically funded projects. To burn cleaner fuel, next steps include evaluation of alternative fuels and a technical clearinghouse on alternative fuels. To burn less fuel, DEQ and partners can evaluate efficiency measures and the feasibility of idle reduction for construction equipment, including private and other jurisdictions' idle reduction programs.

1.4.6 Industrial Metals

For industrial metals facilities DEQ would refine emission estimates using facility-specific models and improved emission characteristics. DEQ would encourage facilities with modeled impacts above benchmarks to make voluntary early reductions, and as with all the other high priority categories, convene a stakeholder process to identify and evaluate strategies to achieve emission reductions.

1.5 Additional Technical Information

The PATS process highlighted several areas in need of data refinement for better understanding of emissions, potential risks and possible emission reduction strategies. With assistance from EPA and other state and local partners, DEQ would develop additional and more accurate information in the following areas:

- Methylene chloride
- Secondary formation pollutants
- Cadmium
- Arsenic
- Additional Monitoring Studies

1.6 Next Steps

In collaboration with PATSAC, DEQ identified several important future considerations for implementing emission reduction strategies. For many categories of emissions there are common potential future needs:

- 1) continuous improvement in achieving emission reductions,
- 2) responding to growth in emissions,
- 3) providing the best quality information about air toxics, and
- 4) mitigating exposures in ways that complement reduction strategies.

DEQ understands through comments received and group discussion that many PATSAC members support the next steps stated in this section. However, the report and recommendations do not represent the views of all PATSAC members. DEQ will seek further comment from the public and stakeholders before finalizing this proposal for presentation to the Environmental Quality Commission.

At the time of this report, DEQ has exhausted the funding for ongoing air toxics work. However, because air toxics are produced by many of the same sources that produce particulate, ozone precursors and greenhouse gases, DEQ will link efforts to reduce all of these pollutants in a comprehensive approach. While DEQ will coordinate local air toxics reduction efforts, it is also relying on partnerships and collaborations with local agencies and communities for resources and for strategy implementation.

